



Fire Weather Services Operation Plan for Maryland 2026

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Section I Annual Operating Plan

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 in the state of Maryland.

Explanation of relationship between the AOP and MOU.

This 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
- MD Department of Natural Resources

Changes from 2025 Plan:

Removed all mention of the Fire Weather Matrix (FWM) Product, as it was discontinued on January 26, 2026. See [Service Change Notice](#) for more details.

Page 8 - Overhauled the NFDRS section to account for the launch of FEMS.

Page 16 - Eastern Area Coordination Center phone number has changed. The EACC Fire Weather Program Manager is also now vacant until further notice.

Section II NWS Fire Weather Policy & Philosophy

The National Weather Service Forecast Offices (WFO's Sterling, VA, Mount Holly, NJ, and Wakefield, VA) will provide fire weather support in accordance with the National Weather Service Fire Weather Policy. This support will consist of daily fire weather forecasts. Spot (non-routine) forecasts, fire weather watches, and red flag warnings will be provided on an as-needed basis at any time throughout the year.

Unless otherwise specified, forecasts are made to reflect the worst probable weather in terms of fire management, within the forecast zone. For instance, the daytime forecast will attempt to depict the hottest, driest, and windiest weather that is likely to be experienced in the wildland environment of a zone from 7AM to 7 PM EST/EDT. On occasion, this may be different from the general public forecast which emphasizes prevailing conditions for the area.

Though the routine forecast attempts to depict a worst case fire weather scenario for a given period, it in no way reflects all the local variations in weather that can have an adverse effect on fire behavior within a zone. Fire control officers should be familiar with typical weather variations across their district or forest such as those associated with land versus sea interaction, changes in elevation, and vegetation. The impact of sea breezes or mountain/valley winds should also be recognized. A spot forecast should be requested whenever local effects are suspected of creating difficult fire management conditions.

Over mountainous terrain, weather conditions vary considerably from site to site within a county. Routine forecasts for mountainous counties will be aimed at lower elevations where the most operations are likely to occur. As a general rule, high elevation sites will have lower temperatures on the order of 5 degrees per 1,000 feet in elevation. Fire officers are urged to obtain spot forecasts whenever terrain causes significant departures from the routine forecast.

Section III NWS Forecast Areas

WFO Sterling: All of Maryland west of the Chesapeake Bay.

WFO Mount Holly: Kent, Queen Anne's, Caroline, Talbot counties

WFO Wakefield: Dorchester, Wicomico, Worcester, Somerset counties.

For NWS Sterling: <http://www.weather.gov/lwx/>

For NWS Mount Holly: <http://www.weather.gov/phi/>

For NWS Wakefield: <http://www.weather.gov/akq/>

National Fire Weather Page: <https://www.weather.gov/fire/>



WFO Sterling		Calvert	MDZ018
(Zones/Zone #s)		Cecil	MDZ008
W Allegany	MDZ501	Frederick	MDZ004
E & Central Allegany	MDZ502	Charles	MDZ016
Anne Arundel	MDZ014	Carroll	MDZ005
Northern Baltimore	MDZ006	Garrett	MDZ001
Southern Baltimore	MDZ011	Washington	MDZ003
NW Harford	MDZ507	SE Howard	MDZ506
SE Harford	MDZ508	NW Howard	MDZ505
SE Montgomery	MDZ504	Prince Georges	MDZ013
NW Montgomery	MDZ503	St. Mary's	MDZ017
WFO Mount Holly		WFO Wakefield	
Kent	MDZ012	Dorchester	MDZ021
Queen Anne's	MDZ015	Wicomico	MDZ022
Talbot	MDZ019	Worcester	MDZ024
Caroline	MDZ020	Eastern Worcester	MDZ025
		Somerset	MDZ023

Section IV

The Fire Weather Planning Forecast (FWF)

The fire weather planning forecast (FWF) will be issued by each Weather Forecast Office for fire weather zone in their forecast area. The forecast will be issued between 4:00 and 6:00 AM each morning and again between 2:00 and 4:00 PM each afternoon.

The morning fire weather forecast will cover specific conditions for a 36 hour period and will consist of three 12 hour periods (today, tonight, and the next day). The afternoon forecast will consist of four 12 hour periods (tonight, tomorrow, tomorrow night, and the next day). On critical fire weather days, a headline may be included at the top of the product. The headline will be mandatory for Red Flag Warnings or Fire Weather Watches. A brief synopsis of the weather as it pertains to the forecast area will precede the forecasts. Following the three/four period forecasts, the product will also contain an extended forecast, and the NWS long range forecast for the area.

A) The Short Term Forecast

Data Included in the Short Term Section of the Fire Weather Product will be broken down into several groups. Each forecast zone consists of 12 hour periods. The data included will be:

- 1) Cloud Amount
- 2) Precipitation Type
- 3) Chance of Precipitation
- 4) Daytime Max Temperatures and Nighttime Minimum Temperatures (*deg F*)
- 5) Daytime Minimum Relative Humidity and Nighttime Max (*in percent*)
- 6) 20-ft Wind Direction & Speed (*using an 8 point compass in MPH*)
- 7) Precipitation Amount (*in inches*)

- 8) Precipitation Duration (*in hours*)
- 9) Precipitation Begin and End Times (*NWS Sterling and Pittsburgh only*)
- 10) Daytime Mixing Height (*in feet*)
- 11) Daytime Transport Wind Direction
- 12) Daytime Transport Wind Speed (*in miles per hour*)
- 13) Daytime Ventilation Index (*transport wind speed x mixing height*)
- 14) Early and Late ADI
- 15) Early and Late Max LVORI

20-ft Winds: Direction is given using an eight point compass (i.e. N, NE, E, SE, S, SW, W, NW). Surface wind speed is in miles per hour. During the daytime periods, wind is broken down into morning and afternoon periods. For those that require 20 foot winds, the difference between 20 and 33 foot winds is typically only 10 % or less in moderate to strong winds.

Precipitation Duration: The total number of hours of precipitation expected during the 12 hour period.

Precipitation Begin and End Times: These are the start and end times of any expected precipitation. It does not necessarily mean that precipitation will occur continuously between these times.

Humidity: The humidity values given are the relative humidity extremes expected. In the two daytime periods, these are the minimum relative humidity forecast. At night, they are the maximum value forecast.

Mixing Height: This is defined as the atmospheric limit above which vigorous mixing does not take place. The mixing height gives the potential of the atmosphere to disperse smoke. In general, with a forecast mixing height of 1600 feet (500 meters) or less, the fire control officer should consider moving a scheduled prescribed burn to a different day. Upper air sounding data is available between 8-9 AM EST (9-10 AM EDT). This data can sometimes provide a more accurate mixing height than what is issued earlier in the morning on the daily fire weather forecast. Since vigorous mixing typically occurs during the daylight hours, this value is given during the daytime periods. At night, the value falls to the inversion height.

Transport Wind: Defined as the average wind vector from the surface to the mixing height (more plainly, the direction and speed of the wind that will carry the smoke). Direction of the transport wind (where the wind is blowing from) and speed will be given. This is given in miles per hour. To convert to meters per second, multiply it by 0.45 (roughly divide it in half). Since the mixing height used to compute this is a daytime index, this is given for day periods only.

Ventilation Rate: This is a combination of the Transport Wind (mph) and the Mixing Height (ft). It is computed by multiplying the two values. It measures the volume of smoke moved by dispersion. Since the mixing height used to compute this is a daytime index, ventilation rate is also given for the daytime periods only.

ADI: The atmospheric dispersion index is the process by which the atmosphere mixes and transports particulates such as smoke away from their source. It is an assessment of air quality and smoke concentration. ADI is derived from 20 ft wind speed, mixing height, transport wind, and cloud cover.

ADI			
1-6	=	Very Poor	61-100 = Good
7-12	=	Poor	>100 = Very Good
13-20	=	Generally Poor	
21-40	=	Fair	
41-60	=	Generally Good	

LVORI: The Low Visibility Occurrence Risk Index is an index of low visibility and ranges from 1-10 depending on the dispersion and relative humidity. A 1 indicates there is almost no chance of low visibility, while a 10 indicates low visibility is likely.

B) The Extended Forecast

At the end of the daily fire weather forecast, the extended forecasts are given. For the mid range, these will include cloud cover, precipitation, and temperatures. For the long range, this will include deviations from normal for temperatures and precipitation.

Section V Spot (Non-Routine) Forecasts

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. Site specific weather forecasts are 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.

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. 38.46, -78.65). If degrees/minutes/seconds, use a second decimal (e.g. 37.27.36, 78.39.00), or leave a space between each number (e.g. 37 27 36, 78 39 00).

Requests for and retrieval of completed Spot Forecast Request web page found at <https://www.weather.gov/spot/request>

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. A printable version of this form is located here <https://www.weather.gov/media/cae/D1a.pdf> 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 guide.

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.

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.

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

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

Provide a contact point name and phone number where the forecaster can call back, if necessary. (Also include a fax number for returning completed forecasts if the web based spot forecast form is not used).

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.

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.

Section VI

National Fire Danger Rating System (NDFRS) Forecasts

The National Weather Service (NWS) has discontinued the Miscellaneous Fire Weather Product (FWM), Fire Weather Notification (FWN), Fire Weather Observation (FWO), and Fire Danger Indices (FDI) products as of January 26, 2026. There is no loss in forecast service for NDFRS with this discontinuation as the NDFRS forecasts for the Nation are now being generated using the existing NWS National Gridded Forecast Database (NDFD). As a result, a specific FWM and derived products will not be necessary for fire danger calculations. The replacement system for the Weather Information Management System (WIMS) is the Fire Environment Mapping System ([FEMS](#)).

Land Management Agencies are responsible for the collection, quality control, transmission, and archiving of NDFRS observations from RAWS sites and other mutually agreed-upon observation networks (e.g., NC ECONet). The accuracy of forecasts is dependent upon the availability of reliable, high-quality observations. Sensor malfunctions frequently result in erroneous or otherwise suspect data values. Upon identification of a potential sensor malfunction, the NWS shall notify the station owner. Conversely, station owners shall notify the appropriate NWS office upon discovery of any sensor failure or data integrity issue.

Station owners are responsible for ensuring that their stations are maintained in proper working order at all times. Required maintenance and repairs shall be completed in a timely manner and in compliance with PMS 426-3, NWCG Standards for Fire Weather Stations.

MARYLAND NFDRS RAWs

FEMS ID	NAME	COUNTY	ELEV. (ft)	LAT.	LONG.	OWNER	WFO
180201	Green Ridge	Allegany	1,090	39.69	78.42	MFS	Sterling
180302	Catoctin Mt	Frederick	1,485	39.65	77.49	NPS	Sterling
180303	Antietam NB	Washington	450	39.49	77.75	NPS	Sterling
180701	Susquehanna	Harford	369	39.61	76.16	MFS	Sterling
181510	Cedarville	Prince Georges	209	38.65	76.82	MFS	Sterling
181501	Patuxent	Prince Georges	200	39.05	76.82	FWS	Sterling
182101	Tuckahoe	Caroline	50	38.94	75.94	MFS	Mt. Holly
182002	Blackwater	Dorchester	8	38.44	76.09	FWS	Wakefield
182201	Powellville	Wicomico	16	38.36	75.43	MFS	Wakefield
180335	Assateague	Worcester	12	38.08	75.20	NPS	Wakefield

Section VII
Fire Weather Watches/Red Flag Warnings / Special Weather Statements
(WBCRFWLW) / (WBCSPSLWX)

The below matrix will be used to make an initial determination on the need for Fire Weather Watches, Red Flag Warnings, and Fire Danger Special Weather Statements. 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 speeds given low enough RH.

RH ↓ / Wind →	0-5 mph	6-11 mph	12-19 mph	20-29 mph	30+ mph
40 - 49%					SPS
31 - 39%				SPS	RFW
21 - 30%			SPS	RFW	RFW
11 - 20%		SPS *	RFW	RFW	RFW
10% or less	SPS *	RFW *	RFW	RFW	RFW

The (*) denotes conditions that are very rare in the I-95 Corridor

Pre-Requisites

Forgo **RFW** if...

3 days since 0.25" + rainfall
2 days since 0.10" - 0.24" rainfall
1 day since 0.01" - 0.09" rainfall

Temperature > 40° F
(east of the Catoctins)
Slope can compensate for lower temps

**10- hour Fuel
Moisture is 8% or less**

Call the VA Interagency
Coordination Center, if no answer,
defer to NFDRS outputs

**NFDRS rating of high,
very high, or extreme**

NWS offices Sterling, Wakefield, and Mount Holly will contact the Maryland Department of Natural Resources Forest Service to obtain information about fuel moisture before issuing any headlines. Chris Robertson will be the lead contact, but the WFO's will use the Maryland Forest Service Wildfire Schedule to contact the State Duty Officer assigned daily. Each WFO will receive the schedule of contact information for the State Duty Officer on a monthly basis.

If WFO's determine that the relative humidity/wind criteria will be met, AND after coordination it is determined that the Fuel Moisture criteria will be met, WFO's will issue a FIRE WEATHER WATCH or RED FLAG WARNING. A SPECIAL WEATHER STATEMENT may be issued when it is determined that all elements (wind speed, relative humidity, and fuel moisture) will be close to criteria for Red Flag Conditions. Special Weather Statements will also be coordinated with the Maryland Department of Natural Resources before being issued.

If a FIRE WEATHER WATCH or RED FLAG WARNING is issued, WFO's will include a HEADLINE in the daily fire weather forecast as well as any spot forecasts that are issued during the event. Also a separate product called an RFW will be issued. This separate product will more specifically state the risks and what weather conditions are producing them.

A "FIRE WEATHER WATCH" is issued to alert the users to the possible development of a

Red Flag event (as defined by the criteria above) in the near future. This is typically issued within 12 to 48 hours in advance of the onset of possible warning conditions.

A “**RED FLAG WARNING**” is issued to warn the users of an impending or on-going Red Flag event (as defined by the criteria above). A Red Flag Warning will typically be issued within 12 hours of the onset of expected warning conditions. However, when confidence is high, a Red Flag Warning may be issued up to 24 hours before the onset of expected warning conditions.

A “**SPECIAL WEATHER STATEMENT**” is issued during situations where near critical (i.e., Wind, RH, and Fuel Moisture are near RFW Criteria) Fire Weather Conditions are expected. A Special Weather Statement may be issued. All Special Weather Statements should be coordinated with the Maryland DNR.

Section VIII **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.

Note: This product is available for WFOs [Sterling](#) , and [Wakefield](#) County Warning Areas.

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 (around 5:00 AM), and the other in the afternoon (around 4:00 PM).

Section IX NOAA Weather Radio

NOAA Weather Radio continuously broadcasts weather information on a special broadcast band. NOAA Weather Radio transmitters that cover areas within Maryland area are as follows:

The following are NWS Sterling's NOAA Weather Radios and their assigned frequencies:

NWS Sterling		
<u>Location</u>	<u>Station</u>	<u>Frequency</u>
Pikesville, MD	KEC-83	162.400 MHz
Hagerstown, MD	WXM-42	162.475 MHz
Frostburg, MD	WXM-43	162.425 MHz
Washington, D.C.	WNG-736	162.450 MHz
Manassas, VA	KHB-36	162.550 MHz

NWS Wakefield		
<u>Location</u>	<u>Station</u>	<u>Frequency</u>
Salisbury, MD	KEC-92	162.475 MHz
Heathville, VA	WXM-57	162.400 MHz
Accomack, VA	KJY-99	162.525 MHz

NWS Mt. Holly		
<u>Location</u>	<u>Station</u>	<u>Frequency</u>
Sudlersville, MD	WXK-97	162.500 MHz

Section X

Specialized Fire Weather Services & On-Site Meteorological Support

Onsite Support

National Weather Service Sterling is offering onsite meteorological support for enhanced fire threats and prescribed burns depending on resource availability. Support must be requested by the agencies with as much advance notice as possible. If Sterling cannot provide onsite support due to resource issues, then offsite support will be provided (via phone). Support from the Sterling office will only be for counties located within the Sterling Office's County Warning Area. For counties outside Sterling's County Warning Area, any support must be coordinated with the appropriate office (Wakefield, or Mount Holly).

When requesting onsite meteorological support, this may include 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 Maryland Department of National Resources.

The AMRS is a modularized mobile system of equipment used by an 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.

The procedure for requesting IMETs will follow the guidelines outlined in the national MOA, the National Mobilization Guide, and the Eastern 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, Planning Chief, and FBAN, if available,
- 5) Request and Resource number for IMET

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 IMET's at nearby incidents.

Fire Weather Training

NWS Fire Weather Meteorologists are available to assist fire control agencies with training at fire behavior school and other weather related courses. Requests for assistance should be forwarded to the Fire Weather Program Leader or MIC of the WFO.

Other Specialized Services

Other services include weather station visitations requested by user agencies, weather observer training, and course development work. These activities would typically be conducted at user agency facilities.

Information about the Incident Meteorologist Program can be found at the following link:

<https://www.nws.noaa.gov/directives/sym/pd01004002curr.pdf>