



# **Fire Weather Services Annual Operating Plan For New York State**

## **National Weather Service**

**Offices: Albany, NY (ALY)**

**Binghamton, NY (BGM)**

**Buffalo, NY (BUF)**

**Burlington, VT (BTV)**

**New York, NY (OKX)**

**2024**

This operating plan is a semi-permanent document, specifying Fire Weather services provided by the National Weather Service Offices serving New York State. It incorporates procedures detailed in the Interagency Agreement for Meteorological Services.

# **FIRE WEATHER SERVICES - 2024 ANNUAL OPERATING PLAN FOR NEW YORK STATE**

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## I. Introduction

This Fire Weather Services Operating Plan serves as the official document governing the interaction and relationships between the National Weather Service (NWS), and the federal, state, and local natural resource and land management agencies or cooperators in New York State. These include the following agencies:

- NOAA National Weather Service (all NWS offices serving parts of NY State)
- USDA Forest Service (USFS)
- NY Department of Environmental Conservation (NYDEC)
- National Park Service (NPS)

The plan identifies meteorological services to be provided by the NWS. Services provided by the NWS fall into two categories, basic and special services. Basic services are provided without cost and are processed directly between the user and the NWS office personnel. Examples of basic services include the Fire Weather Planning Forecast (FWF), numerical forecasts for NFDRS (FWM), spot forecasts, along with Fire Weather Watches and Red Flag Warnings. Spot forecasts are available upon request 24 hours a day throughout the year. Special services are provided on a reimbursable basis. Special services could include teaching weather-related courses, or an onsite Incident Meteorologist (IMET). Please reference the latest versions of the [Eastern Area Mobilization Guide](#) and/or the [National Mobilization Guide](#) for details about these special services.

Changes from the last AOP:

- Update to some personnel/contact info changes for several interagency partners and NWS Fire Weather Program Leaders.

## II. Service Area and Organizational Directory

A. List of weather offices, points of contact and fire weather zones

### NWS OFFICES SERVING NEW YORK

**NWS - Albany, NY Weather Forecast Office** (ALY WFO), [weather.gov/aly/](http://weather.gov/aly/)  
(518) 626-7572, FAX (518) 626-7565, [ALB.Stormreport@noaa.gov](mailto:ALB.Stormreport@noaa.gov)  
Michael Main, Fire Weather Program Leader, [michael.main@noaa.gov](mailto:michael.main@noaa.gov)  
Steve DiRienzo, Warning Coordination Meteorologist,  
[stephen.dirienzo@noaa.gov](mailto:stephen.dirienzo@noaa.gov)  
ETEC - National Weather Service, 1400 Washington Avenue, Albany, NY 12222

**NWS - Binghamton, NY Weather Forecast Office** (BGM WFO), [weather.gov/bgm/](http://weather.gov/bgm/)  
(607) 798-6625, FAX (607) 798-6624  
Michael Kistner, Fire Weather Program Leader/IMET [michael.kistner@noaa.gov](mailto:michael.kistner@noaa.gov)  
Adam Gill, IMET (T) [adam.gill@noaa.gov](mailto:adam.gill@noaa.gov)  
Mark Pellerito, Warning Coordination Meteorologist, [mark.pellerito@noaa.gov](mailto:mark.pellerito@noaa.gov)  
32 Dawes Drive, Johnson City, NY 13790

**NWS - Buffalo, NY Weather Forecast Office** (BUF WFO), [www.weather.gov/buf/](http://www.weather.gov/buf/)  
(716) 565-0013/14, FAX (716) 565-9002  
Aaron Reynolds, Fire Weather Program Leader, [aaron.reynolds@noaa.gov](mailto:aaron.reynolds@noaa.gov)  
Jon Hitchcock, Assistant Fire Weather Program Leader, [jon.hitchcock@noaa.gov](mailto:jon.hitchcock@noaa.gov)  
Mike Fries, Meteorologist In-Charge, [michael.j.fries@noaa.gov](mailto:michael.j.fries@noaa.gov)  
587 Aero Drive, Cheektowaga, NY 14225-1405

**NWS - Burlington, VT Weather Forecast Office** (BTV WFO),  
[www.weather.gov/btv](http://www.weather.gov/btv)  
(802) 658-0207, FAX 802-660-0705  
Brooke Taber, Fire Weather Program Leader/IMET, [brooke.taber@noaa.gov](mailto:brooke.taber@noaa.gov)  
Scott Whittier, Warning Coordination Meteorologist, [scott.whittier@noaa.gov](mailto:scott.whittier@noaa.gov)  
Burlington International Airport, 1200 Airport Drive, South Burlington, VT 05403

**NWS – New York, NY Weather Forecast Office** (OKX WFO), [weather.gov/okx/](http://weather.gov/okx/)  
(631) 924-0383, FAX 631-345-2869  
Joe Pollina, Fire Weather Program Leader, [joseph.pollina@noaa.gov](mailto:joseph.pollina@noaa.gov)  
4 Nelson Vaz, Warning Coordination Meteorologist, [nelson.vaz@noaa.gov](mailto:nelson.vaz@noaa.gov)  
175 Brookhaven Avenue, Upton, NY 11973

## **NWS REGIONAL/NATIONAL CONTACTS**

### **PHONE**

#### **NWS Eastern Region Headquarters**

John Guiney, Acting Regional Fire Program Manager [John.Guiney@noaa.gov](mailto:John.Guiney@noaa.gov)

(631) 244-0121

FAX (631) 244-0167

Airport Corporate Center

630 Johnson Ave.

Bohemia, NY 11716

#### **NWS Headquarters**

National Fire Weather Operations Coordinator (208) 334-9824

National Weather Service cell (xxx) xxx-xxxx

Larry Van Bussum FAX: (208) 334-1660 [Larry.VanBussum@noaa.gov](mailto:Larry.VanBussum@noaa.gov)

NWS National Fire Program Leader

Heath Hockenberry (208) 334-9824

[heath.hockenberry@noaa.gov](mailto:heath.hockenberry@noaa.gov) (208) 334-9862

3833 South Development Avenue, Building 3807 Boise, ID 83705

#### **NWS Storm Prediction Center** (xxx) xxx-xxxx (non-public ops line/lead forecaster)

Evan Bentley, Fire Weather Program Leader

FAX: (405) 325-2938

[evan.bentley@noaa.gov](mailto:evan.bentley@noaa.gov)

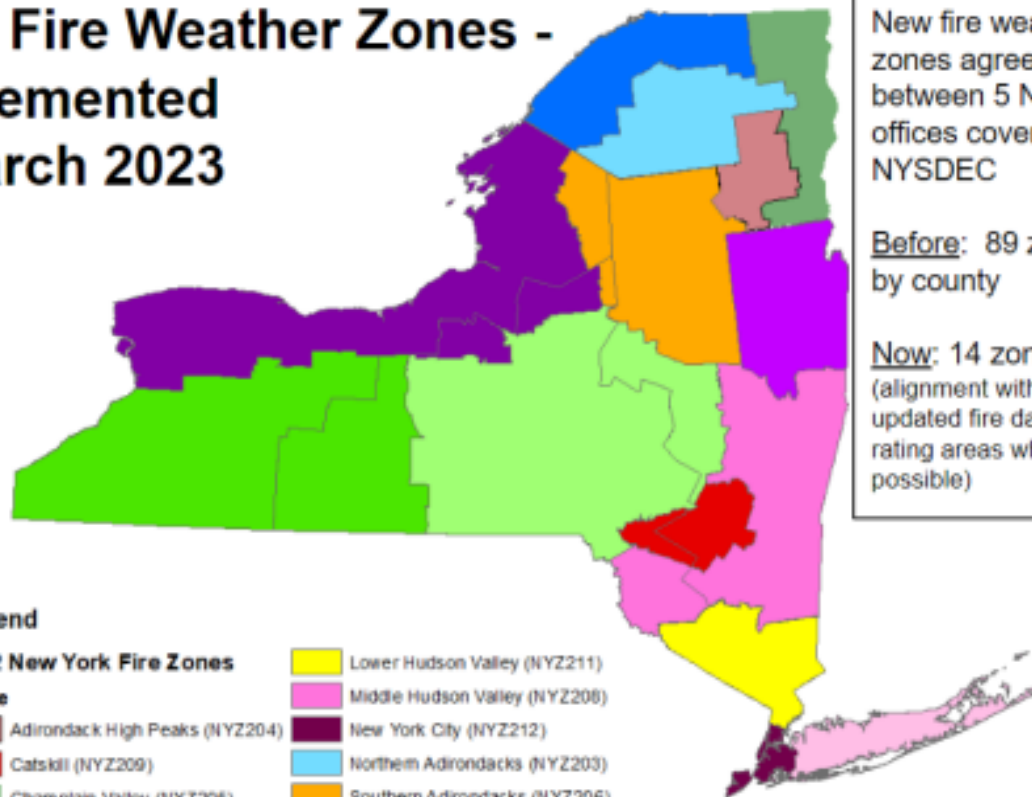
120 David L. Boren Blvd, Suite 2300

Norman, OK 73072

NWS Offices - By Public County Warning Area (for Public Products/Weather, and Special Weather Statements)



## New Fire Weather Zones - Implemented 8 March 2023



New fire weather zones agreed upon between 5 NWS offices covering NY; NYSDEC

Before: 89 zones, by county

Now: 14 zones (alignment with the updated fire danger rating areas where possible)

### Legend

#### 2022 New York Fire Zones

##### Name

- |                                |                               |
|--------------------------------|-------------------------------|
| Adirondack High Peaks (NYZ204) | Lower Hudson Valley (NYZ211)  |
| Catskill (NYZ209)              | Middle Hudson Valley (NYZ208) |
| Champlain Valley (NYZ205)      | New York City (NYZ212)        |
| Lake Ontario Plains (NYZ201)   | Northern Adirondacks (NYZ203) |
| Leatherslocking (NYZ210)       | Southern Adirondacks (NYZ206) |
| Long Island (NYZ213)           | Southern Tier (NYZ200)        |
|                                | St. Lawrence (NYZ202)         |
|                                | Upper Hudson Valley (NYZ207)  |

**Issuing offices for: Spot Forecasts, Fire Weather Forecasts, and Fire Weather Watches/Red Flag Warnings**

- NWS Buffalo
- NWS Albany
- NWS Binghamton
- NWS New York
- NWS Burlington



**B. PARTICIPATING AGENCIES**

**NEW YORK - DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYS DEC)**  
**Albany Central Office**

**Director of Forest Protection and Fire Management** -- John Solan  
(518) 402-8839, Fax (518) 402-8840, [john.solan@dec.ny.gov](mailto:john.solan@dec.ny.gov)  
Statewide Fire Supervisor/Primary contact for NWS – Captain Scott Jackson, (315) 625-7261, [scott.jackson@dec.ny.gov](mailto:scott.jackson@dec.ny.gov)  
Assistant Fire Management Officer/Backup contact for NWS – Lieutenant Timothy Carpenter, (607) 664-1021, [timothy.carpenter@dec.ny.gov](mailto:timothy.carpenter@dec.ny.gov)  
Emergency Management/Secondary backup contact for NWS – Captain Dave Kallen, (518) 408-0045, [david.kallen@dec.ny.gov](mailto:david.kallen@dec.ny.gov)  
Backup: NYSDEC 24-Hour Dispatch (xxx) xxx-xxxx (ask for Forest Rangers Statewide Duty Officer)  
NYS DEC, 625 Broadway, 3<sup>rd</sup> Floor  
Albany, NY 12233-2560



**NY DEC REGIONS MAP**

DEC Contacts as of March 2024: (see <https://www.dec.ny.gov/about/667.html> for updates)

**NYS DEC REGION 1**- Nassau and Suffolk Counties - served by NWS OKX  
Captain Timothy Byrnes, Regional Forest Ranger (631) 444-0291  
[timothy.byrnes@dec.ny.gov](mailto:timothy.byrnes@dec.ny.gov), FAX (631) 444-0401  
NYS DEC  
50 Circle Road  
Stony Brook, NY 11790

**NYS DEC REGION 2**- Bronx, Kings (Brooklyn), New York, Queens, Richmond (Staten Island) Counties - Served by NWS OKX  
Captain Timothy Byrnes, Regional Forest Ranger (631) 444-0291  
[timothy.byrnes@dec.ny.gov](mailto:timothy.byrnes@dec.ny.gov), FAX (631) 444-0401  
NYS DEC  
50 Circle Road  
Stony Brook, NY 11790

**NYS DEC REGION 3**- Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester Counties – Served by NWS offices OKX and ALY  
Captain Kenneth Gierloff, Regional Forest Ranger/RAWS coordinator, PHONE (845) 240-6753, [kenneth.gierloff@dec.ny.gov](mailto:kenneth.gierloff@dec.ny.gov), FAX (845) 255-4659



NYS DEC  
21 South Putt Corners Rd.  
New Paltz, NY 12561-1696

**NYS DEC REGION 4**- Albany, Columbia, Greene, Montgomery, Rensselaer, Otsego, Delaware, Schenectady, and Schoharie Counties - Served by NWS ALY and BGM Captain Adam Pickett, Regional Forest Ranger, (518) 357-2161  
[adam.pickett@dec.ny.gov](mailto:adam.pickett@dec.ny.gov), FAX (518) 357-2291  
1130 North Westcott Rd.  
Schenectady, NY 12306-2014

Regional RAWs Coordinator Tyler Briggs, Fire Management Specialist (518) – 456 -0655 x1220 [tbriggs@albanypinebush.org](mailto:tbriggs@albanypinebush.org)  
Albany pine Bush  
95 New Karner Rd #1  
Albany, NY 12203

**NYS DEC REGION 5 North** - Clinton, Essex, Franklin, and Hamilton Counties – Served by NWS offices ALY and BTV

Captain Kevin Burns, Regional Forest Ranger, (518) 897-1303  
[kevin.burns@dec.ny.gov](mailto:kevin.burns@dec.ny.gov), FAX (518) 897-1331  
NYS DEC  
P.O. Box 296  
1115 State Route 86  
Ray Brook, NY 12977-0296

**NYS DEC REGION 5 South** - Essex, Fulton, Hamilton, Saratoga, Warren, and Washington Counties – Served by NWS offices ALY and BTV

Captain Nancy Ganswindt, Regional Forest Ranger, (518) 623-1200, [nancy.ganswindt@dec.ny.gov](mailto:nancy.ganswindt@dec.ny.gov), FAX (518) 623-3603  
NYS DEC  
232 Golf Course Rd.  
Warrensburg, NY 12885-0220

**NYS DEC REGION 6** - Herkimer, Jefferson, Lewis, Oneida, and St. Lawrence Counties. Served by NWS offices ALY, BGM, BTV, and BUF.

Captain Joel Nowalk, Regional Forest Ranger, (315) 785-3521, [joel.nowalk@dec.ny.gov](mailto:joel.nowalk@dec.ny.gov), FAX (315) 785-2242  
NYS DEC  
317 Washington St.  
Watertown, NY 13601

**NYS DEC REGION 7**- Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga, and Tompkins Counties. Served by NWS offices BGM and BUF.

Captain James McPherson, Regional Forest Ranger, (607) 674-4017 x639, Cell (xxx) xxx-xxxx, [james.mcpherson@dec.ny.gov](mailto:james.mcpherson@dec.ny.gov), FAX (607) 674-9034  
Regional RAWS Coordinator Mike Burkholder, (607) 373-1013  
[michael.burkholder@dec.ny.gov](mailto:michael.burkholder@dec.ny.gov)

NYS DEC  
2715 State Highway 80  
Sherburne, NY 13460

**NYS DEC REGION 8** - Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne, and Yates Counties. Served by NWS BGM & BUF. Captain Ryan Wickens, Regional Forest Ranger, (585) 226-2466, [ryan.wickens@dec.ny.gov](mailto:ryan.wickens@dec.ny.gov), FAX (585) 226-9485  
6274 E. Avon-Lima Rd.  
Avon, NY 14414  
Regional RAWS Coordinator Ranger Anne Staples,  
[anne.staples@dec.ny.gov](mailto:anne.staples@dec.ny.gov), cell (xxx) xxx-xxxx

**NYS DEC REGION 9** - Allegany, Cattaraugus, Chautauqua, Erie, Niagara, and Wyoming Counties. Served by NWS office BUF.

Captain Shawn Plaisted, Regional Forest Ranger, (716) 379-6362, Cell (xxx) xxx-xxxx, [shawn.plaisted@dec.ny.gov](mailto:shawn.plaisted@dec.ny.gov)  
NYS DEC  
182 East Union - Suite 3  
Allegany, NY 14706

## **GEOGRAPHIC COORDINATION CENTERS (GACC) FIRE WEATHER METEOROLOGISTS**

### **National Interagency Fire Center**

Jim Wallmann, Meteorologist, [james.wallmann@usda.gov](mailto:james.wallmann@usda.gov) (xxx) xxx-xxxx (Cell)  
3833 S. Development Ave FAX: (208) 387-5663 Boise, ID 83705-5354

### **Eastern Area**

Steve Marien, Fire Weather Program Manager (xxx) xxx-xxxx (NPS cell)  
[Stephen\\_Marien@nps.gov](mailto:Stephen_Marien@nps.gov)

### **US FISH & WILDLIFE SERVICE CONTACTS**

Department of the Interior  
U. S. Fish and Wildlife Service - Northeast Region

John Ashcraft – ZFMO office (410) 221-1191

[john\\_ashcraft@fws.gov](mailto:john_ashcraft@fws.gov) cell (xxx) xxx-xxxx

2145 Key Wallace Dr  
Cambridge, MD 21613

Tomas Liogys – Prescribed Fire Specialist cell (xxx) xxx-xxxx

[tomas\\_liogys@fws.gov](mailto:tomas_liogys@fws.gov)

241 Pleasant Plains Rd  
Basking Ridge, NJ 07920

### **GREEN MOUNTAIN/FINGER LAKES NATIONAL FORESTS**

U. S. Department of Agriculture, Forest Service

Ryan Hughes, FMO, [eric.hughes@usda.gov](mailto:eric.hughes@usda.gov) (970) 456-8268 Robert Goulding,

Assistant FMO, [robert.a.goulding@usda.gov](mailto:robert.a.goulding@usda.gov)

Green Mountain/Finger Lakes National Forests

4387 US Route 4

Mendon, VT 05701

### **NATIONAL PARK SERVICE**

Saratoga National Historical Park

648 Route 32

Stillwater, NY 12170

David Lamere, Chief Ranger (518) 670-2960, [david\\_lamere@nps.gov](mailto:david_lamere@nps.gov) Bill Crolly (570)

588-1845, [william\\_crolly@nps.gov](mailto:william_crolly@nps.gov)

### III. Services Provided by the National Weather Service

#### A. Basic Services

##### 1. Routine Fire Weather Forecasts (FWF)

- a) **Issuance** – The NWS Weather Forecast Offices serving NY will issue the Fire Weather Forecast (FWF) for their respective County Warning Areas/designated Fire Weather Zones. Special requests for spot fire weather forecasts can also be made at any time.
- NWS Albany, NY (ALY): Twice daily around 4 AM/2:30 PM during fire season; generally March through November with specific dates as coordinated with users.
  - NWS Binghamton, NY (BGM): Three times daily all year; 5 AM, 11 AM, and 330 PM.
  - NWS Buffalo, NY (BUF): Every 3 hours during fire season; suspended during winter months though fire weather data/parameters will still be accessible online.
  - NWS Burlington, VT (BTV): Twice daily at 5 AM and 3 PM during fire season; with specific beginning and ending dates as coordinated with users. Suspended during winter months though fire weather data/parameters will still be accessible online.
  - NWS New York, NY (OKX): Once daily no later than 6 AM during fire season; with specific beginning and ending dates as coordinated with users.

##### b) How forecast is issued and accessed

Fire Weather Forecasts are issued from the gridded database and are transmitted automatically to the internet. It can be accessed through the link at on Fire Weather pages of each NWS Office:

- [NWS Albany, NY \(ALY\) Fire Page](#) - [NWS ALY Fire Weather Forecast \(FWF\)](#) ■ [NWS Binghamton, NY \(BGM\) Fire Page](#) - [NWS BGM Fire Weather Forecast \(FWF\)](#) ■ [NWS Buffalo, NY \(BUF\) Fire Page](#) - [NWS BUF Fire Weather Forecast \(FWF\)](#) ■ [NWS Burlington, VT \(BTV\) Fire Page](#) - [NWS BTV Fire Weather Forecast \(FWF\)](#) ■ [NWS New York, NY \(OKX\) Fire Page](#) - [NWS OKX Fire Weather Forecast \(FWF\)](#)

**c) Content of the forecast.**

**Headline** - A headline when a Fire Weather Watch or Red Flag Warning is in effect; including the watch/warning type, geographical area, reason for issuance, and effective time period.

**Discussion** - Per NWS Directive 10-401, this is a brief, clear and non-technical description of the weather systems impacting the region. Emphasis should be on the first two days, but later periods may be included if significant weather is expected and the forecaster has a reasonable confidence level that it will occur.

**Parameters** - The Fire Weather Planning Forecast (FWF) uses the Universal Generic Code (UGC) zone format. The early morning forecast consists of three 12 hour time frames. The following meteorological parameters are included:

**CLOUD AMOUNT:**

CLR (clear).....0 to 6 percent coverage  
MO CLR (mostly clear).....7 to 31 percent coverage  
PT CLDY (partly cloudy).....32 to 69 percent coverage  
MO CLDY (mostly cloudy).....70 to 94 percent coverage  
CLDY (cloudy).....95 to 100 percent coverage

**PRECIP CHC (%)**: Probability of precipitation in percent (0 - 100%)

**PRECIP TYPE**: The type of precipitation expected.

**MAX/MIN TEMP**: Maximum daytime and minimum nighttime temperatures. (Temperature 24 hour trends are optional.)

**20 FT WND AM**: The prevalent 20 foot wind direction (8 compass points) and speed (mph) during the morning.

**20 FT WND PM**: The prevalent 20 foot wind expected during the afternoon for the daytime period and at night for the nighttime period (follow same nomenclature as AM wind).

**PRECIP AMOUNT**: Amount of average precipitation in inches.

**PRECIP DURATION**: Duration of precipitation in hours during the forecast period.

Today/Tomorrow refers to 7 AM to 7 PM, Tonight is 7 PM to 7 AM. Duration does not have to quantitatively equal Precipitation Begin minus Precipitation End times (i.e., on/off precipitation).

**PRECIP BEGIN**: The onset time of any expected precipitation.

**PRECIP END**: The ending time of precipitation.

**HUMIDITY (%)**: The minimum relative humidity during the day and the maximum value at night.

**HAINES:** The **Haines Index** (HI) which is a **measure of stability and moisture** (does not incorporate wind or fuel moisture). The **HI** ranges from 2 to 6, which is a sum of two components; a temperature difference (categorized 1 to 3), and a moisture/dewpoint difference (also 1 to 3).

The following is a **qualitative guide** for using the **Haines Index** :

**HI Value Qualitative Term**

2 or 3 VERY LOW

4 LOW

5 MODERATE

6 HIGH.

The HI has been related to **fire behavior**, such that **the higher the value, the better the chance of seeing large fire development**, mainly where winds are not a factor.

**LAL:** Lightning activity level category. Ranges from 1 to 6 and relates to the areal coverage of thunderstorms, corresponding to Lightning Activity Levels (LAL) from the National Fire Danger Rating System (NFDRS). LAL and areal coverage should correspond as follows:

**LAL Level Coverage (%) Descriptor**

1 0 None

2 1-14 Isolated

3 15-24 Widely Scattered

4 25-54 Scattered

5 55+ Numerous

6 (Dry lightning)\*  $\geq 15$  Widely Scattered or greater  
(little/no rain)

*\* Dry lightning is **extremely rare** in the eastern United States.*

**MIXING HGT/DISP:** The mixing height and inversion/dispersion. The Mixing Height is forecast during the day and inversion/dispersion is forecast at night.

The **Mixing Height** is the Maximum depth to which mixing will occur. This can be a difficult parameter to forecast. One way to view this is by estimating the maximum temperature and lifting it dry adiabatically until it reaches the forecast sounding temperature. Generally, during the summer, if neither a low level inversion nor warm air advection is present, daytime heating will produce a well mixed atmosphere of 4000 to 7000 ft in depth. The more unstable the atmosphere, the greater the mixing height.

The **Inversion** time is the start and break times of the ground based inversion. If an inversion is not expected, then forecast NONE. The dispersion is the average dispersion during the night. General guidance for dispersion based on surface winds:

0-4 mph: Poor to Very Poor (VP to PO)  
5-7 mph: Fair (FA)  
8-9 mph: Good (GD)  
10 mph or greater: Excellent (EX)

\*So, for example, a daytime entry might be 3000, a nighttime entry might be 1AM - 8am/PO, or a nighttime entry for no inversion might be NONE/GD

**TRANSPORT WIND:** The Transport Wind is the Average wind from the surface to the mixing height. After calculating the mixing height, the average wind direction and speed within that layer needs to be calculated. One way to view this is as an estimate based on the surface to 850 mb wind field (approximately 5000 ft). The direction will be specified using 8 compass points, and the speed in miles per hour.

**VENTILATION RATE:** Generalized descriptions range from "Poor" to "Excellent". There is no definitive classification of Ventilation Rate. It is a combination of mixing height and transport wind. Generally, **when the mixing height is low and transport winds are light, the Ventilation Rate will be poor.** The Ventilation Rate will be calculated only for the daytime periods.

The best procedure to manually calculate the ventilation rate is to Multiply the mixing height in thousands of feet by the transport wind speed (mph). **These numbers are placed in the general Fire Weather Forecast. The table below is only a guide.**

**100000 and up (corresponds to Excellent)**  
**61000 – 100000 (corresponds to Good)**  
**41000 – 60000 (corresponds to Average)**  
**21000 – 40000 (corresponds to Fair)**  
**20000 or less (corresponds to Poor)**

Examples: A) Mixing height 4500 feet, Transport Wind Speed 20 mph.  $4500 \times 20 = 90000$  B)  
Mixing height 2500 feet, Transport Wind Speed 10 mph.  $2500 \times 10 = 25000$

**Expanded Forecast Section** - This is the forecast for days 3-7, averaged across fire weather zones.

**Outlook 8 to 14 Day** - Brief qualitative outlook for above/near/below average temperatures and precipitation, using the 8-14 day outlook from the NWS Climate Prediction Center (CPC).

Additionally, the NWS offices in Albany and Binghamton also includes ADI and LVORI in the

FWF: **Atmospheric Dispersion Index (ADI)**

DAYTIME ADI VALUES 0-20 Poor dispersions; stagnant if persistent.

21-40 Poor to fair; stagnation if accompanied by low wind speeds

41-60 Generally good

61-80 Very good dispersion; 75 and above, control problems likely

80+ Excellent dispersion; control problems expected

NIGHTTIME ADI VALUES 0-2 Poor

3-4 Poor to Fair

5-8 Good

8+ Very Good

**Low Visibility Occurrence Risk Index (LVORI)** – Ranges from 1 (low chance of low visibility) to 10 (high chance of low visibility)

## 2. Site-specific or Non-routine Wildland Fire Forecasts

### a) NFDRS Point Forecasts

The National Fire Danger Rating System (NFDRS) measures wildfire fire danger. The NWS role in NFDRS is that of forecasting weather parameters for input which when combined with fire weather community input (fuel moisture, etc) allows the NFDRS software to predict the next day's fire danger index.

NWS offices are responsible for inputting weather parameters - also called Fire Weather Matrices (FWMs) - into the NFDRS. **Forecast parameters are generally valid at 1300 LST, except some parameters (for example, max/min temperature and RH) are for a range of time. NWS now provides NFDRS forecasts out 7 days instead of the only the next day.** NWS offices issue these FWM/NFDRS weather parameters at least daily to multiple times daily; it varies by office. Times may be adjusted to better meet needs of fire partners.

Per [NWS Directive 10-401](#), a fire weather observation must be received for an NFDRS forecast to be generated. The forecast is for RAWS sites. The New York State locations are as follows:

**NWS Albany, NY** - [NWS ALY NFDRS/FWM](#) issued at about 4 AM and 3 PM daily through day 7.

#300011 (APBN6) Albany Pine Bush (Albany County). [Click for observations.](#)

Elevation: 325' ft Lat/Lon 42° 43' 10.35" N, 73° 51' 55.87" W

Owner: New York State DEC Forest Rangers Contact: Tyler Briggs

#301111 Catskill Center (Ulster County). [Click for observations.](#)

Elevation: 670 ft Lat/Lon 42° 01' 39.00" N, 74° 16' 8.00" W

Owner: New York State DEC Forest Rangers Contact: Captain Scott Jackson

#300411 (LPSN6) Lake Pleasant (Hamilton County). [Click for observations.](#)

Elevation: 1790 ft Lat/Lon: 43° 28' 12.57" N, 74° 24' 47.04" W

Owner: New York State DEC Forest Rangers Contact: Captain Scott Jackson



#305103 (BCHN6) Stony Kill (Dutchess County). [Click for observations.](#)  
Elevation: 230 ft Lat/Lon 41° 32' 29.70" N, 73° 57' 06.52" W  
Owner: New York State DEC Forest Rangers Contact: Captain Scott Jackson

#301901 (SHPN6) Saratoga Battlefield (Saratoga County). [Click for observations.](#)  
Elevation 375 ft Lat/Lon 43° 00' 09.7" N, 73° 32' 05.50" W  
Owner: National Park Service Contact: Chief Ranger David Lamere

**NWS Binghamton, NY** - [NWS BGM NFD RS/FWM](#) issued around 5 AM , 11 AM, and 330 PM

#300171 (SHFN6) – Sherburne (Chenango County). [Click for observations.](#)  
Elevation: 1120 ft. Lat/Lon 42° 40' 52.94" N, 75° 31' 08.72" W  
Owner: State of New York, Department of Environmental Conservation

#301011 (GMFN6) – Gang Mills (Steuben County). [Click for observations.](#)  
Elevation: 950 ft. Lat/Lon 42° 08' 28.52" N, 77° 07' 12.14" W  
Owner: State of New York, Department of Environmental Conservation

**NWS Buffalo, NY** - [NWS BUF NFD RS/FWM](#) issued at 446 PM for the next day through day 7

#301101 (ABMN6) – Iroquois NWR, Basom (Genesee County). [Click for observations.](#)  
Elevation: 628 ft. Lat/Lon 43° 06' 46.30", -78° 24' 15.50"  
Owner: Dept. of Interior, Fish & Wildlife Service

#300491 (LWLN6) – Lowville Dem. Area, Lowville (Lewis County). [Click for observations.](#) Elevation: 740 ft. Lat/Lon 43° 48' 35.00", -75° 28' 23.99"  
Owner: State of New York, Department of Environmental Conservation

**NWS Burlington, VT** - [NWS BTV NFD RS/FWM](#) issued daily (fire season), next day through day 7

#300311 (SRON6) - Schroon Lake (Essex County). [Click for observations.](#)  
Elevation: 820 ft. 43.8 N 73.77 W  
Owner: New York State Forest Rangers

#300191 (SFAN6) - Schuyler Falls (Clinton County). [Click for observations.](#)  
Elevation: 650 ft 44.6 N 73.6 W  
Owner: New York State Forest Rangers

#300892 (BFAN6) - Brasher Falls (St Lawrence County). [Click for observations.](#)  
Elevation: 300 ft. 44.8 N 74.8 W  
Owner: New York State Forest Rangers

#300891 (WNKN6) - Wanakena (St Lawrence County). [Click for observations.](#)  
Elevation: 1500 ft. 44.1667 N 74.9 W  
Owner: New York State Forest Rangers

#300312 (MVAN6) - Mt VanHoevenberg (Essex County). [Click for observations.](#)  
Elevation: 2000 ft. 44.22 N 73.89 W  
Owner: New York State Forest Rangers

**NWS New York, NY** - [NWS OKX NFDRS/FWM](#) issued several times daily

#305702 (TT587) - Eastport (Suffolk County). [Click for observations.](#)  
Elevation: 100 ft. Lat/Lon 40° 52' 25.00", -72° 42' 50.00"

**The FWM Forecast format is as follows:**

FCST,#####,YYMMDD,13,X,TT,RH,L1,L2,DD,SS,,TX,TN,RX,RN,P1,P2,F

where:

##### NFDRS Station Identifier {see above}

YYMMDD Year Month Day (**forecast valid date which is the next day**)

210606: June 6<sup>th</sup>, 2021

13 Time (forecast valid time 1300 hours/1PM EST) *Does not change.*

\*\* The double comma “,,” in the forecast line between SS and TX is needed to hold the place for *10 hour fuel moisture* values. The NWS does not forecast this however.

*The following parameters are valid at 1300 EST for the forecast valid date (next*

**day**):

X Weather

Codes: 0 - clear 5 - drizzle 1 - scattered clouds (mostly clear) 6 - rain

2 - broken clouds (partly-mostly cloudy) 7 - snow/sleet 3 - overcast 8 - showers

4 - fog 9 - thunderstorms **Note**; categories 5, 6, or 7 sets NFDRS index to 0  
Try to avoid.

TT Dry Bulb Temperature

RH Relative Humidity

DD Wind direction (N, NE, E, SE etc)

SS Wind speed (10 minute average in MPH)

L1 Lightning Activity Level (period 1300 - 2300 LST hours)

Codes: LAL Level Coverage (%) Descriptor

1 0 None

2 1-14 Isolated

3 15-24 Widely Scattered

4 25-54 Scattered

5 55+ Numerous

6 (Dry lightning)  $\geq 15$  Widely Scattered or greater (little/no rain)

L2 Lightning Activity Level (period 2300 - 2300 LST hours on forecast valid date) *The following parameters are valid for the 24 hour period ending at 1300 EST on the forecast valid date:*

TX Maximum temperature

TN Minimum temperature

RX Maximum relative humidity

RN Minimum relative humidity

P1 Precipitation duration (1300-0500 LST period) in whole hours

P2 Precipitation duration (0500-1300 LST period) in whole hours

F Wet Flag "Y/N" (Only use Y for widespread rainfall. This will set all NFDRS indices to 0!)

**Example of FWM Point Forecast:**

FCST,301011,210326,13,2,58,53,1,2,WSW,21,,76,56,90,36,6,0,N

FCST,301011,210327,13,1,57,37,1,1,W,08,,59,36,82,36,0,0,N

FCST,301011,210328,13,2,59,60,1,1,WSW,13,,65,45,93,30,0,0,N

FCST,301011,210329,13,1,43,30,1,1,NW,17,,61,30,72,29,0,0,N

FCST,301011,210330,13,1,58,29,1,1,S,10,,59,26,74,26,0,0,N

FCST,301011,210331,13,2,61,47,1,1,SSW,12,,63,38,85,26,0,0,N

FCST,301011,210401,13,2,46,43,1,1,WNW,14,,65,34,92,41,0,0,N

**Remember...**the double comma “,” in the forecast line above, between SS and TX is needed to hold the place for *10 hour fuel moisture* values. The NWS is not responsible for this parameter.

Guidance products used to develop these forecasts include, but are not limited, to the following sources:

- Numerical MOS guidance for nearby stations,
- Fire weather observations (Observation is REQUIRED per Directive 10-401), -- Current METAR surface observations, and
- Satellite and Radar imagery.

### **b) SPOT and Pre-suppression FORECASTS**

The spot and pre-suppression forecast is a site-specific, localized weather forecast including a forecast of wind, temperatures, humidity and any effects local topography will have on the weather. A spot forecast will normally cover a 12-hour period and is issued on request. Spot forecasts can be monitored at <https://www.weather.gov/spot/monitor/>.

The agency requesting a spot fire weather forecast in New York should use the **NWS Spot Forecast Request page** at <https://www.weather.gov/spot/request/>; also linked on the fire pages of the NWS offices serving New York: [NWS Albany, NY \(ALY\) Fire Page](#), [NWS Binghamton, NY \(BGM\) Fire Page](#), [NWS Buffalo, NY \(BUF\) Fire Page](#), [NWS Burlington, VT \(BTV\) Fire Page](#) and [NWS New York, NY \(OKX\) Fire Page](#). If it is not available a request can be called or faxed in. The forecast staff will provide the information also via the internet or when not available by fax or phone (Appendix E) for the particular area affected when duties allow. Higher priorities, such as severe weather, may delay the response until time permits. The following information should be exchanged whenever a spot or pre suppression forecast is requested:

<b>THE REQUESTING AGENCY WILL PROVIDE THE FOLLOWING:</b>
--

- 1) The name of the agency
- 2) Location and size of the fire
- 3) Elevation/Geography/Topography
- 4) Recent weather observations if any
- 5) Any additional information that would help the forecaster

<b>THE FORECASTER WILL PROVIDE:</b>
-------------------------------------

- 1) Time period for forecast (usually for 12 hours)
- 2) Brief synopsis
- 3) Relative humidity forecast (forecast minimum value during the day and forecast maximum value at night)
- 4) 20 ft forecast wind direction/speed (state height of wind if other than 20 ft)
- 5) Probability of precipitation

- 6) Mesoscale features associated with thunderstorms/fronts
- 7) Other weather phenomena deemed important by the duty forecaster

### **c) Non-routine Forecasts**

Although the Department of Environmental Conservation Forest Protection and Fire Management in New York, the Bureau of Land Management, and Fish and Wildlife Service are the main agencies using and requesting fire weather information; other federal, state and local agencies may also request non-routine fire weather (spot and pre-suppression) forecasts anytime during the year. During times of high to extreme fire danger, these same entities may request updates to the fire weather forecast product as needed. An agency may request a revised forecast when there is a significant change from the previous forecast in wind, relative humidity or thunderstorm activity.

During periods of very high or extreme fire danger, a supplemental verbal phone briefing may also be requested of NWS. The briefing can provide updated information pertaining to the progress of frontal systems, lightning storms, wind shifts, approaching rain or other rapidly changing weather features.

## **3. Fire Weather Watch and Red Flag Warning Programs**

### **a) Critical Fire Weather/Red Flag Criteria**

Fire Weather Watches and Red Flag Warnings are used to convey the likelihood of severe fire weather to fire control agencies. Meeting criteria is considered rare.

**RED FLAG CRITERIA is unified for all of New York State** (must meet all):

**During vegetation stage I or II (cured/transition B spring/fall)**

- 1) Winds sustained or frequently gusting above 25 mph for at least two hours.**
- 2) Relative Humidity less than 30% for at least two hours.**
- 3) Partner confirmation of dry/receptive fuels.**

**During vegetation stage III (green B summer)**

- 1) Winds sustained or frequently gusting above 25 mph for at least two hours.**

- 2) Relative Humidity less than 30% for at least two hours.**
- 3) Rainfall less than 1/4 of an inch during the previous 8 or more days.**
- 4) Keetch Byram Drought Index (KBDI) above 300 and partner confirmation of dry/receptive fuels.**

KBDI Definition: An estimate (0-800) of the amount of precipitation (in 100ths of inches) needed to bring the top 8 inches of soil back to saturation. A value of 0 is complete saturation of the soil, a value of 800 means 8.00 inches of precipitation would be needed for saturation. National observed KBDI map: <http://www.wfas.net/images/firedanger/kbdi.png>

Red Flag events normally require the combination of very dry fuels as confirmed by land agencies, and critical weather conditions (significantly increased winds and wind shifts, thunderstorm activity containing little or no rain, and significantly decreased humidity). The issuance of red flag events are based on the criteria of the users (state and federal) and require advance coordination.

It is users' responsibility (in NY) to inform the NWS of the following: Current stage (I, II, or III), and when measured KBDI is: approaching 300, over 300, and falls back below 300. With no input from the users on these parameters, the NWS will assume climatological timing for various stages.

Stage I cured: >75% dead; Stage II transition: 25%-75% dead; Stage III green: <25% dead

During the winter the stage will be cured. Generally speaking, transition will occur 2 to 4 weeks after the last freeze. After about 30 days the stage will be green. The process will work backwards starting with the first freeze of fall.

### **FIRE WEATHER WATCH**

A Fire Weather Watch is used to advise of the **high probability of a red flag event in the near future**. A Fire Weather Watch will normally be issued 24 to 48 hours in advance of the probable onset of severe fire weather conditions; earlier if confidence is very high. The watch will be issued via an RFW product. The product will contain a headline and the basis for the watch issuance. Fire Weather Watch information will be included in the affected areas of the daily routine Fire Weather Forecast. A Fire Weather Watch will be canceled via an RFW if subsequent information indicates that the conditions are no longer expected to develop.

### **RED FLAG WARNING**

A Red Flag Warning is issued to indicate the **expected imminent danger of severe fire weather**. A Red Flag Warning will normally be issued in less than 12 hours before onset of severe fire weather, but as much as 24 hours if confidence is very high. A Red Flag Warning may or may not be preceded by a Fire Weather Watch. The warning will be issued via an RFW product and contain a headline and basis for the warning issuance. Red Flag Warning information will be included in the affected areas of the daily routine Fire Weather Forecast. A Red Flag Warning will be canceled via an RFW if subsequent information indicates that the conditions are no longer expected to develop, or if the severe fire weather has passed. (See appendix D for an example of a red flag warning.)

If there are any Fire Weather Watches or Red Flag Warnings in effect, they are retrievable at: [◦ NWS Albany, NY \(ALY\) Fire Weather Watch or Red Flag Warning \(RFW\)](#) [◦ NWS Binghamton, NY \(BGM\) Fire Weather Watch or Red Flag Warning \(RFW\)](#) [◦ NWS Buffalo, NY \(BUF\) Fire Weather Watch or Red Flag Warning \(RFW\)](#) [◦ NWS Burlington, NY \(BTV\) Fire Weather Watch or Red Flag Warning \(RFW\)](#) [◦ NWS New York, NY \(OKX\) Fire Weather Watch or Red Flag Warning \(RFW\)](#)

## **b) Options for Near-Critical Fire Weather**

### **Special Weather Statements (SPS)**

NWS policy somewhat varies office-to-office, but Special Weather Statements (SPS) can be issued when conditions support enhanced fire weather behavior, but at levels below Red Flag criteria. SPSs can also be issued to raise elevated fire awareness amongst the fire weather community and the general public. Fire weather partners can reach out to NWS offices to confirm applicability or desire for SPS to raise awareness.

SPSs can be issued when the following occurs:

- Red Flag weather criteria is met but fuels are not quite yet dry enough for extreme fire behavior, so fire weather partners prefer SPS over Red Flag.
- Fire weather partners request SPS to raise awareness to the fire weather community and/or the general public. This is only issued at the request of primary NY state contacts. For example, if fuels are dry enough and humidity low enough, yet winds will fall short of Red Flag criteria.

Example SPS:

Special Weather Statement  
National Weather Service Albany NY  
440 AM EDT Mon Mar 9 2020

...ELEVATED RISK OF FIRE SPREAD TODAY...

Southwesterly winds gusting to around 20 mph combined with relative humidity values falling below 30 percent in the afternoon will contribute to an elevated risk of fire spread today. The risk will be highest over the Mid Hudson Valley, Capital District, Saratoga-Glens Falls Region, and lower elevations of the eastern Catskills, Schoharie Valley, central Mohawk Valley, and Taconics.

The annual statewide burn ban is in effect until May 14. No burn permits are

issued. **Fire Weather Section of Area Forecast Discussion**

The Area Forecast Discussion (AFD) is a routinely issued and continuously updated product that focuses on the most significant weather issues affecting an NWS office's forecast area over the next seven days. During heightened fire activity, a fire weather section (.FIRE WEATHER...) may be included in the AFD containing weather information of interest to fire managers. Whether or not fire weather concerns are occurring, these AFDs can be seen at:

- [NWS Albany, NY \(ALY\) Area Forecast Discussion \(AFD\)](#)
- [NWS Binghamton, NY \(BGM\) Area Forecast Discussion \(AFD\)](#)
- [NWS Buffalo, NY \(BUF\) Area Forecast Discussion \(AFD\)](#)
- [NWS Burlington, VT \(BTV\) Area Forecast Discussion \(AFD\)](#)
- [NWS New York, NY \(OKX\) Area Forecast Discussion \(AFD\)](#)

### **Social Media/Websites**

NWS offices may create, promote, or share fire weather messages on their websites and/or social media. Fire weather partners can contact the NWS for help spreading messages such as avoiding burning, and heeding regulations/burn bans, on fire weather-sensitive days.



## **B. Special Services**

### **ON-SITE METEOROLOGICAL SUPPORT (IMET and AMRS):**

Large wildfires may need an incident response. If the occasion should arise, an Incident Meteorologist (IMET) and All-hazards Meteorological Response System (AMRS) would be requested by the state or federal government through the U.S. Forest Service or the National Interagency Fire Center. Support will be subject to the availability of NWS resources; and limited to federal fire agencies participating in the Interagency Agreement for Meteorological and Other Technical Services, individual state/local interagency agreements, and requests by a public safety official who represents such support as essential to public safety.

The user agency requesting the on-site forecast service has the primary responsibility for transporting the AMRS and IMET to and from the incident. See [National Mobilization Guide](#) and the [National Weather Service Instruction 10-402](#) for more details.

## **C. NWS Forecaster Training**

The NWS recognizes the need for specialized training in fire weather meteorology for forecasters. Any NWS meteorologist producing fire weather products shall have met the requirements set forth in [NWS Fire Weather Services Directive 10-405](#).

## **IV. WILDLAND FIRE 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 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 specialized weather observations for fire weather forecasts, wildfire control and suppression, and various other land management operations. 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.

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 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 that any repairs are made in a timely manner. Owners of NFDRS stations can still (and should) correct any errors in their respective observations.



RAWS Map: Courtesy of April Marinov of NYS DEC

**FUELS/FIRE DANGER:** New York State DEC Predictive Services issues a statewide Fire Danger Rating Area Risk Forecast covering Day 2. When forecast fire danger levels reach critical levels, NYS DEC should coordinate with NWS offices. Link to this forecast:

<https://dec.ny.gov/environmental-protection/wildfires/fire-danger-map>

### 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.

## **V. Joint Responsibilities**

Joint responsibilities include the following:

### **Meetings between the NWS offices and the natural resource agencies.**

At least one statewide meeting hosted by the NWS is normally attempted each year, usually coordinated by the NWS State Liaison Office in Albany. The 5 NWS offices serving New York State will also conduct local users meetings for their respective areas each year.

### **Maintenance and Revision of the Annual Operating Plan.**

Statewide Policy Updates and the NYS Fire Weather AOP should be revised at least once each year before March 1st, with cooperation and participation from NWS offices serving NY, and each natural resource agency.

### **Workplace Visits.**

Natural resource agencies and the NWS should collaborate on familiarization of personnel in each others' fields of expertise, operations and equipment. Visits to offices and work centers, as well 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. More information can be found in the National Interagency Agreement for Meteorological and Other Technical Services at

[https://www.weather.gov/media/akq/fire/2017\\_National\\_Agreement.pdf](https://www.weather.gov/media/akq/fire/2017_National_Agreement.pdf)

## **VI. EFFECTIVE DATES ON THE AOP**

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 webpages. A copy of this plan will be sent to NWS Eastern Region Headquarters upon completion, with annual updates by March 1 in subsequent years. Eastern Region Headquarters will forward a copy of the plan to NIFC and NWS Headquarters.

## VII. SIGNATURE PAGE

Michael Main (received  
2/12/2024) Michael Main  
Fire Weather Program Leader  
NWS Albany, NY

Mike Kistner (received  
2/12/2024) Mike Kistner  
IMET/Fire Weather Program Leader  
NWS Binghamton, NY

Joe Pollina (received  
4/1/2024) Joe Pollina  
Fire Weather Program Leader  
NWS New York, NY

Aaron Reynolds (received  
4/1/2024) Aaron Reynolds  
Fire Weather Program Leader  
NWS Buffalo, NY

Brooke Taber (received 4/1/2024)  
Brooke Taber  
IMET/Fire Weather Program Leader  
NWS Burlington, VT

Christopher Gitro (received  
4/1/2024)  
Christopher Gitro  
Meteorologist-In-Charge  
NWS Albany, NY

Dave Nicosia (received 4/1/2024)  
David Nicosia  
Meteorologist-In-Charge  
NWS Binghamton, NY

I. Ross Dickman (received 4/1/2024)  
Ross Dickman  
Meteorologist-In-Charge  
NWS New York, NY

Mike Fries (received 4/01/2024) Mike  
Fries  
Meteorologist-In-Charge  
NWS Buffalo, NY

Gabriel Langbauer (received 4/1/2024)  
Gabriel Langbauer  
Meteorologist-In-Charge  
NWS Burlington, VT

