

NATIONAL WEATHER SERVICE, ALBANY, NY

2008 FIRE WEATHER

ANNUAL OPERATING PLAN

FOR

EAST CENTRAL NEW YORK AND ADJACENT WESTERN  
NEW ENGLAND



PREPARED BY

HUGH W. JOHNSON IV/EVAN HELLER

FIRE WEATHER PROGRAM LEADER/ASSISTANT FIRE WEATHER PROGRAM LEADER

NATIONAL WEATHER SERVICE ALBANY, NY

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## SECTION 1. FIRE WEATHER PROGRAM OVERVIEW

Meteorologist in Charge (MIC )	Gene Auciello
Warning Coordination Meteorologist (WCM)	Raymond O'Keefe
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This document is based on the new Fire Weather Directive (10-400) issued by the National Weather Service (NWS). The NWS issues the following weather products consisting of:

1. Fire Weather Planning Forecast (FWF)
2. National Fire Danger Rating System Forecast (NFDRS) (FWM)
3. Spot Forecast (as needed)
4. Fire Weather Watch (RFW)
5. Red Flag Warning (RFW)
6. Rarely, localized service that is specifically requested by the fire weather community to reflect localized fire danger (**Fire danger is different from Red Flag conditions**)

The NWS Fire Weather Program provides forecast and warning services in support of fire management planning and control operations, leading to the effective prevention, suppression, and management of forest and rangeland fires. The objective of the Fire Weather Program is to provide a service which will meet the meteorological requirements of federal and state wild land management agencies in the protection and enhancement of the Nation's forest and rangelands. We provide these forecasts and services to east central New York, southern Vermont, western Massachusetts, and northwestern Connecticut.

The Fire Weather season runs from approximately April 1<sup>st</sup> through November 15<sup>th</sup>. **These dates can be adjusted based on variations in weather and fuels. The 2006 Fire Weather Season began on March 20<sup>th</sup>, due to drier than normal conditions.** NWS Fire weather support is available twenty-four hours a day, seven days a week, regardless of the season. **Fire Weather grids are also available all year long.** The Lead Forecaster or Acting Lead Forecaster is responsible for providing fire weather support and requests.

To obtain fire weather services, mentioned in this plan, federal or state officials may contact the National Weather Service Office in Albany, NY at 518-435-9580 or email Hugh Johnson.

Written requests should be addressed to:  
**National Weather Service Office**  
**CESTM, 251 Fuller Road, Suite B300**  
**Albany, NY 12203**  
**Attn: Hugh W. Johnson IV**

## **SECTION 2. FIRE WEATHER PRODUCTS ISSUED**

### **INTRODUCTION**

The daily fire weather planning forecast, issued during the regular fire season, forecasts the average conditions over the Albany County Warning Area, hereafter referred to as ALY CWA. This includes east central New York, southern Vermont, western Massachusetts, and northwest Connecticut.

The forecast is a general zone forecast and may not necessarily reflect the **exact current conditions at any exact given location**. When a more precise forecast is required, the user is referred to section 5 (Special Fire Weather Forecasts or Spot Forecasts).

Fire control and forest officials in each state are familiar with their own local weather differences. Therefore, the fire weather planning forecast may be used as a base, and adapted for local conditions.

New York, Vermont, Massachusetts and Connecticut are currently using the 1964-67 National Fire Danger Rating System (NFDRS) for calculating fire danger, and also use the 1978 and 1988 NFDRS.

The basic information contained in the fire weather planning forecast provides fire control officials with sufficient data to calculate fire danger indices for all versions of the national fire danger rating systems mentioned above.

### **FIRE WEATHER GRAPHICAL FORECASTS**

Fire Weather Graphical Forecasts will be populated all year long, at least twice a day. To access the graphical forecasts start at ALY's home page, go to:

<http://www.erh.noaa.gov/aly>

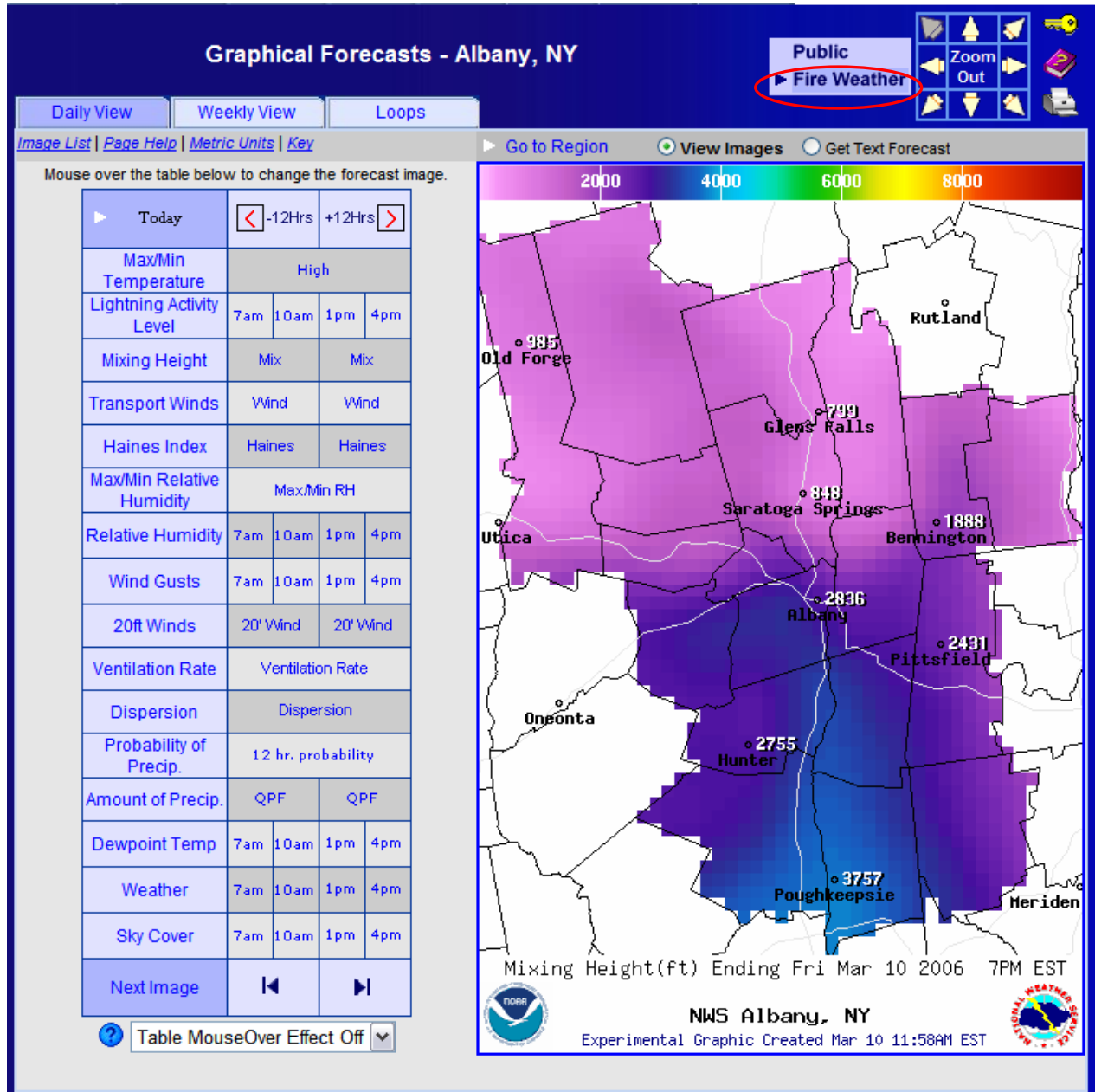
Once at that site, on the left, under Forecasts, click on Forecast Images. Click on Fire Weather and you will have an interactive graphical table of many Fire Weather elements, including Mixing Height, Transport winds, Ventilation, the Haines Index and more. See Example 1.

To obtain our Fire Weather Planning Forecast Product (FWF), from the ALY home page, under Forecasts, click on Fire weather, and you will get to our Fire Weather home page. The exact link is...

<http://www.erh.noaa.gov/er/aly/FireWx/FirePage.htm>

Once there, you can find just about any significant fire weather information you would need. The FWF will be found in the first column under the Forecast/Outlook, Fire Weather Forecast.

**Example 1. Fire Weather Graphical Forecasts**



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**THE FIRE WEATHER PLANNING FORECAST (FWF)**

The NWS Albany area of Fire Weather responsibility includes east central New York, southern Vermont, western Massachusetts, and northwest Connecticut. The CWA is broken into 34 zones. Refer to Example 7 for a map of the forecast area. The points displayed on the map are those that are used to produce the FWF for that zone. Fire weather users may provide input to NWS Albany regarding the location of these points. This product is issued daily during the fire weather season, and should be issued between 4 and 6AM. **It will be updated as needed.**

**DEFINITION OF TERMS**

- A. Day period: Between the hours of 7 am and 7 pm local time.
- B. Night period: Between the hours of 7 pm and 7 am local time.
- C. Zone: Refer to Figure 4 for the forecast coverage area of the ALY CWA.

**BODY OF FORECAST**

1. Headline: A headline is required when a Fire Weather Watch or Red Flag Warning is in effect. Include are the watch/warning, what areas are affected, reason for issuance and effective time period. The headlines will be generated by the Graphical Forecast Editor (GFE) software. Significant trends of locally defined critical weather elements should be headlined for non-watch/warning periods.
2. Discussion: Per NWS Directive 10-401, this is a brief, clear and non-technical description of the weather systems impacting ALY's CWA. Emphasis should be placed on the first two days, but longer periods should be included if significant weather is expected to impact safety or operations, and the forecaster has reasonable confidence that it will occur. Significant trends in temperature, dewpoint and winds are useful to fire weather customers. Also, any unusual instability/stability (i.e. high Haines index of 6) should be noted.
3. Cloud Cover
  - a. (CLR) Clear..... 0 to 6 percent coverage.
  - b. (MCLEAR) Mostly clear...7 to 30 percent coverage.
  - c. (PCLDY) Partly cloudy...31 to 69 percent coverage.
  - d. (MCLDY) Mostly cloudy...70 to 94 percent coverage.
  - e. (CLDY) Cloudy...95 percent or more coverage.
4. Precip Type
  - a. Rain: continuous liquid precipitation.
  - b. Showers: an intermittent precipitation.
  - c. Drizzle: very light liquid precipitation, may not measure.
  - d. Sleet: solid precipitation of small ice pellets.
  - e. Snow: continuous solid crystallized precipitation.
  - f. Flurries: intermittent light snow, little or no accumulation.
  - g. Hail: ice precipitation of varying size and intensity.

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- h. Thunderstorms (TSTMS): showers, with thunder/lightning, and possibly, strong gusty winds and/or hail.
- 5. Chance Precip (%)...Probability of measurable precipitation during a 12-hour period.
- 6. Temp (24H Trend)...Highest/ lowest dry bulb temperature expected during the day/ night time period (°F). The 24-hour trend is the difference between the previous forecasted high/low temp and the current forecast high/low temp.
- 7. Relative Humidity RH % (24H Trend)...The lowest daytime relative humidity, or the highest nighttime relative humidity, for the period indicated. Note; relative humidity is a direct function of the dry bulb temperature and dewpoint temperature.
- 8. 20 FT Am Wind...Average 20-foot wind direction and speed (mph) during the morning. (7 a.m.-12 noon).
- 9. 20 FT Pm Wind...Average 20-foot wind direction and speed (mph) during the afternoon for the daytime period and at night for the nighttime period.
- 10. Precip Amount...Amount of liquid equivalent precipitation (rain or melted snow/sleet) during the 12-hour period, in inches.
- 11. Precip Duration...Expected duration of precipitation during any 12-hour period.
- 12. Precip Begin...Beginning time of precipitation during the period (or continuing from the previous period).
- 13. Precip End...Ending time of precipitation during the period (or continuing through the period).
- 14. Mixing Hgt...The **mixing height** is forecast during the day. It is the height to which the air near the surface is well mixed through turbulence. It is typically located at the base of a capping temperature inversion. The mixing height is quite variable in space and time, and in fair weather, typically rises from a few tens of meters at sunrise, to 1 to 4 km at the time of maximum temperature. Because of its typically low elevation under an early morning surface inversion, the mixing height is frequently assumed to fall to near zero overnight, and often not included in a FWF for the nighttime periods. To determine it, estimate the maximum temperature, and lift it dry adiabatically until it reaches the forecast sounding temperature. During the summer, if neither a low-level inversion nor warm advection is present, daytime heating will produce a mixed atmosphere of 4000 to 7000 feet in depth. The more unstable the atmosphere, the greater the mixing depth.
- 15. Transport Wind...The average direction and speed of the wind from the surface to the Mixing height.

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16. Ventilation Rate...An index which is the mixing height times the transport wind speed. It is a measure of the horizontal transport of air within the mixed layer. When the mixing height is low and the transport winds are light, the Ventilation Rate will be poor. The Ventilation Rate is calculated for the daytime periods only.

100000 and up	(Excellent)
61000-100000	(Good)
41000-60000	(Average)
21000-40000	(Fair)
20000 or less	(Poor)

Example - Mixing height 4500 feet, Transport Wind Speed 20 mph (4500 x 20=90000)

17. The **dispersion** is the average diversion during the night. General guidance for dispersion based on surface winds.

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

18. LAL...Lightning Activity Level category. Ranges from 1 to 6 and relates to areal coverage of thunderstorms corresponding to Lightning Activity Levels. LAL and areal coverage are as follows...

<u>LAL Level</u>	<u>Coverage (%)</u>	<u>Descriptor</u>
1	< 15	None
2	15-24	Isolated/Widely Scattered (Slight Chance)
3	25-54	Scattered (Chance)
4	55-74	Numerous (Likely)
5	> 74	Widespread (Categorical/Definite)
6 (Dry lightning)*		Widely Scattered or greater

\*Dry lightning, which is lightning with little or no rain, is **extremely rare** in the eastern United States.

19. Haines Index...The Haines Index (HI) is calculated for the two daytime periods, but not the night time period. It is a measure of stability and moisture (not incorporating wind or fuel moisture). The HI ranges from 2 to 6, which is a sum of two components, a temperature difference (categorized from 1 to 3), and a moisture/dewpoint difference (also categorized from 1 to 3). There are different options available in the Haines Index, each customized for elevation. We use a single point in each of the 34 zones in the ALY CWA to calculate the Haines index. Below 1000 feet MSL, use the low-level Haines calculation. For elevations between 1000 and 3000 feet MSL, use the mid level Haines calculation. Above 3000 feet MSL use the high level Haines calculation. **Studies have indicated the larger the Haines**



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**number, the better chance of seeing large (plume) fire development, mainly where winds are not a factor.**

Haines Index

2-3 VERY LOW (Stable Atmosphere)

4 LOW (Neutral Atmosphere)

5 MODERATE (Unstable Atmosphere)

6 HIGH (Very Unstable Atmosphere)

20. Remarks...any unusual or pertinent facts, that are not described in the body of the forecast. These may include wind shifts with frontal passages, temperature inversions, any potential severe weather, smoke management comments, etc.
21. Forecast Extended...a general forecast of weather and temperature trends beyond the first three forecast periods out to Day 7, located at the end of the 34-zone FWF.
22. Outlook 8 to 14 Day...temperature and precipitation trends of near, above or below normal for the time of the season. Issued directly from National Centers for Environment Prediction (NCEP).

Updates of our FWF – Issued ONLY when the weather scenario changes significantly from earlier thinking. This product will be updated during the daytime only. Criteria (NOT exclusive) for updating the FWF would be:

1. Red Flag criteria met, but not previously anticipated, or vice versa.
2. If observed wind speeds differ by 10 mph or greater and/or wind direction differs by 90 degrees from forecast, with a prevailing wind 10 mph or greater.
3. Relative humidity falls below 30 percent, when forecast to be 40 percent or greater.
4. Relative humidity exceeds 40 percent, when forecast to be below 30 percent.
5. A wetting rain likely, when not forecast or vice versa.
6. Convection changes two categories or more (eg. slight to likely/likely to slight)
7. Any unexpected weather conditions that will **significantly** impact fire service operations.

The link to our FWF, during the official Fire Weather Season, is:

<http://www.srh.noaa.gov/fwd/productviewnation.php?pil=ALYFWFALY&version=0>

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**Example 2. Fire Planning Forecast (FWF)**

FIRE WEATHER PLANNING FORECAST FOR EASTERN NEW YORK...SOUTHERN VERMONT...WESTERN MASSACHUSETTS AND NORTHWEST CONNECTICUT  
NATIONAL WEATHER SERVICE ALBANY NY  
420 AM EDT TUE MAR 18 2008

.DISCUSSION...  
HIGH PRESSURE WILL SLIDE EAST OFF THE NEW ENGLAND COAST TODAY. A COMPLEX LOW PRESSURE SYSTEM WILL LIFT NORTHEAST INTO THE OHIO VALLEY TONIGHT PUSHING A WARM FRONT IN OUR DIRECTION. THE LOW PRESSURE SYSTEM IS THEN EXPECTED TO TRACK EAST ACROSS PENNSYLVANIA ON WEDNESDAY AND THEN LIFT NORTHEAST ACROSS SOUTHEAST NEW YORK AND SOUTHERN NEW ENGLAND WEDNESDAY NIGHT...BRINGING UNSETTLED WEATHER TO THE REGION TUESDAY NIGHT INTO THURSDAY.

THREE QUARTERS OF THE FORECAST AREA REMAINS SNOW COVERED WITH THE EASTERN MOHAWK VALLEY...THE HUDSON VALLEY SOUTH OF SARATOGA SPRINGS...PORTIONS OF THE SOUTHERN BERKSHIRES AND THE LITCHFIELD HILLS BEING THE ONLY AREAS WITHOUT SNOW COVER.

RELATIVE HUMIDITY LEVELS WILL FALL INTO THE 20-30 PERCENT RANGE ACROSS THE MID HUDSON VALLEY...LITCHFIELD HILLS AND WESTERN MA...TO 40-50 PERCENT ACROSS THE WESTERN MOHAWK VALLEY AND ADIRONDACKS THIS AFTERNOON...RECOVERING TO 85-95 PERCENT TONIGHT. RH LEVELS WILL ONLY FALL SLIGHTLY FOR WED AFTERNOON...INTO THE 70-80 PERCENT RANGE.

NO PRECIPITATION IS EXPECTED UNTIL THIS EVENING...WHEN A MIX OF LIGHT RAIN/SNOW/SLEET AND FREEZING RAIN IS EXPECTED...WITH A TRANSITION TO MOSTLY RAIN ESPECIALLY ACROSS SOUTHERN PORTIONS OF THE FA ON WEDNESDAY.

HAINES INDICES WILL REACH 4 TO 5 ACROSS MOST AREAS THIS AFTERNOON...BUT WILL GENERALLY REMAIN AROUND 2 FOR WED.

TRANSPORT WINDS WILL INITIALLY BE LIGHT AND VARIABLE THIS MORNING...BEFORE BECOMING SOUTH TO SOUTHEAST AND INCREASING TO 15 TO 25 MPH THIS AFTERNOON AND TONIGHT...WITH SOUTH WINDS INCREASING TO 30-40 MPH ON WED.

CTZ001-182115-  
NORTHERN LITCHFIELD-  
INCLUDING THE CITIES OF...TORRINGTON  
420 AM EDT TUE MAR 18 2008

	TODAY	TONIGHT	WED
CLOUD COVER	PCLDY	CLOUDY	CLOUDY
PRECIP TYPE	RAIN	SNOW/RAIN	FRZ RAIN
CHANCE PRECIP (%)	10	100	100
TEMP (24H TREND)	46 (+7)	29 (+12)	45

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RH % (24H TREND)	23 (-4)	98 (+22)	70
20FTWIND-AM(MPH)	LGT/VAR		SE 10 G19
20FTWIND-PM(MPH)	LGT/VAR	S 11	SE 10
PRECIP AMOUNT	0.00	0.03	0.51
PRECIP DURATION	1	9	12
PRECIP BEGIN	2 PM	CONTINUING	CONTINUING
PRECIP END	CONTINUING	CONTINUING	CONTINUING
MIXING HGT(FT-AGL)	4510		870
TRANSPORT WND (MPH)	S 15		SW 32
VENT RATE (KT-FT)	12120		15290
DISPERSION	4		4
LAL	1	1	1
HAINES INDEX	4	2	2

REMARKS...NONE.

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.FORECAST FOR DAYS 3 THROUGH 7...

.THURSDAY...RAIN OR SNOW. LOWS IN THE LOWER 30S. HIGHS AROUND 40.  
WEST WINDS 5 TO 20 MPH.

.FRIDAY...WINDY. MOSTLY CLOUDY. CHANCE OF SNOW SHOWERS. LOWS  
AROUND 20. HIGHS IN THE MID 30S. WEST WINDS 20 TO 30 MPH.

.SATURDAY...PARTLY CLOUDY. LOWS AROUND 14. HIGHS IN THE MID 30S.  
WEST WINDS 15 TO 20 MPH.

.SUNDAY...PARTLY CLOUDY. CHANCE OF SNOW SHOWERS. LOWS AROUND 14.  
HIGHS IN THE UPPER 30S. WEST WINDS 15 TO 20 MPH.

.MONDAY...MOSTLY CLEAR. LOWS AROUND 13. HIGHS IN THE MID 30S.  
WEST WINDS 10 TO 15 MPH.

.OUTLOOK 8 TO 14 DAYS...

TEMPERATURES BELOW NORMAL. PRECIPITATION NEAR NORMAL.

**Forecast Back-Up Responsibility** – In the event that NWS BTV is unable to produce their fire weather forecasts, NWS Albany is their primary backup. If we issued their FWF (ALBFWFBTV) with a line in the MND Header stating that the product was issued by NWS Albany, NY.

If Albany is down, then NWS Burlington is our primary backup and NWS Binghamton is our secondary backup to cover all products, including our Fire Weather forecasts, watches and warnings.

### SECTION 3. RED FLAG PROGRAM

**From the NWS Directive 10-401:**

“Forecasters shall issue Fire Weather Watches/Red Flag Warnings when the combination of dry fuels and weather conditions support extreme fire danger and/or fire behavior. These conditions alert land management agencies to the potential for widespread new ignitions or control problems with existing fires, both of which could pose a threat to life and property.”

A red flag event is the combination of a critical fire weather pattern and significantly dry fuels. This combination could lead to the occurrence of large and dangerous wildfires. Since the potential for Red Flag conditions does not exist without receptive fuel conditions, **knowledge of existing fuel conditions is essential. It is important to point out that High Fire Danger, by itself, does NOT necessarily result in Red Flag Conditions.** Red Flag generally reflects how fires might behave after they are ignited, while fire danger specifically relates to the likelihood of fire development.

**RED FLAG CRITERIA**

NWS Directives 10-401 states that both fuel and weather parameters are important considerations. It indicates that the following weather criteria be considered.

During Vegetation Stage I & II (cured/transition - Spring/Fall)

1. Wind.....sustained or frequently gusting above 25 mph for two or more consecutive hours.
2. RH.....less than 30% for two or more consecutive hours.
3. Rainfall...less than 1/4 inch during previous 5 or more days

During Vegetation Stage III (green - Summer)

1. Winds.....sustained or frequently gusting above 25 mph, for two or more consecutive hours.
2. RH.....less than 30% for two or more consecutive hours.
3. Rainfall...less than 1/4 inch during previous 8 or more days
4. Fuels.....Keetch Byram Drought Index (KBDI) above 300

It is the User’s responsibility to inform the NWS the following:

When Greenup has taken place in a given area.

When the measured KBDI:

- a. Approaches 300
- b. Is over 300
- c. Falls back below 300

With no input from the users on these parameters, the NWS will have to estimate when “green-up” has taken place. **Note: the forest rangers will inform us which vegetative stage we are in.**

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**RED FLAG WARNING PRODUCT**

If Red Flag conditions look imminent, (75 percent or greater), a Red Flag Warning shall be hoisted. Again, this product is issued under the AWIPS PIL...**ALBRFWALY**. On the NWS Albany Internet webpage, you will immediately know if a Red Flag is up based on the color-coding of our County Warning Area Map. A Red Flag Warning is colored Deep Pink.

If a Red Flag Warning is issued, an updated routine FWF is required with the Red Flag Warning and the reason for the warning in a headline. The Red Flag Warning is used to warn of an impending or occurring Red Flag Event.

Per NWS Directive 10-401 and per request of both our Vermont and New York Fire Weather Users, they shall be called, 7 days a week, **before 6:00 AM**, before a Red Flag Warning is issued.

In Vermont, call Tess Greaves at **802-888-5733** (work)

If you cannot reach her and need to issue the RFW, go ahead and do so, but make sure you eventually make contact with her.

In New York, call the 24-hour Dispatch at **518-891-0235**

In Massachusetts, call Margaret Carnevale at **413-499-3494**. If she is not in, call MA Dept of Conservation and Recreation Dispatch at **1-866-759-2824, Ext 5** and leave message with the dispatcher on duty.

In Connecticut, call the dispatcher at **860-930-5062**. Backup number is **960-930-4023**.

**IMPORTANT: STATE WARNING POINTS SHALL BE CONTACTED VIA NAWAS WHEN A RED FLAG WARNING IS ISSUED, BUT NOT WHEN A FIRE WEATHER WATCH IS ISSUED.**

**FIRE WEATHER WATCH (YELLOW FLAG)**

Coordination is NOT required before issuing a Fire Weather Watch. Ideally, these will be issued the DAY before the possible Red Flag, anywhere from 12 to 72 hours in advance of the expected onset of criteria. Once the Fire Watch has been issued, it is up the judgment of the forecaster whether or not any of our State Liaison Fire Personnel should be contacted. If the “trend has been our friend” our Contacts should not be “surprised” by issuing the Fire Weather Watch. However, if the watch were issued after a major weather change, then our Liaison Fire Personnel should be contacted. These numbers are the same as for a Red Flag Warning. The Fire Weather Watch is issued under the AWIPS PIL...**ALBRFWALY**. Forecasters shall issue a Fire Weather Watch when there is a high potential (50 percent or greater) for the development of a Red Flag Event (per Directive 10-401). Unless there are dramatic differences among zones (snow cover north, dry south), strong front bisecting the region, the forecaster is encouraged to include as much of the CWA, for simplicity’s sake. If we do hoist a Fire Weather Watch after the initial morning FWF issuance, the FWF **must** be updated, and included with the “Fire Weather Watch” headline.

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**“NEAR RED FLAG” CONDITIONS**

ALY had devised a weather situation that includes an elevated fire weather danger (Elevated Fire Awareness), but not quite to the level of the Red Flag. However, our users have indicated this headline resulted in more confusion than it was worth. Therefore, we have dropped our Elevated Fire Weather Alertness and if meteorological conditions approach but do not reach “Red Flag” we will go with a headline in our Fire Weather AFD (which will also be in our FWF), which include the following...

- ...Fire Weather Watch or Red Flag Warning... (Obviously a headline need in both these cases)
- ...Gusty winds over 25 mph today... (The relative humidity is not low enough for a Red Flag or 5 days of no rain have not elapsed yet).
- ...Gusty winds 15-25 mph... (Other conditions are met for a Red Flag but the winds are not projected to be strong enough).
- ...High Haines Index Today (6)...
- ...Scattered (or greater coverage) of thunderstorms...
- ...Significant wind shift expected...
- ...Lack of dew expected at night (Rare and only after Green-up)
- (Any other meteorological element deemed significant in forecaster’s judgement...

Our users have told us that very low Relative Humidity in absence of significant wind (under 15 mph sustained or gusty) does not generally result in erratic fire behavior. Anytime the wind is expected to frequently gust to 25 mph or more for two or more hours, a headlines should be issued, unless area is under a “wet flag.”

The Fire Weather AFD should discuss when conditions are Near Red Flag. However, the term “Near Red Flag” shall NEVER be included in the headline.

## **SECTION 4. NFDRS POINT FORECASTS PROGRAM**

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

In 2005, the Albany office started issuing National Fire Danger Rating System (NFDRS) forecasts for Marlboro, VT. We have added four more New York sites in 2006. These NFDRS Point Forecasts are derived from the Remote Automated Weather Station (RAWS) observations from the sites listed below. These will be issued once daily in the afternoon, no later than 3 PM, and are valid through 1300 LST the following day. Updates are not necessary, since the NFDRS data is run only once a day. The NWS NFDRS Forecast (FWM) will be corrected when a typographical/format error is detected.

Per Directive 10-401, a fire weather observation must be received for an NFDRS forecast to be generated. These forecasts are currently issued for 4 Vermont locations, as well as for 5 new sites in New York. The NFDRS locations are as follows:

### **VERMONT**

# 431401 Marlboro, VT (Windham County)  
Elevation: 1686' MSL  
Coordinates: 42 50 16 N 72 44 06 W  
Owner: Green National Forest  
Contact: Tess Greaves

### **NEW YORK**

#300011 Albany Pine Bush (Albany County)  
Elevation: 325' MSL  
Coordinates: 42 43 10.35 N 73 51 55.87 W  
Owner: New York State Forest Rangers  
Contact: Joe Kennedy

#301111 Belleayre Mountain (Ulster County)  
Elevation: 1925' MSL  
Coordinates: 42 08 37.12 N 74 29 43.12 W  
Owner: New York State Forest Rangers  
Contact: Joe Kennedy

#300411 Lake Pleasant (Hamilton County)  
Elevation: 1790' MSL  
Coordinates: 43 28 12.57 N 74 24 47.04 W  
Owner: New York State Forest Rangers  
Contact: Joe Kennedy

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#305103     Stony Kill (Dutchess County)  
              Elevation: 230' MSL  
              Coordinates: 41 32 29.70 N    73 57 06.52 W  
              Owner: New York State Forest Rangers  
              Contact: Joe Kennedy

As of March 2006, ALY had no NFDRS sites for either Massachusetts or Connecticut.

**FWM Format** – Our NFDRS Forecast are launched through the FWM Forecast Format. The Format is as follows...

FCST,#####,YYMMDD,13,WX,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/next day) 060321 (March 21,2006)
13	Time (Forecast valid time 1300 hours/100 PM). Never changes.
WX	Weather (Codes)
0-	Clear
1-	Scattered clouds
2-	Broken clouds
3-	Overcast
4-	Fog
5-	Drizzle
6-	Rain
7-	Snow/sleet
8-	Showers
9-	Thunderstorms
	There is no coding for freezing rain.
TT	Dry Bulb Temperature
RH	Relative Humidity
L1	Lightning Activity Level (period 1300 LST of the day of issuance to 2300 LST hours) See <b>FWF</b> section for description of LAL codes.
L2	Lightning Activity Level (period 2300 LST day of issuance, to 2300 the next day)
DD	Wind direction (N, NE,E,SE, etc)
SS	Wind Speed (10-minute average, in MPH)
„	Between SS and TX, commas are needed to hold the place for the 10-hour fuel moisture values which the NWS does not forecast at this time.
TX	Maximum Temperature
TN	Minimum Temperature
RX	Maximum Relative Humidity
RN	Minimum Relative Humidity
P1	Precipitation duration (1500-0600 LST Period) in whole hours
P2	Precipitation duration (0600-1300 LST period) in whole hours
F	Wet Flag “Y/N” (use Y for widespread rainfall)

**EXAMPLE 4. ALBFWMALY**

FNUS81 KALY 202250



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FWMALY

FCST,431401,060321,13,1,37,28,1,1,WNW,06,,37,14,75,28,0,0,N

NFDRS Forecast for Marlboro, VT issued on March 20, 2006, forecast through 1300 LST March 21. Forecast for a Clear sky at 1300 LST (3/21/06), 37 degrees at 1300 LST (3/21/06), relative humidity 28% at 1300 LST (3/21/06), no lightning activity expected from time of issuance through 0600 LST, no lightning activity expected from 0600-1300 LST (3/21/06), forecast WNW wind, 6 mph, at 1300 LST (3/21/06),(,,) 10-hour fuel NOT forecast at this time, 37 is projected high temperature through 1300 LST (3/21/06), 14, the low overnight (tonight), 75% maximum humidity forecast overnight, 28% low relative humidity through 1300 LST (3/21/06), no precipitation expected from time of issuance through 0600 LST, no precipitation expected 0600 LST through 1300 LST (3/21/06). Obviously since no wet weather is expected, NOT a wet flag day!

NFDRS (FWM Forecasts) can be directly found in the following link.

<http://www.srh.noaa.gov/fwd/productviewnation.php?pil=ALYFWMALY&version=0> or go to our Fire Weather Page and click 'NFDRS Decoder'.

## **SECTION 5. SPECIAL FIRE WEATHER FORECASTS**

"Special fire weather forecasts" are detailed forecasts of local conditions. These forecasts differ based on the specific activity and the location. They are specifically based on the need of the user, and type of activity anticipated.

### **SPOT FORECASTS REQUEST**

Site Specific (SPOT) forecasts are issued by WFOs in support of wildfire suppression and natural resource management. These forecasts aid the land management and fire control agencies in protecting life and property, not only during wildfire situations, but also for hazardous fuels reductions, as well as rehabilitation and restoration of natural resources. These may also be requested for prescribed burns. When unscheduled "SPOT" forecasts are needed, officials are requested to give the NWS as much advance notice as possible. This will ensure staffing provisions, when possible, for the requested service. Requests should be made by contacting the lead forecaster at the National Weather Service Forecast Office (WFO) in Albany, NY. Requests can be made by clicking at the link on the top of Albany's Fire Weather page, or go directly to the internet address:

<http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=aly>

**VERY IMPORTANT. Only federal and state agencies should request this information. Local users (like the Albany Pine Bush) MUST request any Spot Forecast via a state or government agency.**

**From 10-401...WFOs will provide spot forecast service under the following circumstances and conditions:**

- **Upon request of any federal official who represents that the spot forecast is required under the terms of the Interagency Agreement for Meteorological Services (NWS Instruction 10-406)**
- **Upon request of any state, tribal, or local official who represents that the spot forecast is required to carry out their wildland fire management responsibilities in coordination with any federal land management agency participating in the Interagency Agreement for Meteorological Services (NWS Instruction 10-406).**
- **Upon request of any public safety official who represents the spot forecast is essential to public safety, e.g. due to the proximity of population centers or critical infrastructure. A "public safety official" is an employee or contract agent of a government agency at any level (federal, state, local, tribal, etc.) charged with protecting the public from hazards including wildland fires of whatever origin, and/or other hazards influenced by weather conditions such as hazardous material releases.**

**MICs and fire weather program leaders should coordinate with local users and establish local policies/procedures for the site specific spot services in their fire weather services area. The NWS Spot is the national standard for requesting and issuing SPOT forecasts, and should be used whenever possible. At times when the Internet is hindered or not available, SPOT forecasts**

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may be requested and disseminated through other means (eg., the phone). In these rare cases, the forecaster needs to, at the very least, obtain the name, phone number, agency, reason for the request, and the forecast parameters required. Always ask **“What type of fire is this, a Prescribed Burn or Wildfire?”** If it is not a fire, ask specifically what the problem is. (Hazmat, etc.). Last but not least, the person requesting the forecast should provide the NWS with as much weather information as possible, including sky conditions, any precipitation, dry bulb temperature, relative humidity, surface wind speed and direction. If these elements are not available, and the forecaster feels that lack of information will negatively impact the forecast, he/she may decline to fulfill a formal spot request. **The Lead Forecaster is the person responsible for making this decision. If declined, a reason MUST be clearly stated in the action log, and the Fire Weather Program Leader shall be notified as soon as practicable.**

The Weather Spot forecast for this specific site is then provided at:

<http://spot.nws.noaa.gov/cgi-bin/spot/spotfcst?site=aly>

Since the forecast is, in a sense, "tailor-made" forecast, the following information must be provided:

- A. Location. (MUST be entered as coordinates, with negative values of longitude)
- B. Type of terrain (including slope).
- C. Elevation (above mean sea level).
- D. Incident on ground, or elsewhere.
- E. Size of incident.
- F. Existing weather, in as much detail as possible.  
    Preferably including: temperature, dew point or relative humidity, wind speed and  
and  
    direction, significant weather and, if possible, precipitation amounts.
- G. Activity time periods for which forecast is requested  
    (Including date(s) and hours).
- H. Information on limits (conditions) affecting the operation or activity.
- I. Fuel type (slag, brush, etc).
- J. Agency and person in-charge of (responsible for) project (including phone number).
- K. Name and telephone number for person to contact regarding changes, questions, etc.

Some examples of activities for which a special request may be made include:

- A. Ongoing fires.
- B. Prescribed burning.
- C. Search and rescue operations (including aviation briefings).

If the forecaster receives the request and can complete it, it should be done within a twenty-minute turn around time. If not, the forecaster should contact the requester and explain why the forecast will be delayed. The forecaster can use the (graphical) forecast grids as a first guess for the forecast provided he/she feels that they are representative of the actual forecast. The forecaster can certainly deviate from the grid forecast should it be unrepresentative. Once the Requested Forecast is received on our home page, it should provide a new link so that the

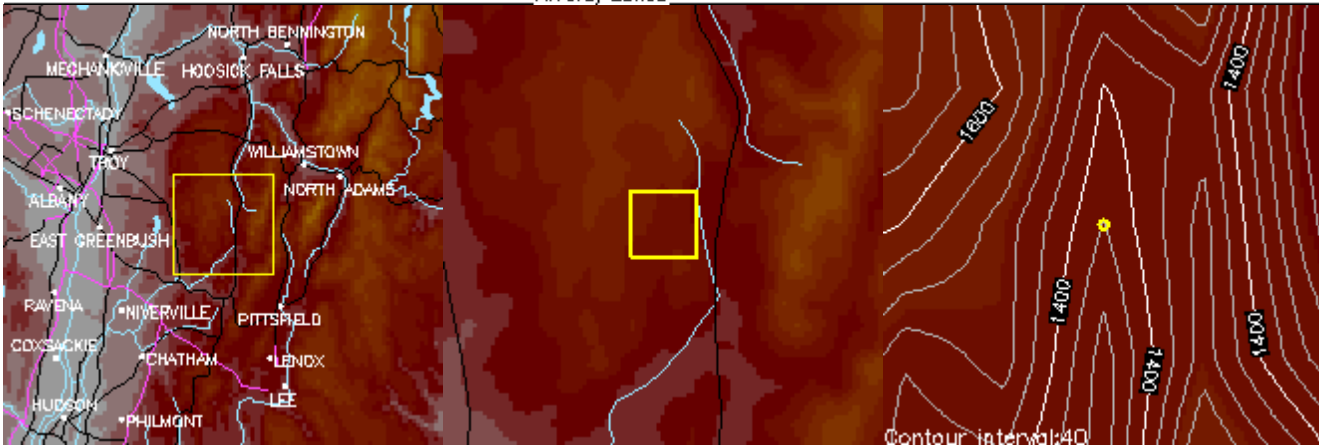
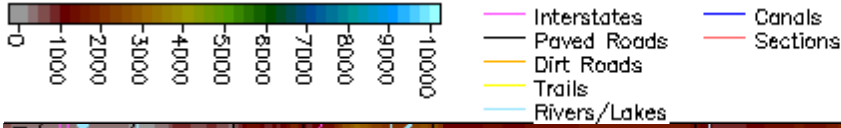
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forecaster can open it up and forecast the requested parameters to the best of his/her ability. Once completed, click on the button to issue the forecast. Wait a few minutes, and then call the phone number of the requestor to make sure it was received. Examples of both a request and a forecast will follow

**EXAMPLE 5. SPOT FORECAST REQUEST**

**HAZMAT (HAZMAT)** (Requested: 1320 EDT 6/30/05)

Requested by: RENSSELAER COUNTY 911 Phone:(518) 270-5252



**Location**  
 : Legal: Lat/Lon:42.6/73.4 Quad:  
 Calculated (42°36'0"N 73°24'0"W) (STEPHENTOWN CENTER NY)

Elevation:1000-1300 Drainage:unknown Aspect:unknown Size:unknown

Fuel Type:unknown (Sheltering Unknown)

**Observations:**

Place	Elev	Time	Wind	Temp	Wetbulb	RH	Dewpt	Remark

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**Requested  
Parameters**

**Remarks**

- X.. Sky / Weather
- X.. Temperature
- X.. Relative Humidity
- ... 20 Foot Wind
- ... Chance of Wetting Rain

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**EXAMPLE 6. SPOT FORECAST ISSUED BY ALBANY**

423 PM THU MAY 18 2006

SPOT FORECAST FOR THATCHER PARK  
ISSUED BY NATIONAL WEATHER SERVICE ALBANY NY  
VALID UNTIL 1223 AM FRI MAY 18 2006  
IF CONDITONS BECOME UNREPRESENTATIVE, CONTACT THE NATIONAL  
WEATHER SERVICE.

HIGH PRESSURE WILL MOVE OFF THE NEW ENGLAND COAST THIS AFTERNOON.  
INCREASING MOISTURE WILL MOVE NORTHEAST FROM THE OHIO VALLEY...AS A  
COLD FRONT DROPS THROUGH THE GREAT LAKES. THE FRONT WILL MOVE  
ACROSS THE FORECSAT LOCATION EARLY FRIDAY AFTERNOON...TAPERING TO  
SCATTERED SHOWERS BY FRIDAY NIGHT. GUSTY WINDS WILL DIMINISH ON  
SUNDAY.

FOR THE REST OF TODAY  
SKY/WEATHER.....INCREASING CLOUDS.  
CHANCE OF PCPN.....LESS THAN 20 PERCENT.  
BEGIN/END OF PCPN...NONE  
TEMPERATURE.....75 TO 80  
HUMIDITY.....40 TO 45 PECENT  
20-FOOT WIND.....S 10 TO 15 MPH.

FOR TONIGHT  
SKY/WEATHER.....CLOUDY WITH A CHANCE OF SHOWERS. STEADY AFTER 3  
AM.  
CHANCE OF PCPN.....90 PERCENT.  
BEGIN/END OF PCPN...8 PM.  
TEMPERATURE.....60 TO 65.  
HUMIDITY.....INCREASING TO 100 PERCENT.

OUTLOOK FOR TOMORROW  
SKY/WEATHER..... OCCASIONAL RAIN.  
CHANCE OF PCPN.....100 PERCENT  
BEGIN/END OF PCPN...CONTINUING  
TEMPERATURE..... MID 60S  
HUMIDITY..... 100 PERCENT AM, 90 PERCENT PM  
20-FOOT WIND.....SE 12-18 MPH SHIFTING TO NW IN THE PM

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### **ADVISORY WEATHER BRIEFINGS**

Supplementary weather briefings may be requested by Agency Officials, to provide more detailed weather information.

Extremely dry weather, accompanied by strong winds and high temperatures create a greater hazard for forest fires. Depending on weather conditions, Fire Weather Watches or Red Flag Warnings may be issued (see Example 3).

Supplementary information may include:

- A. A general weather picture for planning purposes.
- B. A long-range outlook for planning purposes.
- C. Detailed weather information too lengthy for regular forecasts.
- D. Any questions concerning the existing forecast.

### **SPECIAL WEATHER STATEMENTS**

"Special weather statements" (SPS) are issued, as needed, in consultation with the New York State ENCON, Bureau of Forest Protection and Fire Management. Either they will call us to request an SPS, or we should inform them of an existing brush fire and the possible need for a SPS. The SPS will be sent to the general public and news media via the normal communications systems of the National Weather Service. These would mainly be used to describe a significant on-going wild or brush fire that is either threatening property and/or disrupting a major artery like the New York State Thruway. The SPS should give a 3 to 6 hour forecast for generic temperature, wind and relative humidity conditions, as well as any other short-term pertinent information for that area only. The detail will not be as great as SPOT forecast. **Do NOT attempt to predict the actual fire behavior. Coordination with our contact points should take place before issuing any SPS based on an ongoing fire.**



## **SECTION 6. ASSISTANCE, CONSULTATION, AND SPECIAL SERVICES**

The forecasters at the WFO Albany NY will provide assistance and consultation to those who request fire weather information, when possible, and as current staffing permits.

The Warning Coordination Meteorologist (WCM) will give assistance and consultation, (depending on availability) for any forest planning and management program where weather or climate is a factor. Some examples are:

- A. Research in fire weather meteorology problems.
- B. Advice in the operation of fire-danger stations.
- C. Participation in training sessions.

### **SPECIAL REQUESTS**

Special meteorological services are those required by land management agencies, which would require National Weather Service personnel to be away from their duty station (normally, the forecast office) emergency situations.

User agencies pay the costs for:

- A. Overtime.
- B. Travel and per diem (food, lodging, etc.).
- C. Other miscellaneous costs pertaining to these special services.

Special services include:

- A. Mobile unit and other on-site meteorological services.
- B. Participation in user agency training activities.

Costs, to be recovered from user agencies, will be paid directly to, or calculated on the basis of expense reports submitted to the NWS finance division, of the servicing NWS Office. Billing of user agencies will be handled by the appropriate NWS administrative divisions based on these expense reports. Bills will include a statement of services rendered, and the dates and locations of these services.

Costs for special services pertaining to interagency training (i.e., ATMU training, etc.) should be handled by a cooperative agreement among the agencies involved with the specific training objective.

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**MOBIL UNIT SERVICES**

Modularized, Air-Transportable Mobile Units (ATMU), are stored and dispatched from a USDA forest fire cache on a seasonal basis. These units are available, upon request, for duty at an incident fire, critical prescribed burn project, or other fire weather sensitive incidents.

Further information concerning the ATMU, such as weight, size, forms needed, etc. are obtained from the USDA forest service dispatch meteorologist in Boise, ID at (208) 334-9824.

The unit is to be operated only by a certified incident meteorologist working closely with the Fire Behavior Analyst (FBA) or Planning Section Chief (PSC), in setting up the unit at the incident site.

Agencies requesting the ATMU and Incident Meteorologist (IMET) should provide the following information:

- A. Name of the fire or incident.
- B. Location of the fire or incident.
- C. Directions to the location of the fire or incident.
- D. Name of the incident commander, and of the FBA or PSC.

The requesting agency is responsible for:

- A. Coordinating transportation of the ATMU and IMET to and from the incident.
- B. If commercial air is used to transport the ATMU to the incident.
- C. Storage of the ATMU while in transit.
- D. Shelter and provisions for the IMET.
- E. Shelter for the ATMU at the incident site.
- F. Provision of daily telephone access for short periods.

Upon arrival at the incident site, the IMET will:

- A. Brief the FBA, PSC and incident commander on current and expected weather as it affects the incident.
- B. Establish a schedule with the incident commander and FBA for written forecasts and/or formal briefings.
- C. Request a briefing of the incident situation (fire) and potential problems, as time and resources permit.
- D. If possible, request an aerial inspection trip, current fire line maps and a radio with fire line frequency.
- E. In cooperation with the FBA and PSC, arrange for a schedule of observations from key points around the fire. This information can be provided from belt weather kits.

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Other special services include, but are not limited to:

- A. Forest and fire weather research projects.
- B. Weather advisor to the Northeastern Forest Fire Protection Commission.
- C. Participation in the Northeast Forest Fire Protection Compact (including weather presentations and ATMU equipment displays and demonstrations).

**FIRE WEATHER TRAINING**

A NWS meteorologist is available, at times, to assist state and federal agencies with training needs. Written requests for assistance should be forwarded to the MIC at the NWS Office in Albany, NY, as soon as dates for such training are known.

Other special services include, but are not limited to:

- A. Forest and fire weather research projects.
- B. Weather advisor to the northeastern forest fire protection commission.
- C. participation in the northeast forest fire protection compact (including weather presentations and ATMU equipment displays and demonstrations).

## **SECTION 7. ADDITIONAL CONTACT INFORMATION**

### **NEW YORK STATE**

#### **24 hour Ray Brook Dispatch 518-891-0235**

#### **Albany Central Office**

Assistant Director Andrew Jacob 518-402-8839  
Captain David Brooks, Fire Management Officer 518-402-8835

Forest Ranger Joe Kennedy, Statewide Predictive Services/RAWS Program Coordinator  
518-359-7030 [kennedy@northnet.org](mailto:kennedy@northnet.org)  
Assistant Forest Ranger Lisa Minor 315-866-6330

#### **Region 3 New Paltz** (Dutchess and Ulster Counties)

Captain Dan Walsh 845-256-3012  
Regional RAWS Coordinator Greg Tyrrell 845-294-4404

#### **Region 4 Schenectady** (Rensselaer, Albany, Schenectady, Montgomery, Schoharie, Greene, Columbia Counties)

Captain Pat Kilpeck 518-357-2161  
Regional RAWS Coordinator William Henry 518-287-1445

#### **Region 5 Ray Brook** (Saratoga, Washington, Warren, Hamilton, Fulton Counties)

Captain John Streiff 518-897-1300  
Regional RAWS Coordinator Edwin Russell 518-532-9511 (work)

#### **Region 6 Watertown** (Herkimer County)

Captain Robert Cavanagh 315-785-2558  
Regional RAWS Coordinator Joe Kennedy 518-359-7030

#### **Albany Pine Bush Preserve Commission**

Craig Kostrzewski, Fire Management Specialist 518-456-0655 (work)

### **NATIONAL PARK SERVICE**

Saratoga National Historical Park

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648 Rte 32 Stillwater NY 12170

James M. Gorman, Chief Ranger 518-664-9821 Ext 214 (work)

Trevor Smith, Park Ranger 518-664-9821 Ext 216 (work)

**VERMONT**

Tess Greaves

**802-888-5733**

**MASSACHUSETTS**

District 12 Fire Crew

Primary Contact, Margaret O'Brien Carnevale **413-499-3994 (For coordination purposes)**

Office hours: M-F 9am-5pm

Secondary Contact, Larry Ray, District 12 Fire Warden **413-442-8928** M-F 9am-5pm

If the above two contacts are not available,

contact Philip Gilmore, District 9 Fire Warden (Franklin County) **1-978-544-2760**

Dept of Conservation and Recreation Dispatch **1-866-759-2824, Ext 5**

Staffed 24/7 during Fire Season

**CONNECTICUT**

**860-930-5062 (24/7)**

Ralph Scarpino, Fire Supervisor

79 Elm Street

Hartford, CT 06106

Tel: **960-930-4023**

Fax: 860-424-4070

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**EXAMPLE 7. ALBANY ZONE MAP INCLUDING RELIEF**

