NWS Albany Winter 2025-26 Skywarn Spotter Training - Advanced Course

www.weather.gov/safety/winter

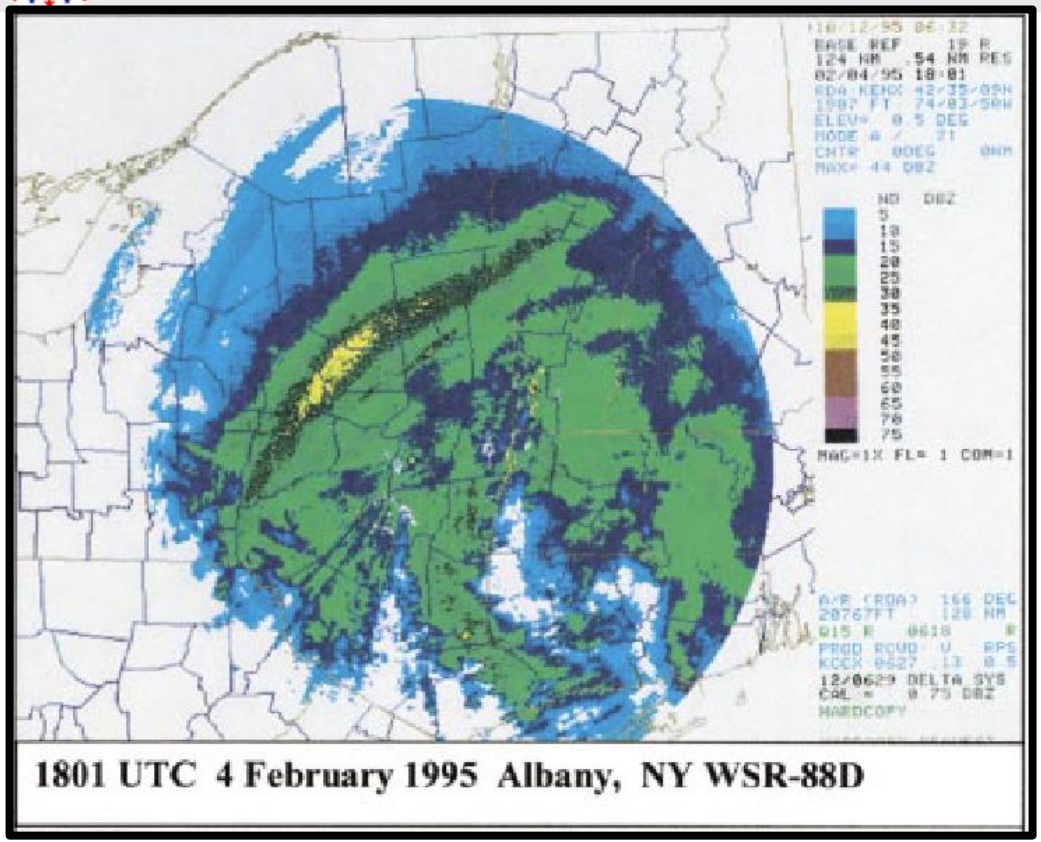
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

National Weather Service
Albany, New York

Outline

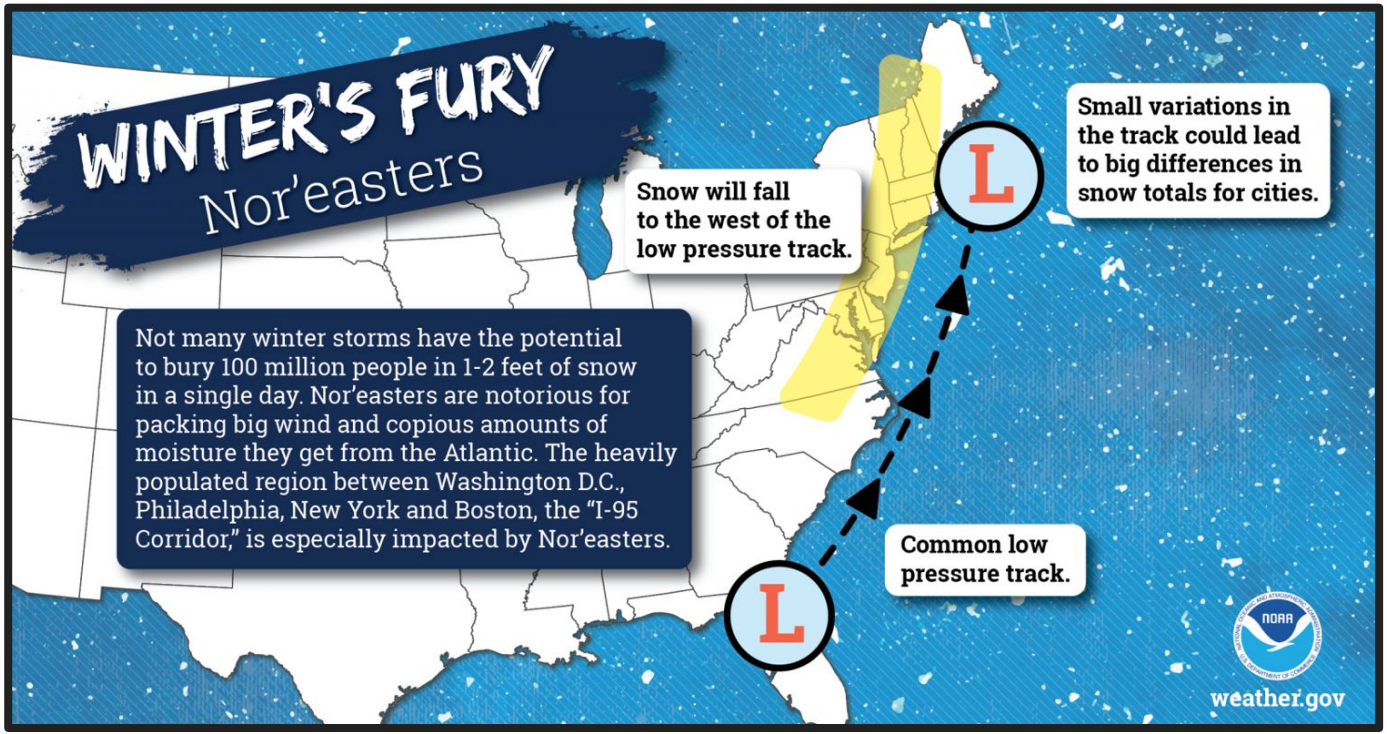
- Mesoscale Banding/Frontogenesis
- Dual-Polarization Radar/Products
- NWS Timeline of Operations for a Winter Storm

Mesoscale Snow Banding / Frontogenesis



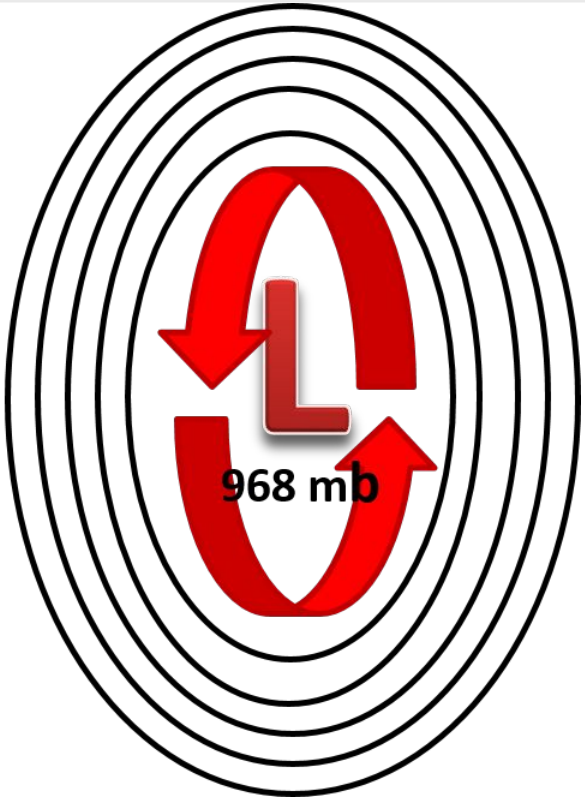
- Mesoscale banding frequently occurs with winter storms.
- Mesoscale banding often leads to local maxima and minima in snowfall totals
- Banding identification comes first, as it usually occurs (not always) with strong cyclones such as Nor'easters that go through cyclo- or bombogenesis (single band? multi-band??)
- Types or bands are based on motion and location (Pivoting, Laterally Translating, etc.)

Mesoscale Snow Banding / Frontogenesis



- Banding frequently occurs with storms that go through cyclogenesis or bombogenesis (rapid fall in surface pressure with the storm)
- Many Nor'easters have mesoscale snowbanding on the northwest or north side of the storm.

Bomb Cyclone (or Bombogenesis)



Bomb Cyclone: When the central pressure of a low pressure system decreases by ***at least*** 24 millibars (mb) in 24 hours

Mesoscale Snow Banding/Frontogenesis

Snow Banding (Novak 2004)

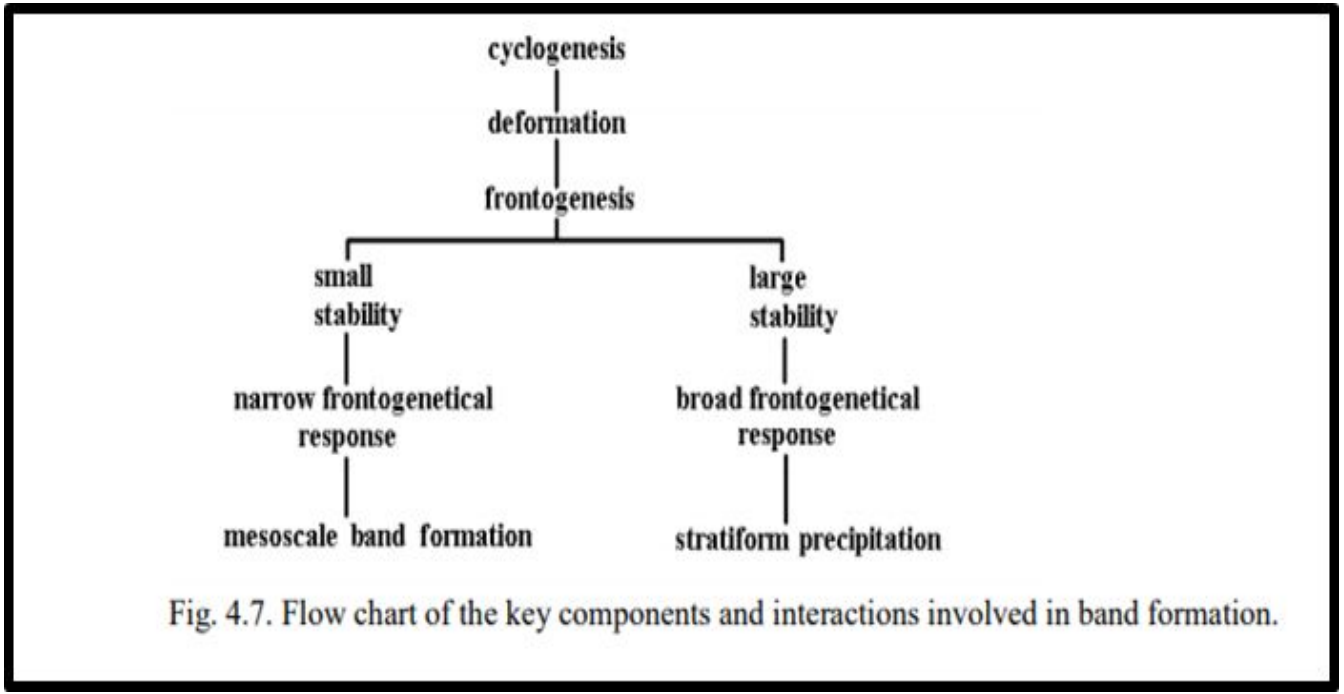


Fig. 4.7. Flow chart of the key components and interactions involved in band formation.

Mesoscale Snow Banding/Frontogenesis

Banded

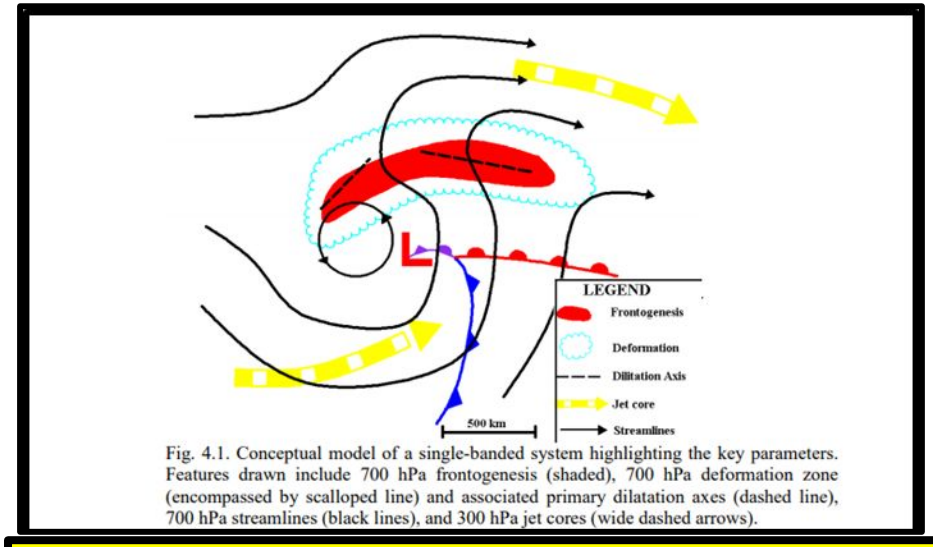


Fig. 4.1. Conceptual model of a single-banded system highlighting the key parameters. Features drawn include 700 hPa frontogenesis (shaded), 700 hPa deformation zone (encompassed by scalloped line) and associated primary dilatation axes (dashed line), 700 hPa streamlines (black lines), and 300 hPa jet cores (wide dashed arrows).

- Dual jet upper level structure identified
- Deformation zone near the northwest quadrant of cyclone
- 700 hPa (mid-level) 2-D Frontogenesis Region and the Axis of Dilatation

Non-Banded

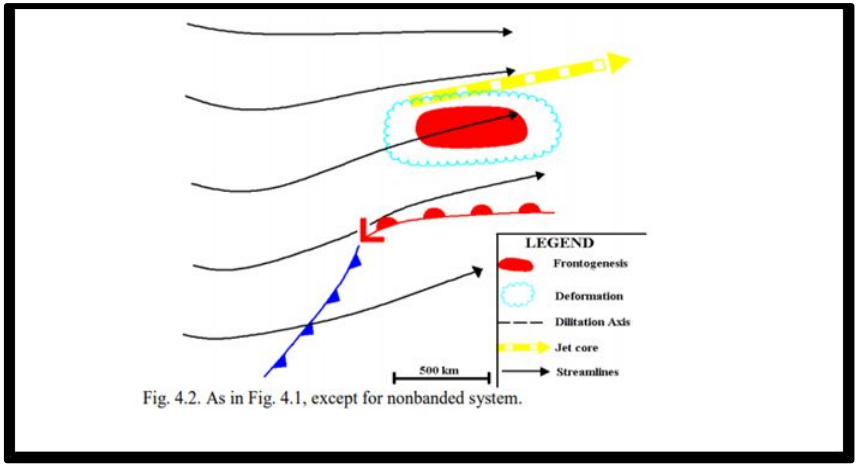


Fig. 4.2. As in Fig. 4.1, except for nonbanded system.

Snow Banding (Novak 2004)

Mesoscale Snow Banding/Frontogenesis

Snow Banding (Novak 2004)

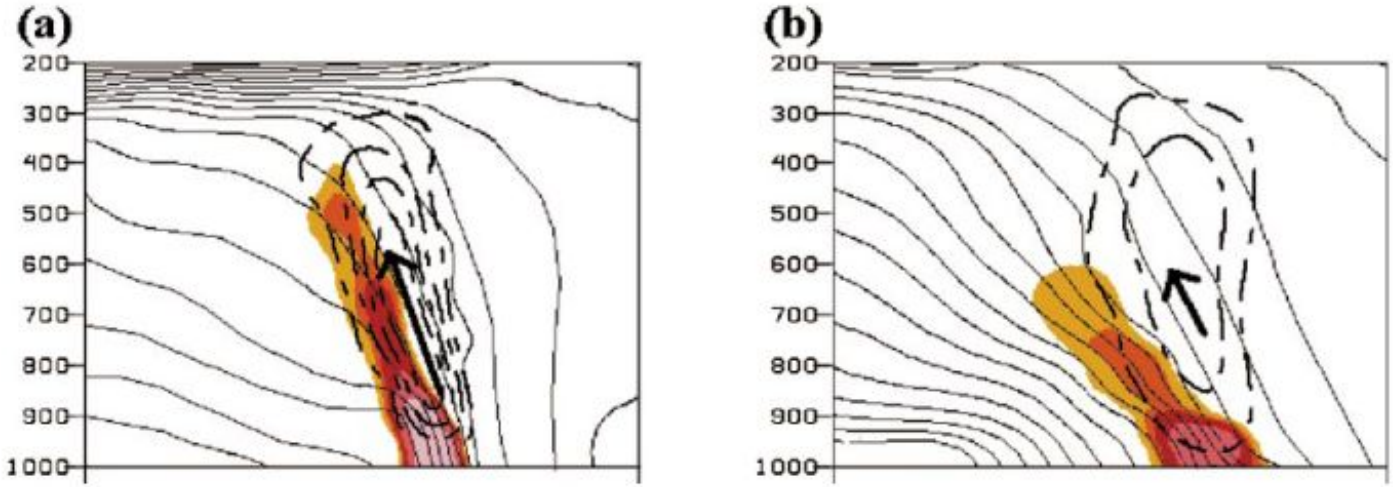


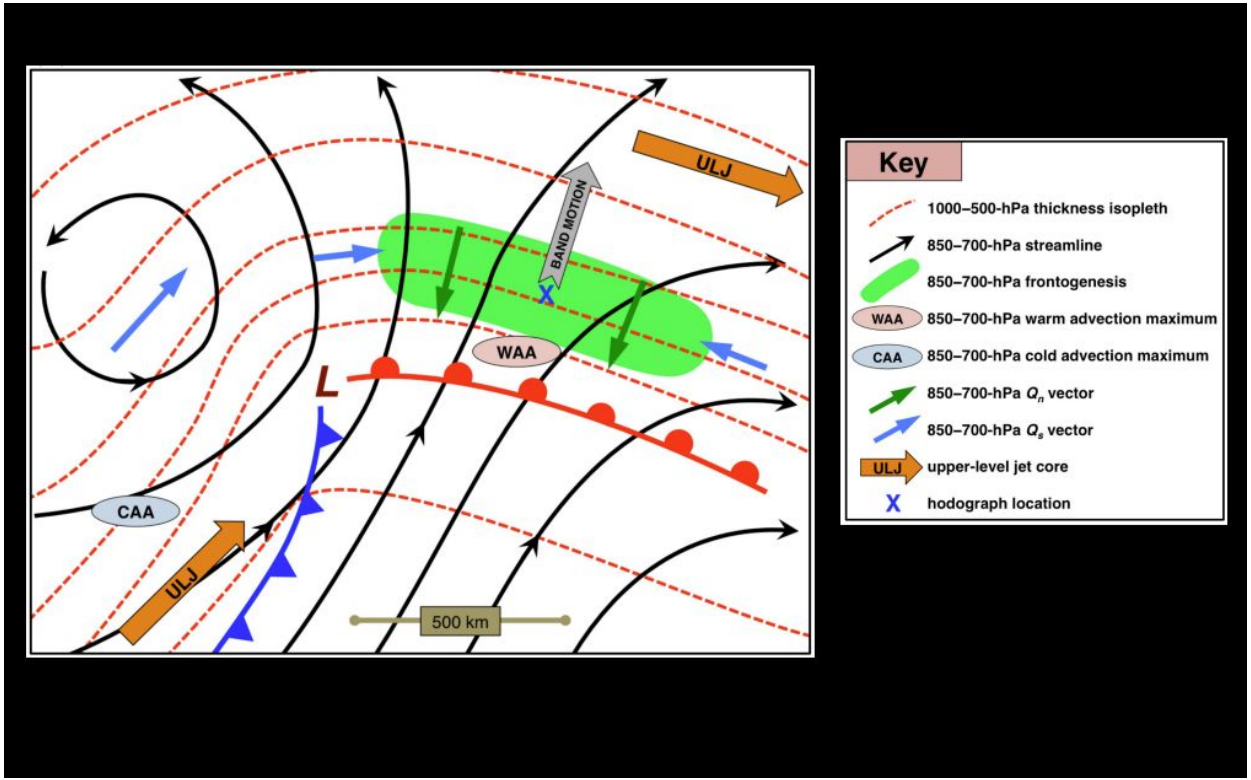
FIG. 16. Schematic cross sections through a typical (a) single-banded and (b) nonbanded environment. Fields shown are frontogenesis (red shading), saturation equivalent potential temperature (thin solid), and ascent (dashed) with length of arrow proportional to the magnitude of ascent and orientation representative of air parcel trajectory. Cross-section length is approximately 1000 km.

- Frontogenesis is shaded (red/orange)
- Saturated equiv potential temp (thin-solid)
- Omega/Ascent (dashed) with arrow proportional to magnitude of ascent and parcel trajectory

Novak D.R., L.F. Bosart, D. Keyser, and J.S. Waldstreicher, 2004: An observational study of cold season-banded precipitation in northeast U.S. cyclones. *Wea. Forecasting*, **19**, 993-1010.

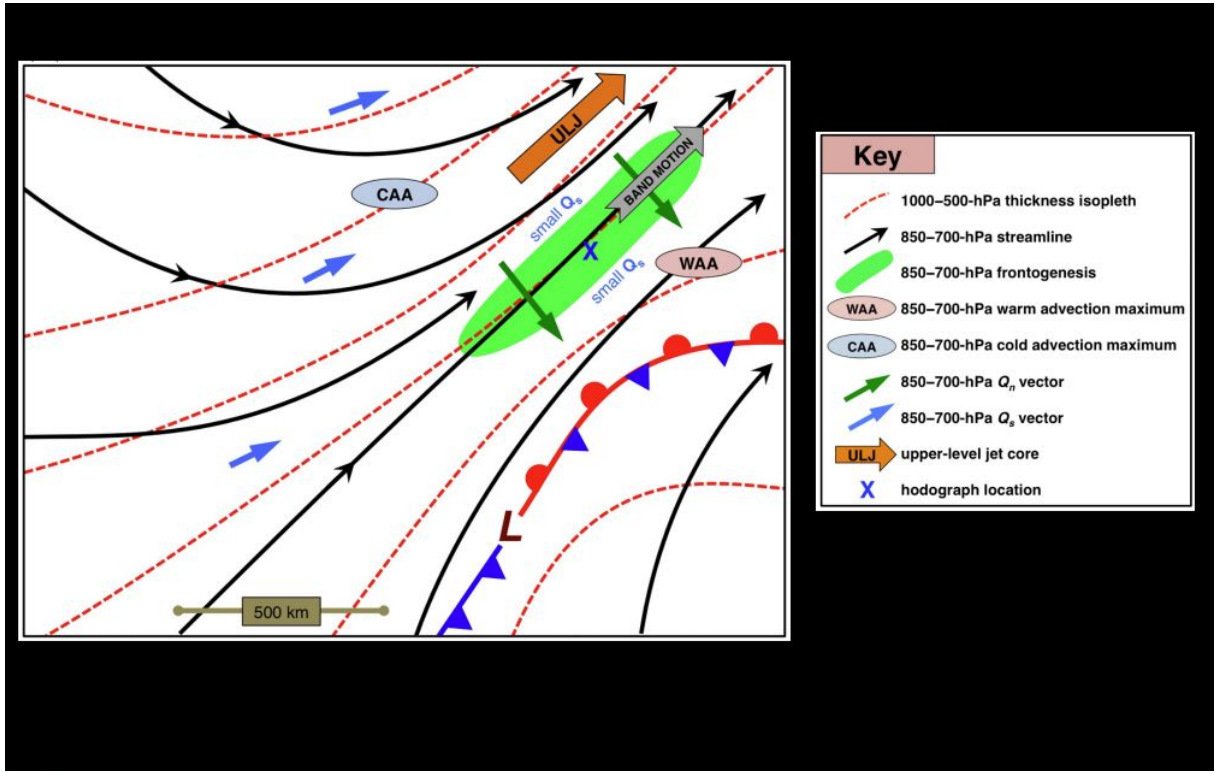
Mesoscale Snow Banding/Frontogenesis

Laterally Translating Snowbands (Kenyon 2020)



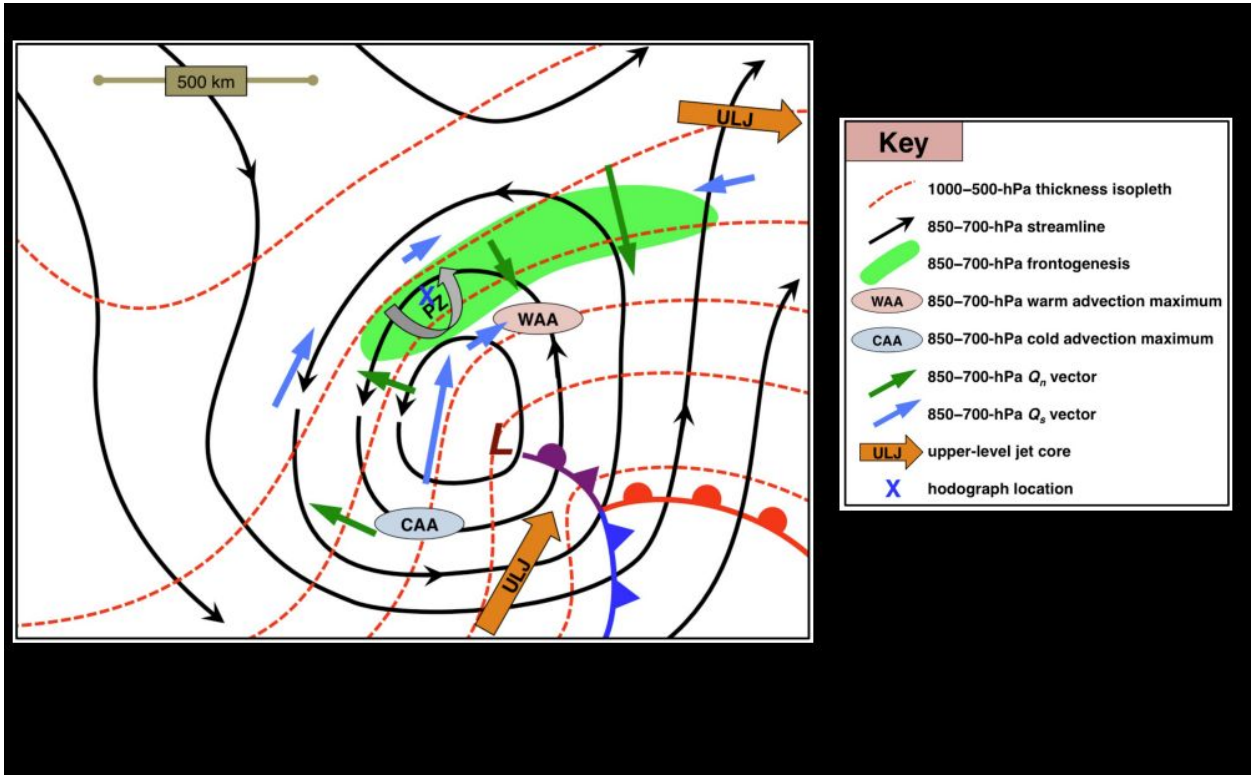
Mesoscale Snow Banding/Frontogenesis

Laterally Quasi-Stationary Snowbands (Kenyon 2020)



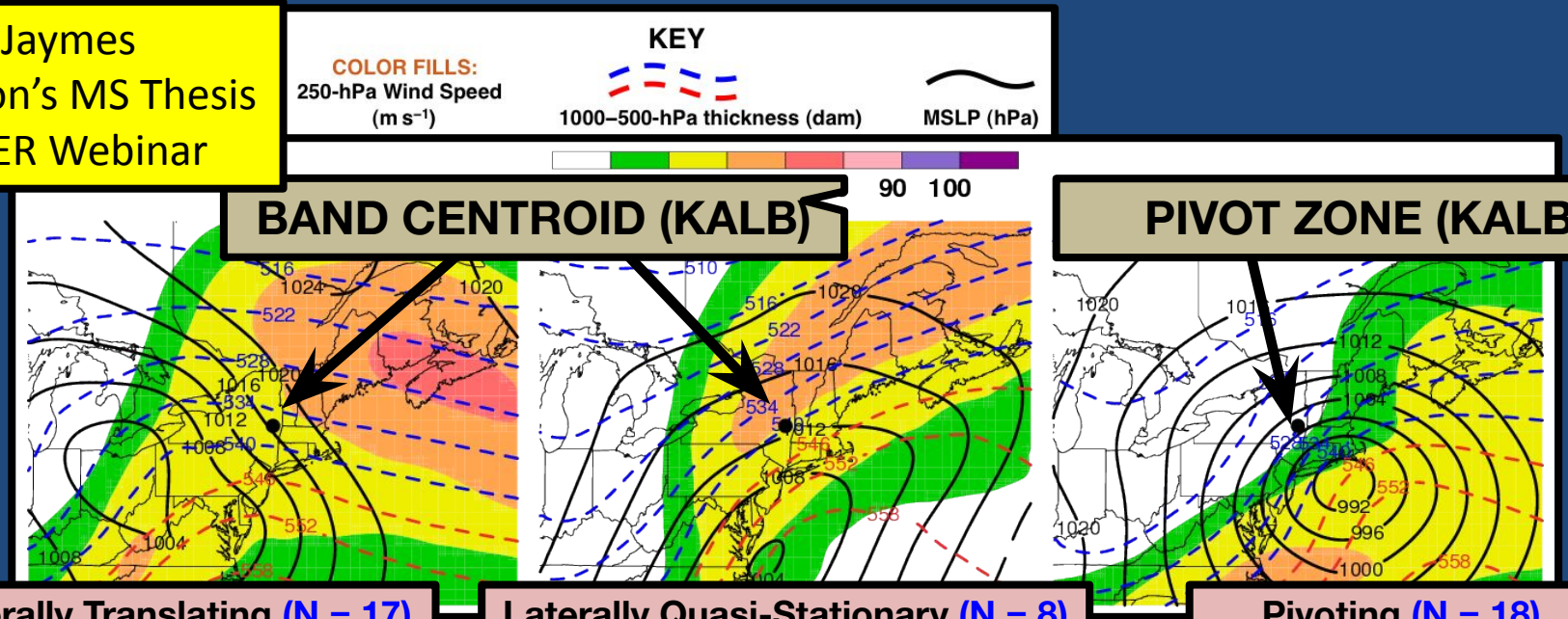
Mesoscale Snow Banding/Frontogenesis

Pivoting Snowbands (Kenyon 2020)



Composites: MSLP, 1000–500-hPa Thickness, 250-hPa Wind Speed

From Jaymes Kenyon's MS Thesis talk /ER Webinar



Laterally Translating (N = 17)

- E of surface cyclone
- equatorward entrance region of upper-level jet oriented NW–SE

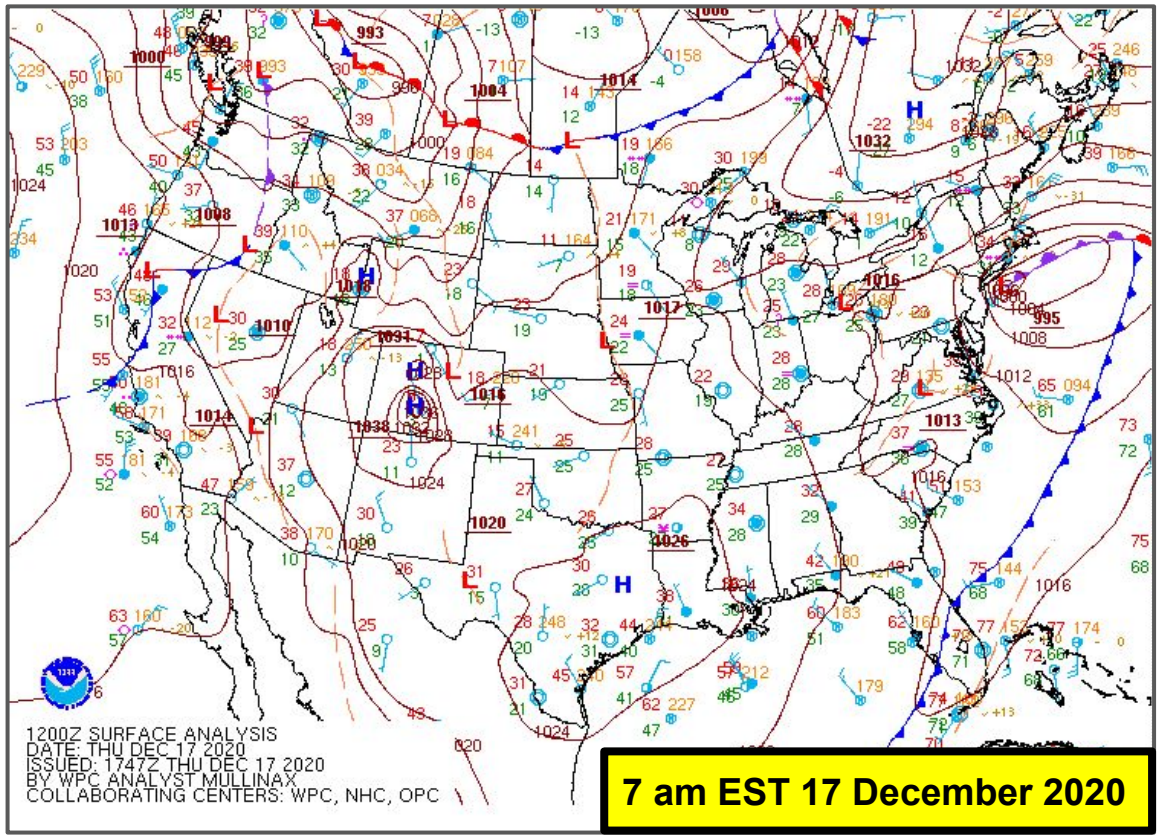
Laterally Quasi-Stationary (N = 8)

- N of surface cyclone
- equatorward entrance region of upper-level jet oriented SW–NE

Pivoting (N = 18)

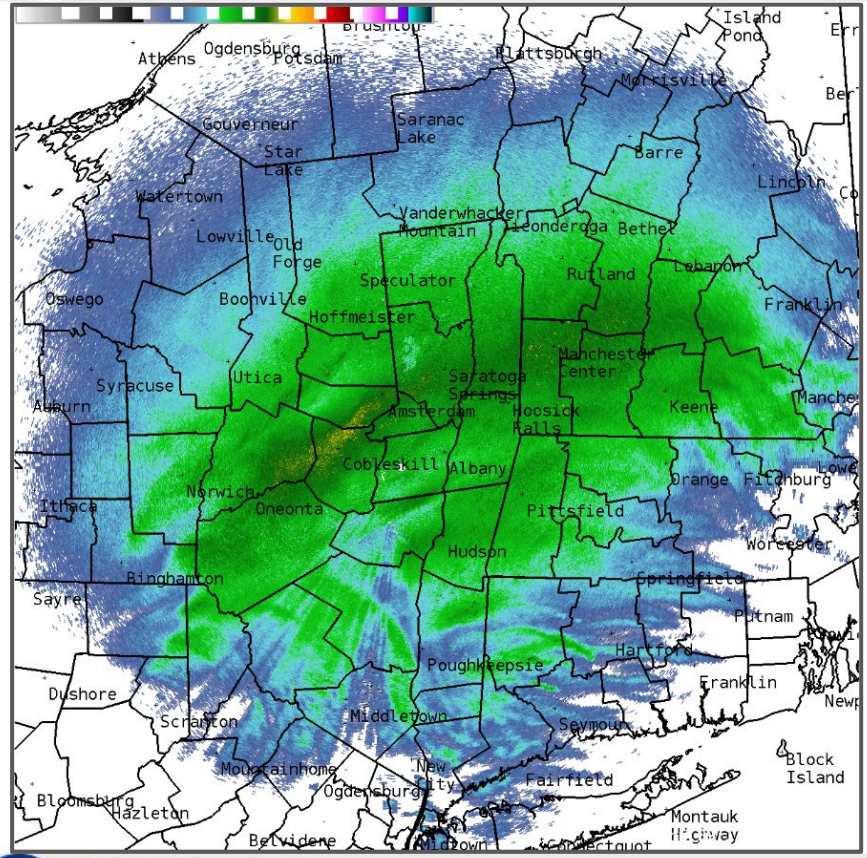
- NW of strong surface cyclone near thermal inflection
- W of upper-level jet axis

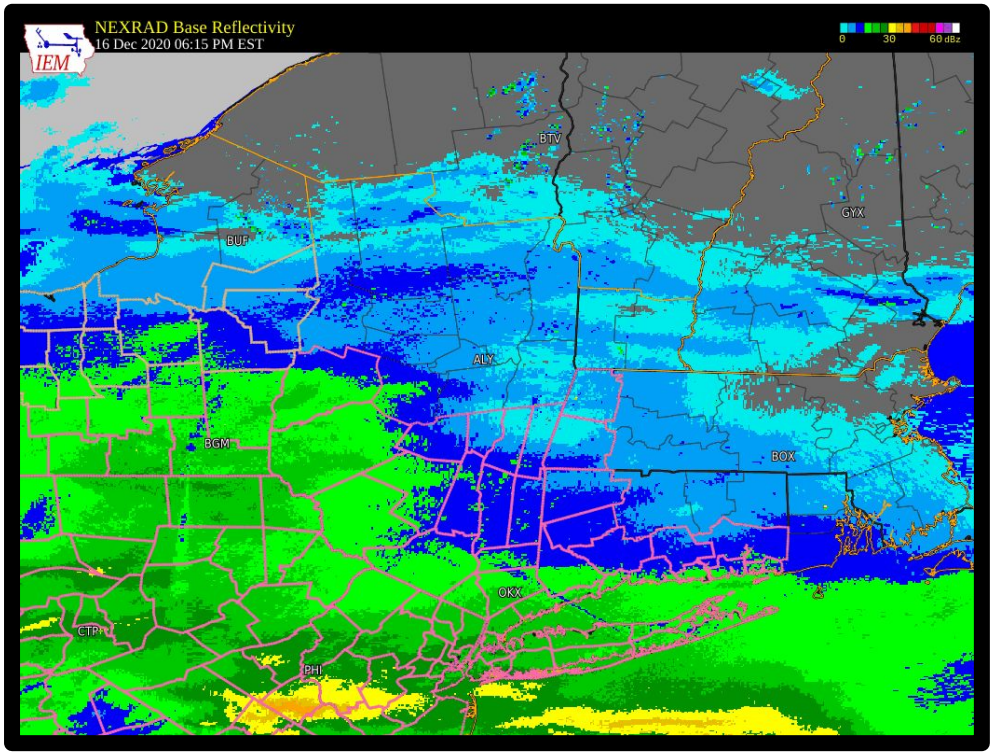
Nor'easter/Snowband Example: December 16-17, 2020



Heavy Snowband Example: December 16-17, 2020

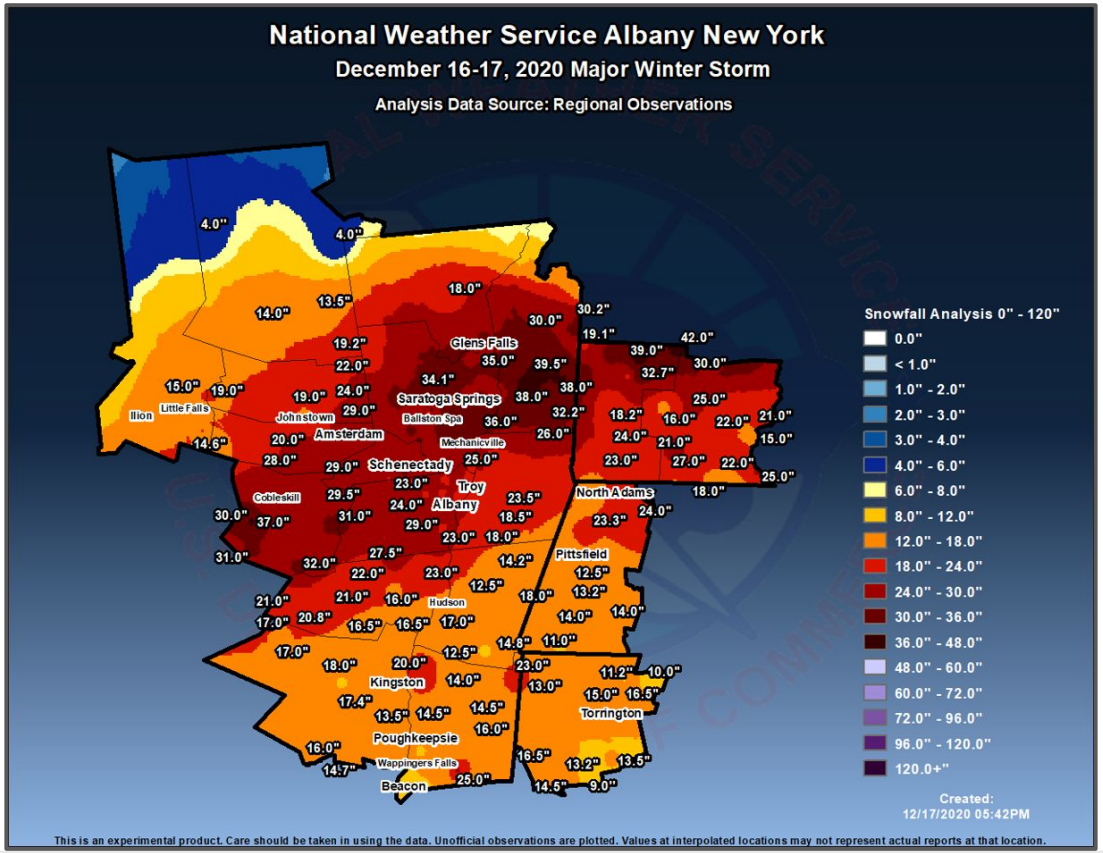
Radar





Heavy Mesoscale Snowband Example: December 16-17, 2020

- Snowfall rates within the mesoscale heavy snowband over the Schoharie and Mohawk valleys, Upper Hudson Valley and into southern VT reached 4+”/hr
- Most of this snow fell during a 12 hour period during the overnight or early morning hours



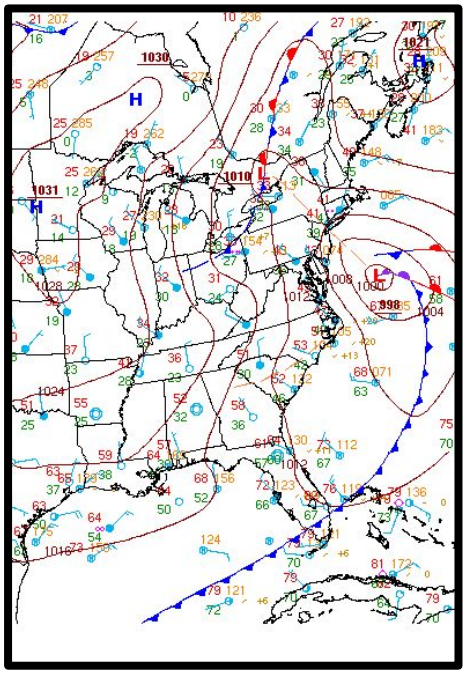
December 16-17, 2020 Pictures

Albany, NY (Brett Rathbun)

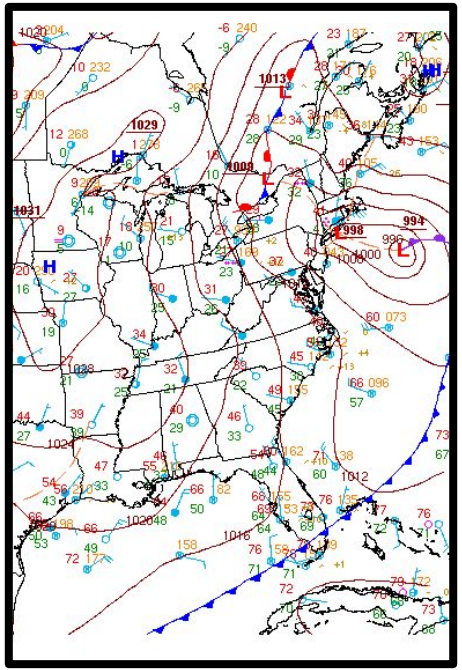
Andy Gregorio (Glens Falls, NY)

Albany, NY (Dan Thompson)

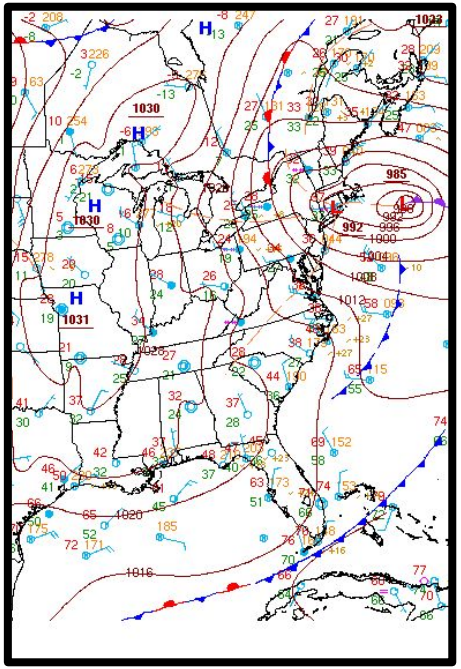
March 13-14, 2023: Surface Maps



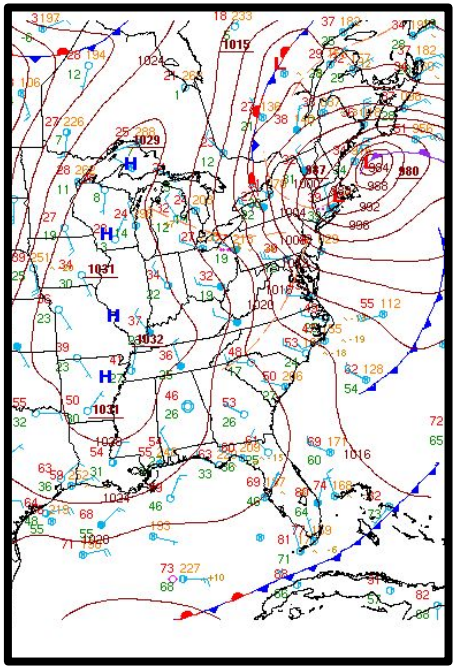
700 pm March 13th



100 am March 14th

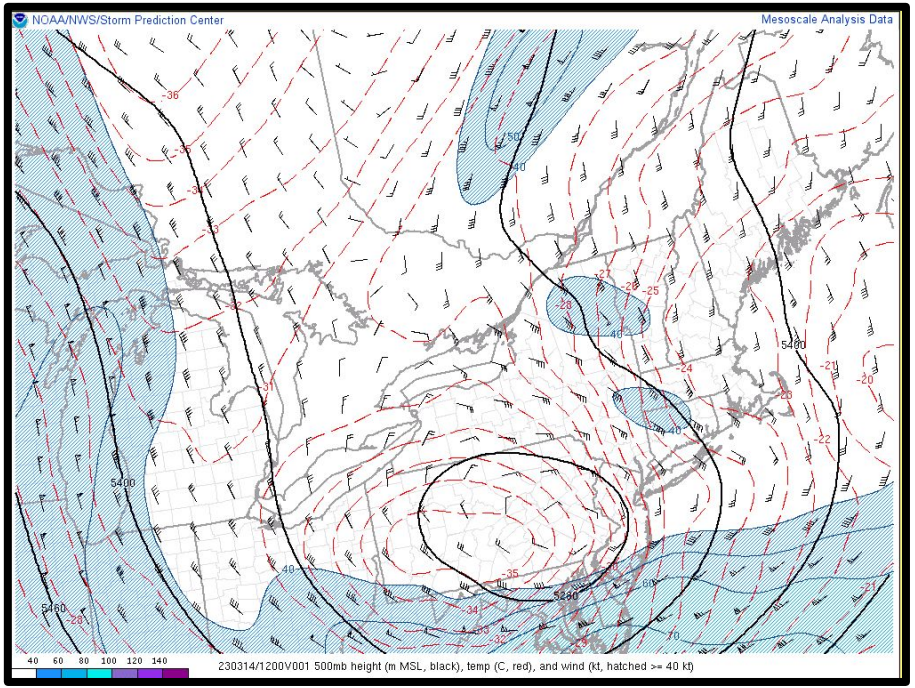


700 am March 14th

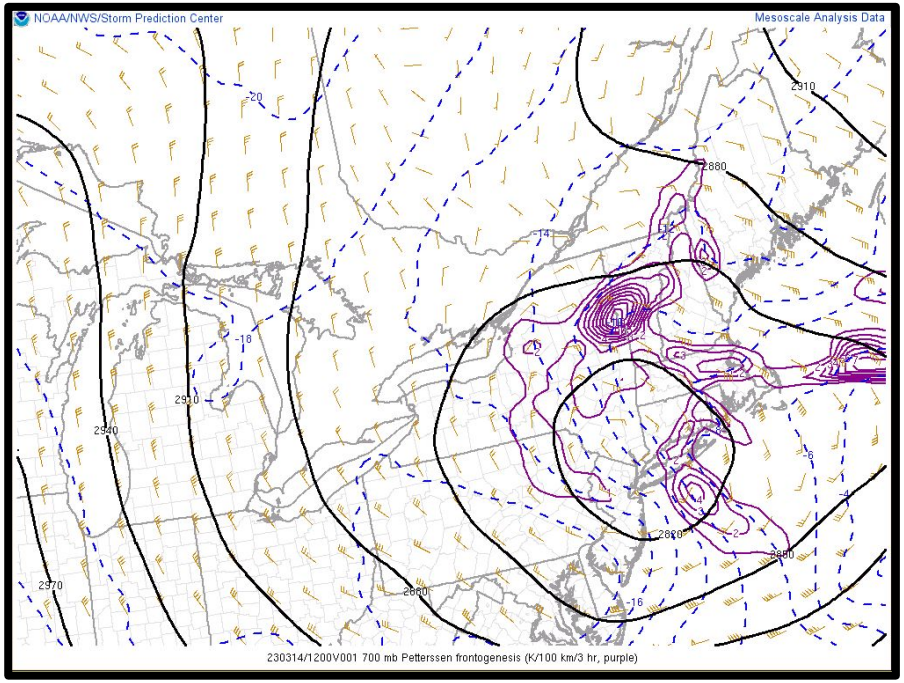


100 pm March 14th

Mesoscale Snowband Example: March 14, 2023

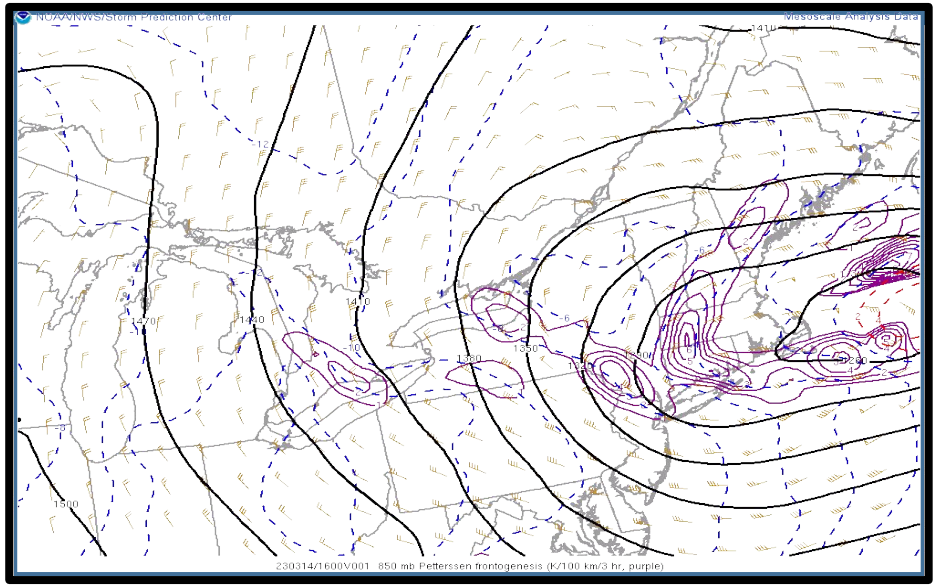


7 am EST March 14, 2023 500 hPa Heights, Temps, and Winds

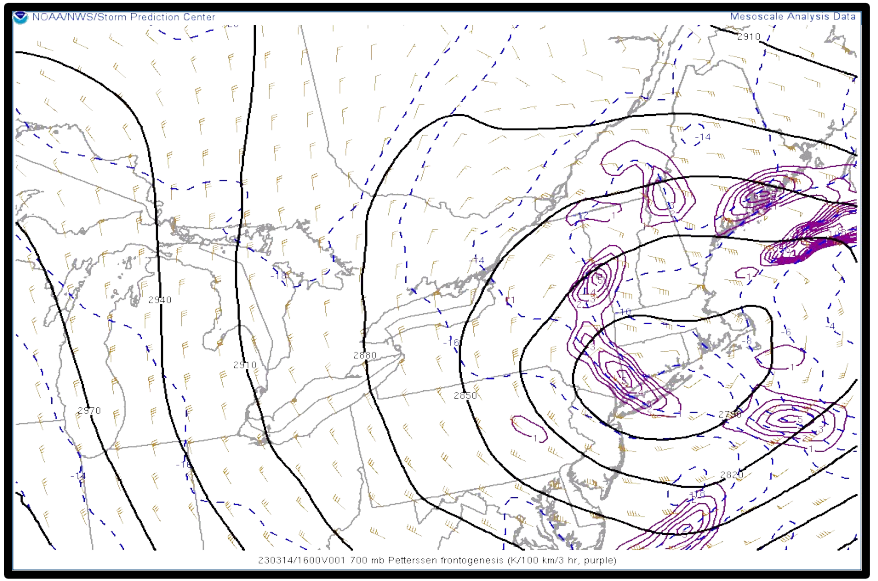


7 am EST March 14, 2023 700 hPa Heights, Temps, and 2-D Frontogenesis

Mesoscale Snowband Example: March 14, 2023



11 am EST March 14, 2023 850 hPa Heights, Temps, and Frontogenesis



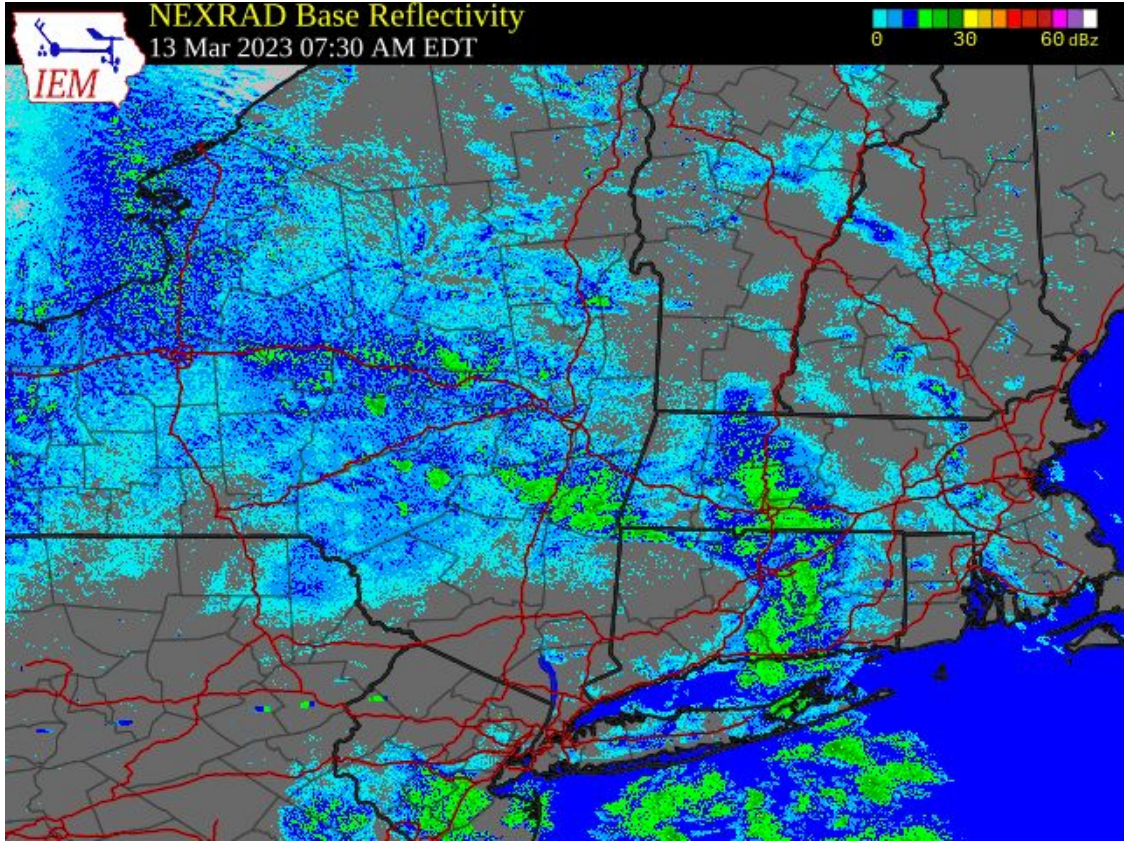
11 am EST March 14, 2023 700 hPa Heights, Temps, and 2-D Frontogenesis

Mesoscale Snowband Example: March 13-14, 2023

- WFO ALY forecasters anticipated heavy mesoscale snowbands with this storm and it was mentioned in the area forecast discussion
- The type of band anticipated was a “Pivoting” snowband based on the conceptual model
- The band placement and locations was the challenge, as local maxima amounts would occur

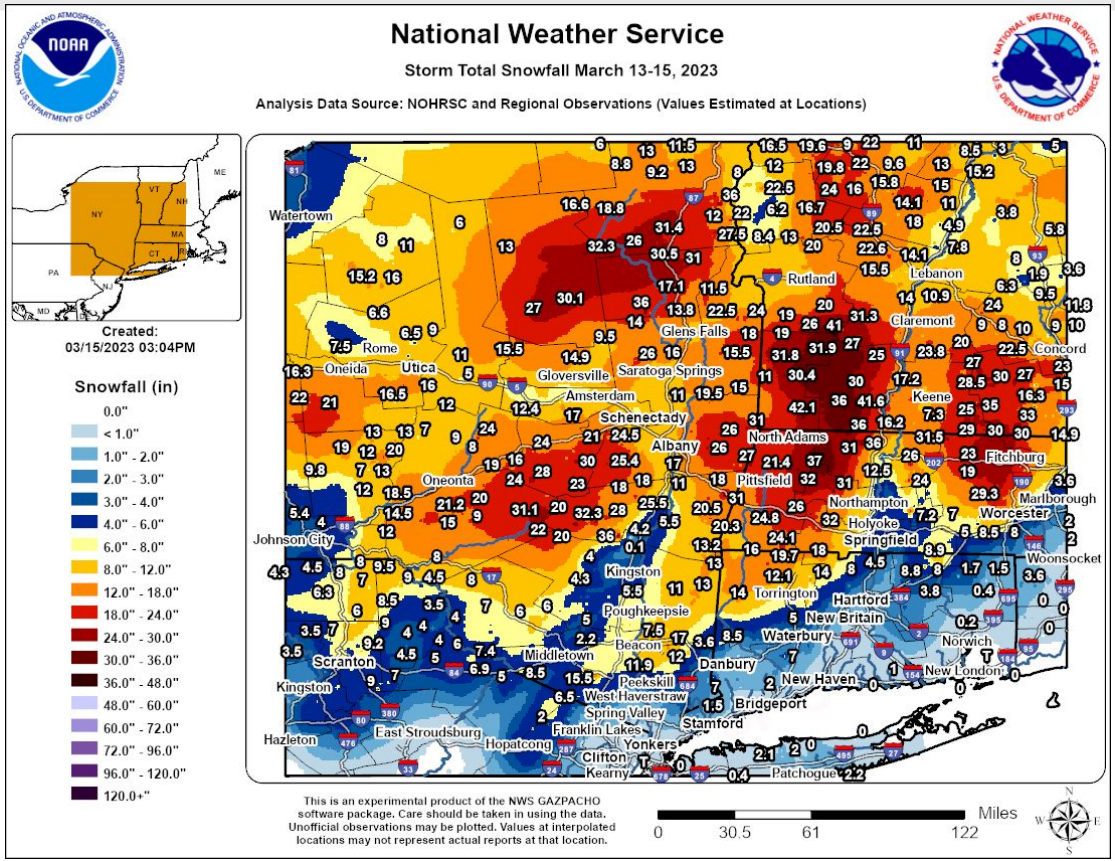
From about midnight through daybreak, bands of heavy snowfall are expected over much of the area. 12z HREF suggests a good probability of snowfall rates exceeding 1" per hour over much of the area, with even some 2" per hour rates possible for the high terrain of the Catskills. CSTAR research suggest heavy snowbands are likely overnight across the region, with a pivoting snowband developing over the area. The snowfall will be a very wet consistency, with ratios under 10:1 in valley areas (a little higher within the terrain). This snow load may result in some downed limbs and power lines, especially towards sunrise Tuesday. By this point, widespread 6 to 12 inches may already have fallen over a good part of the area. There could be some downsloping for a short period for areas west of the Greens (Washington County, NY especially) but it's unclear if this will be occurring for a long enough period to cause less impacts than currently anticipated.

Nor’easter/Banded Snowfall Example: March 13-15, 2023



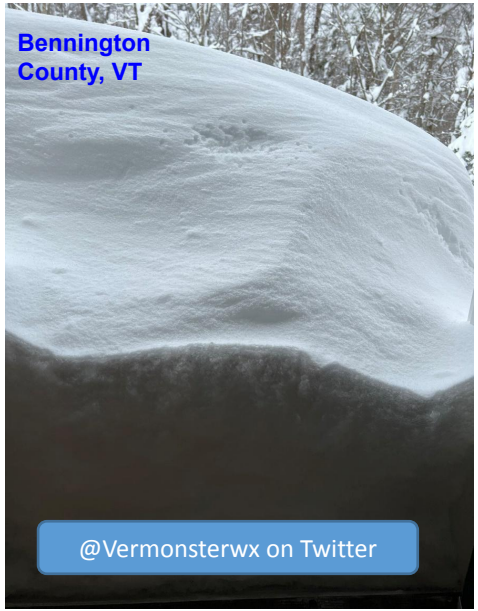
Nor’easter Example: March 13-15, 2023

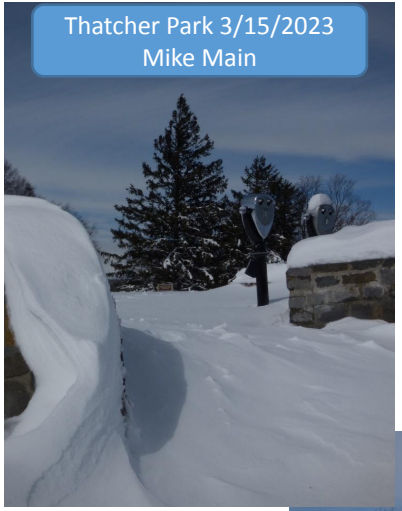
- Heaviest Snow:
  - Catskills
  - Eastern Adirondacks
  - Southern VT
  - Berkshires
  - Worcester Hills
- Lowest Snow Totals
  - Mid Hudson Valley
  - I-95 Corridor



Nor’easter/Mesoscale Snowband Pictures: March 13-15, 2023

Pictures





Outline

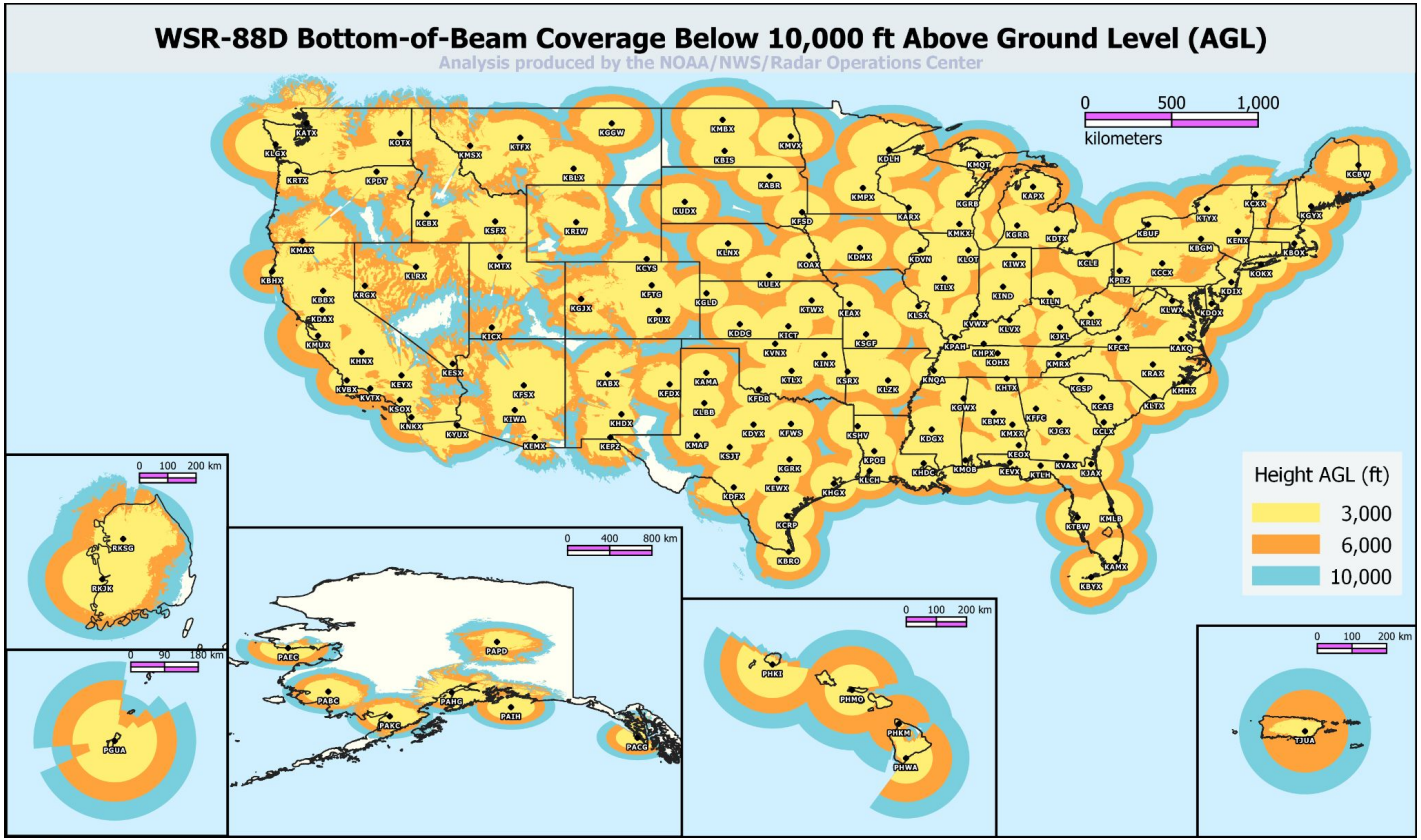
- Mesoscale Banding/Frontogenesis
- Dual-Polarization Radar/Products
- NWS Timeline of Operations for a Winter Storm

What is Radar?

- Next Generation Weather Radar (NEXRAD) network system composed of 160 high resolution doppler radars called the Weather Surveillance Radar - 1988 Doppler (WSR-88D)
- Operated jointly by the National Weather Service, Federal Aviation Administration and Department of Defense
- Operate 24/7/365 providing precipitation and wind data in support of warning and forecast operations

KENX radar located in East Berne, NY

Radar Locations and Coverage



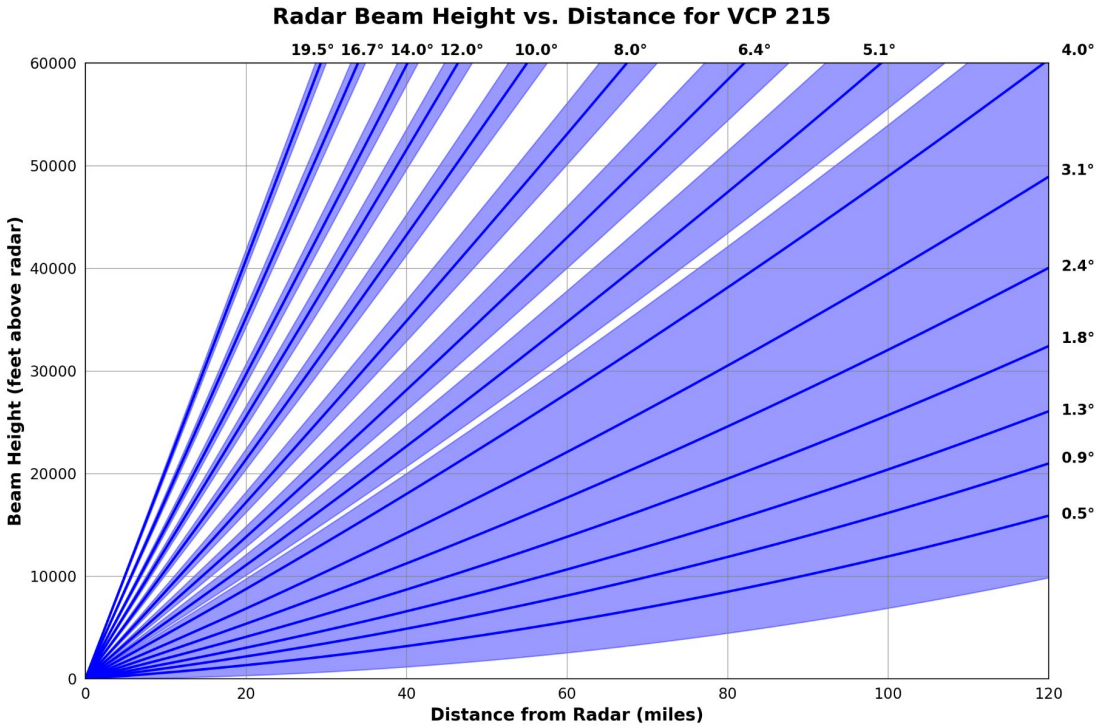
How a Radar Works

- Radar transmitter sends out brief ‘radio wave’ pulses and listens for a returned signal from a ‘target’
- The time it takes for a pulse to be transmitted, strike a target and return to the radar can determine the range (or distance) of the target from the radar
- The amount of energy that returns to the radar can help determine its reflectivity (object size)
- When a pulse hits a moving target, the ‘phase shift’ of the wave can determine the velocity of a target and if it is moving toward or away from the radar (think of the ‘Doppler Effect’ - change in pitch)

How a Radar Works

- Did you know?
  - Radar pulses are transmitted at the speed of light and are very short in duration
  - Each pulse lasts 1.57 millionths of a second and is repeated 1300 times a second and the radar listens for each return
  - For every hour, the radar spend a little more than 7 seconds transmitting pulses and 59 minutes 53 seconds ‘listening’ for returns

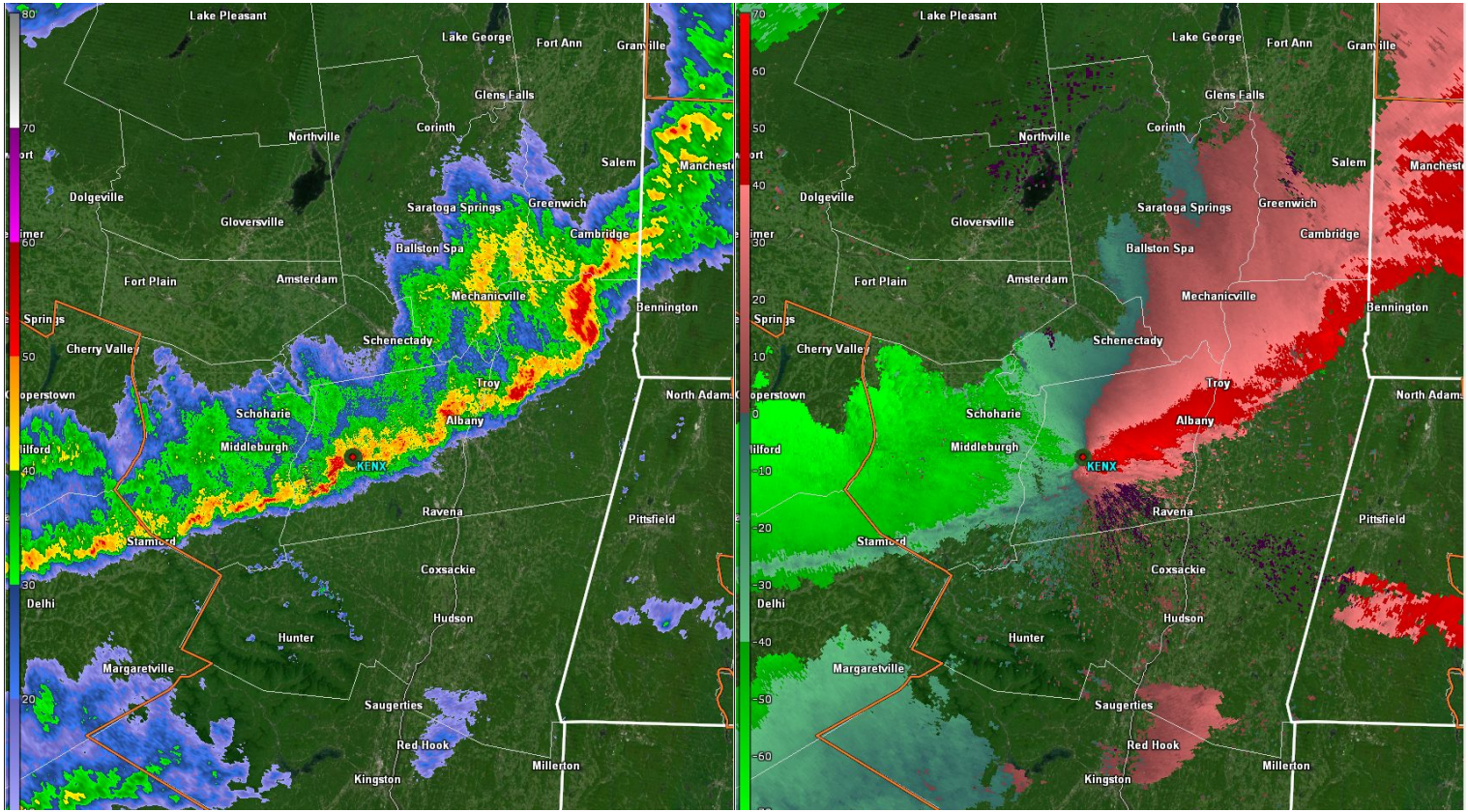
How a Radar Works



VCP 215 typically used for monitoring precipitation. Full scan takes ~6 mins.

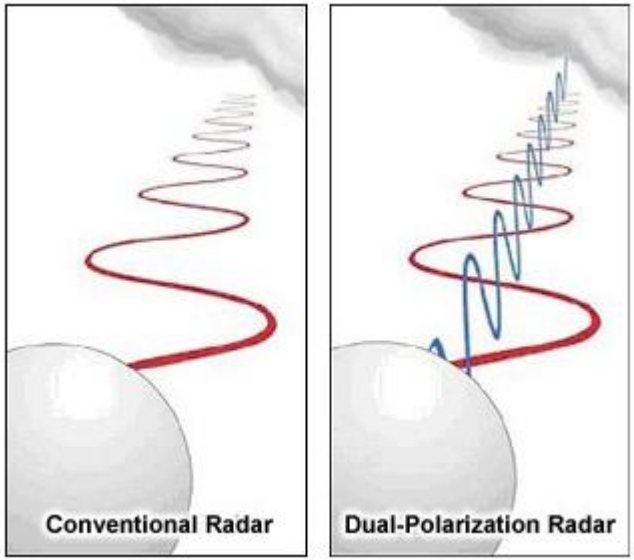
- Each radar performs a scanning strategy (volume coverage pattern - VCP) where it scans at different elevation angles to obtain data in the vertical
- This helps give a better picture of the depth and intensity of storms, especially for those closer to the radar
- Clear air mode is used when there is little or no precipitation around (fewer elevation angles and slower scans)
- Precipitation mode used when then precipitation is around, more elevation angles and faster scans

How a Radar Works



Reflectivity (left and velocity (right) from a derecho that moved across eastern New York and western New England on October 7, 2020.

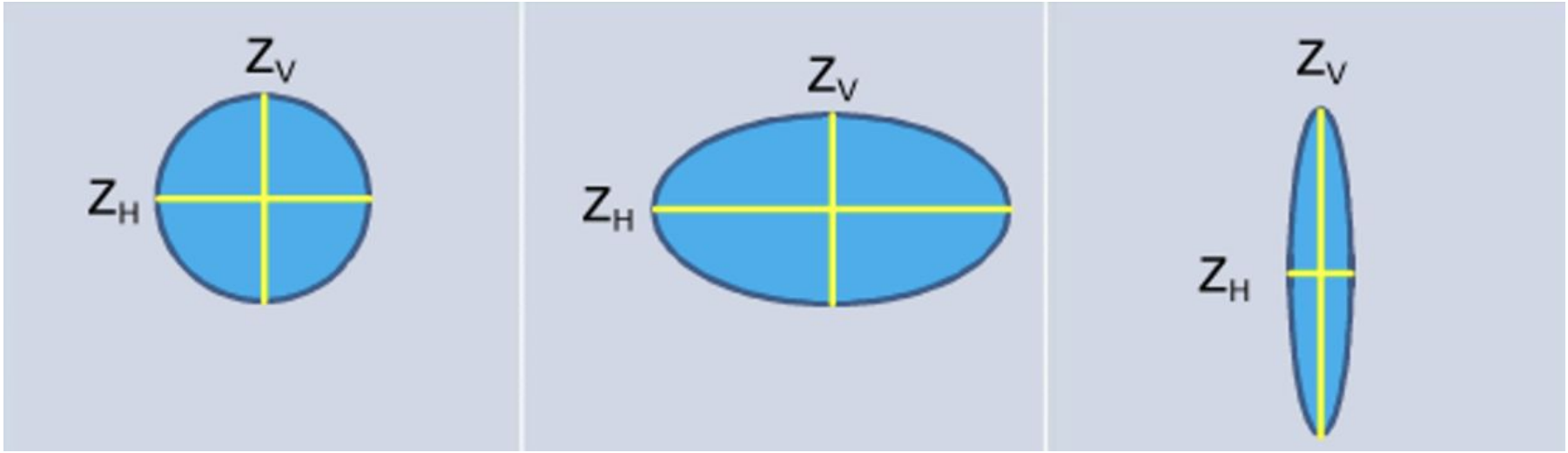
Dual Polarization Radar



NOAA

- In 2012, all WSR-88D radars across the country were upgraded to dual polarization
- Instead of the radar only sending a pulse in the horizontal direction, the upgrade allowed the radar to send a pulse ‘at an angle’ in order to receive both horizontal and vertical returns
- This allows the radar to better detect the size and shape of targets
- Various additional products became available following this upgrade and will be discussed in the following slides:
  - Differential Reflectivity (ZDR)
  - Correlation Coefficient (CC)
  - Specific Differential Phase (KDP)

Differential Reflectivity (ZDR)



$ZDR = Z_{(H)} - Z_{(V)}$

Power difference between the horizontal return and the vertical return

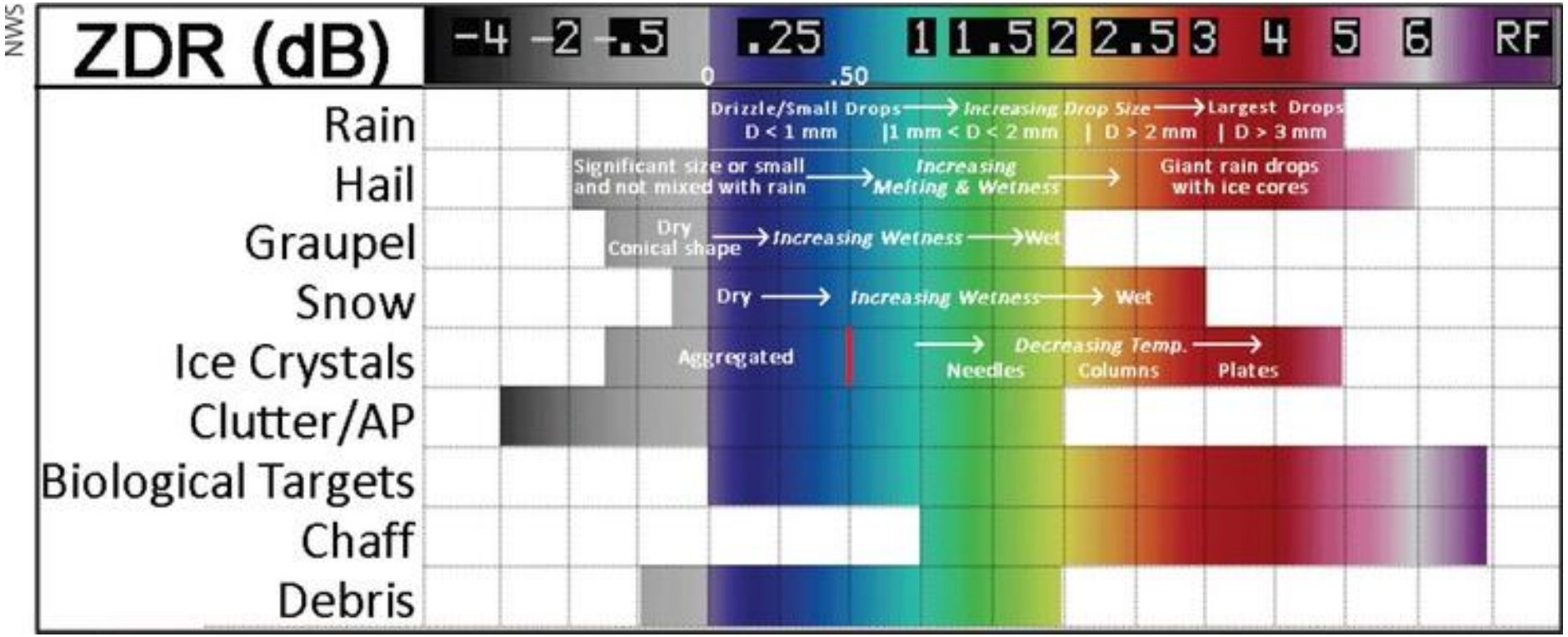
Units are decibels (dB)

Left image: ZDR ~0 ($Z_{(H)} = Z_{(V)}$)

Middle image: ZDR > 0 ($Z_{(H)} > Z_{(V)}$)

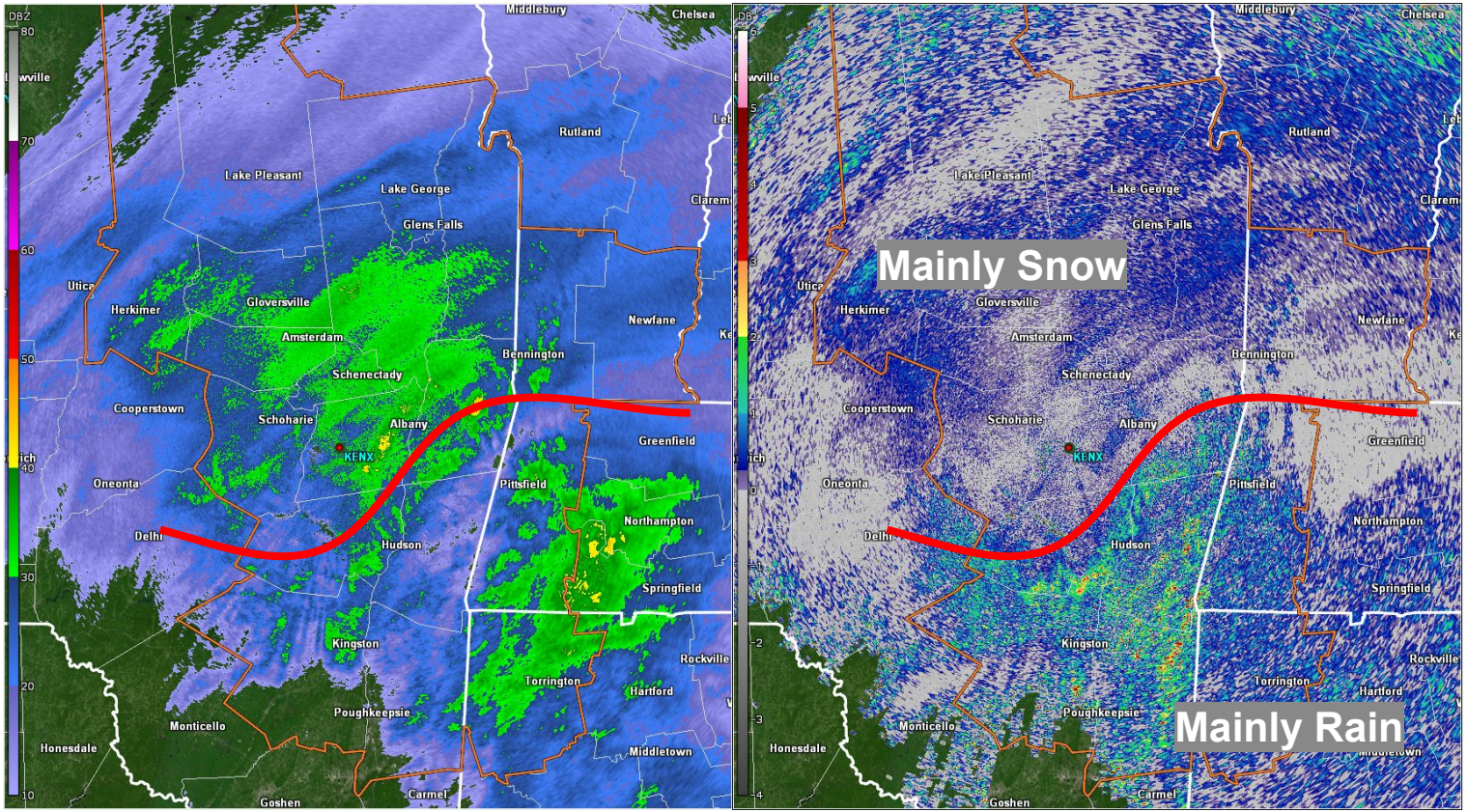
Right image: ZDR < 0 ($Z_{(H)} < Z_{(V)}$)

Differential Reflectivity (ZDR)



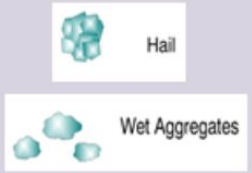
Differential Reflectivity (ZDR)

Radar Image: 1805 UTC November 28, 2024 (1:05 PM EST)



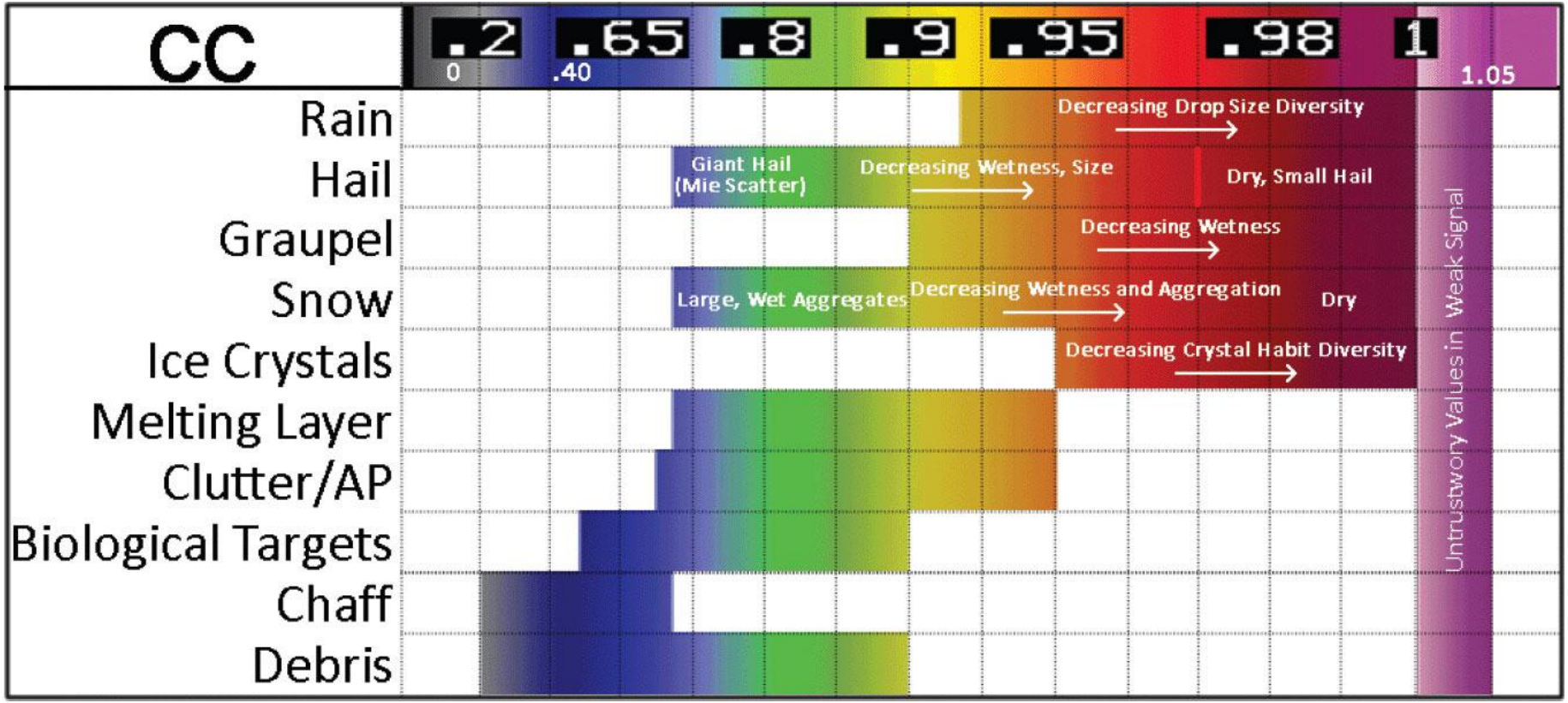
Correlation Coefficient (CC)

- How similar targets are being sampled
- Can be used with differential reflectivity to help identify areas of precipitation transition
- Unitless product with values ranging from 0 to 1

Non-Meteorological (birds, insects, etc.)	Metr (Non-Uniform) (hail, melting snow, etc.)	Metr (Uniform) (rain, snow, etc.)
		
Complex scattering from pulse-to-pulse.	Somewhat complex scattering from pulse-to-pulse.	Well-behaved scattering from pulse-to-pulse.
Low CC (< 0.8)	**Moderate CC (0.80 to 0.97)**	**High CC (> 0.97)**

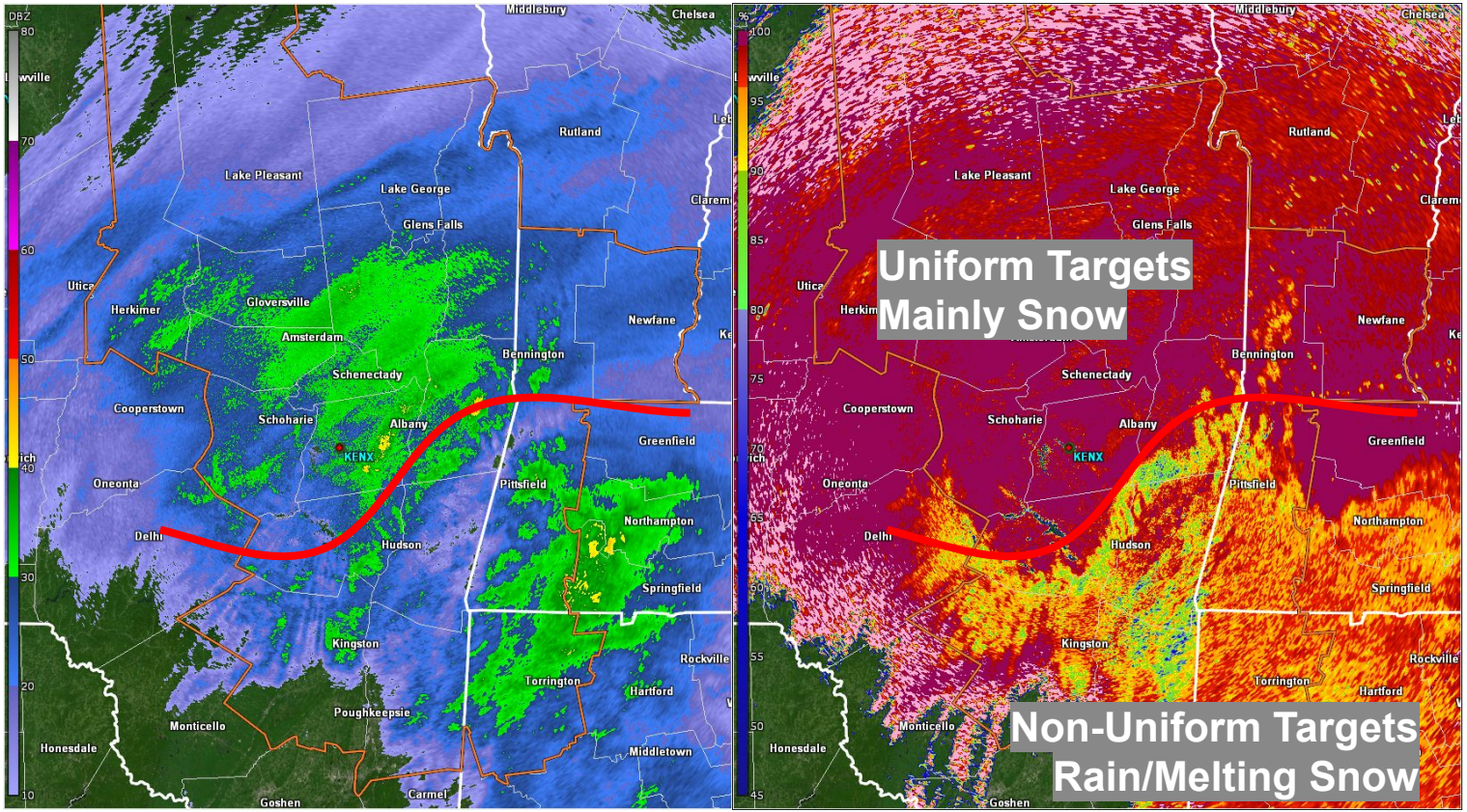
Correlation Coefficient (CC)

NWS



Correlation Coefficient (CC)

Radar Image: 1805 UTC November 28, 2024 (1:05 PM EST)

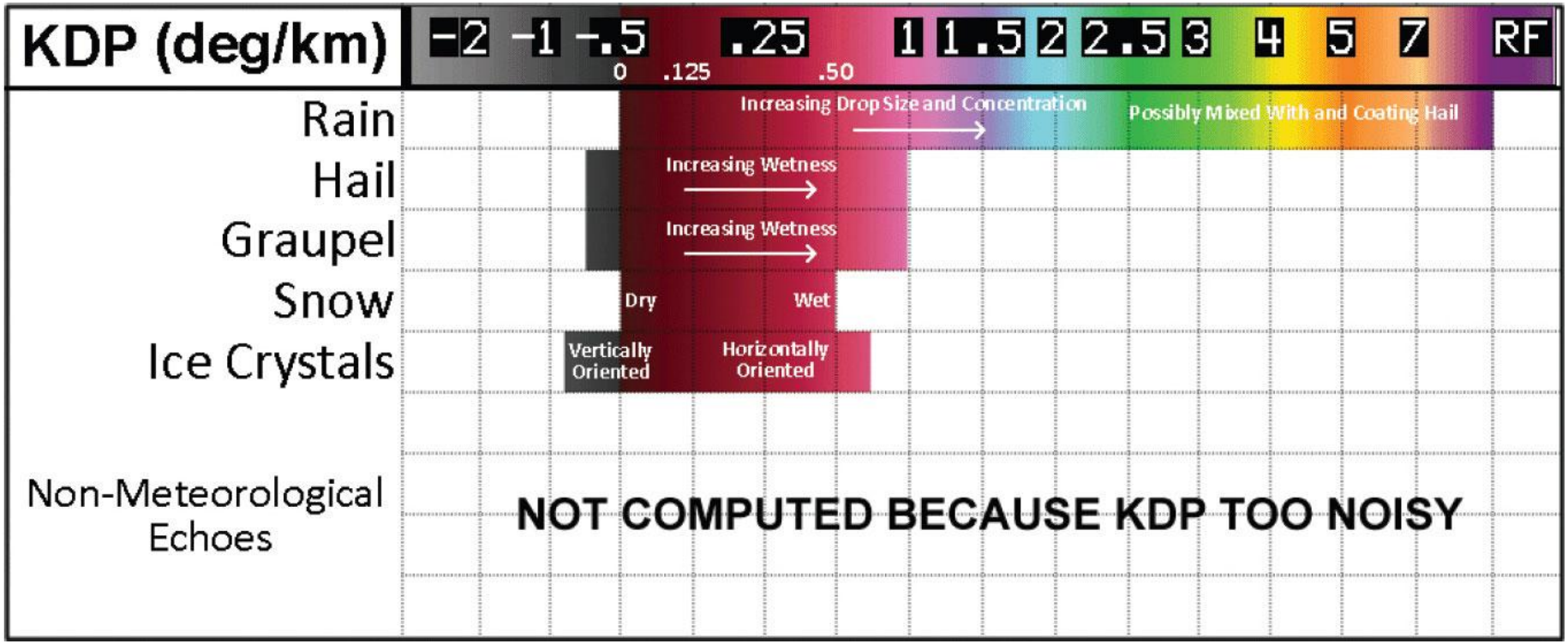


Specific Differential Phase (KDP)

- KDP shows the overall phase shift of the horizontal and vertical pulses as it travels through targets
  - How much the pulse is slowed down by the precipitation it is travelling through
- This is more commonly used to detect areas of heavy rainfall as the beam will slow more in heavier rainfall (larger concentration of horizontal targets)
- Units are degrees per kilometer (°/km)

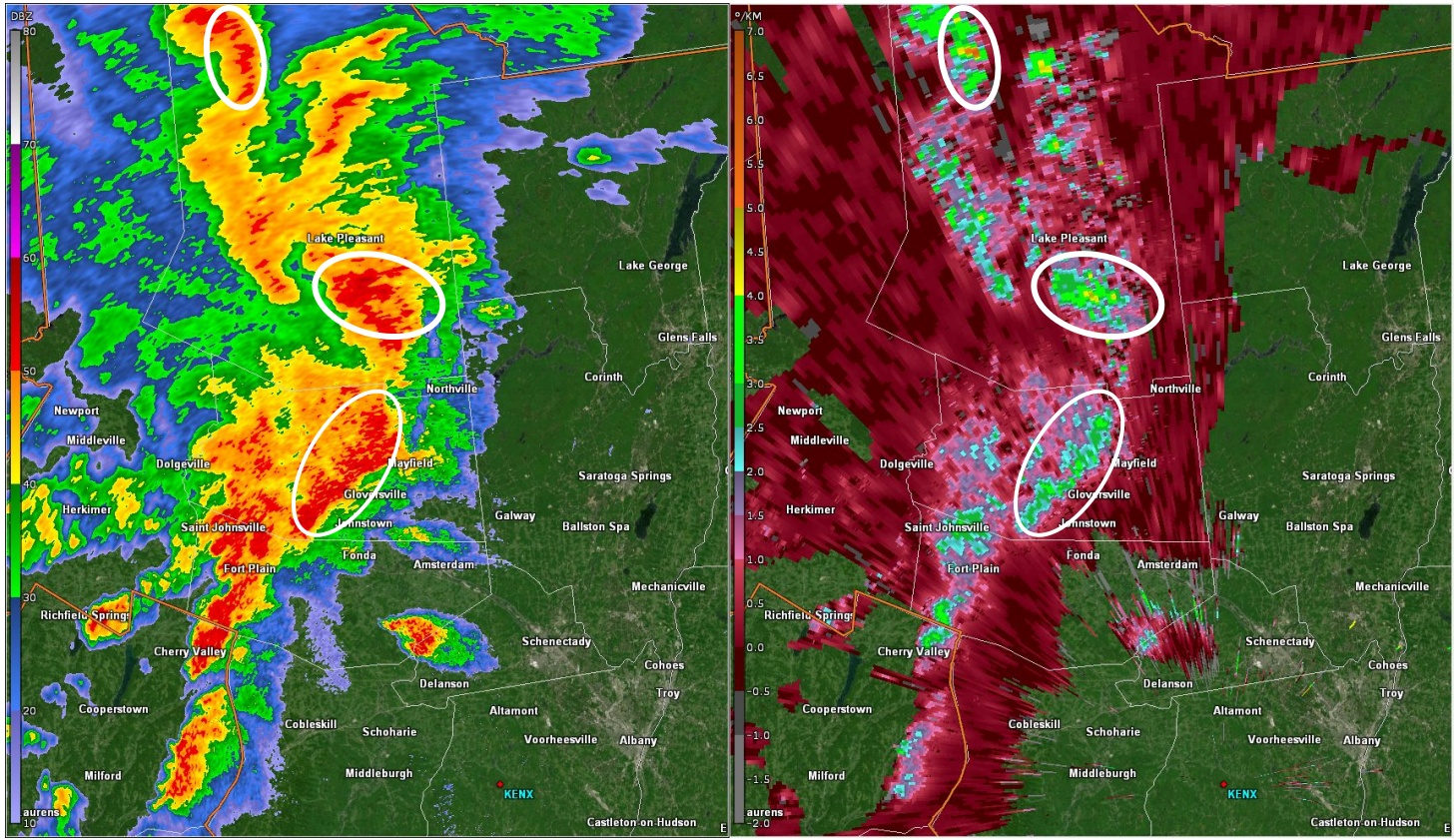
Specific Differential Phase (KDP)

NWS



Specific Differential Phase (KDP)

Radar Image: 2029 UTC July 16, 2024 (4:29 PM EDT)



The white circles show where there is a concentration of heavier rainfall.

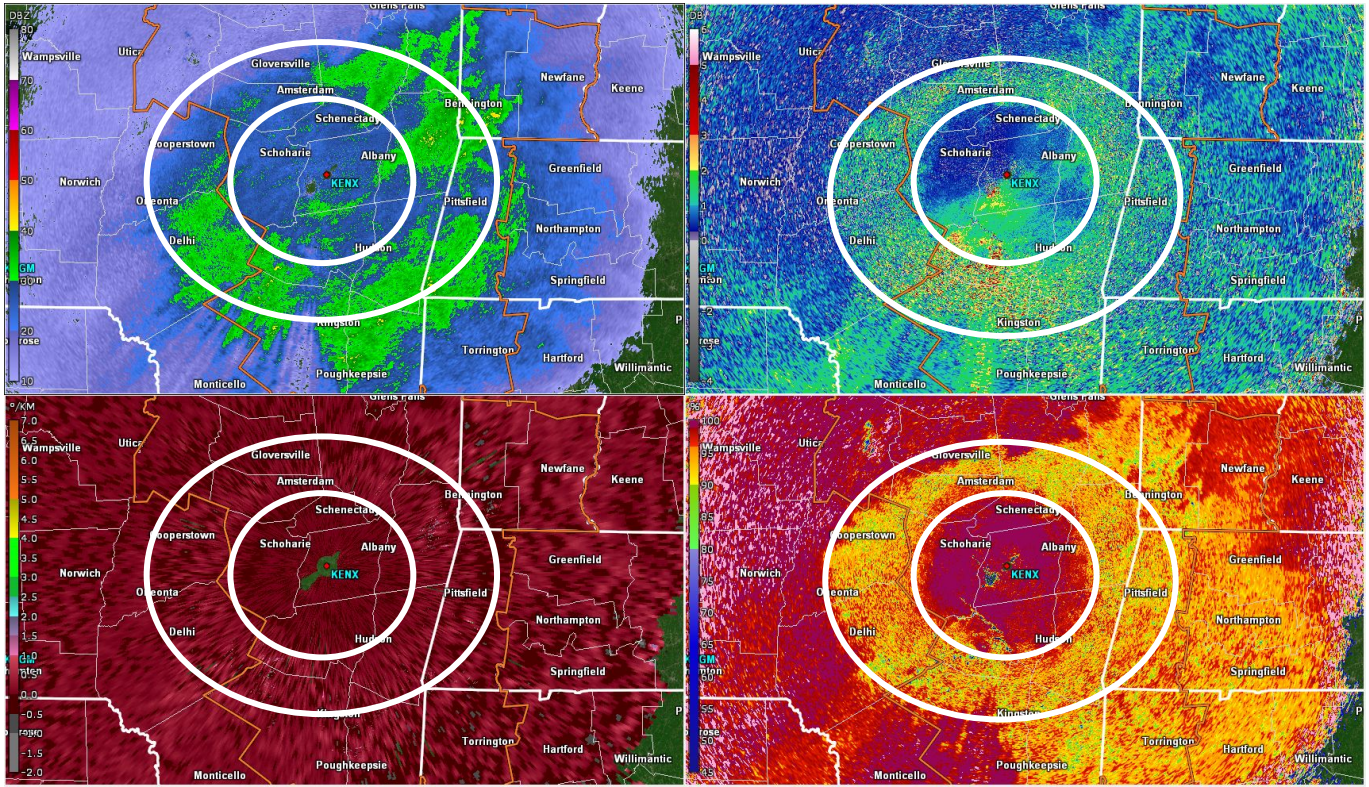
While the reflectivities look similar across Fulton and southeastern Hamilton counties, the KDP product suggests rainfall is slightly heavier in Hamilton County due to locally higher values.

Melting Layer (ML)

- Common feature observed within wintertime precipitation
- Helps determine the radar's best guess at the height of the freezing level and snow levels
- This feature is most commonly observed in the Correlation Coefficient (CC) product as a ring of reduced values (due to a mix of rain/melting snow in this region)
- "Bright Banding" can also be observed on reflectivity due to the melting snowflakes appearing as larger raindrops (higher reflectivity)
- ZDR can also become noisy within the melting later due to the variation of precipitation shapes and sizes
- KDP can sometimes be shown as a ring of reduced or no values based on the lower overall CC values, but can be more difficult to detect

Melting Layer (ML)

Radar Image: 1404 UTC March 23, 2024 (10:04 AM EDT)



Four Panel image showing the location and depth of the melting layer (Top Left: Reflectivity; Top Right: ZDR; Bottom Left; KDP; Bottom Right: CC)

Melting layer is shown between the two white circles on the image

In this example, snowflake melting begins within the outer circle (between 3000-4000 ft) and is complete within and inside the inner circle (between 1000-1500 ft)

Outline

- Mesoscale Banding/Frontogenesis
- Dual-Polarization Radar/Products
- NWS Timeline of Operations for a Winter Storm

Three Phase Method for a Winter Storm

Days 4+ Potential Phase	Days 2-3 Preparedness Phase	Days 0-1 Take Action Phase
• Global models begin to hint at possible winter storm in the future; others may not • Run-to-run and model consistency is likely very low • Global ensembles tend to have a wide range of possible solutions • Typically just a 'mention' in our Area Forecast Discussion but can also include a graphic on the office Weather Story or social media	• Global models begin to converge and become more consistent on a solution, but some spread can still exist • Winter Storm Watches or other headlines may be issued pending confidence and coordination with surrounding WFO's and National Centers • Heads up briefings can begin for partners • More detail included in AFD's including possible scenarios (what we know vs what is less certain) and impacts	• Models typically merge onto a solution with higher confidence on amounts and impacts • Watches get upgraded to either warnings or advisories pending accumulations and impacts • More detailed briefings are created and sent to partners and also shared on the web for the public • Even greater detail in AFD's including timing, accumulations and impacts

Winter Storm Planning Timeline

A few days out

If the forecast calls for winter weather, start preparing now.

Have emergency supplies for your home & car

Check your smoke and carbon monoxide detectors

Replenish fuel for your car and heating sources

The day before

Forecast accuracy continues to improve, so keep checking the latest.

Adjust plans

Have multiple ways to receive Warnings

Bring pets indoors and ensure they have water

During & After

Remain vigilant and stay informed. Drive only if necessary.

Check on neighbors and family

Properly ventilate emergency heat sources

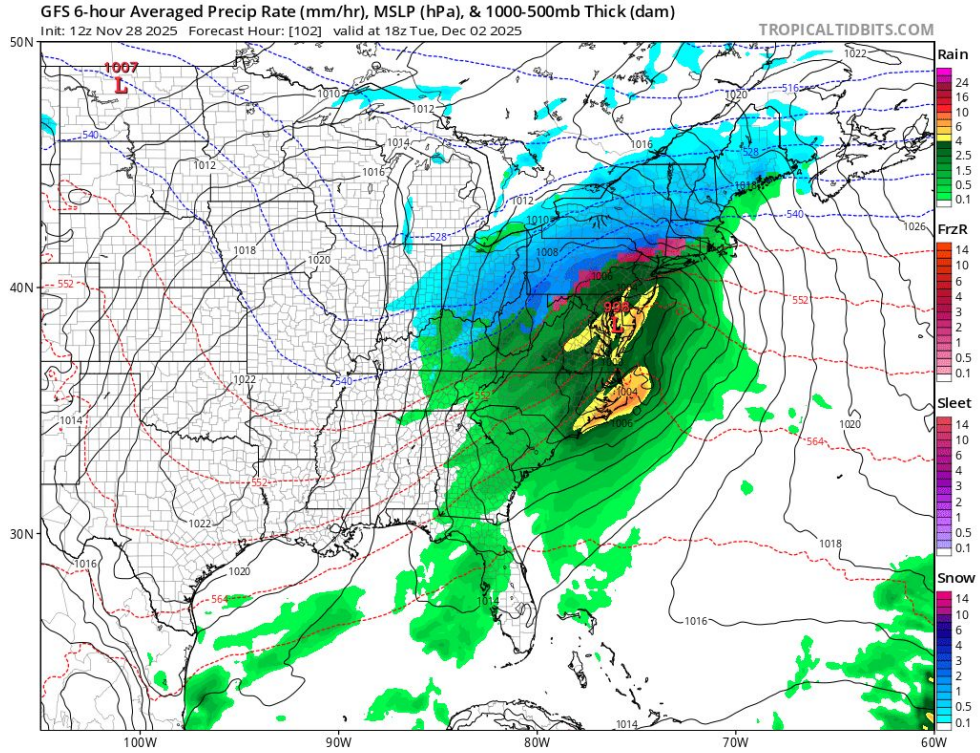
Keep generators at least 20 feet from your home

Take it easy when shoveling

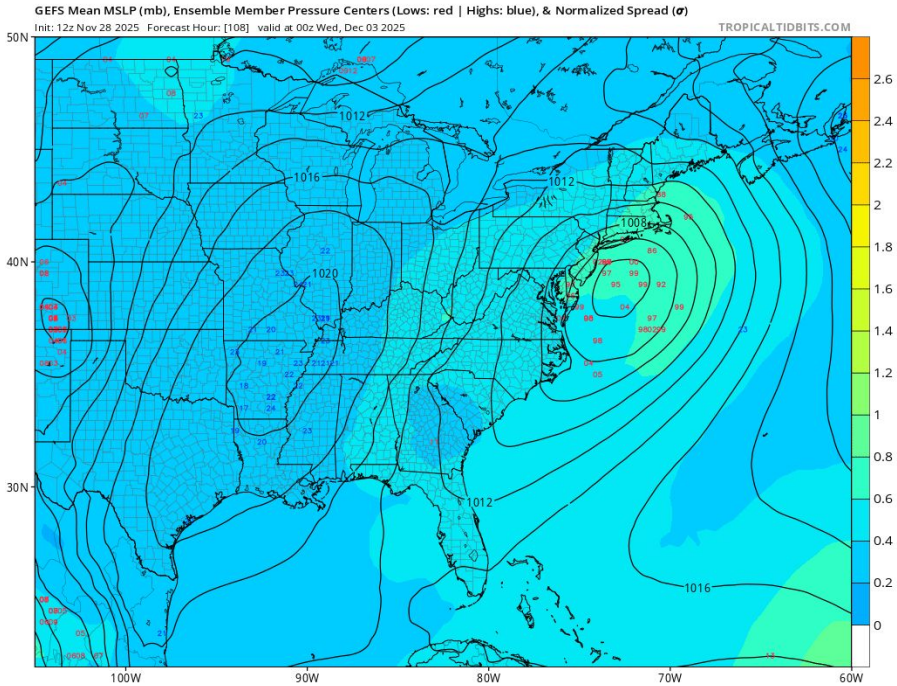
weather.gov

Potential Phase (Days 4+)

Case Study: December 2, 2025 Snowstorm Event



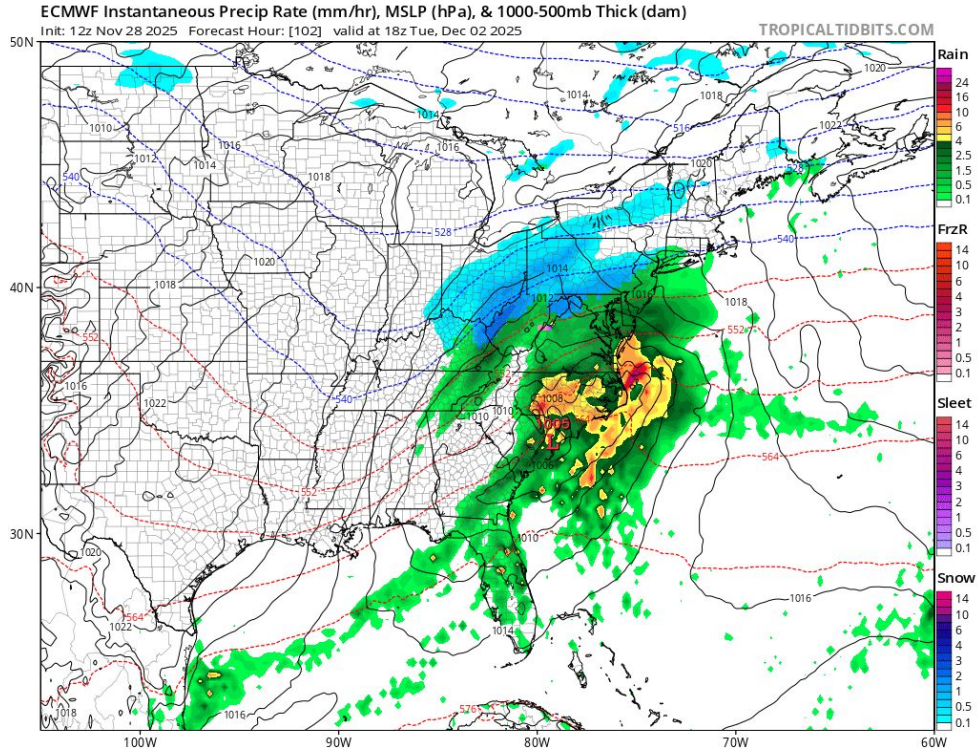
GFS Deterministic: 12z Nov 28, 2025 (5 Days Out)



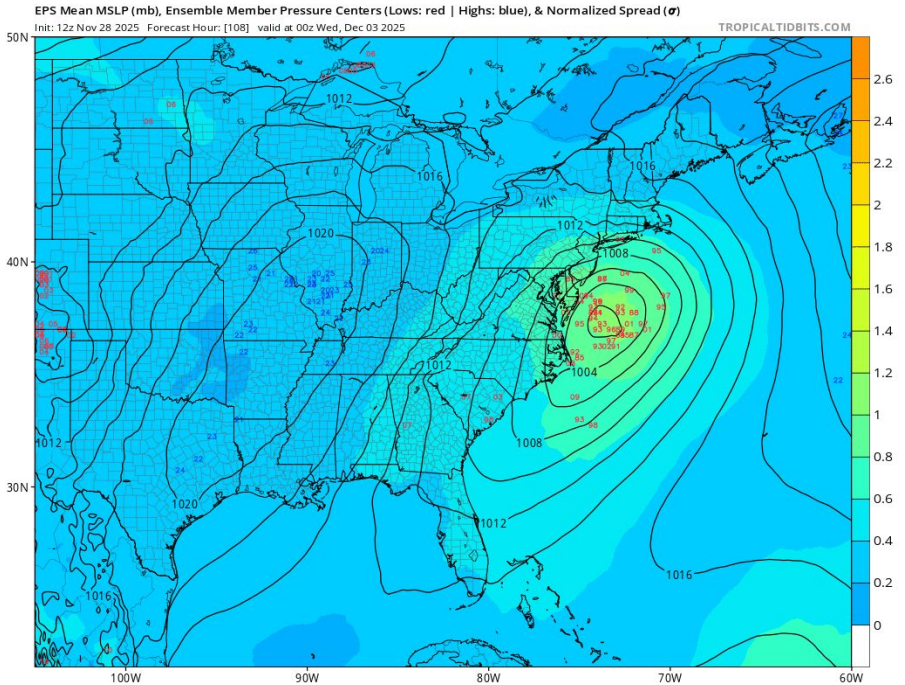
GFS Ensemble: 12z Nov 28, 2025 (5 Days Out)

Potential Phase (Days 4+)

Case Study: December 2, 2025 Snowstorm Event



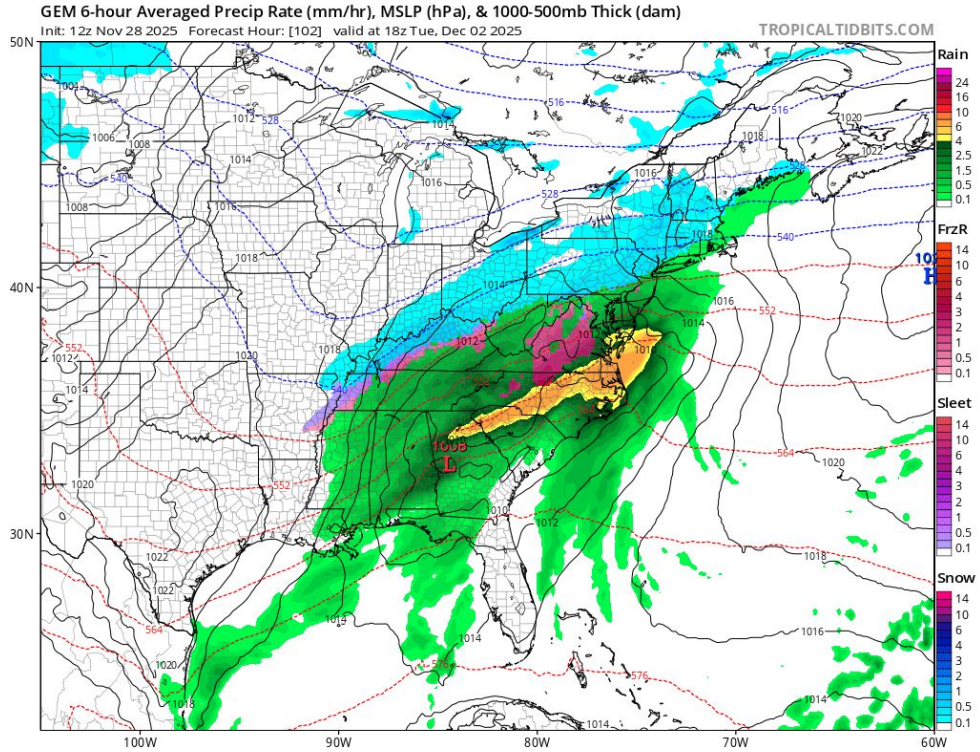
Euro Deterministic: 12z Nov 28, 2025 (5 Days Out)



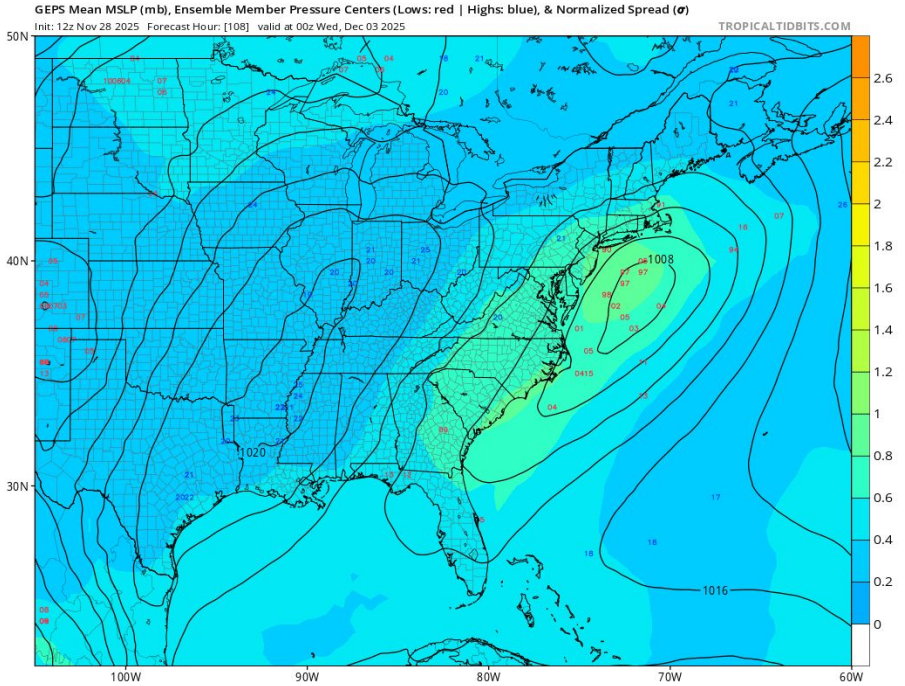
Euro Ensemble: 12z Nov 28, 2025 (5 Days Out)

Potential Phase (Days 4+)

Case Study: December 2, 2025 Snowstorm Event



CMC Deterministic: 12z Nov 28, 2025 (5 Days Out)



CMC Ensemble: 12z Nov 28, 2025 (5 Days Out)

Potential Phase (Days 4+)

Case Study: December 2, 2025 Snowstorm Event

Forecast Discussion: November 28, 2025 - AM Update

Key Message:

- A low pressure system tracking south and east of the region Tuesday into Wednesday **could** bring a widespread snowfall with latest NBM probabilities of greater than 4 inches at 30 to 50 percent.

Discussion…

On Tuesday, a northern and southern stream shortwave will interact with one another forming a surface low near the Lower Mississippi Valley coast and track northeastward off the East Coast. While there is consensus of a track to the south and east of our region, there is some spread with how close to the coast it does track. Regardless of track, if precipitation were to occur, it would mostly be in the form of snow. A track closer to the coast would increase snowfall accumulations with a track farther off the coast likely resulting in less snow or no snow at all.

Potential Phase (Days 4+)

Case Study: December 2, 2025 Snowstorm Event

Winter Storm Likely Tuesday

What We Know

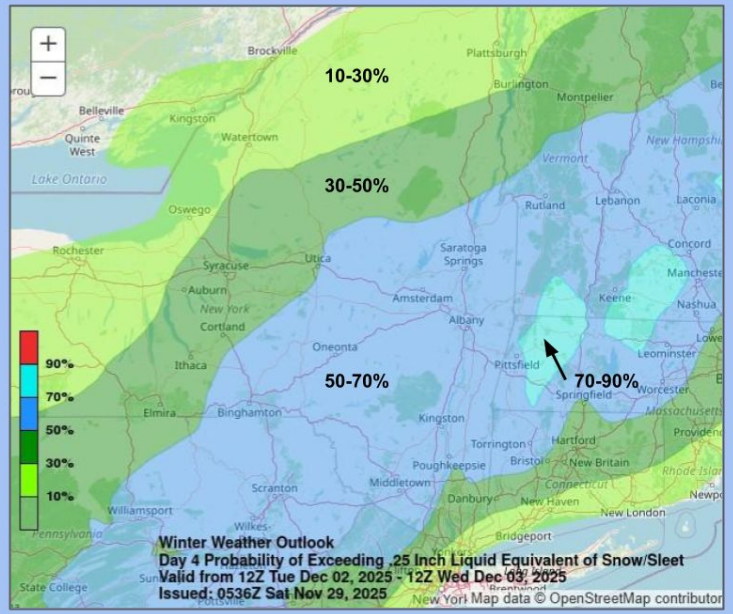
- A winter storm is likely to track near or off the East Coast on Tuesday bringing widespread precipitation to the area, mostly in the form of snow.

Unanswered Questions

- Exact track of the storm
- Placement of the rain/snow line
- How much snow will fall and where?

What You Can Do Now

- Monitor the latest forecasts from www.weather.gov and trusted sources.
- Start preparing now.



Probability of ~4" or more of snow Tuesday through Tuesday Night

NATIONAL WEATHER SERVICE
OCEANIC AND ATMOSPHERIC ADMINISTRATION

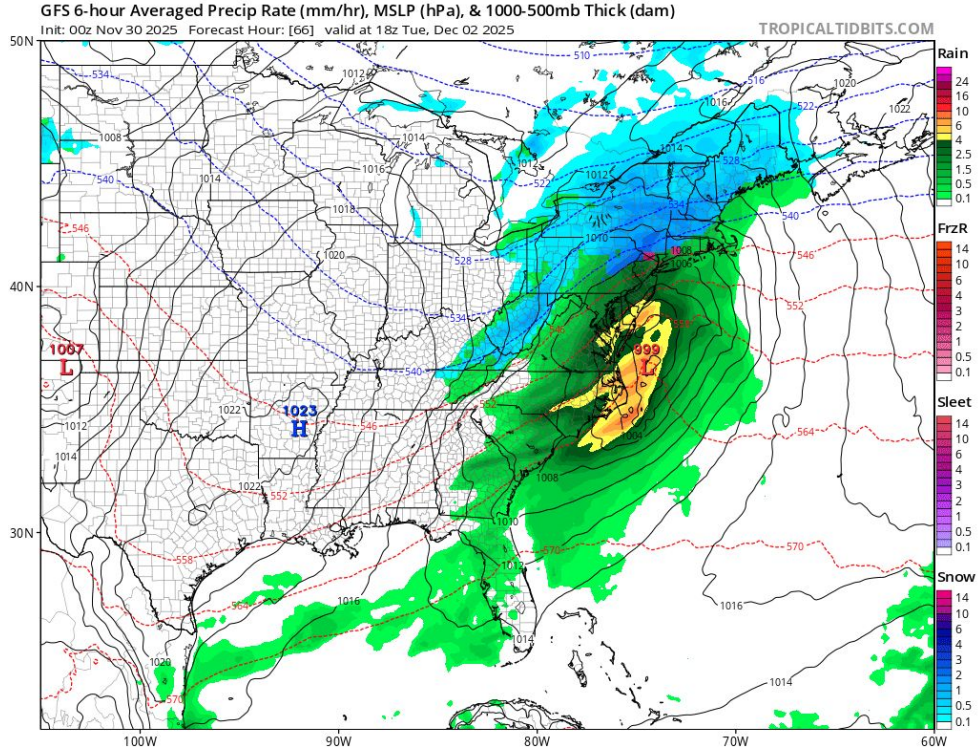
Albany, New York

Find us on:

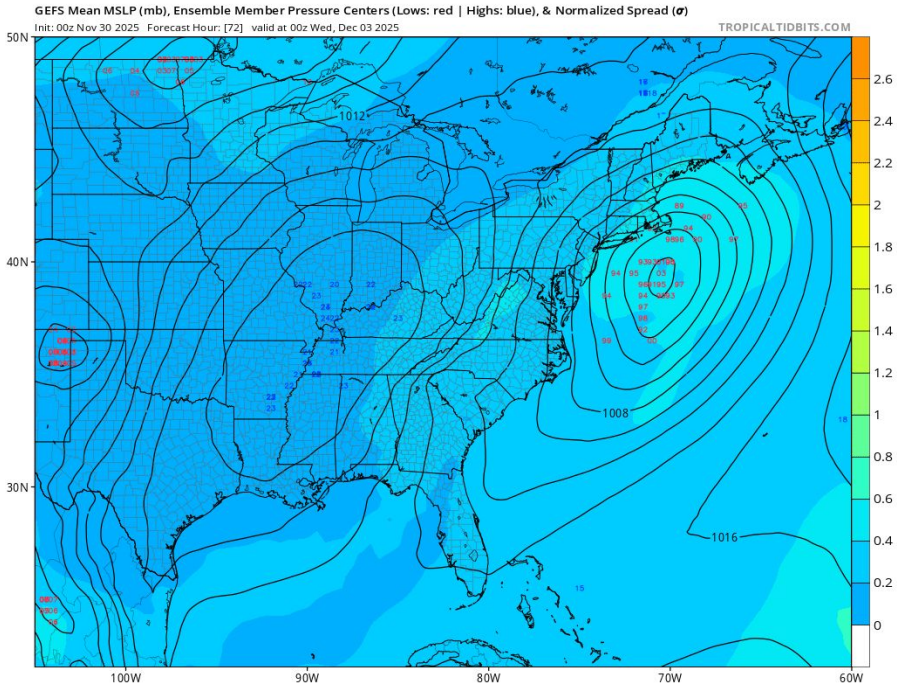
WeatherStory issued Nov 29, 2025 (4 days prior to the event)

Preparedness Phase (Days 2-3)

Case Study: December 2, 2025 Snowstorm Event



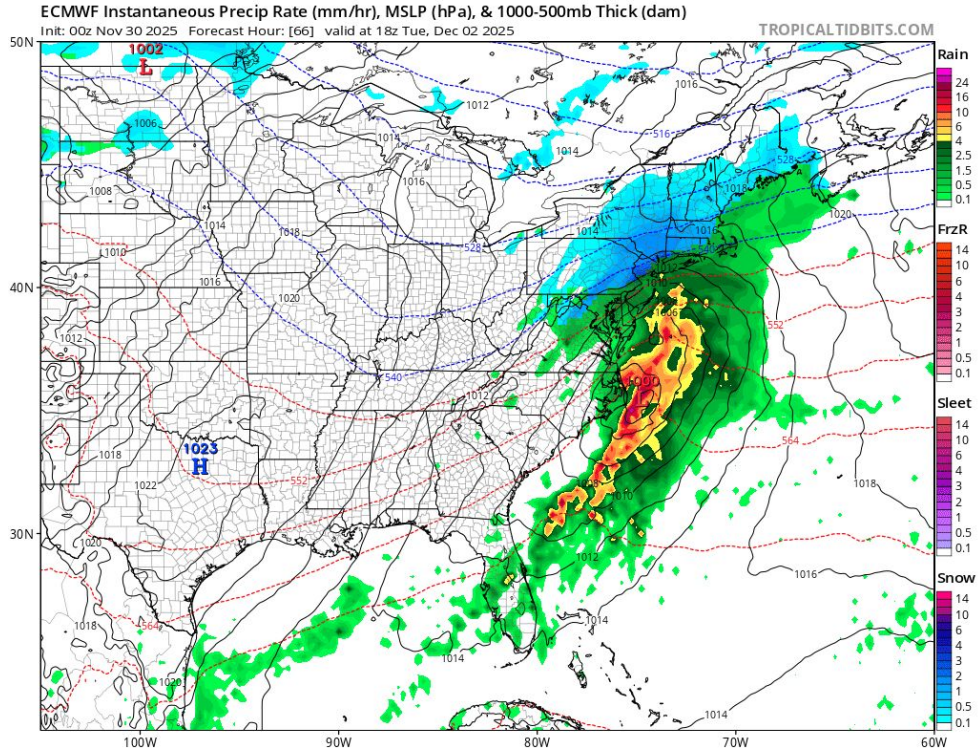
GFS Deterministic: 00z Nov 30, 2025 (3 Days Out)



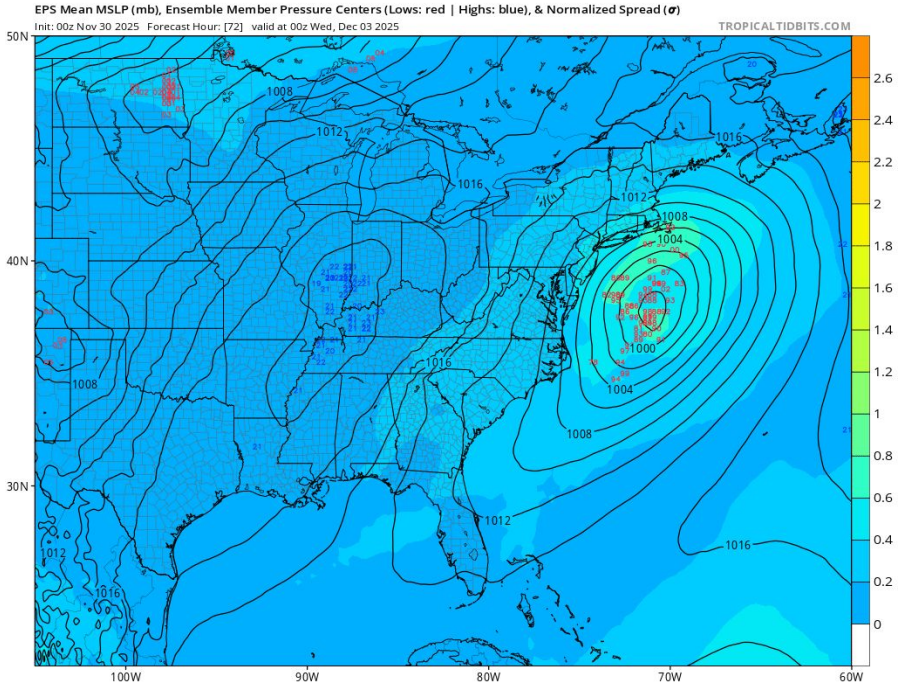
GFS Ensemble: 00z Nov 30, 2025 (3 Days Out)

Preparedness Phase (Days 2-3)

Case Study: December 2, 2025 Snowstorm Event



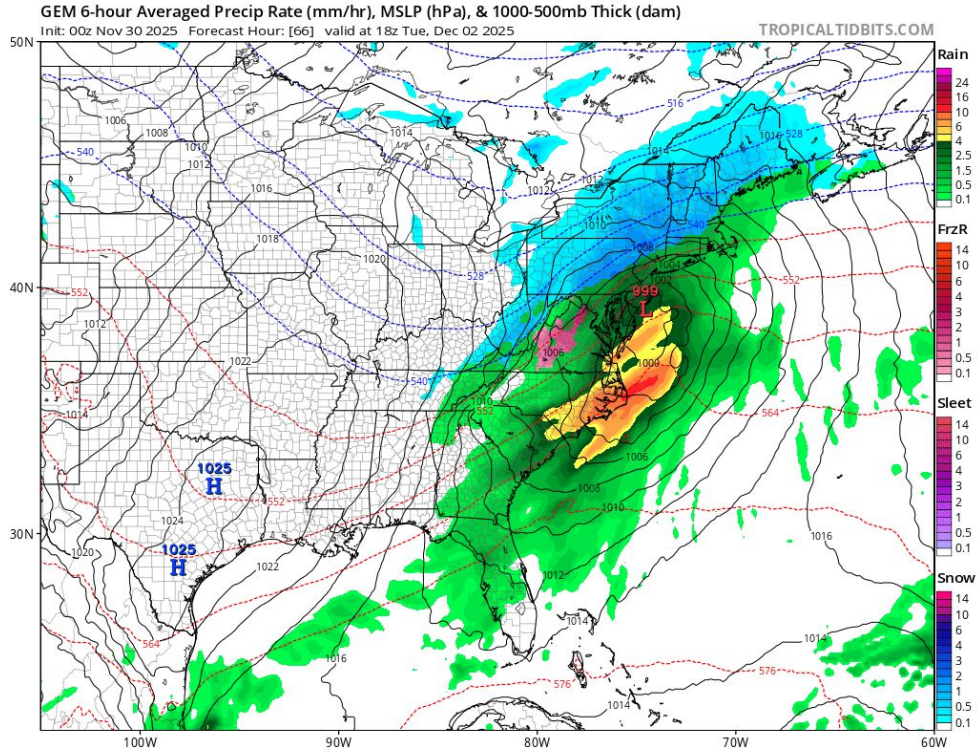
Euro Deterministic: 00z Nov 30, 2025 (3 Days Out)



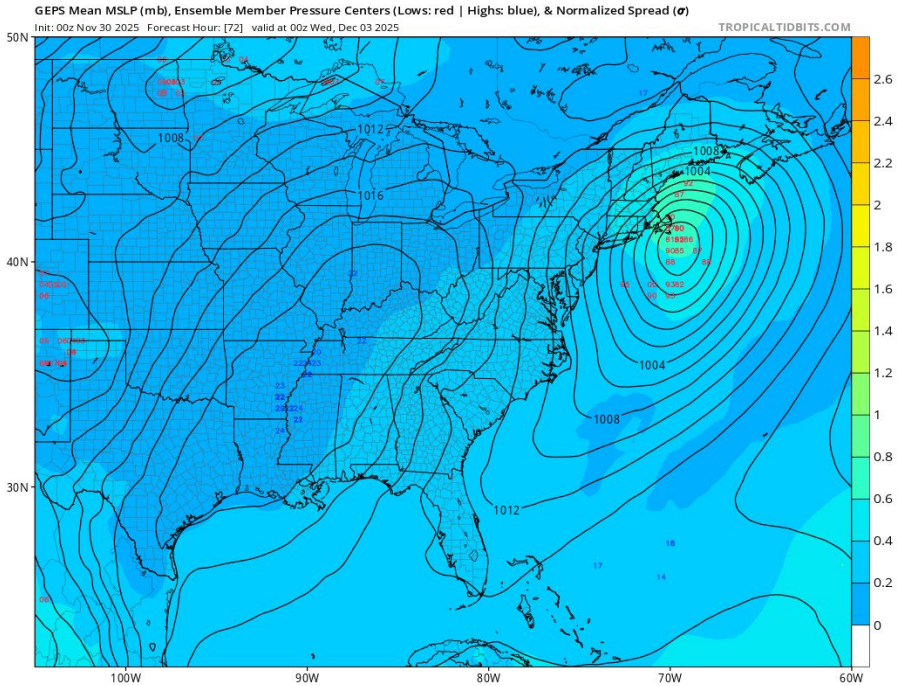
Euro Ensemble: 00z Nov 30, 2025 (3 Days Out)

Preparedness Phase (Days 2-3)

Case Study: December 2, 2025 Snowstorm Event



CMC Deterministic: 00z Nov 30, 2025 (3 Days Out)



CMC Ensemble: 00z Nov 30, 2025 (3 Days Out)

Preparedness Phase (Days 2-3)

Case Study: December 2, 2025 Snowstorm Event

Forecast Discussion: November 30, 2025 - PM Update

Key Message:

- **Winter Storm Watches** have been issued for Tuesday morning through Tuesday night with 50% chance for accumulating snowfall amounts over 7 inches.

Discussion…

Beginning Tuesday morning, precipitation begins to move in from the south as a coastal storm moves northeastward…However, there are two different scenarios based on latest ensemble forecast members that could happen with the center of the low with the latest forecast supporting scenario number one for Tuesday…Scenario number one: The center of the low moves closer to the coast for widespread snowfall amounts between 4 to 8 inches from Tuesday morning into Tuesday evening…Scenario number two: The center of the low stays farther east and off the coast for the lower end of snowfall amounts, especially locations north and west of Albany…Nevertheless, we are looking at an impactful morning and evening commute across eastern New York and western New England. Allow extra time when traveling as roads become snow covered and visibilities can be quickly reduced due to the falling snow.

Preparedness Phase (Days 2-3)

Case Study: December 2, 2025 Snowstorm Event

Winter Storm Watch Tue-Tue Night

November 30, 2025
4:45 PM

For Eastern New York and Western New England

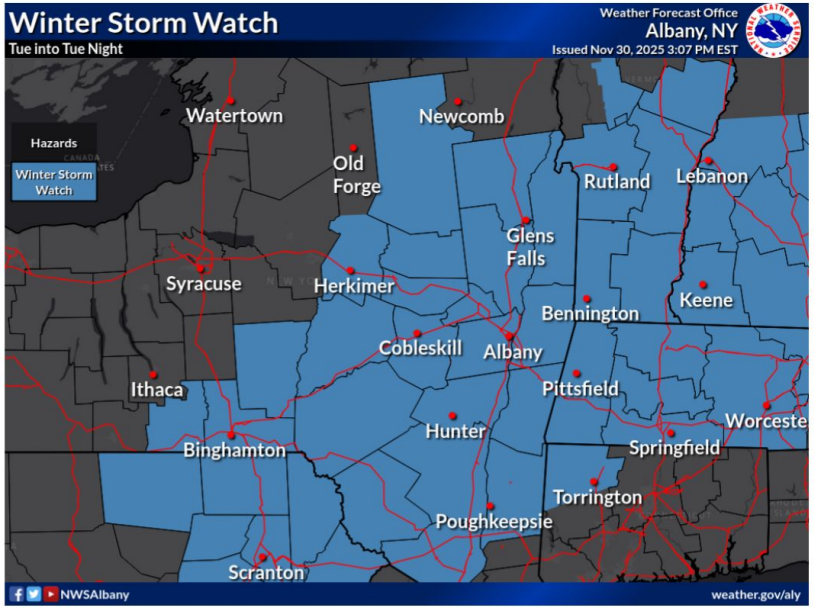
Decision Support Briefing #1

➔ As of 4:00 PM Sunday, November 30, 2025

NEW

Important Details/Updates

- ➔ A Winter Storm Watch has been issued for most of Eastern New York and western New England 7 am Tue to 1 am Wed
- ➔ Northern Herkimer and southern Litchfield Counties are not in the Watch
- ➔ 7 or more inches of snowfall are possible in the Watch area



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U.S. Department of Commerce

National Weather Service
Albany, NY

National Oceanic and Atmospheric Administration
U.S. Department of Commerce

National Weather Service
Albany, New York

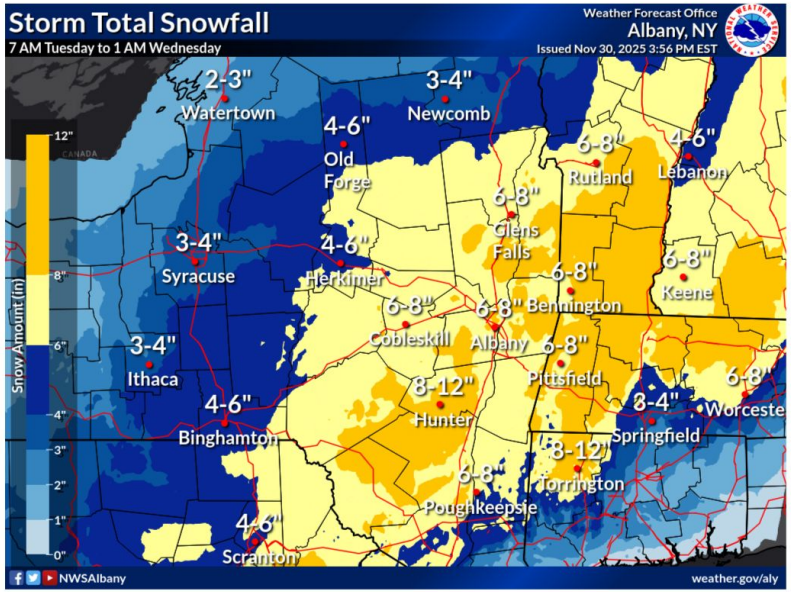
Preparedness Phase (Days 2-3)

Case Study: December 2, 2025 Snowstorm Event

Expected Snowfall

November 30, 2025
4:45 PM

Tuesday through Tuesday Night



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Preparedness Phase (Days 2-3)

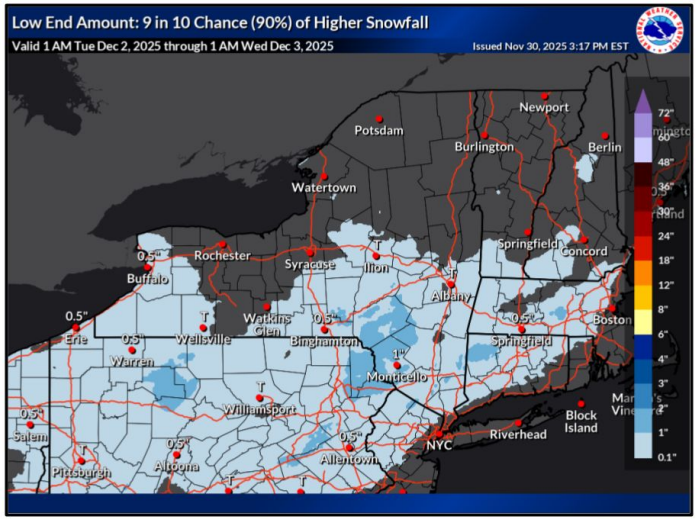
Case Study: December 2, 2025 Snowstorm Event

Probabilistic Snowfall Forecast

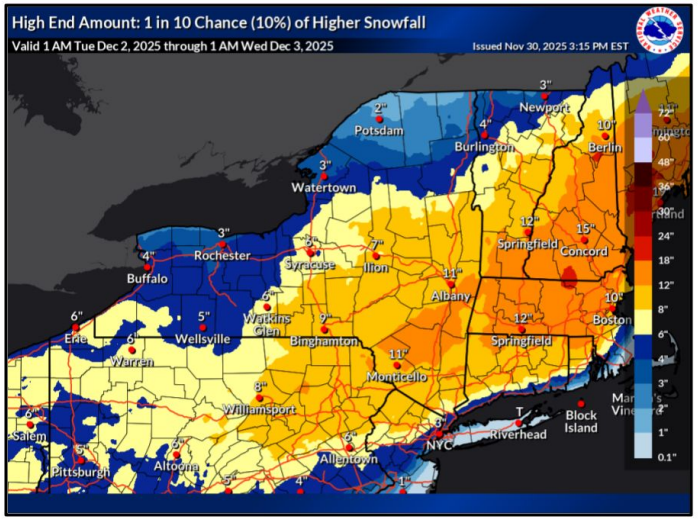
November 30, 2025
4:45 PM

1 AM Tuesday through 1 AM Wednesday

Best Case (Low End Scenario)



Worst Case (High End Scenario)



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Preparedness Phase (Days 2-3)

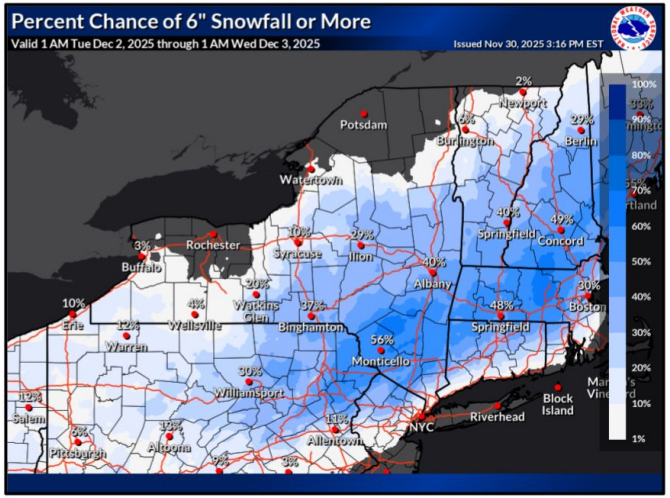
Case Study: December 2, 2025 Snowstorm Event

Percent Chance of 6” & 8” or more

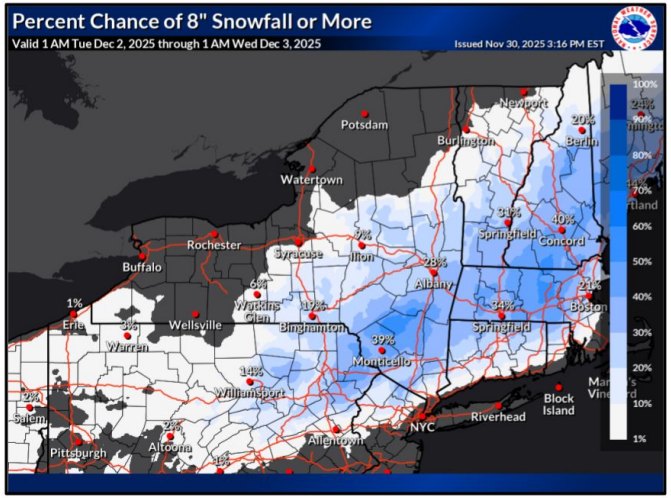
November 30, 2025
4:45 PM

1 AM Tuesday through 1 AM Wednesday

Percent (%) chance of 6” or more



Percent (%) chance of 8” or more



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U.S. Department of Commerce

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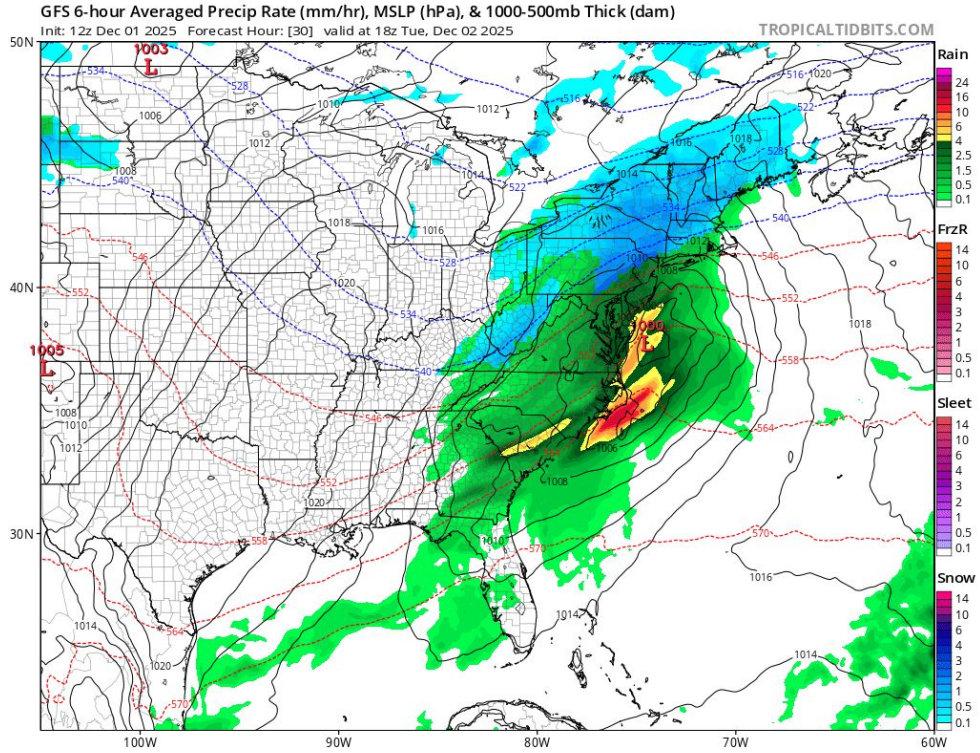
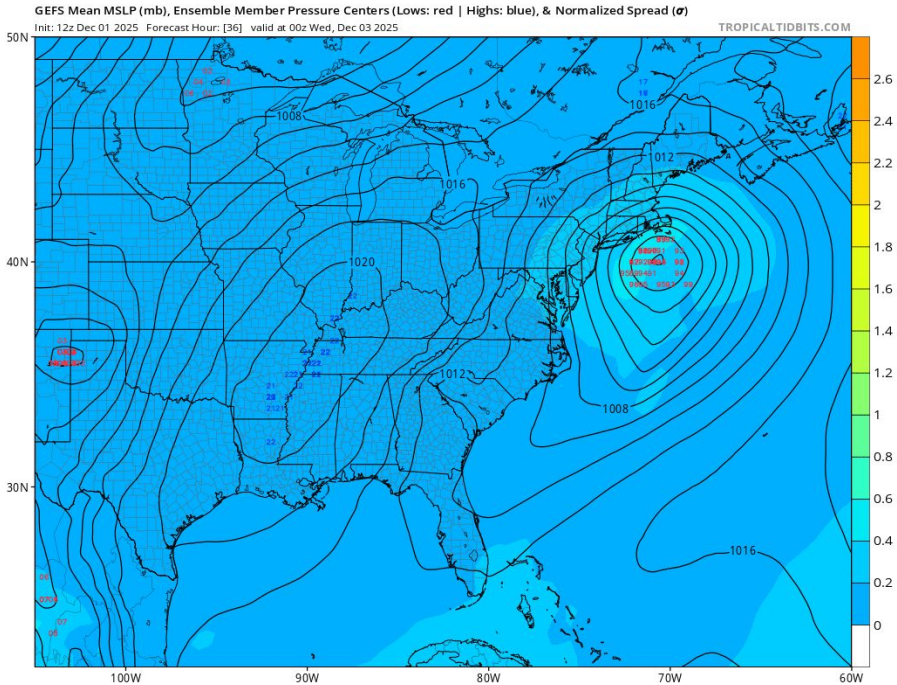
Albany, New York

Take Action Phase (Days 0-1)

Case Study: December 2, 2025 Snowstorm Event



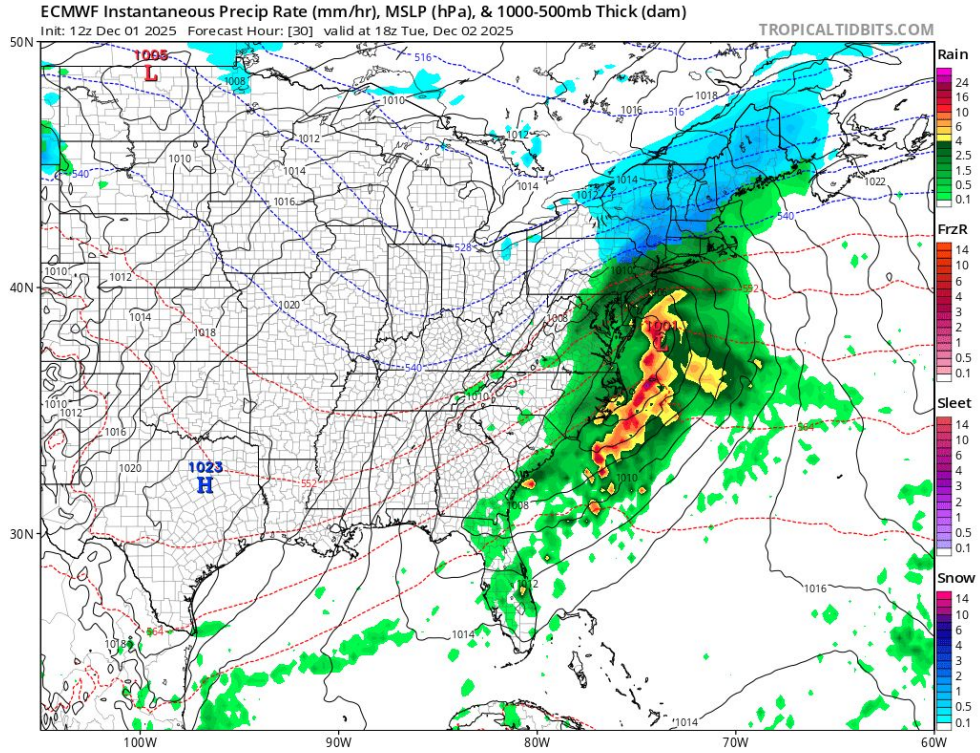
GFS Deterministic: 12z Dec 1, 2025 (1 Day Out)



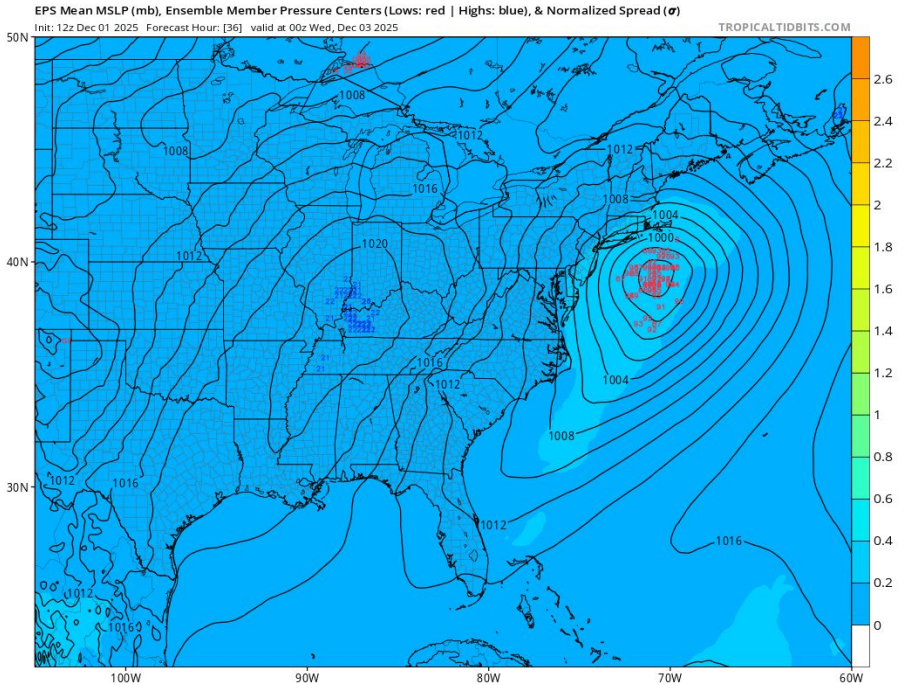
GFS Ensemble: 12z Dec 1, 2025 (1 Day Out)

Take Action Phase (Days 0-1)

Case Study: December 2, 2025 Snowstorm Event



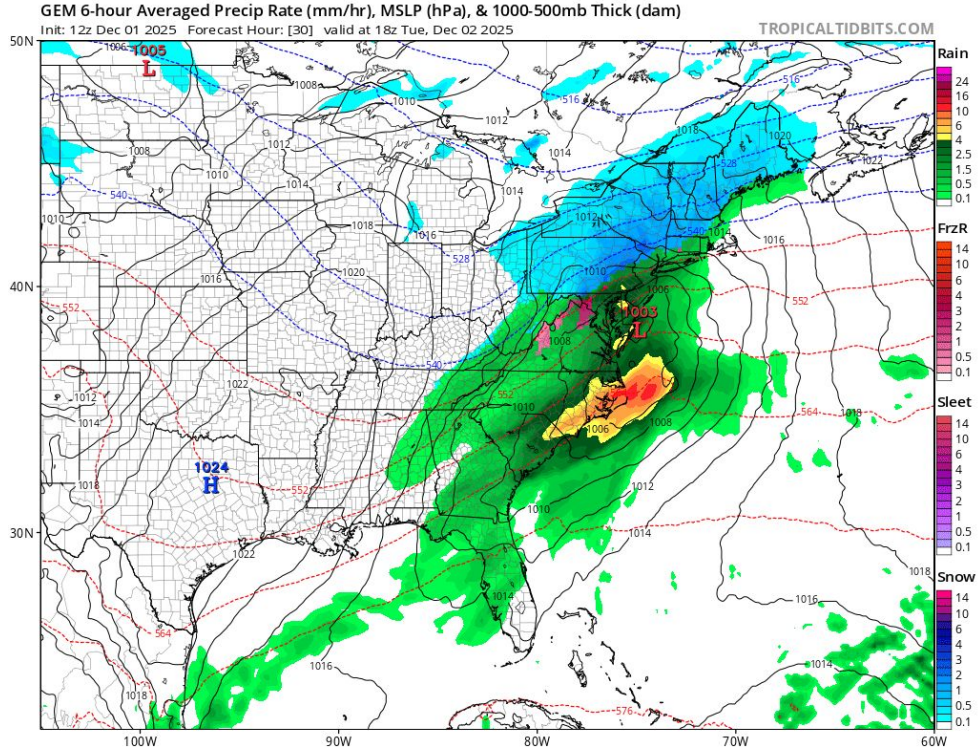
Euro Deterministic: 12z Dec 1, 2025 (1 Day Out)



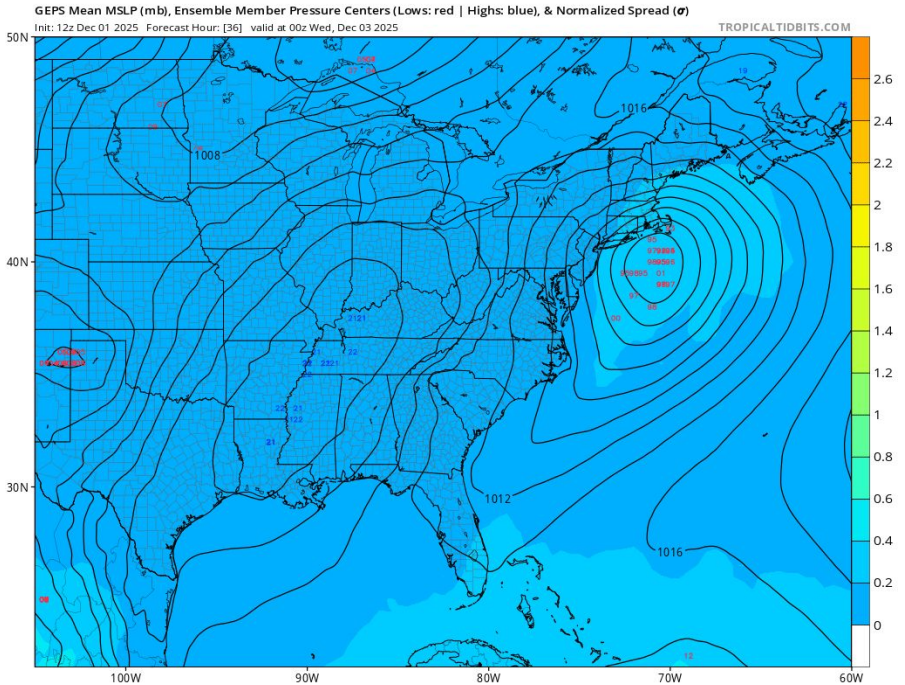
Euro Ensemble: 12z Dec 1, 2025 (1 Day Out)

Take Action Phase (Days 0-1)

Case Study: December 2, 2025 Snowstorm Event



CMC Deterministic: 12z Dec 1, 2025 (1 Day Out)



CMC Ensemble: 12z Dec 1, 2025 (1 Day Out)

Take Action Phase (Days 0-1)

Case Study: December 2, 2025 Snowstorm Event

Forecast Discussion: December 1, 2025 - PM Update

Key Message:

- Winter Storm Watches have been upgraded to **Winter Storm Warnings and Advisories** for most of eastern New York and western New England from 7 AM Tuesday through 1 AM Wednesday.

Discussion…

…stratiform precipitation will spread into the region from west to east between 4 and 8 AM…With temperatures remaining at or below freezing within these onset periods, precipitation is expected to be snow for everyone to start…Latest forecast soundings and atmospheric cross sections indicate decent omega intersecting the DGZ as well as some areas where FGEN intersects the DGZ, supporting efficient snow production processes…Based on the consensus of a more northwesterly (closer inland) track of the low, the probability of the Capital District, Lake George-Saratoga Region, Eastern Catskills, Southern Vermont, and Berkshires being in a favored position for strong deformation bands is moderate to high…Therefore, we had the greatest confidence in seeing the highest snowfall totals of 7 to 11 inches within these areas through late Tuesday night. Elsewhere, light to moderate accumulations of 2 to 6 inches looks more likely…

Preparedness Phase (Days 2-3)

Case Study: December 2, 2025 Snowstorm Event

Winter Storm Tomorrow

December 1, 2025
3:15 PM

For Eastern New York and Western New England

Decision Support Briefing #3

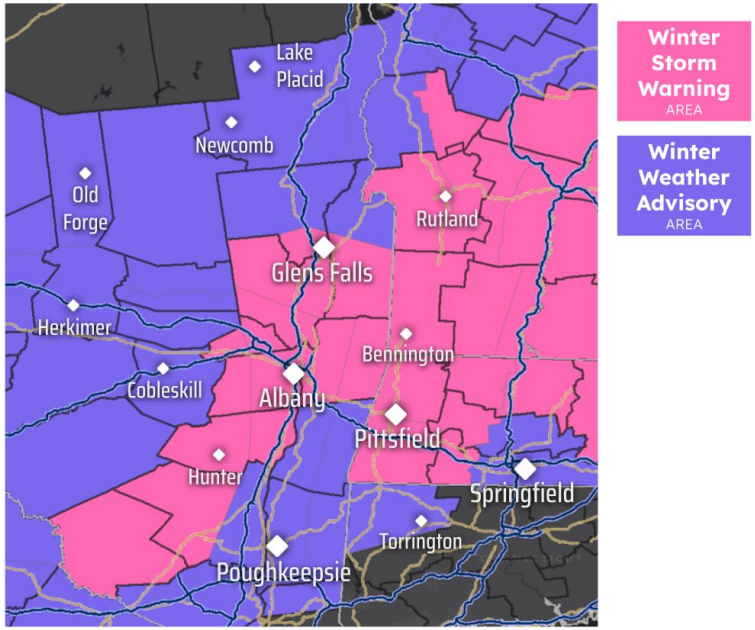
➔ As of 3:15 PM Monday, December 1, 2025

NEW

Important Details/Updates

➔ **Winter Storm Warnings and Winter Weather Advisories have been issued for 7 AM Tomorrow through 1 AM Wednesday.**

➔ **Only southern Litchfield county does not have any winter weather headlines due to lower snowfall totals.**



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Albany, NY

Preparedness Phase (Days 2-3)

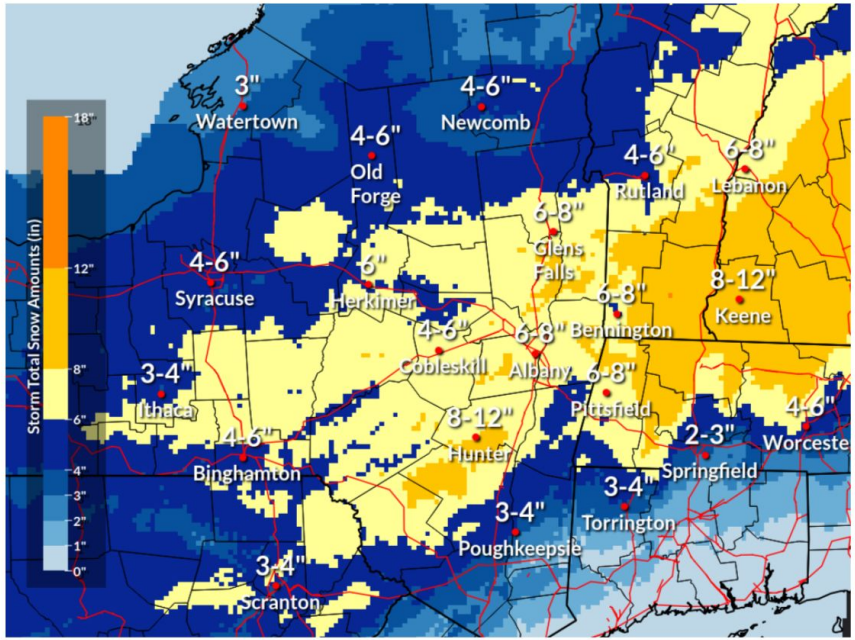
Case Study: December 2, 2025 Snowstorm Event

Forecasted Storm Total Snowfall

December 1, 2025
3:15 PM

1 AM Tuesday to 7 AM Wednesday

- Widespread snowfall arrives tomorrow morning with higher confidence areas to see over 7 inches in the eastern Catskills, to the Capital Region, Saratoga-Lake George Region, Berkshires, and into southern Vermont.
- Southern Litchfield and the southernmost portion of the Mid-Hudson Valley is forecasted to see more rain than snow with this storm.



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Preparedness Phase (Days 2-3)

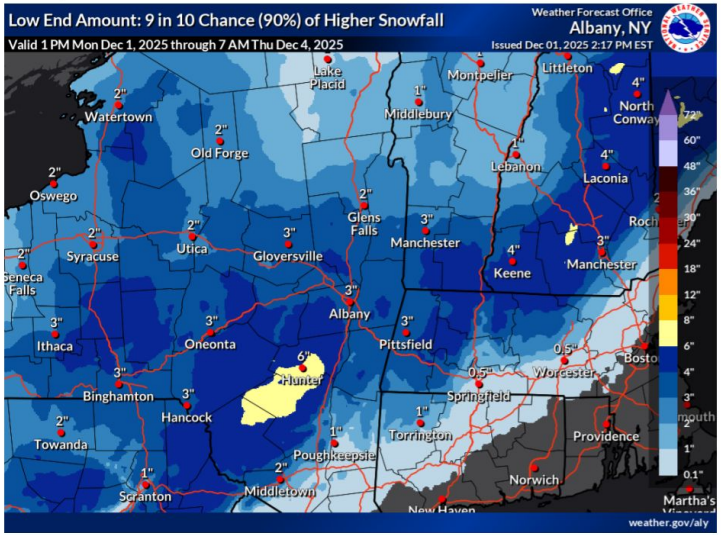
Case Study: December 2, 2025 Snowstorm Event

Probabilistic Snowfall Forecast

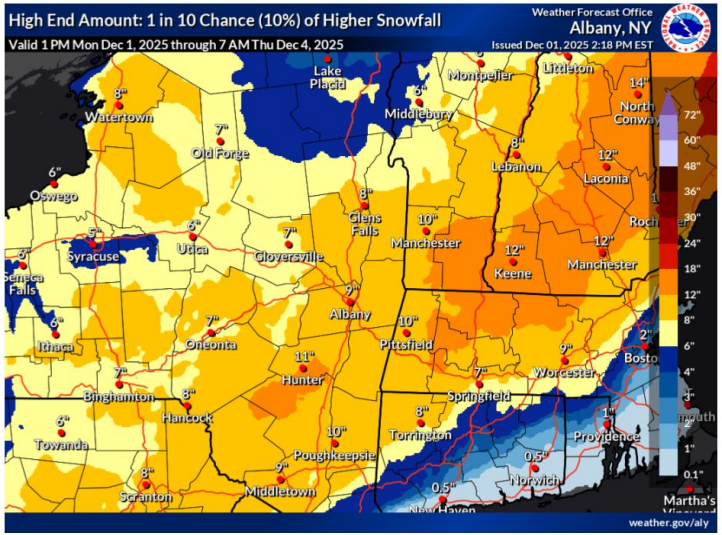
December 1, 2025
3:15 PM

Through 7 AM Thursday

Best Case (Low End Scenario)



Worst Case (High End Scenario)



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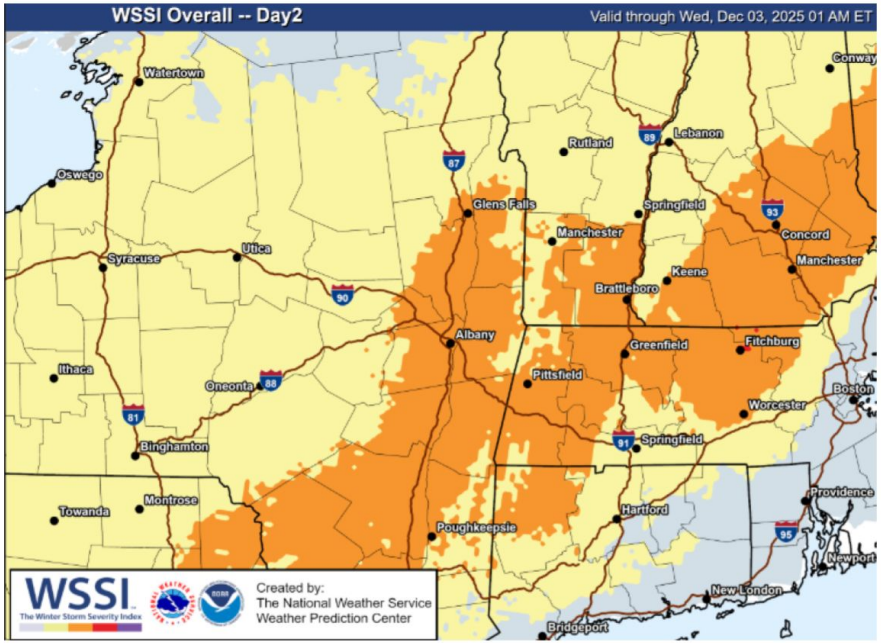
Preparedness Phase (Days 2-3)

Case Study: December 2, 2025 Snowstorm Event

Winter Storm Severity Index

December 1, 2025
3:15 PM

7 AM Tuesday to 7 AM Wednesday



Potential Winter Storm Impacts

Winter Weather Area
Expect Winter Weather.
- Winter driving conditions. **Drive carefully.**

Minor Impacts
Expect a few inconveniences to daily life.
- Winter driving conditions. **Use caution while driving.**

Moderate Impacts
Expect disruptions to daily life.
- Hazardous driving conditions. **Use extra caution while driving.**
- Closures and disruptions to infrastructure may occur.

Major Impacts
Expect considerable disruptions to daily life.
- Dangerous or impossible driving conditions. **Avoid travel if possible.**
- Widespread closures and disruptions to infrastructure may occur.

Extreme Impacts
Expect substantial disruptions to daily life.
- Extremely dangerous or impossible driving conditions. **Travel is not advised.**
- Extensive and widespread closures and disruptions to infrastructure may occur.
- Life-saving actions may be needed.

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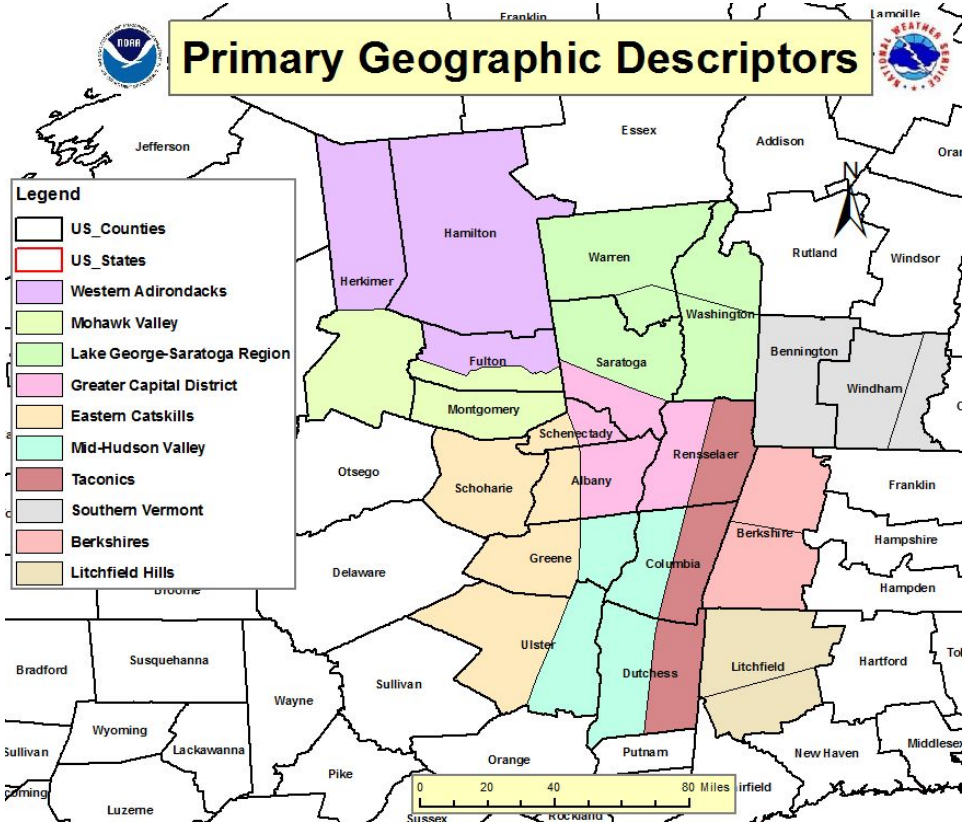
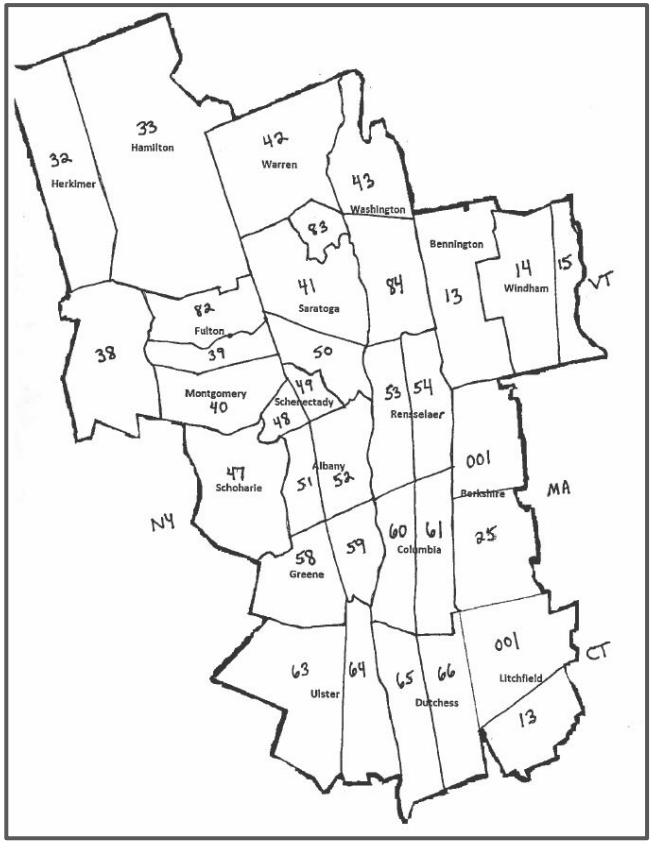
Decision Between a Watch versus Warning/Advisory?

Watch	Warning/Advisory
At least 50% confidence of seeing warning level precipitation amounts As noted in basic course, can be all one precipitation type or a combination of multiple precipitation types Coordination is done with surrounding offices and occasionally national centers	At least 80% confidence of seeing warning/advisory level precipitation amounts This is based on a zone average, not necessarily one location within each zone seeing warning or advisory level amounts with all others seeing less The one exception to a zonal average is lake-effect snow which verifies at a point due to this event typically more localized

NWS Albany Forecast Zones and Numbers

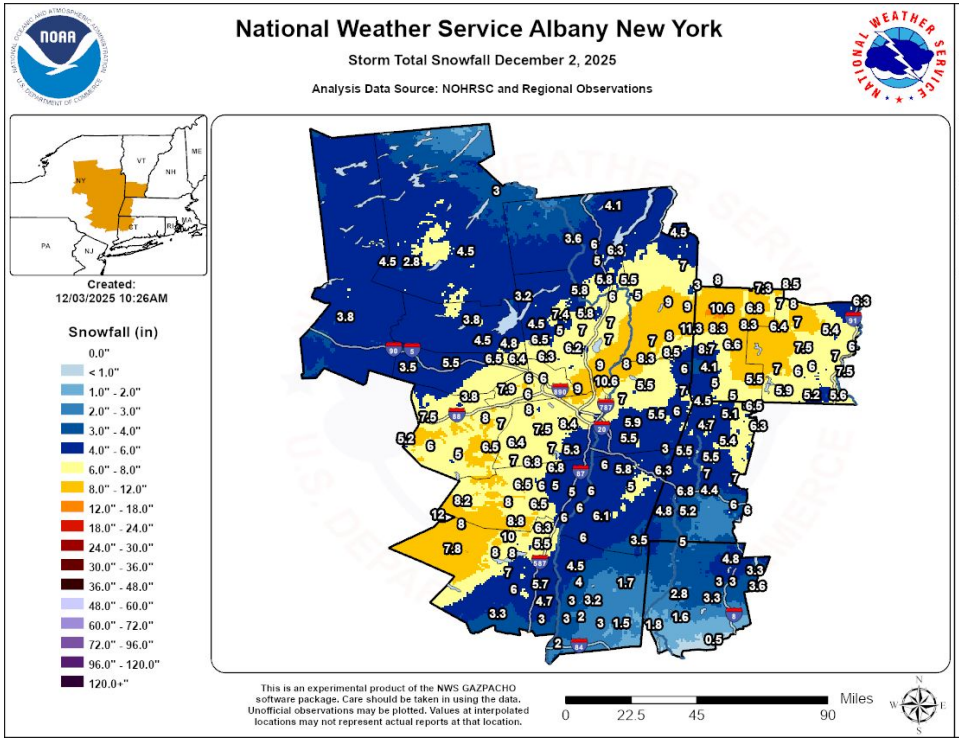


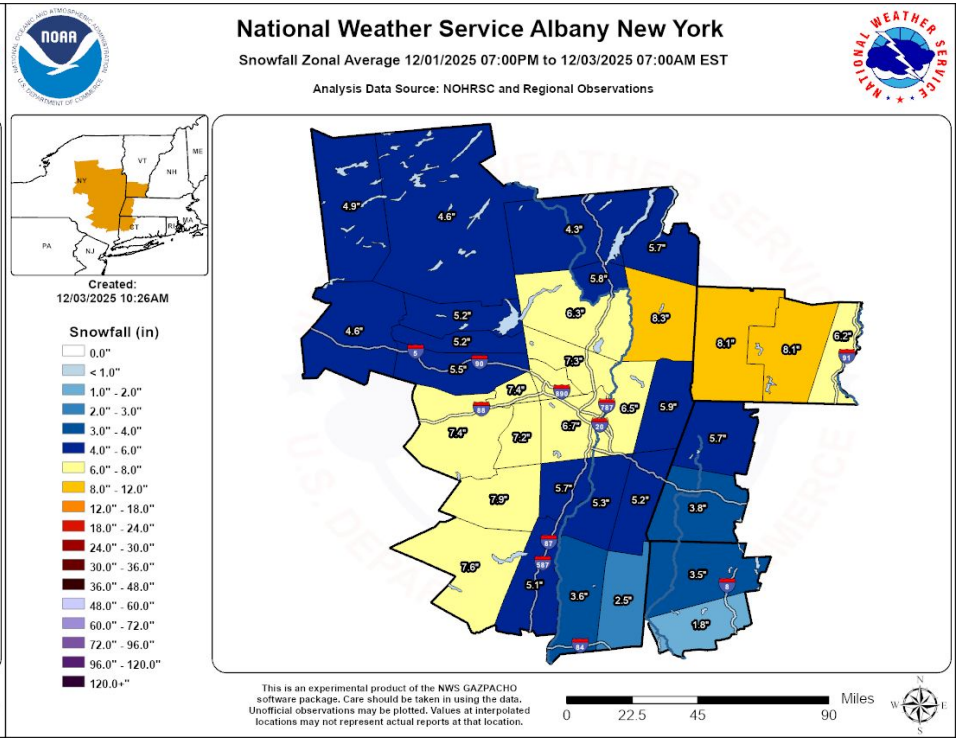


NWS Verification

Following an event, snow maps are created generally using a blend of observations (from Public Information Statements) and NOHRSC snowfall analysis to help smooth out areas with less reports. These are generated on a GIS NWS software program called GAZPACHO which compiles images of both a summarized map of reports but also county/zone averages. This helps us determine our warning verification which then gets inputted into StormData.

NWS Verification





Thank you For Attending! Questions?

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