Monson MA Early Morning Severe Flash Flood
August 12, 2012

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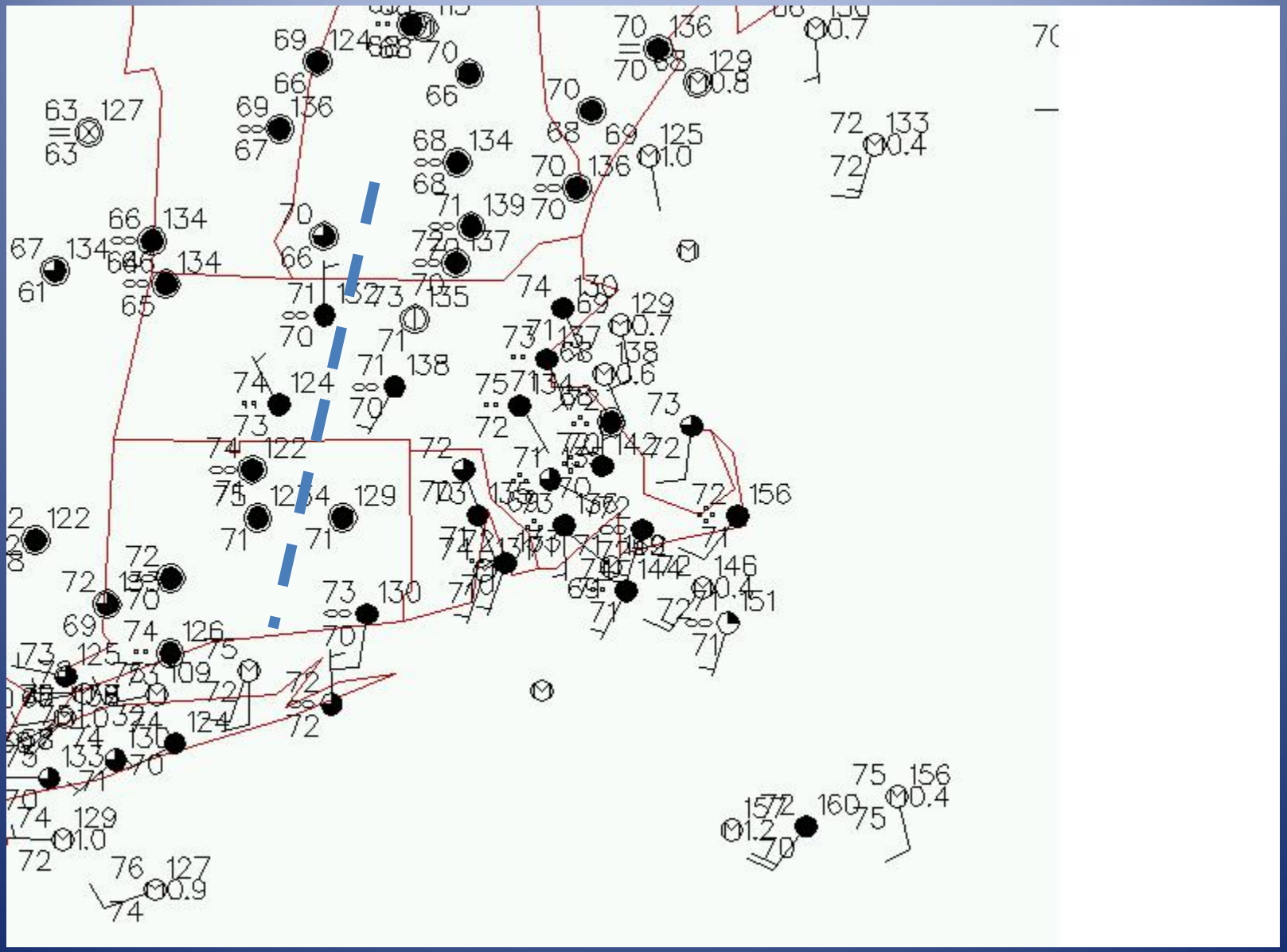
Overview of the Flash Flood Event

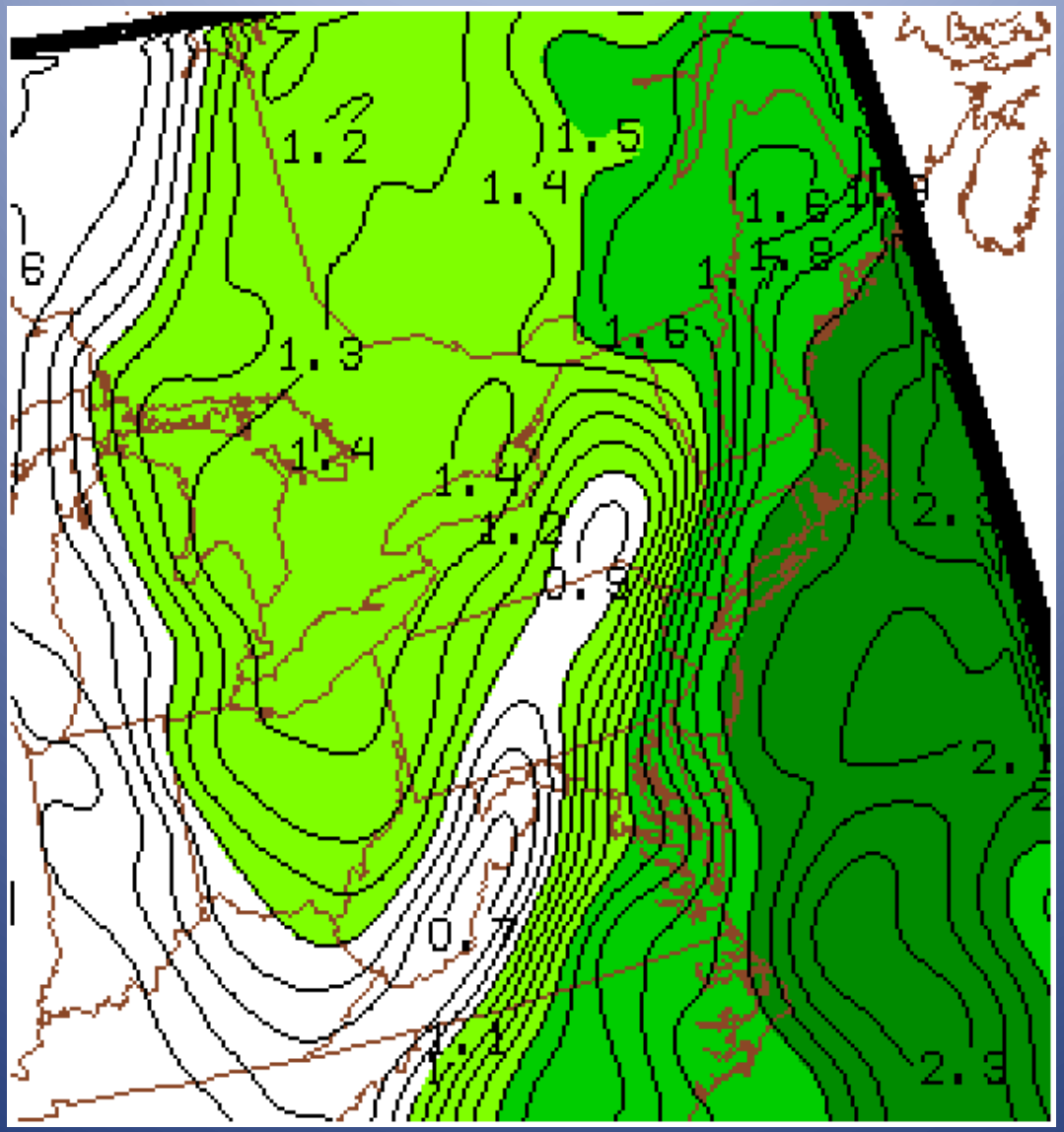
1. Anomolous Flash Flood Event that occurred early in the morning in Monson MA.
2. PWATS between 1.5 and 2 inches.
3. 70+ Dewpoints in place.
4. Weak surface frontal boundary provided focus.
5. Deep moisture/strong WSW flow at 700 mb.
5. Event on going during the A to H shift briefing.

Surface Station Plots Valid at 7 AM



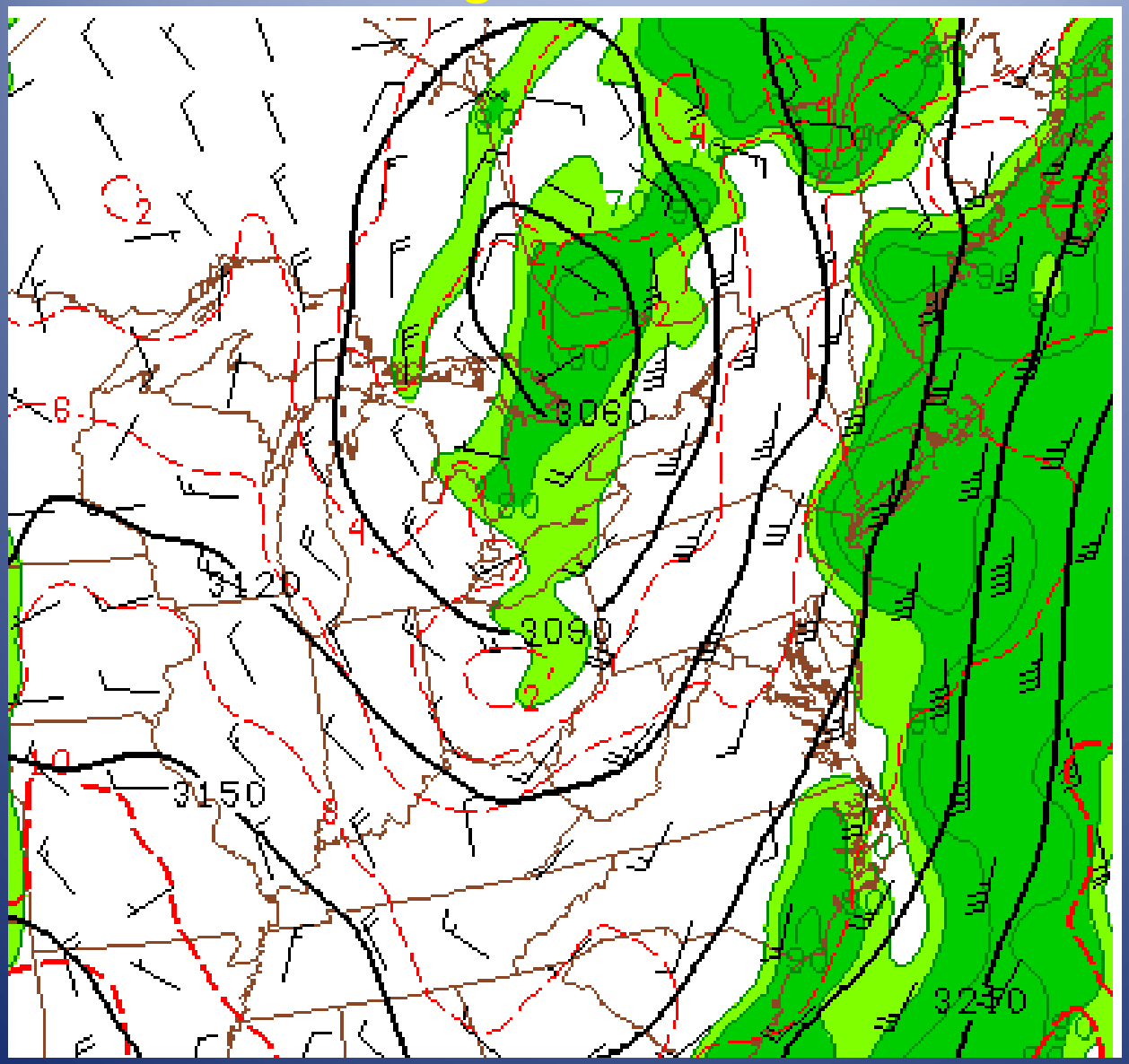
70+ Surface Dewpoints along with a weak surface boundary near Monson

PWATS Valid at 6 AM



PWAT Values between 1.5 and 2 inches near Monson

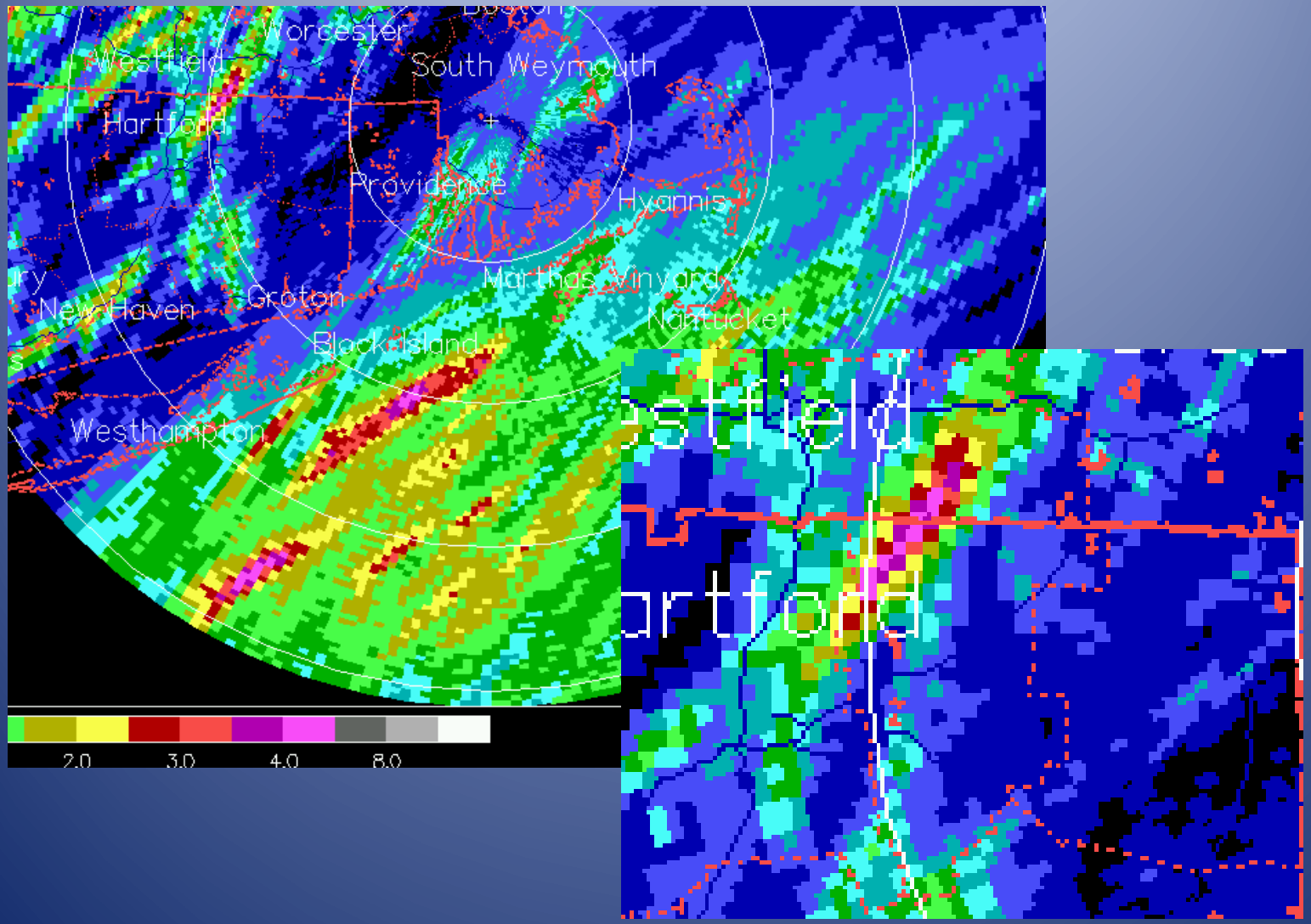
700 MB Height Field valid at 7 AM



700 MB Values Greater than 80 Percent shaded In Dark Green

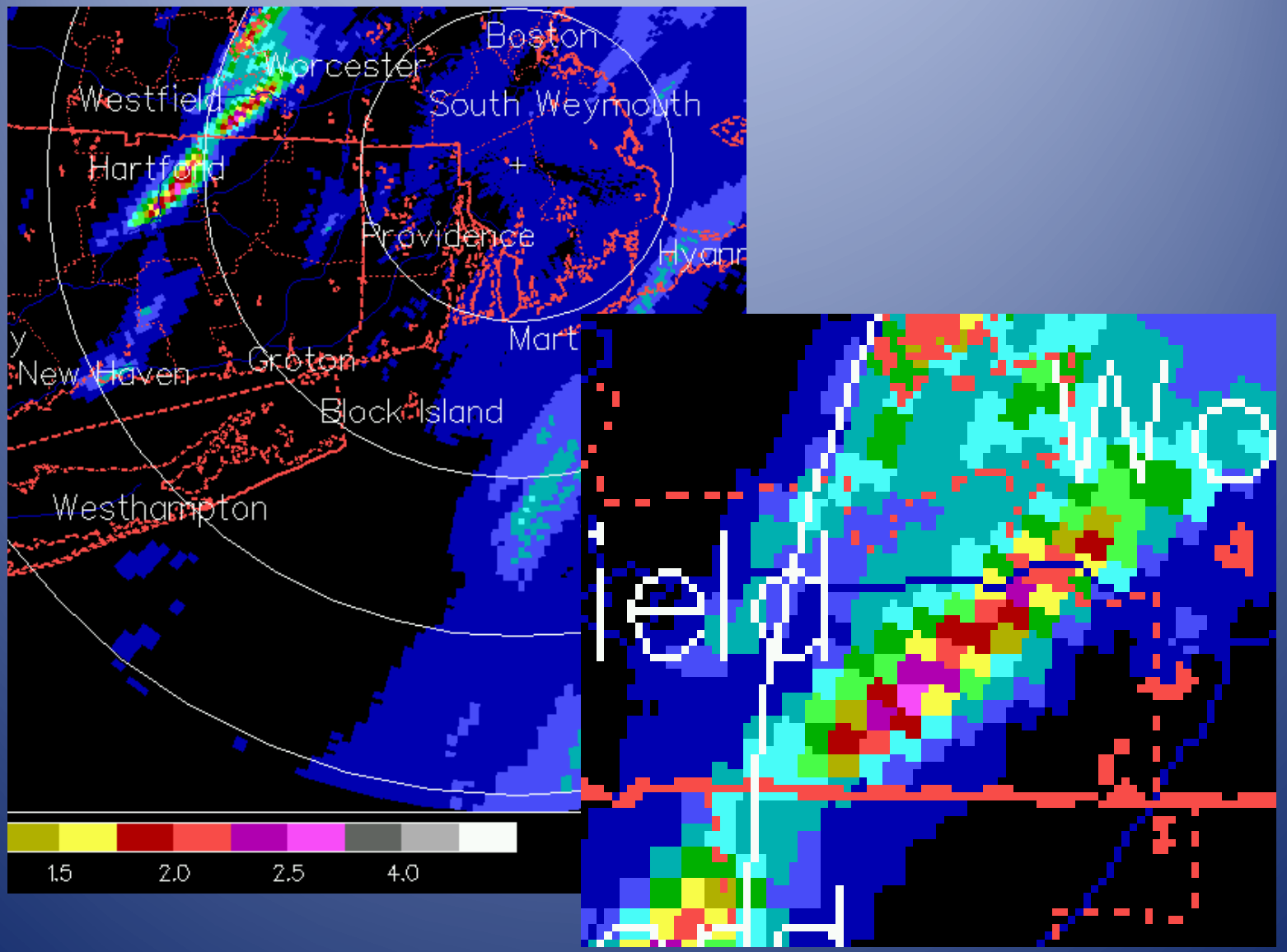
SSW flow of 30 knots coupled with deep lift/moisture

BOX Radar Storm Total QPF VALID AT 7 am on August 12, 2012



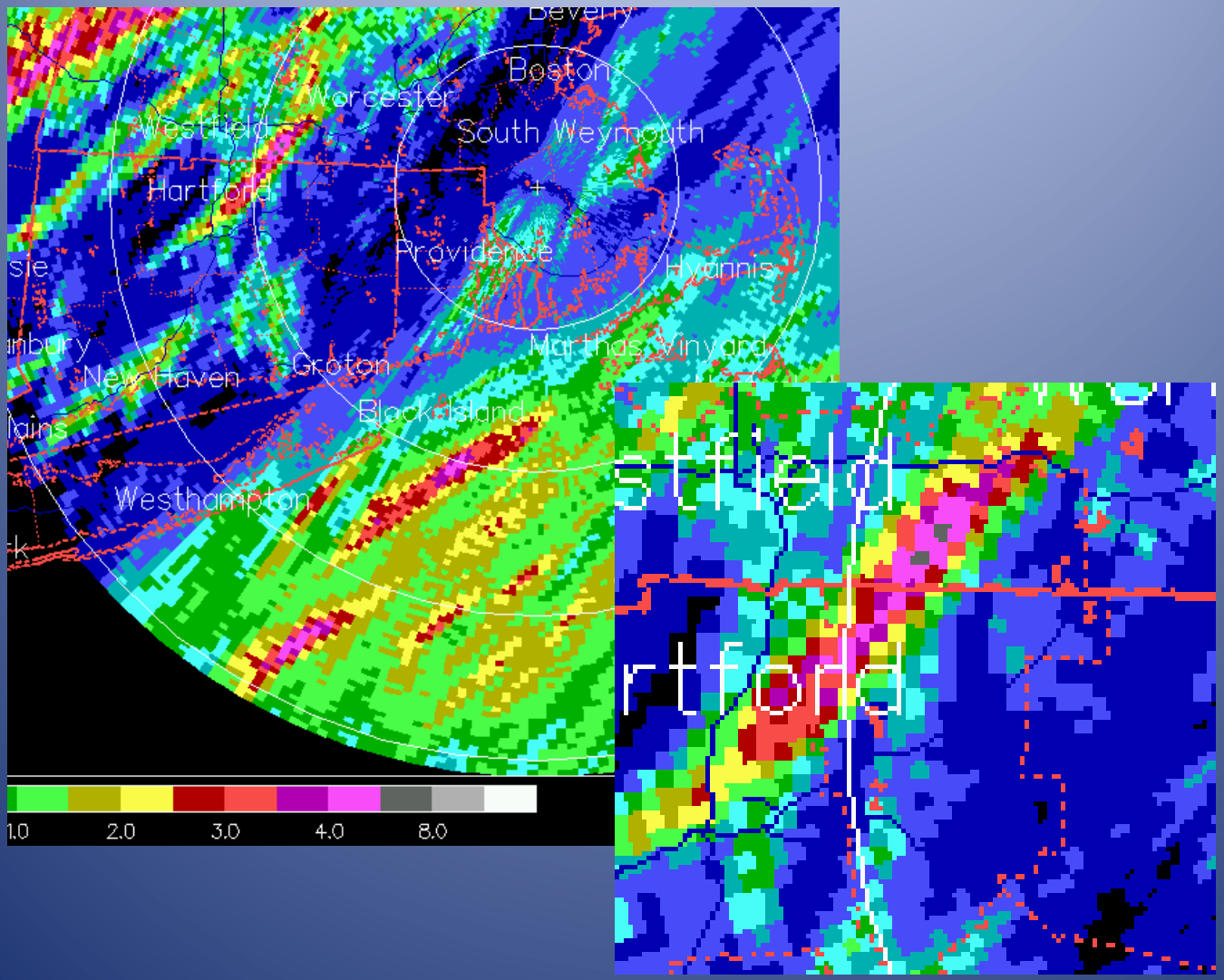
BOX Radar estimates 2.5 to 4 inches of rain had fallen through 7 AM near Monson

BOX Radar One Rainfall Valid between 7 and 8 am



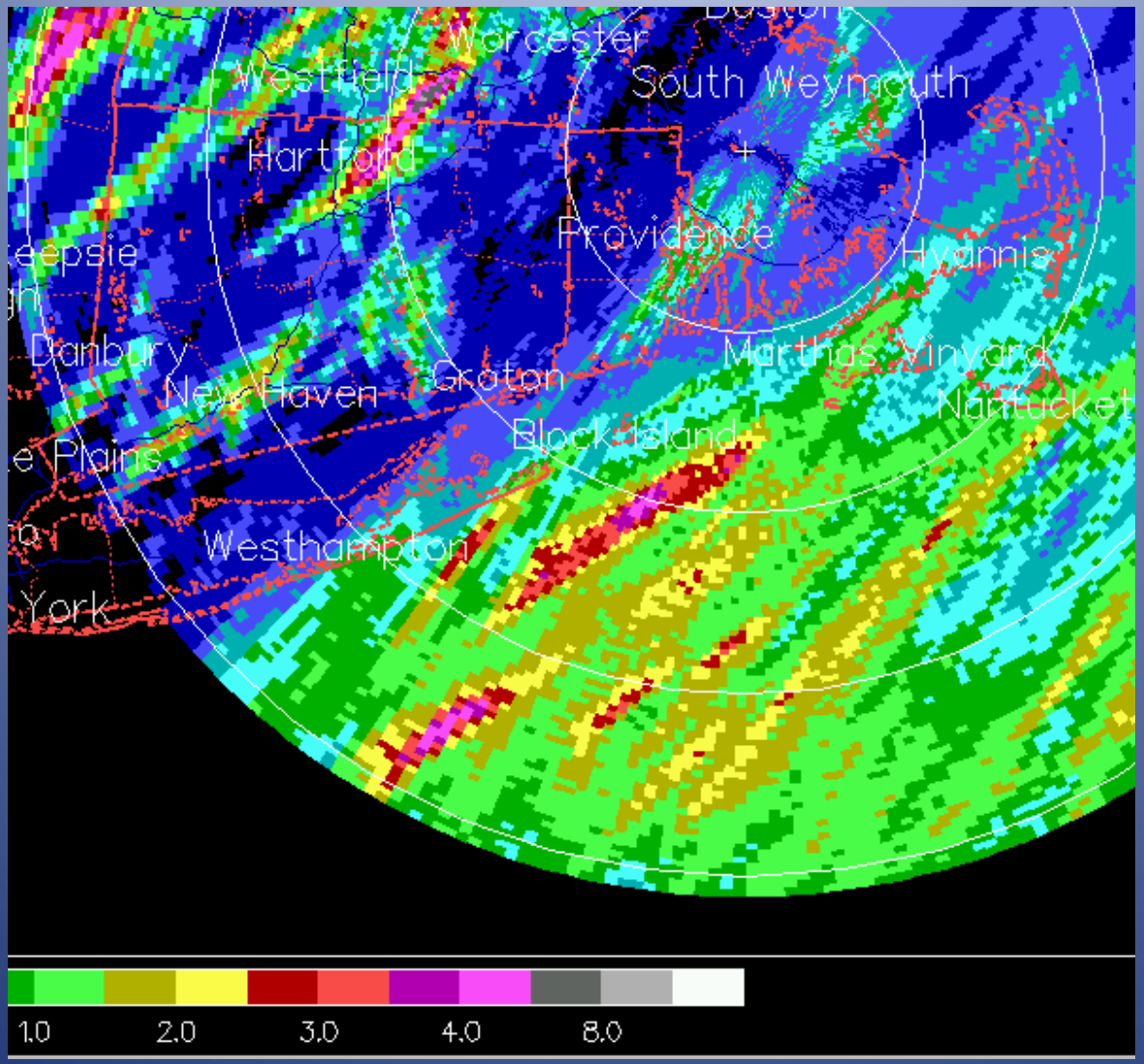
BOX Radar estimates additional 2 to 3 inches of rain in between shift change

BOX Radar Storm Total QPF VALID AT 8 AM on August 12, 2012



BOX Radar estimates 4 to 5 inches of rain has fallen through 8 AM near Monson

BOX Radar Storm Total QPF VALID AT 9 AM on August 12, 2012



5 to 6 inches of rain had fallen through 9 am, with the activity finally coming to end by 930 am but the damage was done.

Torrential Rain over a short period of time resulted in Severe Flash Flooding

1. Numerous Streets experienced severe flooding and became impassable early Sunday morning.

2. Several Roads sustained damage as a result of severe flash flooding.

3. Bebe Road was the hardest hit and portions of the road were completely washed out.

4. Temporary repairs were made to Bebe Road and all roads were re-opened by Sunday evening.

5. No significant damage occurred to any homes or vehicles.

Severe Flooding Pictures from Monson MA

The Missed Flash Flood Event

1. The flash flood event occurred around the time of the A to H shift change (I was the H shift).

2. It was my first day back in a week, so was a bit slow to spin up.

3. Issued a Flood Advisory for the region when I arrived, but should have gone with a Flash Flood Warning. Also, called for extra staffing immediately given the heavy rain occurring.

4. I looked at the Storm Total QPF, but wasn't sure when exactly that fell and if it was hail contaminated from the day before.

5. I was looking at the hourly total QPF, but was not sure if it was over estimating a bit since we were in tropical mode (typical bias but not in this case). Dual Pol estimates were a bit less.

6. I spent too much time on enhanced short term forecast/TAFS/AFD given staffing situation.

Recommendations to Avoid a Similar Situation

1. When hourly rainfall rates exceed 1 inch and/or lightning is occurring, the departing shift hanging around a minimum of 1 hour is a good practice. In the very least, it allows sometime to spin up.

2. If hourly rainfall rates exceed 1.5 inches, we should be pro-active and make phone calls to law enforcement/Skywarn to check things out. In this case, information was not relayed to us until around 930 after the damage had been done.

3. Social Media/NWS Chat should be used only to request/monitor severe weather reports during times of minimal staffing.

4. Although 3 hourly rainfall amounts are only available once an hour, we should perform RMR's to see the time period of concern immediately.

5. HMT/s should monitor 1,3 and storm total QPF/s from Legacy/Dual Pol from surrounding radars, especially during shift change. Training and perhaps creating procedures would help.

6. Rainfall amounts exceeding 4.50 inches in 3 hours should be strongly considered for a FFW, regardless of the antecedent conditions.

Conclusions from the Anomalous Early Morning Flash Flood Event

1. Biggest missed event in my career, but a very good learning experience.

2. Heavy rain/flooding is often the hardest to spin up on given that there are so many other factors that contribute to it.

3. Be extra cautious during shift changes and make sure there is ample time for spin up.

4. Fortunately, no one was hurt/injured as this could have ended up being far worst.

5. The biggest mistake I made was not being pro-active enough, as it never hurts to make phone calls even if there were no reports.