

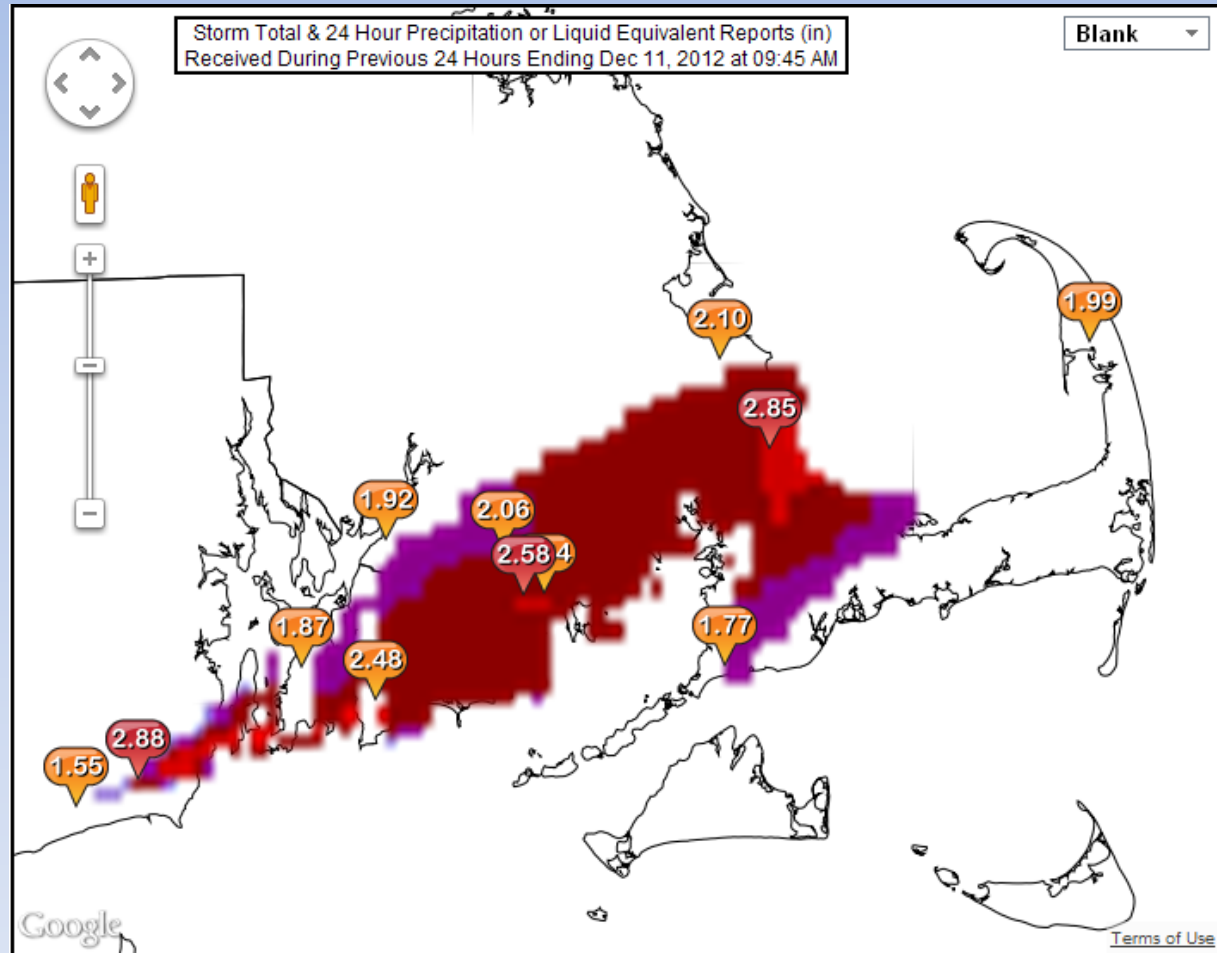
December 10, 2012  
Southeast Massachusetts Convection

A Look at  
Dual-Pol Precipitation Estimates

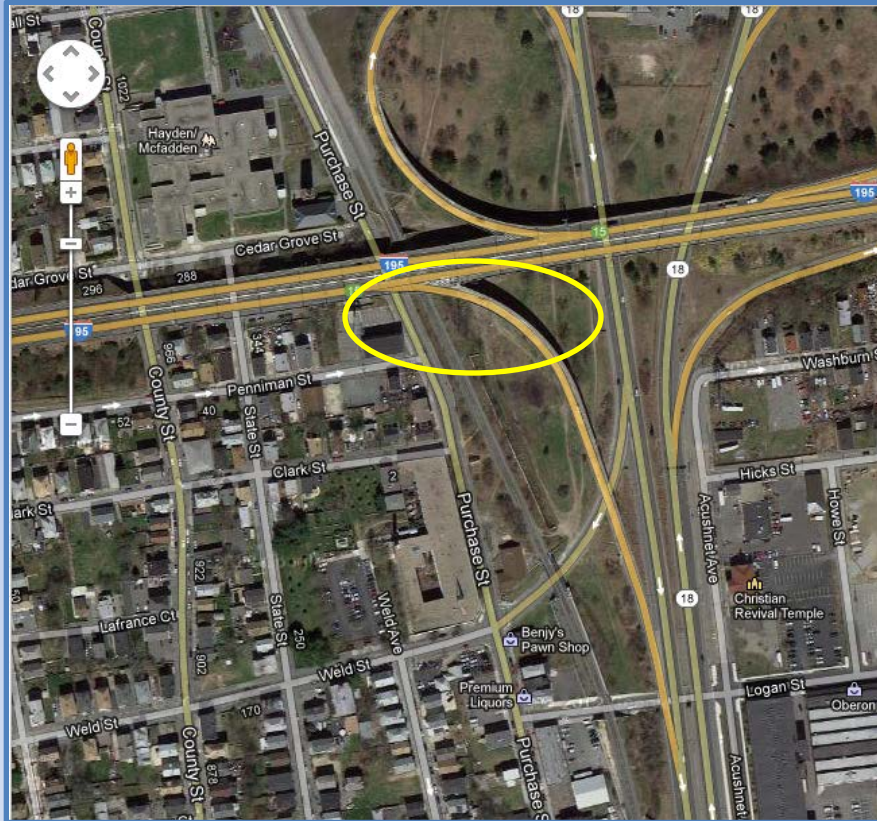
# What Happened

Bands of convection developed in the warm sector during the afternoon over Long Island and tracked along the South Coast.

Rainfall totals over a 3-hour period are shown on the right.



# Impacts

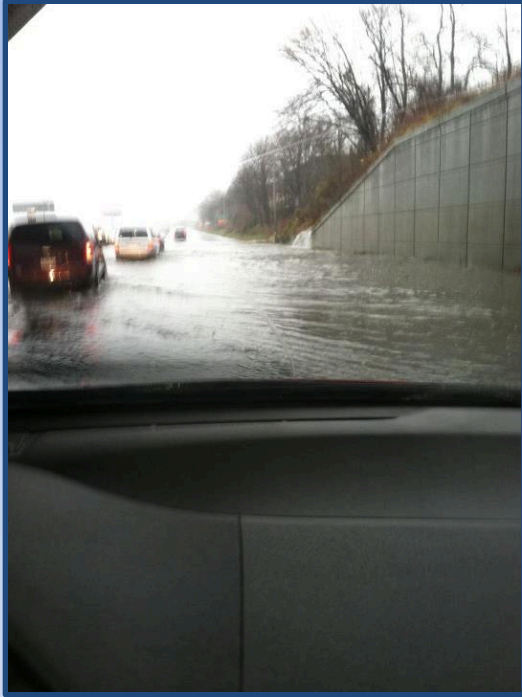


PRELIMINARY LOCAL STORM REPORT...SUMMARY  
NATIONAL WEATHER SERVICE TAUNTON MA  
346 PM EST MON DEC 10 2012

..TIME...	...EVENT...	...CITY LOCATION...	...LAT.LON...
..DATE...	....MAG....	..COUNTY LOCATION..ST..	...SOURCE....
..REMARKS..			
0228 PM 12/10/2012	FLOOD	FAIRHAVEN BRISTOL	41.65N 70.82W MA NEWSPAPER
FLOODING ON ROUTE 6 AT GREEN ST AND BRIDGE ST AND SPRING ST. 18 INCHES OF WATER ON ROAD AT WASHINGTON AND ADAMS ST WITH 2 CARS STRANDED IN FLOOD WATERS.			
0230 PM 12/10/2012	FLOOD	NEW BEDFORD BRISTOL	41.66N 70.94W MA NEWSPAPER
FLOODING ON PARTS OF ROUTE 18...PURCHASE ST AND INTERSECTION OF ROCKDALE AND SAWYER ST.			
0335 PM 12/10/2012	FLOOD	NEW BEDFORD BRISTOL	41.66N 70.94W MA AMATEUR RADIO
I-195 EAST EXIT 15 RAMP TO RT 18 SOUTH CLOSED DUE TO FLOODING.			

Several reports of street flooding in Fairhaven and New Bedford. Ramp from I-195 was closed for about an hour.

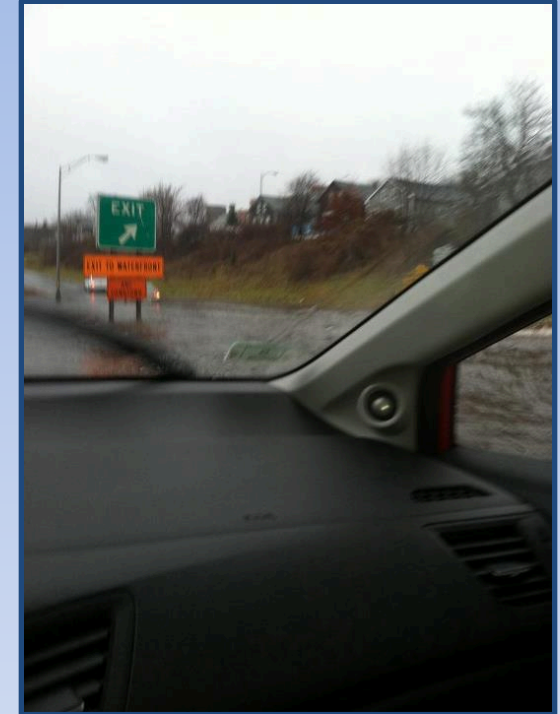
# Impacts



Skywarn Photo



New Bedford  
Standard Times Photo



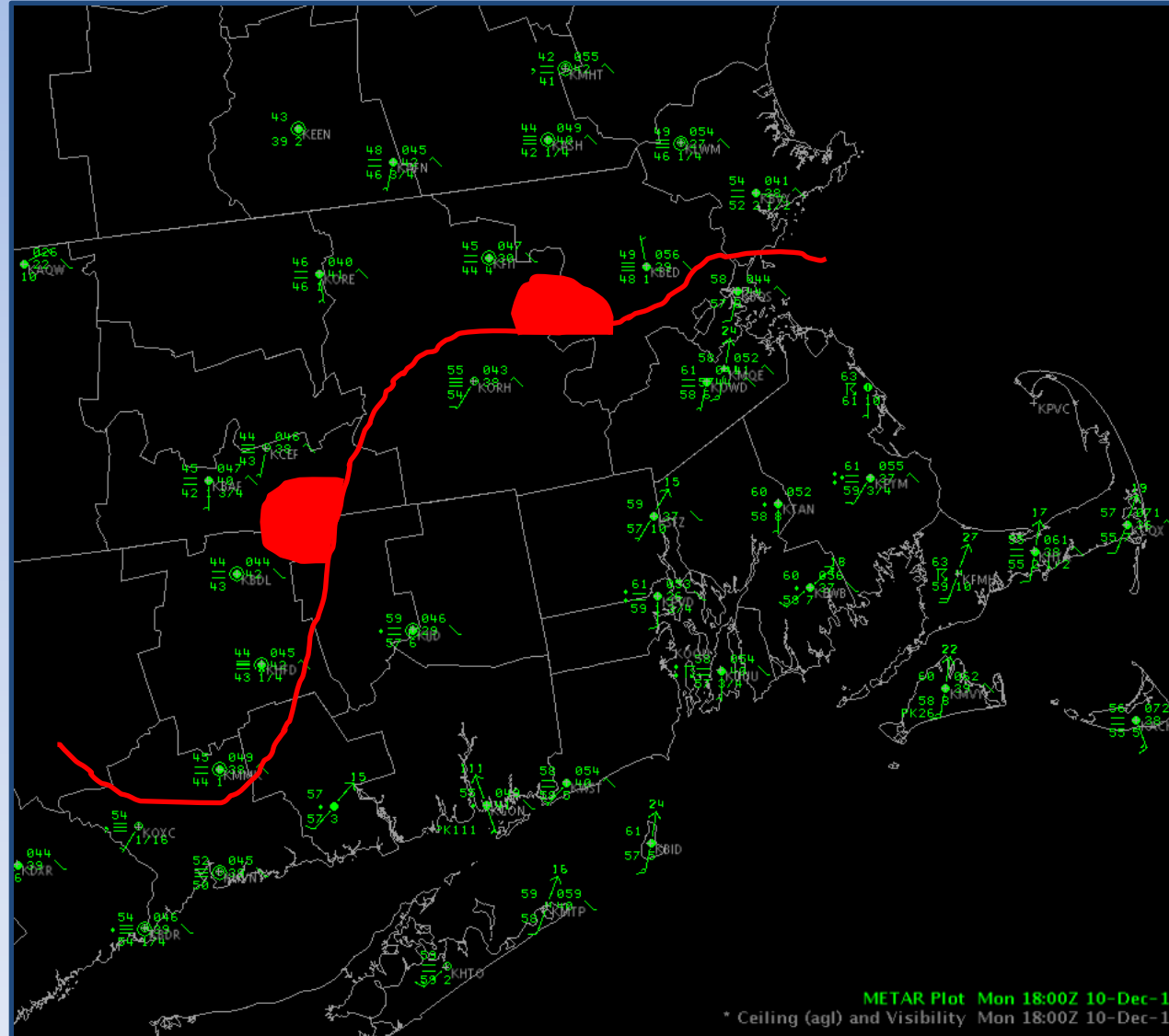
Skywarn Photo

Flooding of low lying and poor drainage areas

# 18z Surface Plot

Warm front was lifting slowly north.

Temperatures rose into the upper 50s and lower 60s in the warm sector

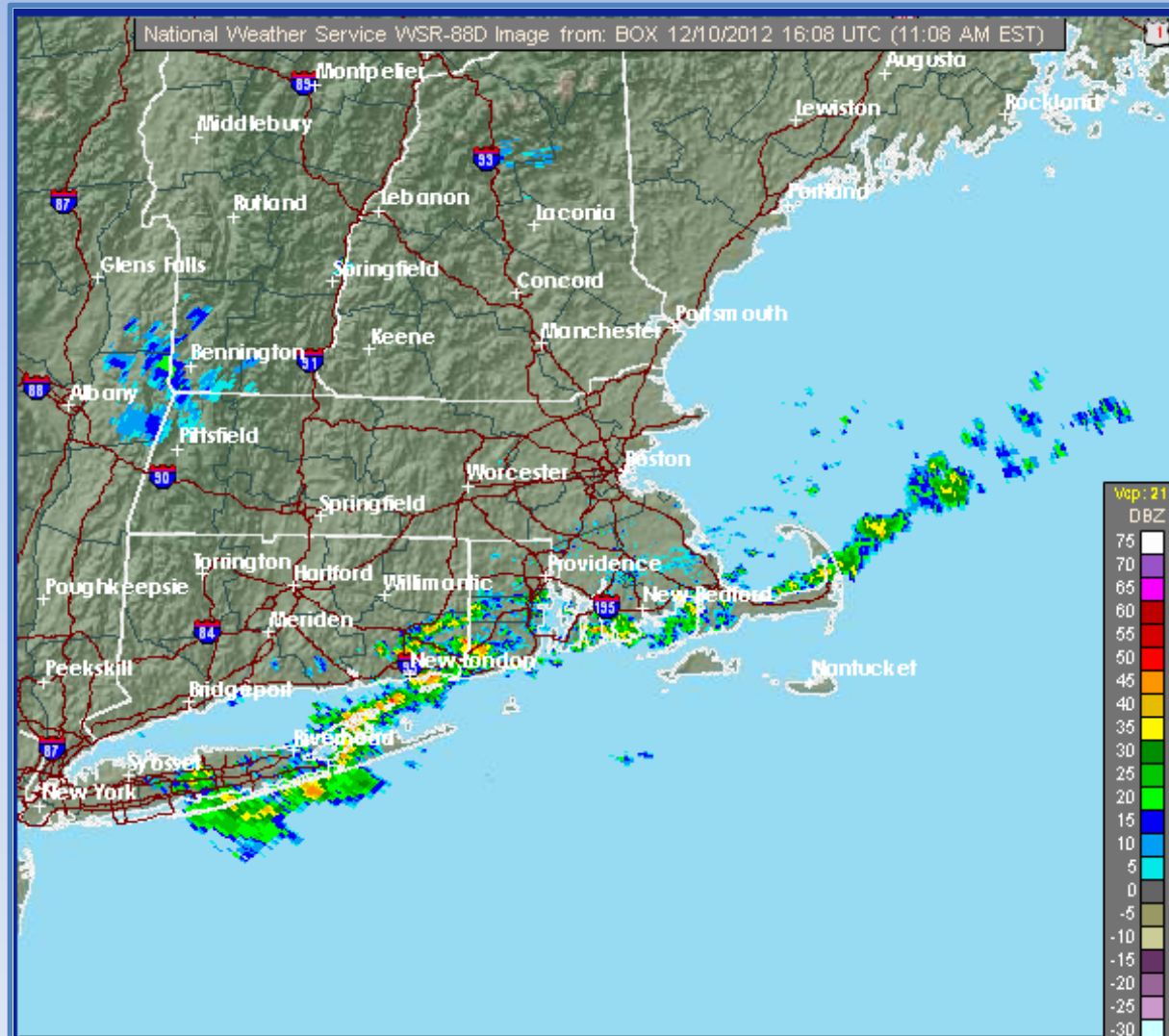




# 1608z 0.5 REF

Convection formed in the warm sector across Long Island and southeast Connecticut

Many reports of thunder in these areas

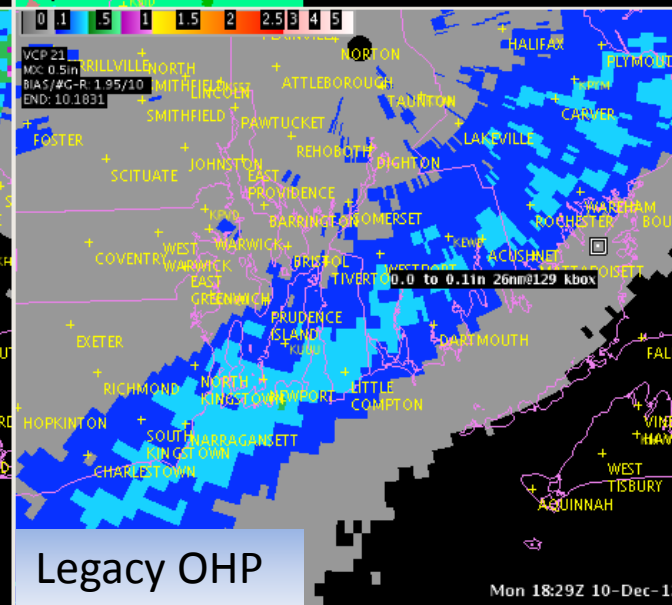
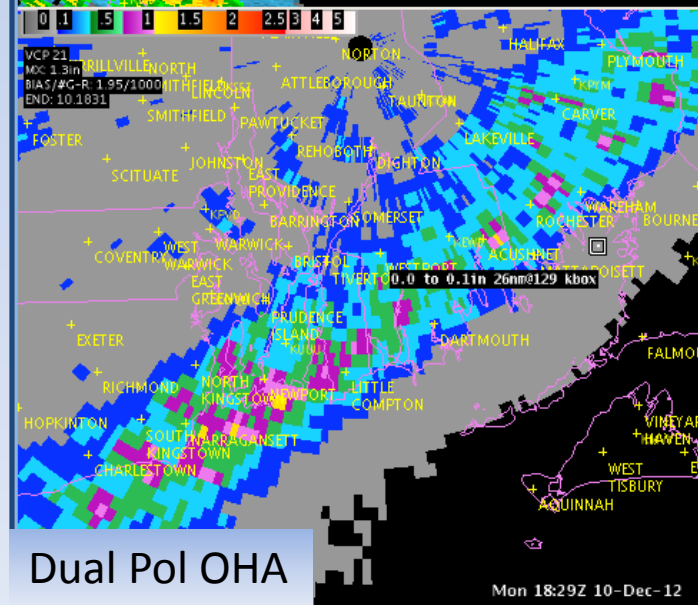
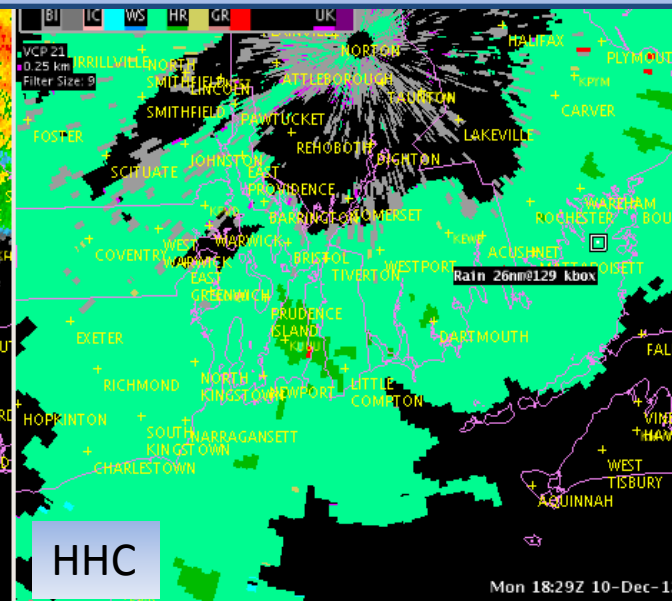
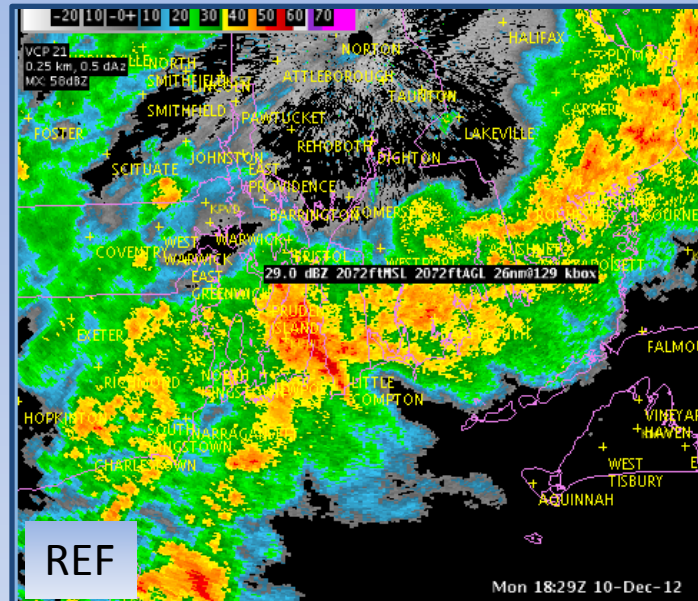


# 1829z KBOX 0.5 4-Panel

HHC correctly identified Rain; freezing level properly assessed around 9,000 ft (manually input to HCI)

Dual Pol: 1-1.5"/hr  
Legacy: 0.1-0.3"/hr

EWB: 0.59"/hr  
PYM: 0.37"/hr  
UUU: 0.35"/hr  
MVY: 0.24"/hr  
WST: 0.21"/hr



# Forecast Process

- Rainfall rates not expected to meet FFW criteria for urbanized areas of Bristol County
  - Fall River study: 1.25” in 45-60 min
  - Rates of 1”/hr expected south of fall River
    - Dual pol looked too high; preferred a “blend” of dual-pol and legacy for hourly estimates
- Decided to use SPS to address minor flood threat
  - Flood Advisory was an option, but typically reserved for non-convective events



MAZ020-101830-  
SOUTHERN BRISTOL MA-  
1202 PM EST MON DEC 10 2012

...BRIEFLY HEAVY RAINFALL HEADING FOR SOUTH COASTAL MASSACHUSETTS...

BE ALERT FOR MINOR FLOODING OF LOW LYING AND POOR DRAINAGE AREAS IN  
FALL RIVER AND NEW BEDFORD EARLY THIS AFTERNOON.

AT 1158 AM...SHOWERS AND SCATTERED THUNDERSTORMS WERE HEADING  
NORTHEAST FROM SOUTHERN CONNECTICUT AND EASTERN LONG ISLAND.

THESE SHOWERS AND THUNDERSTORMS WILL PRODUCE RAINFALL RATES OF UP TO  
ONE INCH PER HOUR AS THEY HEAD ACROSS SOUTHEAST MASSACHUSETTS  
BETWEEN 1215 PM AND 130 PM.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

DO NOT DRIVE YOUR VEHICLE THROUGH FLOODED ROADWAYS.

MAZ018>023-101900-  
EASTERN PLYMOUTH MA-BARNSTABLE MA-SOUTHERN BRISTOL MA-DUKES MA-  
WESTERN PLYMOUTH MA-SOUTHERN PLYMOUTH MA-  
117 PM EST MON DEC 10 2012

...BE ALERT FOR MINOR URBAN FLOODING THIS AFTERNOON IN SOUTHEAST  
MASSACHUSETTS...

AT 110 PM...SHOWERS AND A FEW THUNDERSTORMS WERE PRODUCING HEAVY  
RAIN ALONG THE SOUTH COAST...FROM NEWPORT RHODE ISLAND TO PLYMOUTH  
MASSACHUSETTS.

RAINFALL RATES OF UP TO ONE INCH PER HOUR CAN BE EXPECTED NEAR  
BUZZARDS BAY AND THE CAPE COD CANAL THROUGH 3 PM. THIS INCLUDES  
NEW BEDFORD...DARTMOUTH...WESTPORT...WAREHAM...BOURNE AND SANDWICH.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

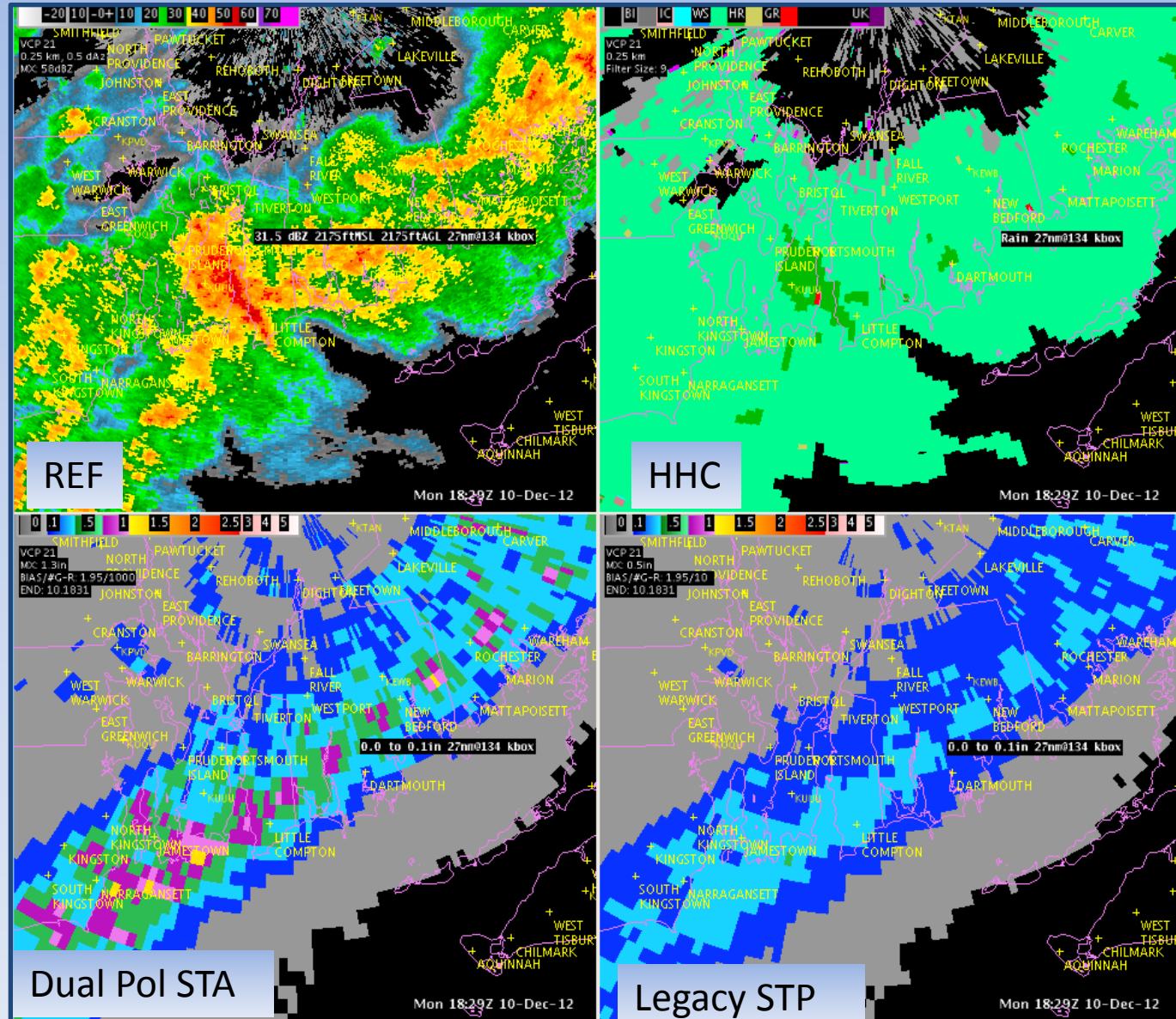
DO NOT DRIVE YOUR VEHICLE THROUGH FLOODED ROADWAYS.

# 1829z KBOX 0.5 4-Panel

HHC correctly identified Rain/Heavy Rain

Max:  
Dual Pol: 1.5-2.5"  
Legacy: 0.3-0.5"

Reality:  
1.55-2.88"



# Summary

- Showers/thunderstorms brought locally heavy rain to the South Coast
  - Heaviest remained south of Fall River but impacted New Bedford
- Hourly dual-pol rainfall rates too high; legacy too low
  - Used blend of both in real-time
- Dual-pol storm totals much better
- Rainfall did not quite meet FFW criteria
  - SPS used to address flooding threat
  - Minor flooding of poor drainage areas resulted