Flash Flood Monitoring and Prediction (FFMP)

Flash Flood Monitoring and Prediction-Advanced (FFMPA)

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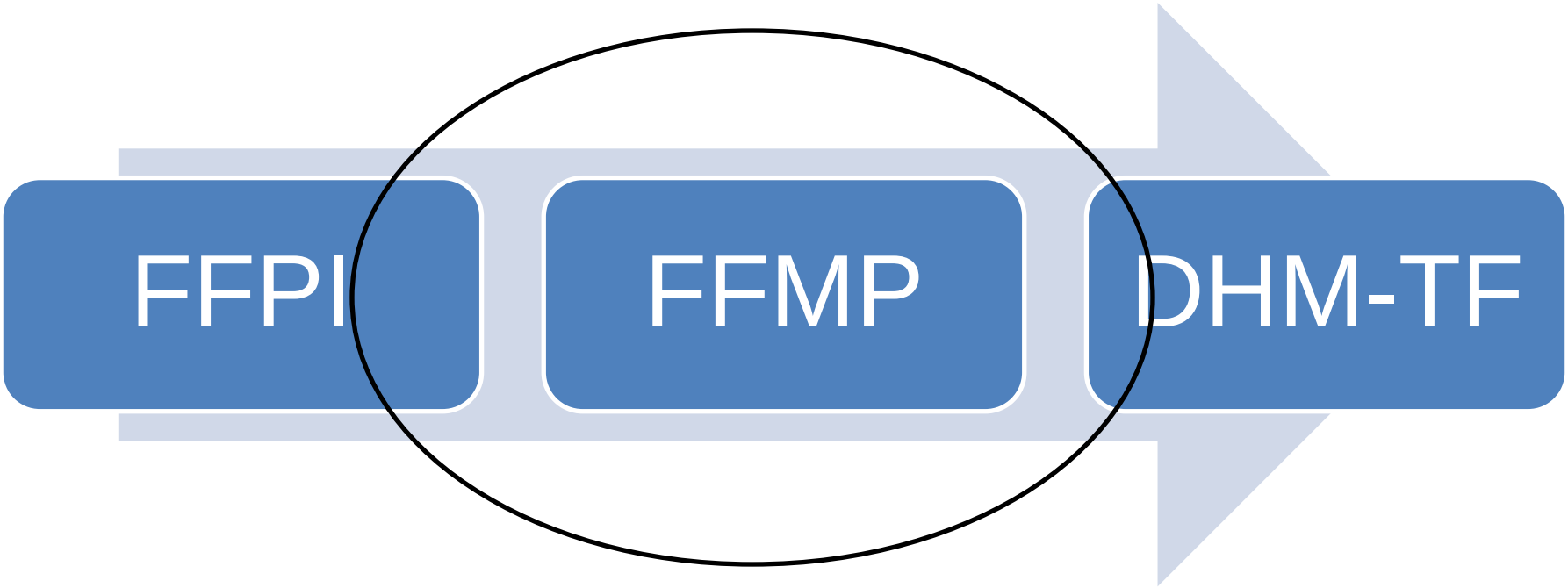
Eastern Region

Johnson City - Picture from Pressconnects.com

Tools



FFPI FFMPA

FFPI

- Shows you areas that you should be concerned, where flash flooding could occur. It is static

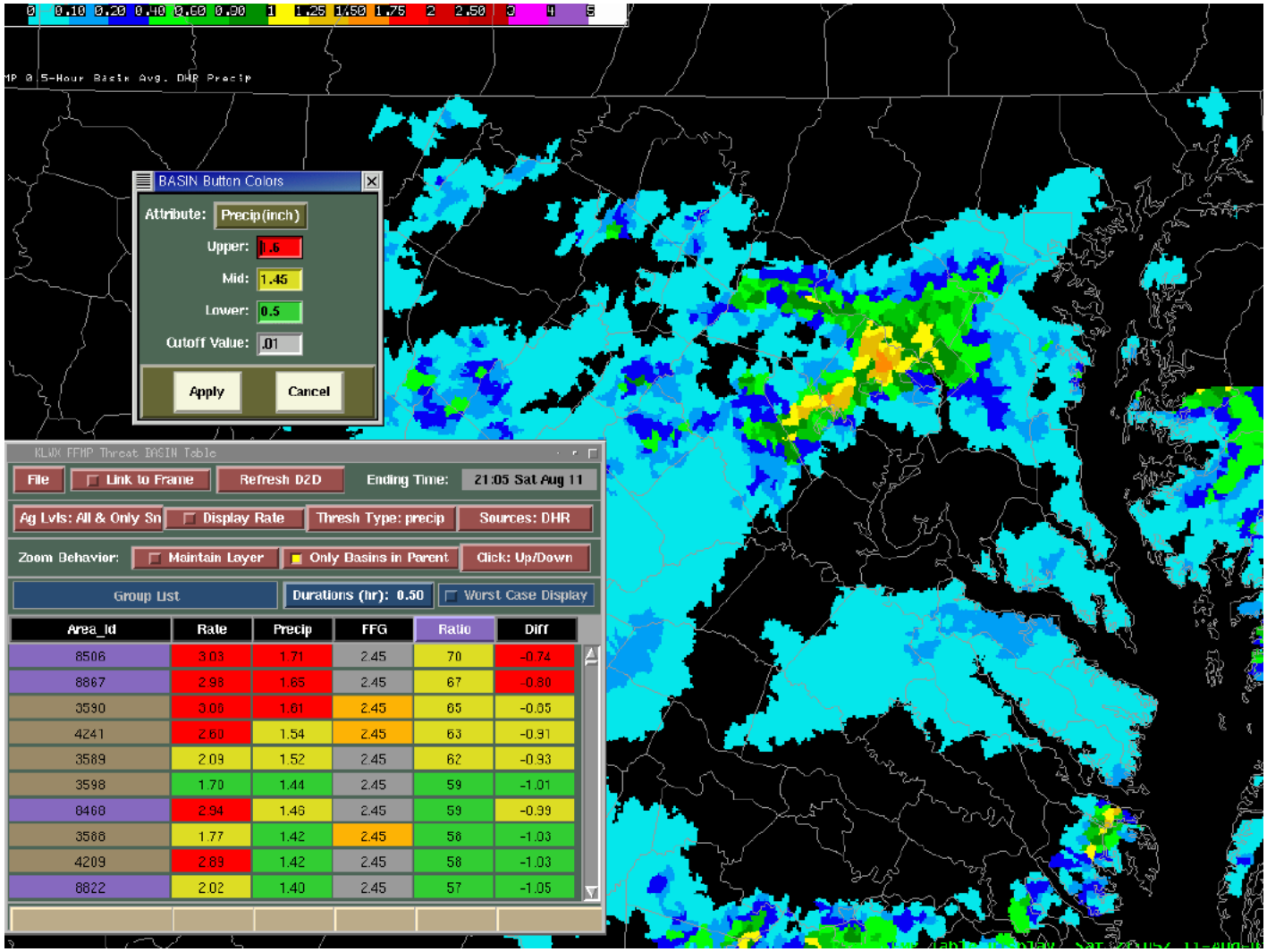
FFMPA

- Monitors areas where current/future rainfall might prompt a warning. It is dynamic

FFMP

- Flash Flood Monitoring and Prediction (FFMP) is a Decision Assistance tool specifically designed to help forecasters **monitor and evaluate the flash flood threat and decide** whether or not to issue flash flood warnings

- It does this by using **radar data** to calculate precipitation accumulation in hydrologic water basins over various time periods and compare to the suggested **Flash Flood Guidance (FFG)**, provided by River Forecast Centers (RFCs).

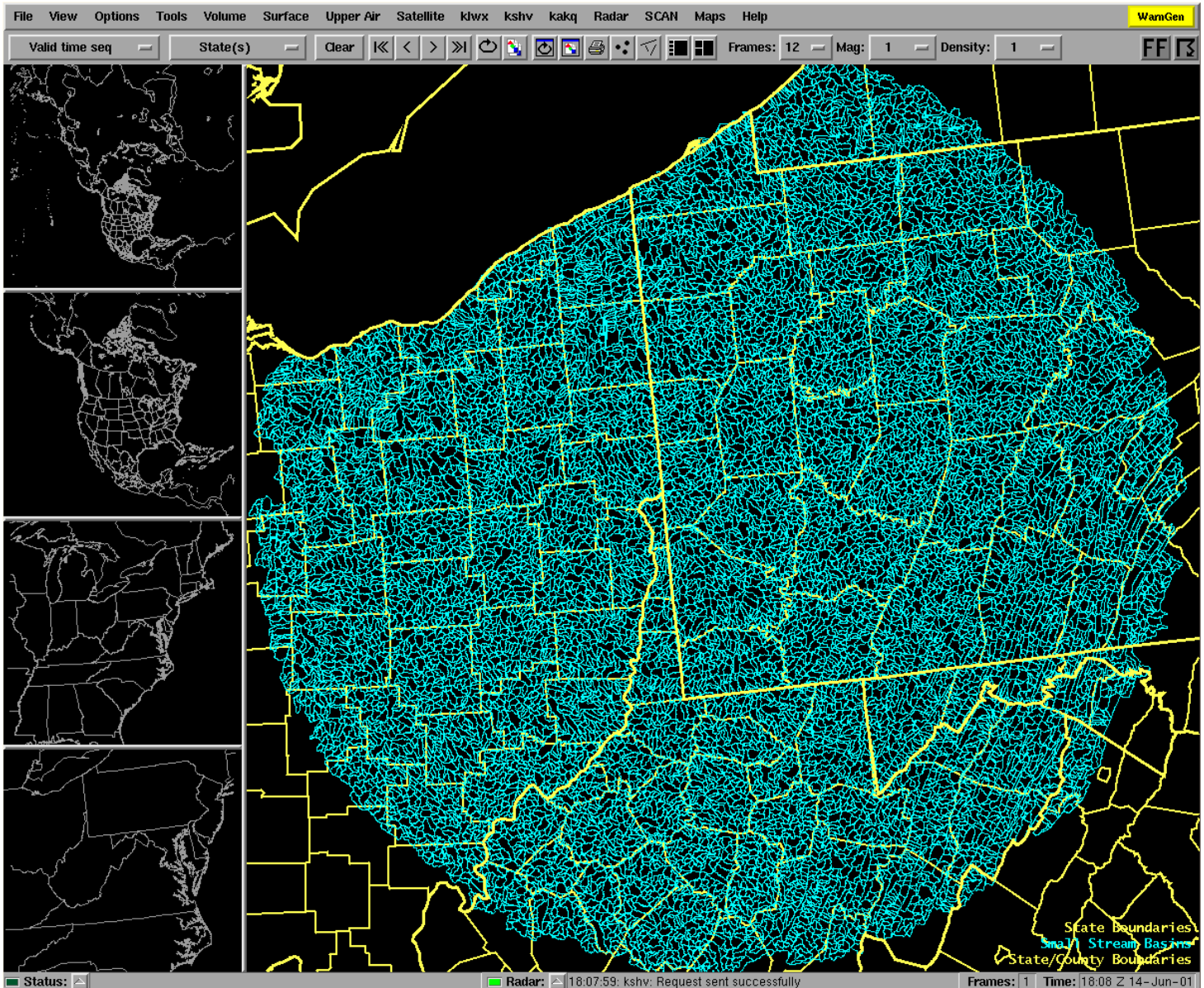


Flash Flood Monitoring and Prediction tool used by National Weather Service forecasters to track the precipitation rates and accumulations in small basins (typically 5 to 25 square kilometers) as compared to flash flood guidance. Information is updated every 4.5 to 6 minutes. The stream name and county can also be displayed so more specific information can be included in flash flood warning messages.

Data Requirements

- Radar: DHR product for each applicable radar
- Basin shapefile for each applicable radar
- Radar Bin shapefile for each applicable radar
- Flash Flood Guidance (FFG) issued by the RFCs.

Basins



2-20 mi^2

Basic Components

- **Processor**
  - Creates input data
- **Display**
  - Displays data as an image (map)
  - Displays data in a table
  - Displays data in a time trend
- **Flash Flood Threat Indicator (FFTI)**
  - The Monitor

Processor

Ingests

- Localization
- Radar data
- Flash Flood Guidance (FFG)

Writes output for each radar volume scan:

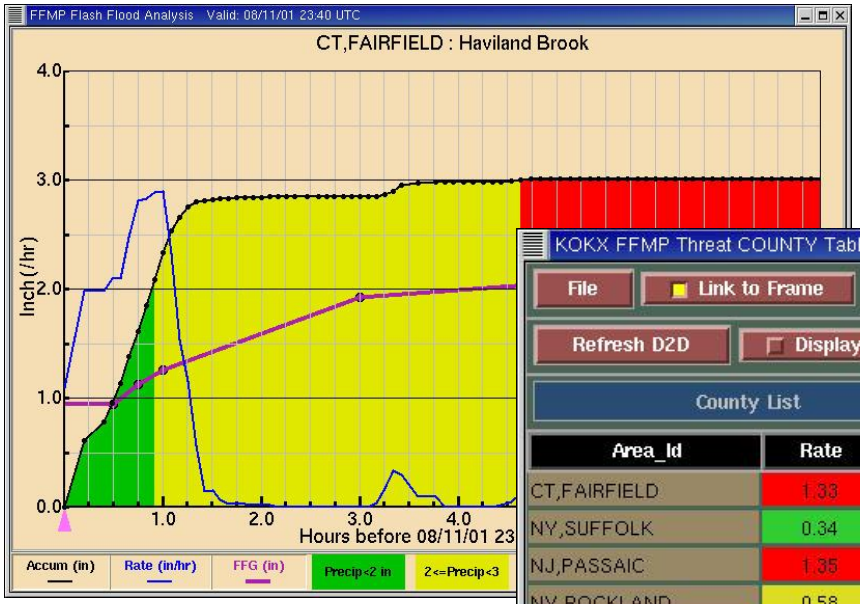
- /data/fxa/radar/@@@@/ffmp/yyyymmdd_hhmm*
- /data/fxa/radar/@@@@/ffmp/accumulation*

Display

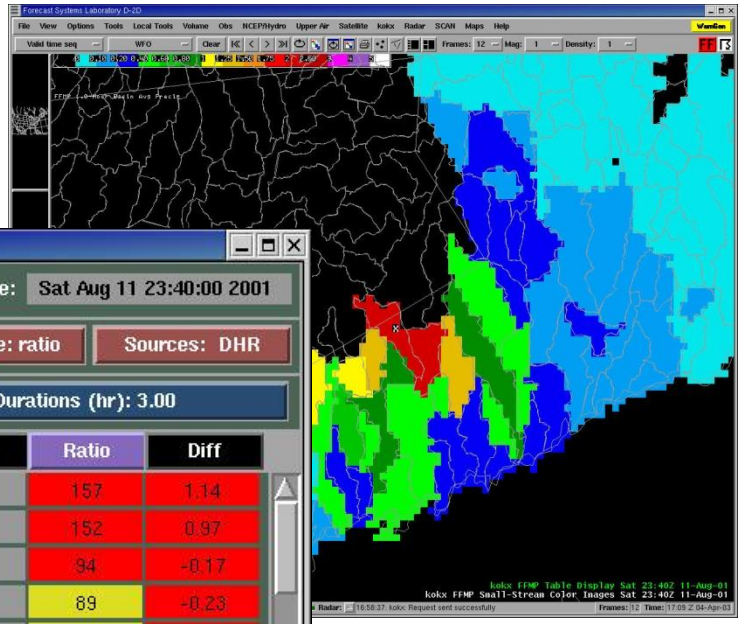
- Image: displays Counties or Basins
- Basin Table: GUI presenting data in tabular form
- Basin Trend: launched form Basin Table or D2D Image (if made active)

Set of Displays

Basin Trend Graph



D2D Image



Basin Table

KOKX FFMP Threat COUNTY Table

File | Link to Frame | Ending Time: Sat Aug 11 23:40:00 2001

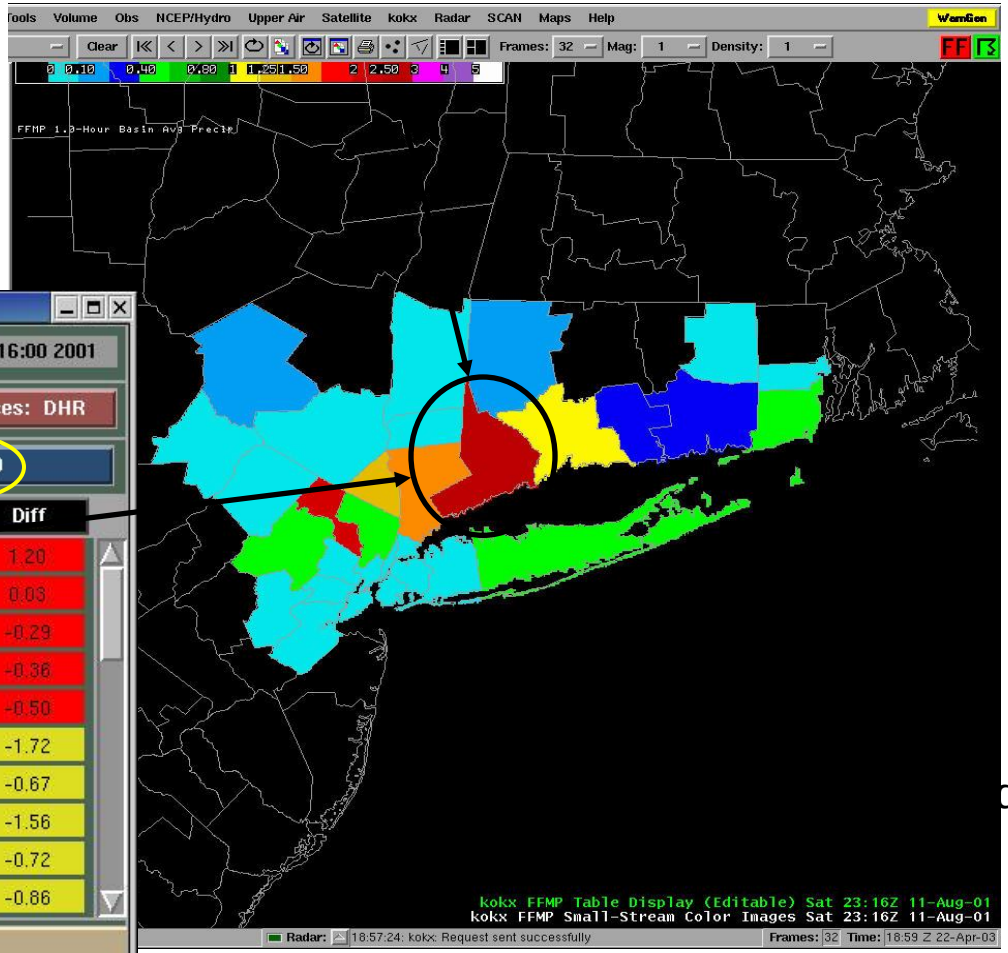
Refresh D2D | Display Rate | Thresh Type: ratio | Sources: DHR

County List | Durations (hr): 3.00

Area_Id	Rate	Precip	FFG	Ratio	Diff
CT,FAIRFIELD	1.33	3.13	1.99	157	1.14
NY,SUFFOLK	0.34	2.83	1.86	152	0.97
NJ,PASSAIC	1.35	2.58	2.75	94	-0.17
NY,ROCKLAND	0.58	1.81	2.05	89	-0.23
NY,WESTCHESTER	1.80	1.96	2.45	80	-0.49
NJ,MORRIS	1.15	1.73	2.42	72	-0.69
CT,NEW HAVEN	0.79	1.27	2.31	55	-1.04
NY,NASSAU	0.40	0.86	2.02	43	-1.16
CT,LITCHFIELD	2.78	1.02	2.75	37	-1.73
NJ,UNION	0.10	0.96	2.62	37	-1.66

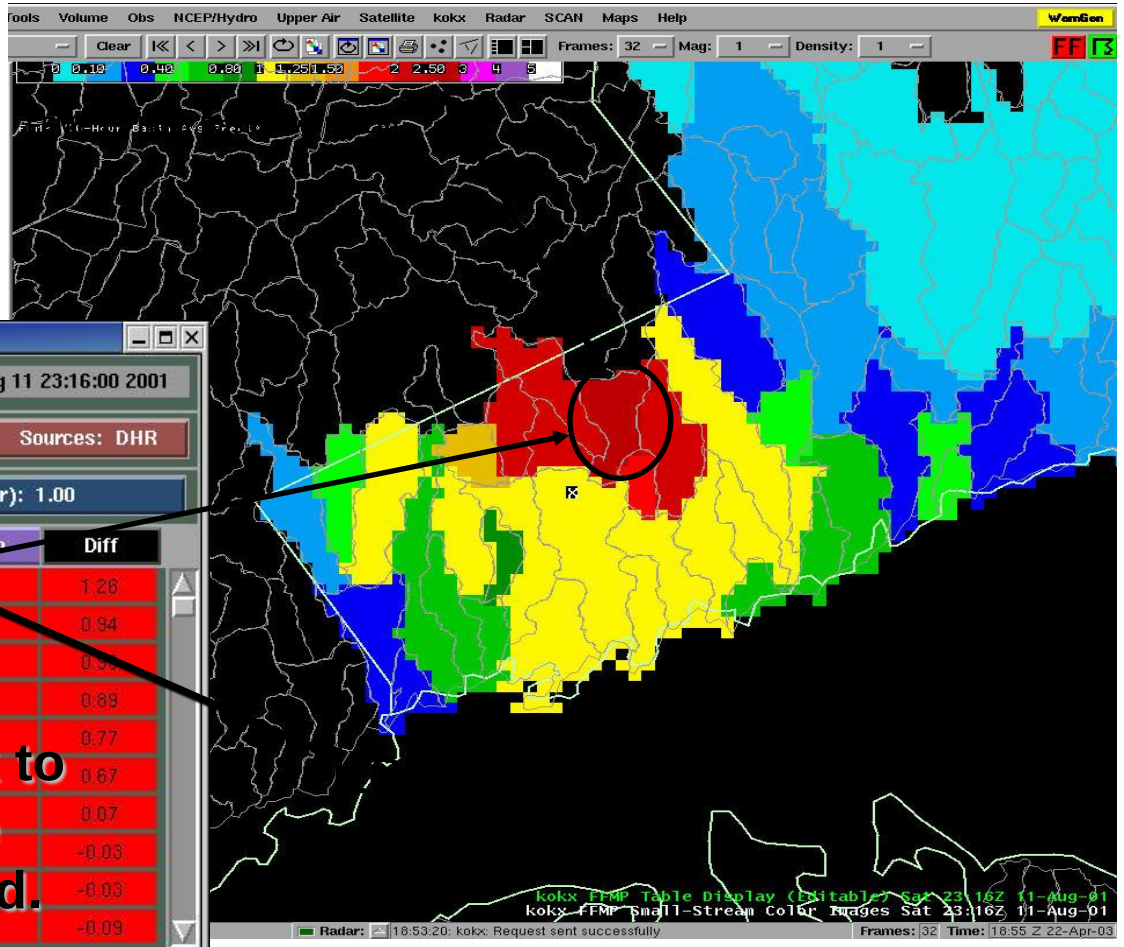
County Precipitation Accumulation Display

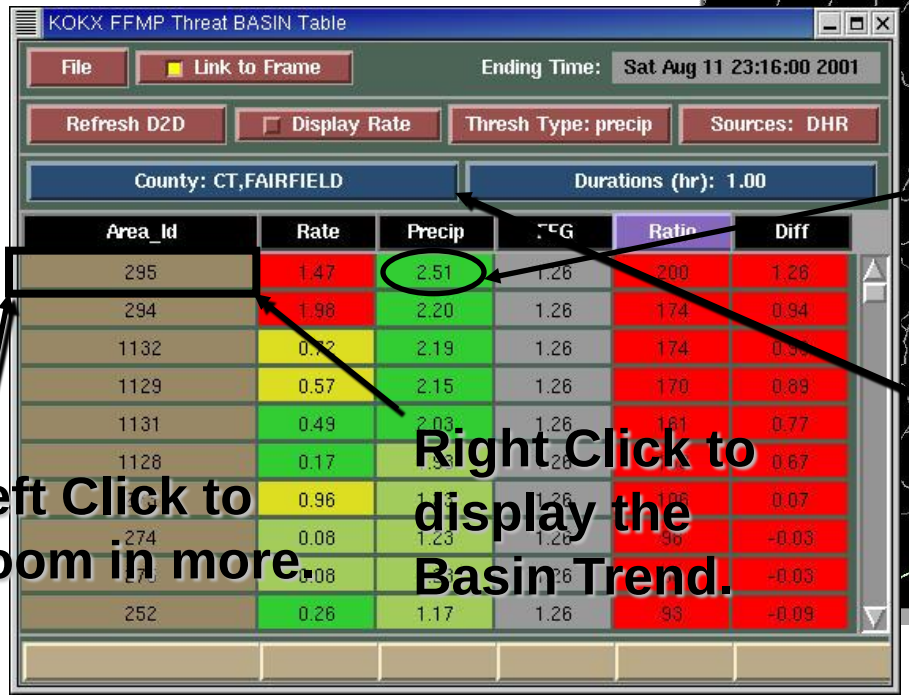
Left Click on County Name To zoom in



Basin Precipitation Accumulation Display

- Only displays those basins within the county area selected.

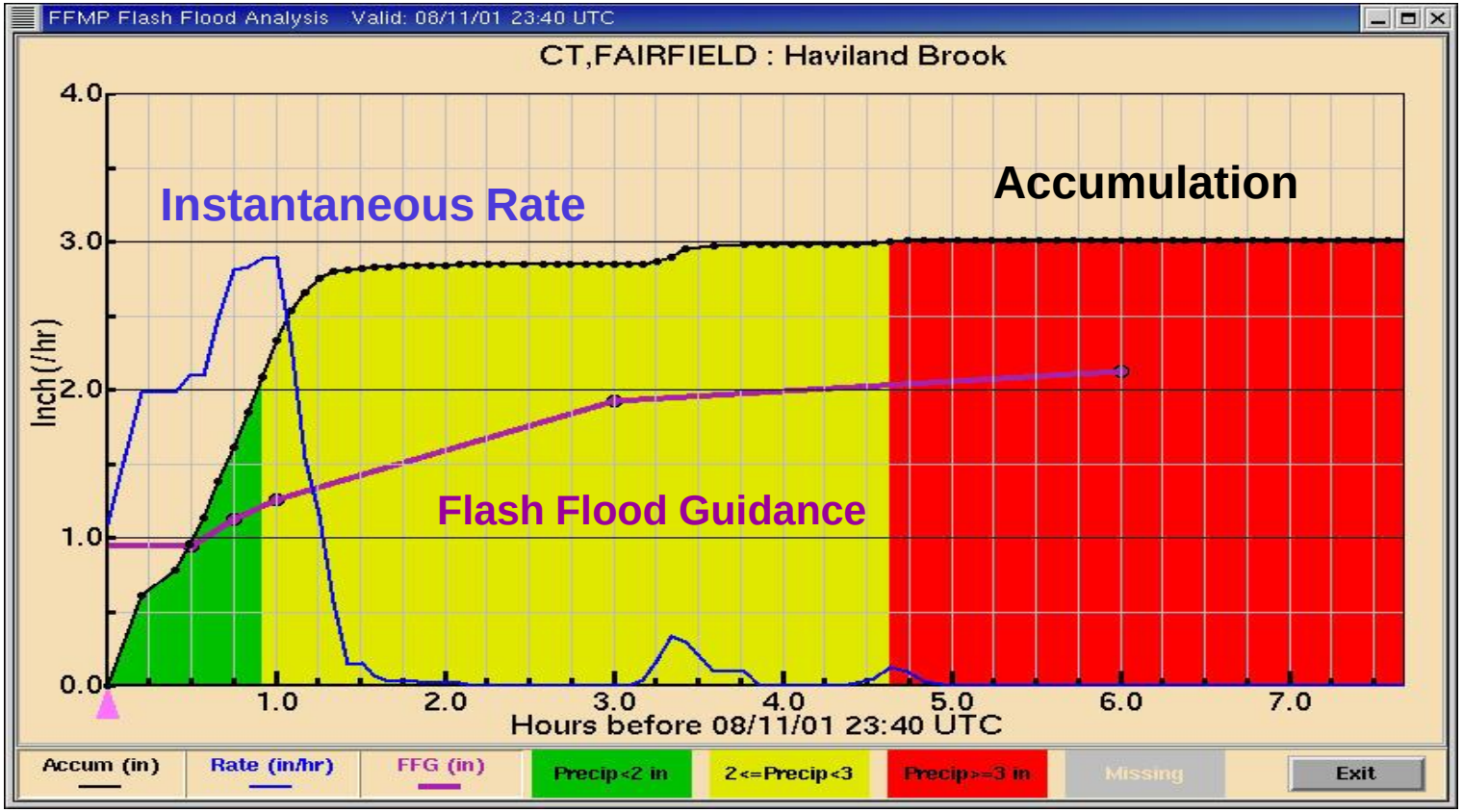




Left Click to Zoom in more.

Right Click to display the Basin Trend.

Basin Trend Graph

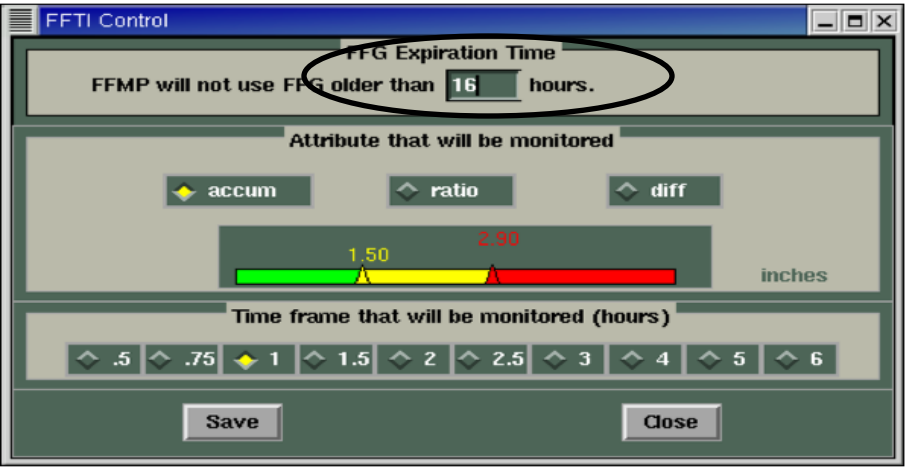


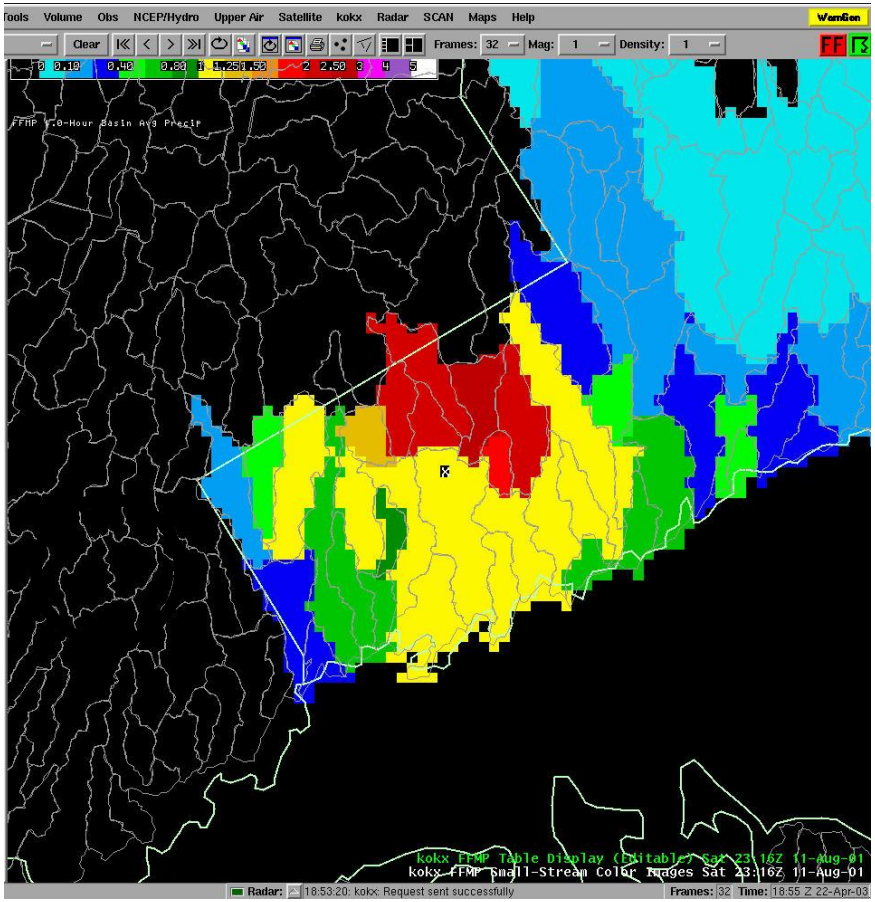
Where the accumulation is above the FFG there is a threat of flash flooding

Flash Flood Threat Indicator (FFTI).

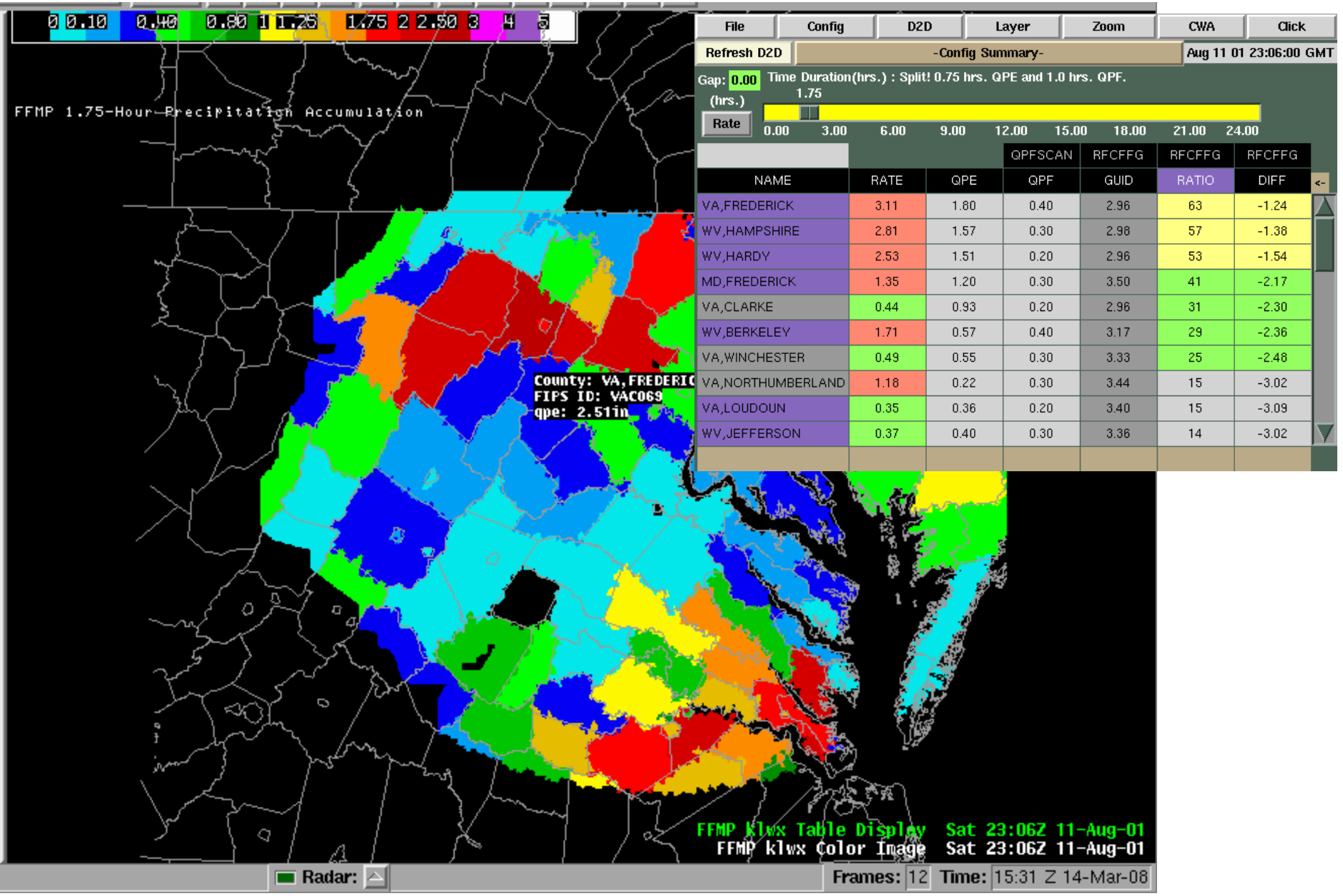
Provides GUI to define settings.

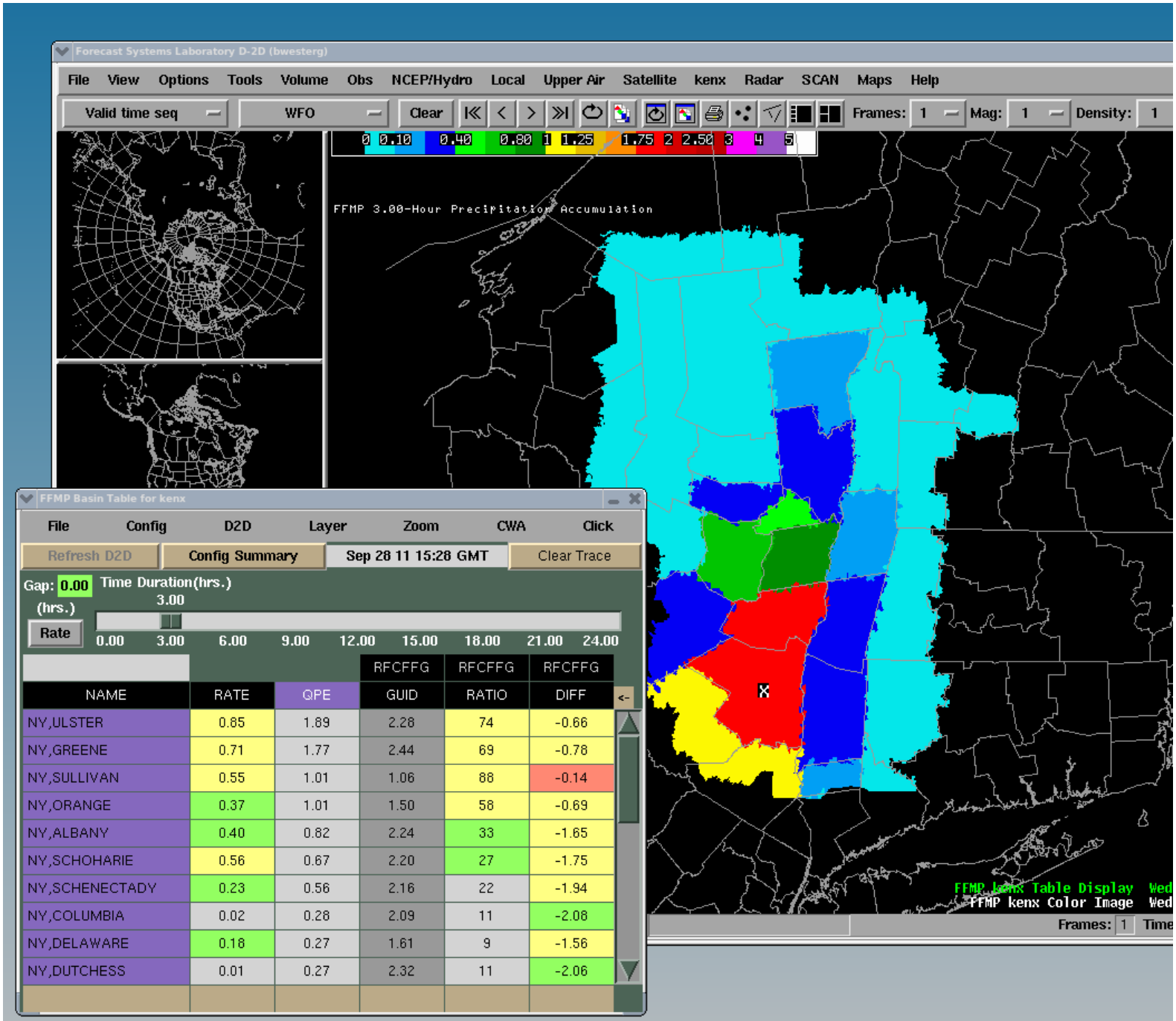
Note: FFG Expiration definition is here.



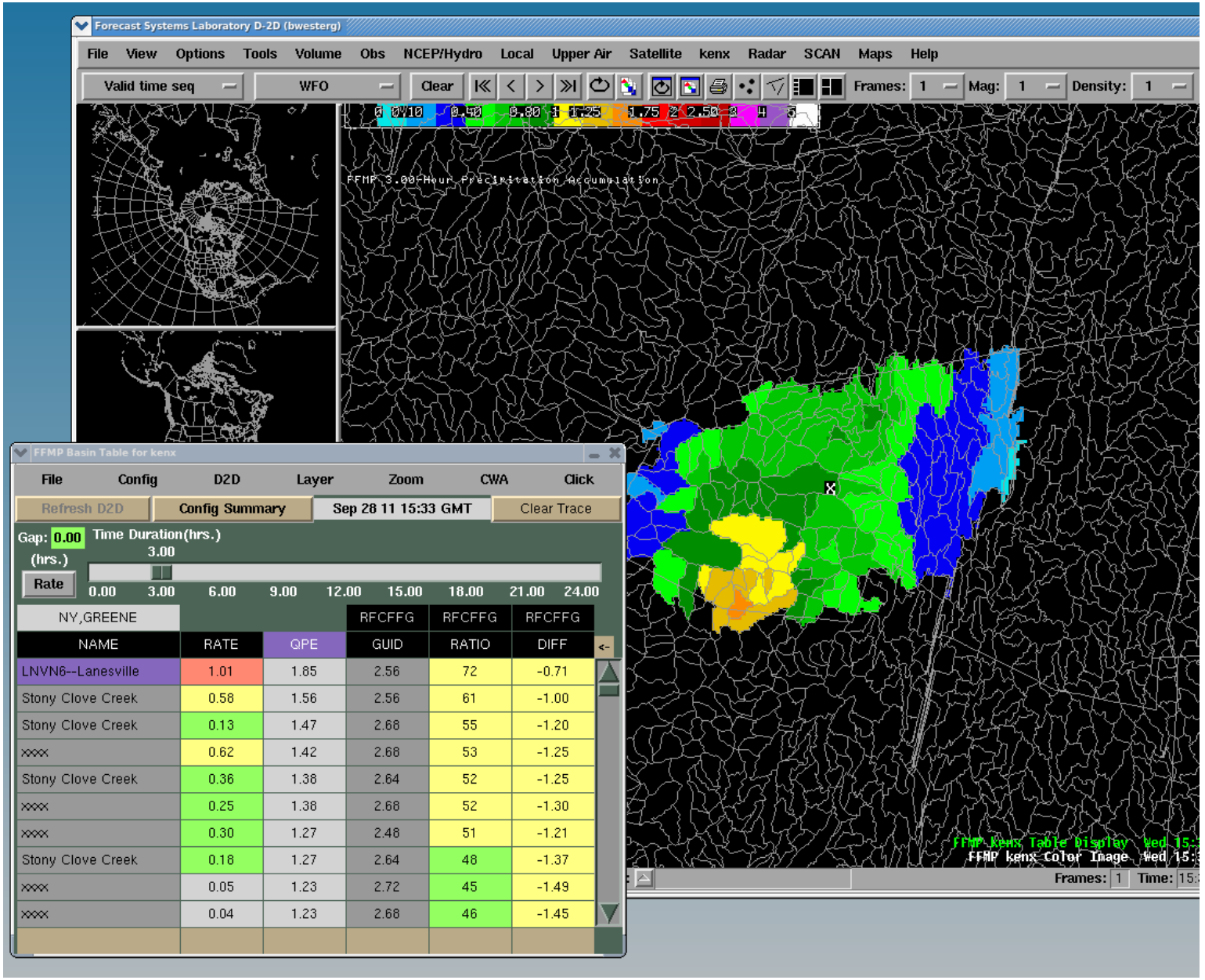


FFMPA: Display

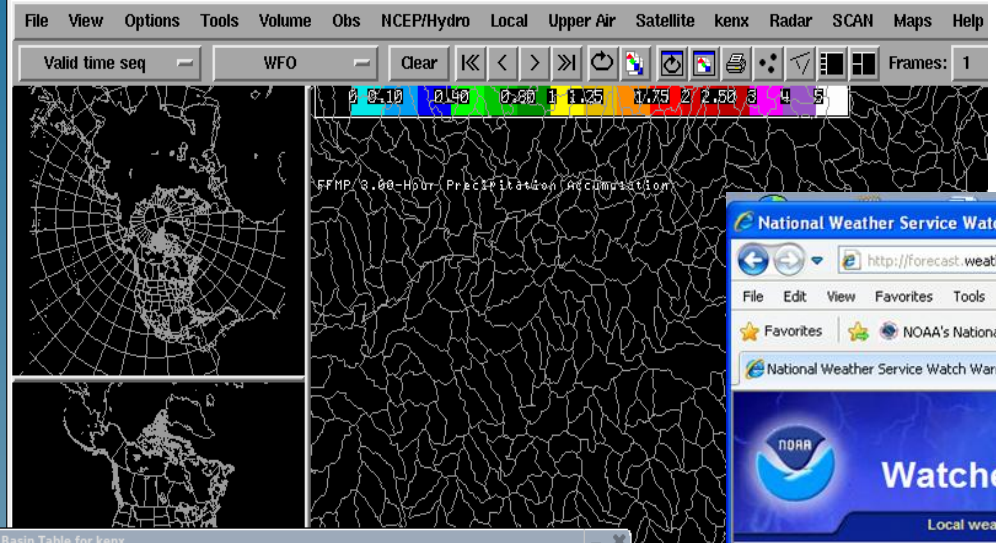


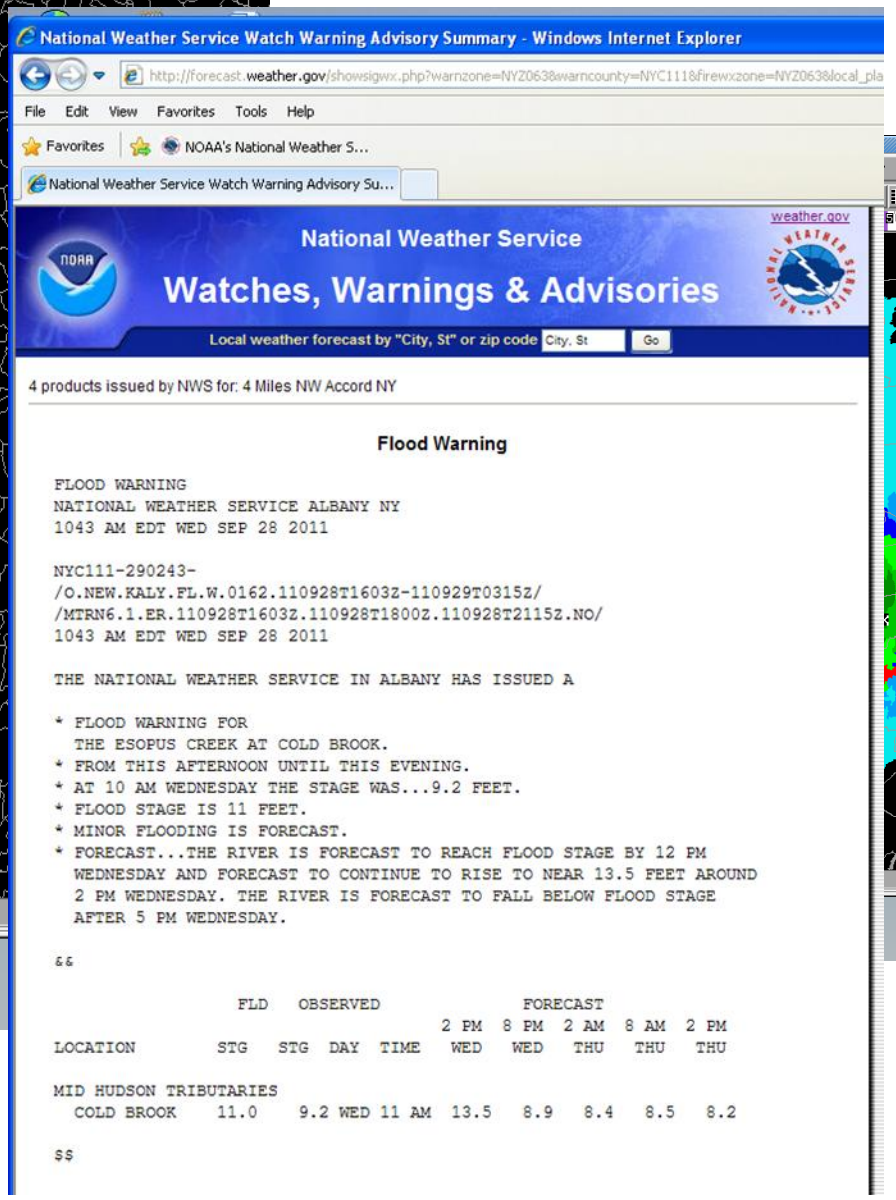


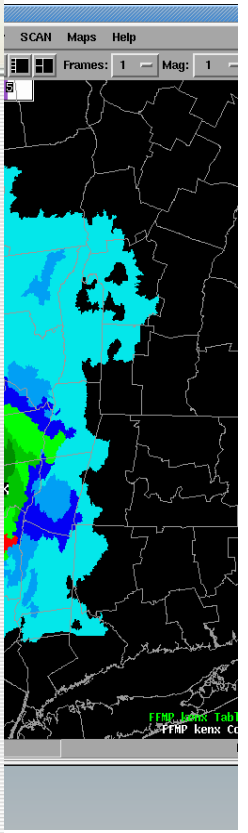
NAME	RATE	QPE	RFCFFG GUID	RFCFFG RATIO	RFCFFG DIFF
NY,ULSTER	0.85	1.89	2.28	74	-0.66
NY,GREENE	0.71	1.77	2.44	69	-0.78
NY,SULLIVAN	0.55	1.01	1.06	88	-0.14
NY,ORANGE	0.37	1.01	1.50	58	-0.69
NY,ALBANY	0.40	0.82	2.24	33	-1.65
NY,SCHOHARIE	0.56	0.67	2.20	27	-1.75
NY,SCHENECTADY	0.23	0.56	2.16	22	-1.94
NY,COLUMBIA	0.02	0.28	2.09	11	-2.08
NY,DELAWARE	0.18	0.27	1.61	9	-1.56
NY,DUTCHESS	0.01	0.27	2.32	11	-2.06


Forecast Systems Laboratory D-2D (bwesterg)
File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite kenx Radar SCAN Maps Help
Valid time seq
WFO
Clear
Frames: 1 Mag: 1 Density: 1
FFMP 3.00-Hour Precipitation Accumulation
FFMP Basin Table for kenx
File Config D2D Layer Zoom CWA Click
Refresh D2D
Config Summary
Sep 28 11 15:33 GMT
Clear Trace
Gap: 0.00 (hrs.)
Time Duration(hrs.)
3.00
Rate
0.00 3.00 6.00 9.00 12.00 15.00 18.00 21.00 24.00
NY,GREENE
RFCFFG RFCFFG RFCFFG
NAME RATE QPE GUID RATIO DIFF
LNVN6--Lanesville 1.01 1.85 2.56 72 -0.71
Stony Clove Creek 0.58 1.56 2.56 61 -1.00
Stony Clove Creek 0.13 1.47 2.68 55 -1.20
xxxx 0.62 1.42 2.68 53 -1.25
Stony Clove Creek 0.36 1.38 2.64 52 -1.25
xxxx 0.25 1.38 2.68 52 -1.30
xxxx 0.30 1.27 2.48 51 -1.21
Stony Clove Creek 0.18 1.27 2.64 48 -1.37
xxxx 0.05 1.23 2.72 45 -1.49
xxxx 0.04 1.23 2.68 46 -1.45
FFMP kenx Table Display
FFMP kenx Color Image
Frames: 1 Time:

28th September, 2011

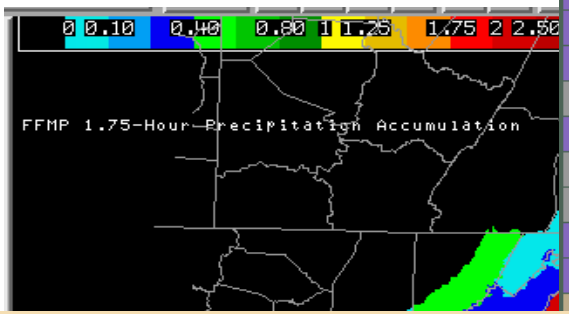


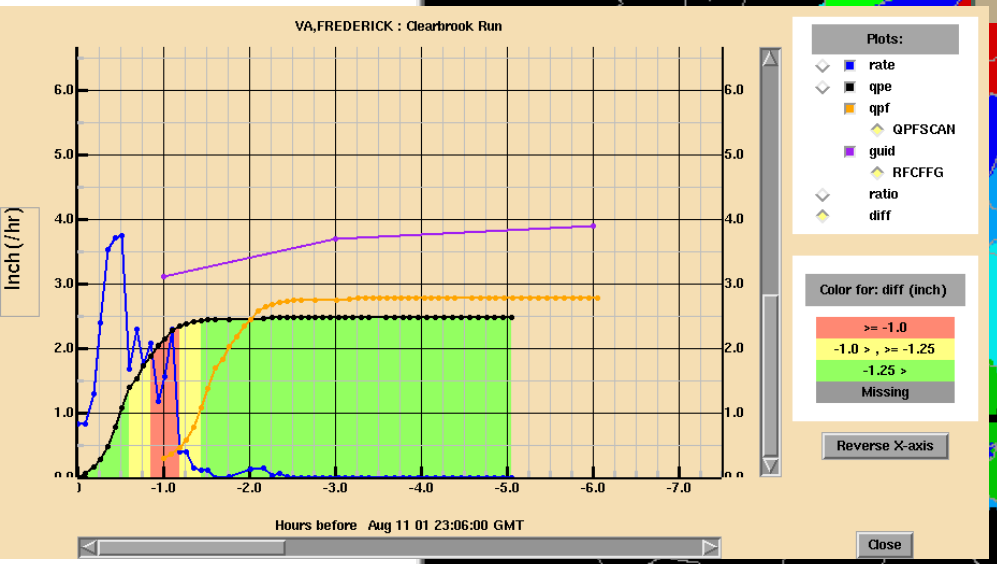


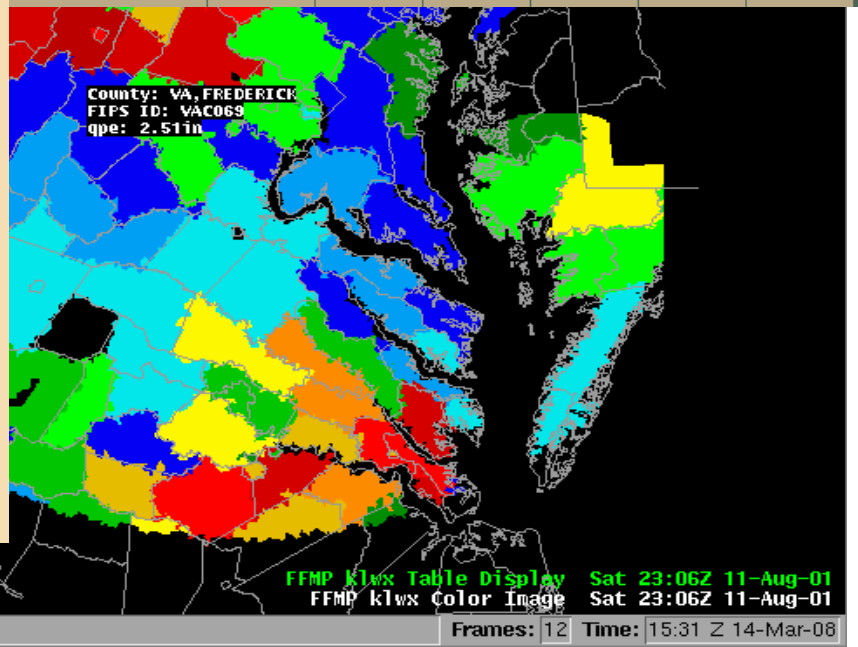


Highlights/Strengths: Split Window

- Combine **QPE with QPF**, then compare to guidance
- Brings much more of a predictive quality to FFMP







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Binghamton, NY - Picture from *Pressconnects.com*