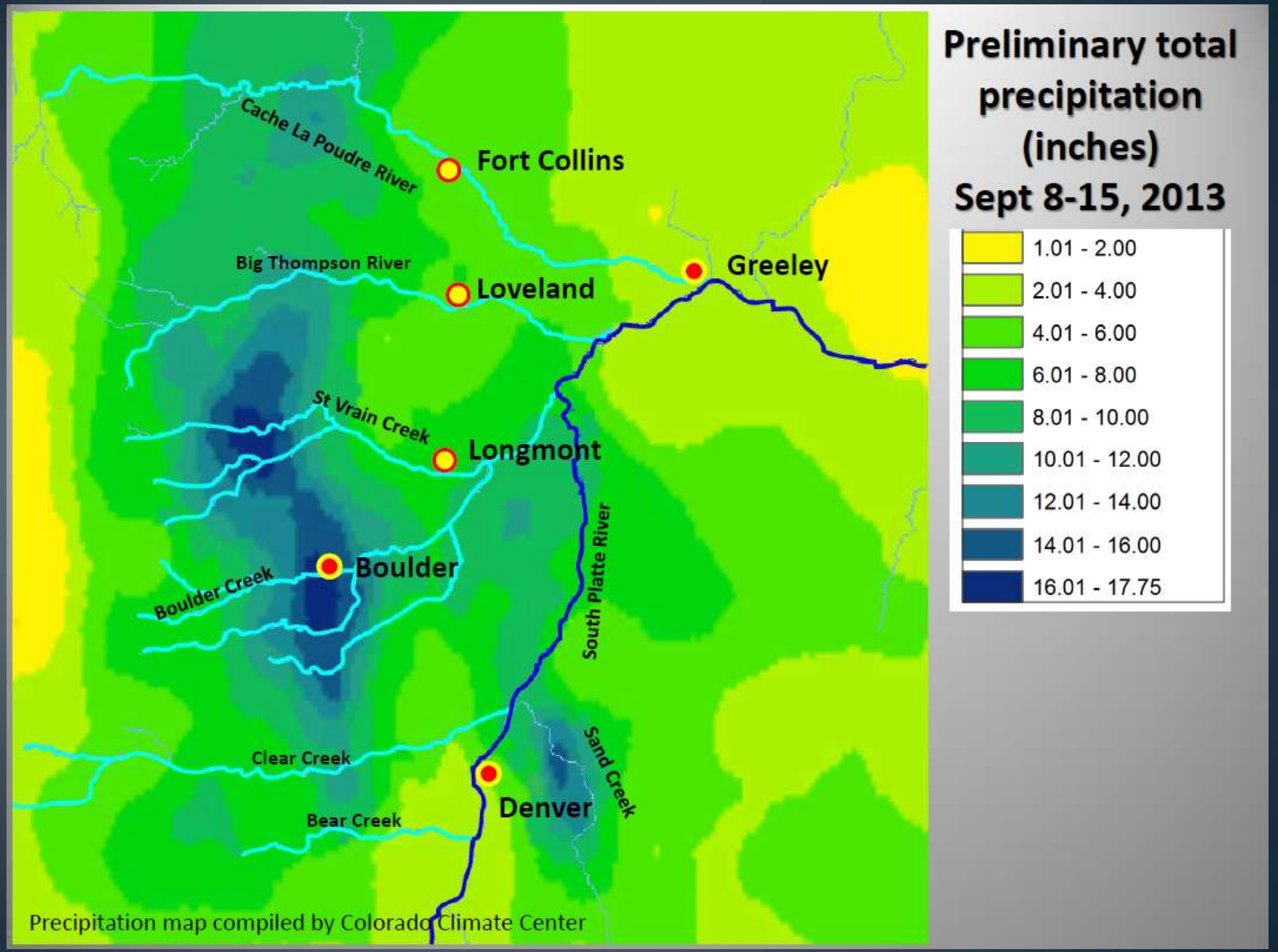
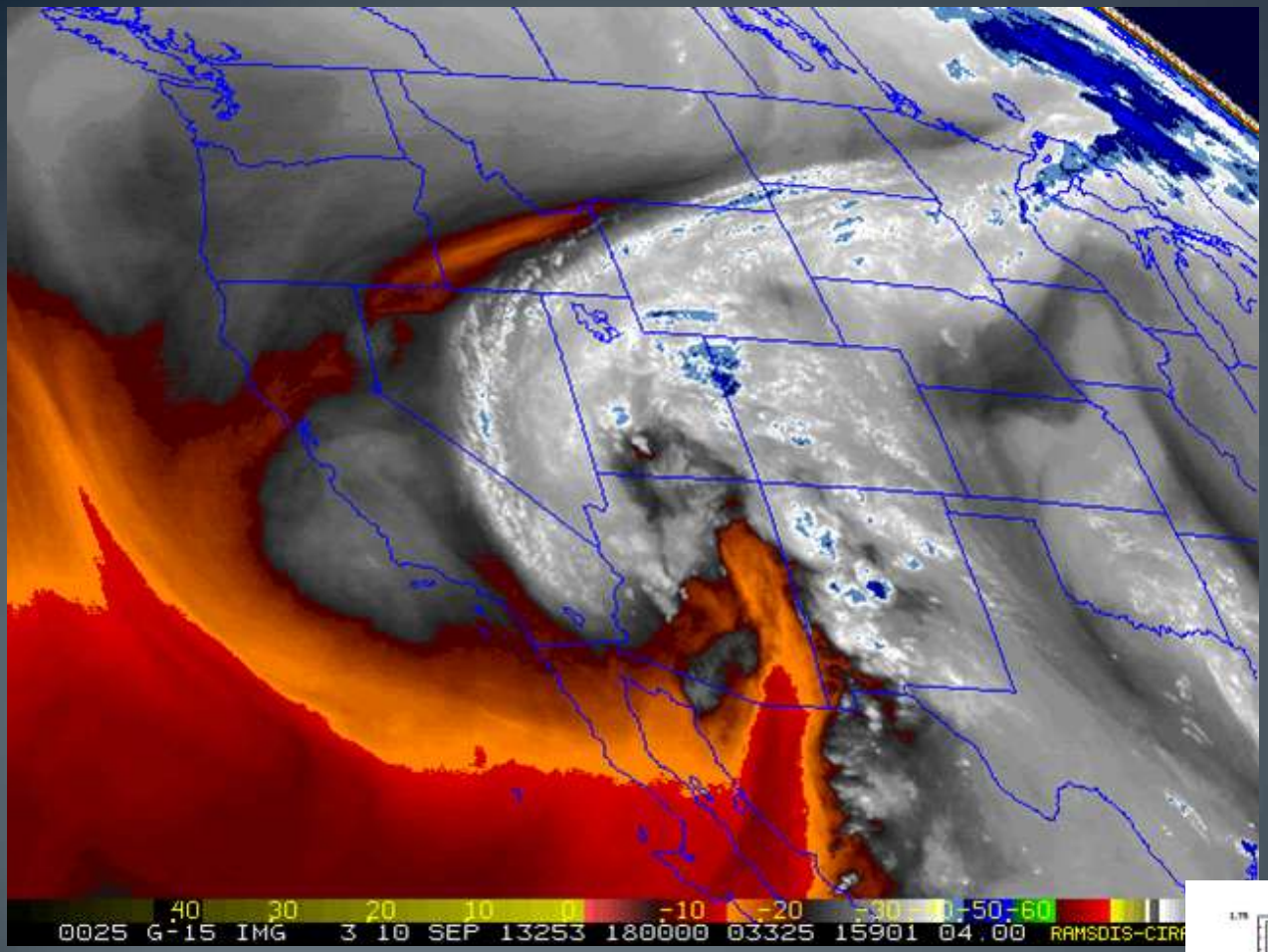
September 2013

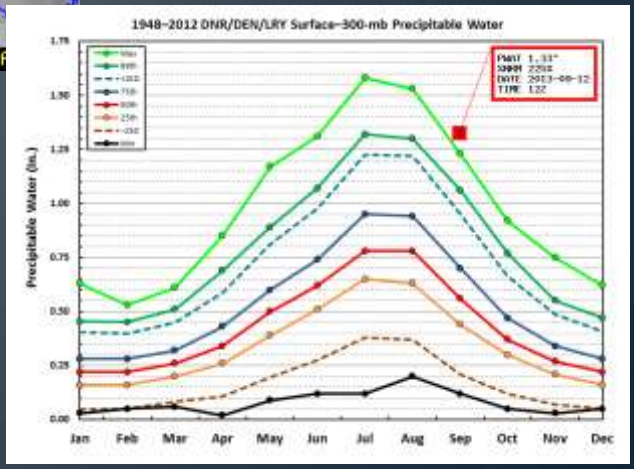

Preliminary total precipitation (inches) Sept 8-15, 2013
1.01 - 2.00
2.01 - 4.00
4.01 - 6.00
6.01 - 8.00
8.01 - 10.00
10.01 - 12.00
12.01 - 14.00
14.01 - 16.00
16.01 - 17.75
Cache La Poudre River
Fort Collins
Big Thompson River
Loveland
Greeley
St Vrain Creek
Longmont
Boulder
Boulder Creek
South Platte River
Clear Creek
Sand Creek
Bear Creek
Denver
Precipitation map compiled by Colorado Climate Center

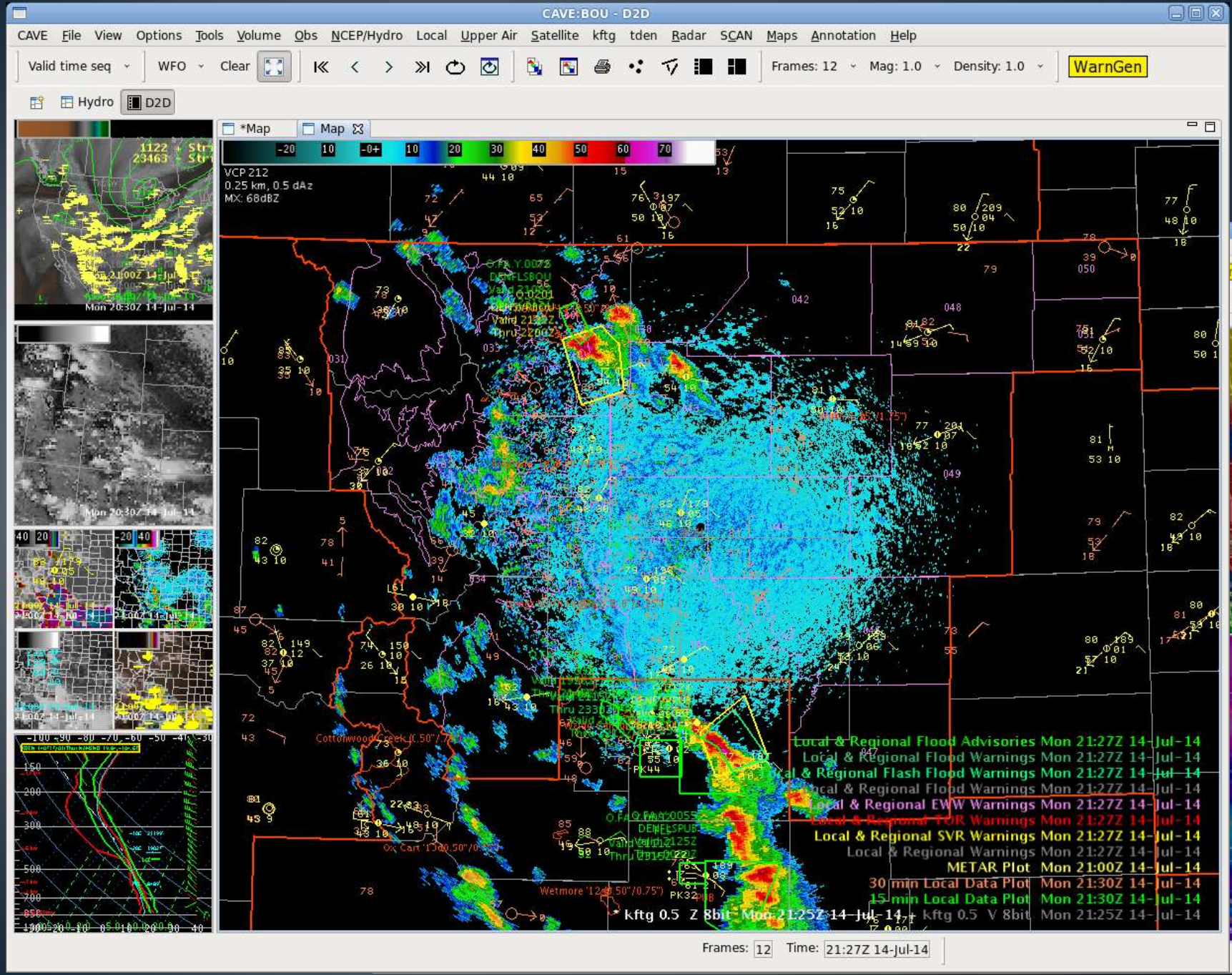
Impact Summary Statewide

- Flood Area
  - 1918 square miles
  - 17 counties
- FEMA Disaster Declarations – 9 counties
- 9 fatalities
- 5950 persons evacuated
- 16,101 homes damaged
- 1882 homes destroyed
- 785 commercial buildings damaged
- 203 commercial buildings destroyed
- 200 miles of road damaged or destroyed
- 50 bridges damaged or destroyed

Tuesday Evening

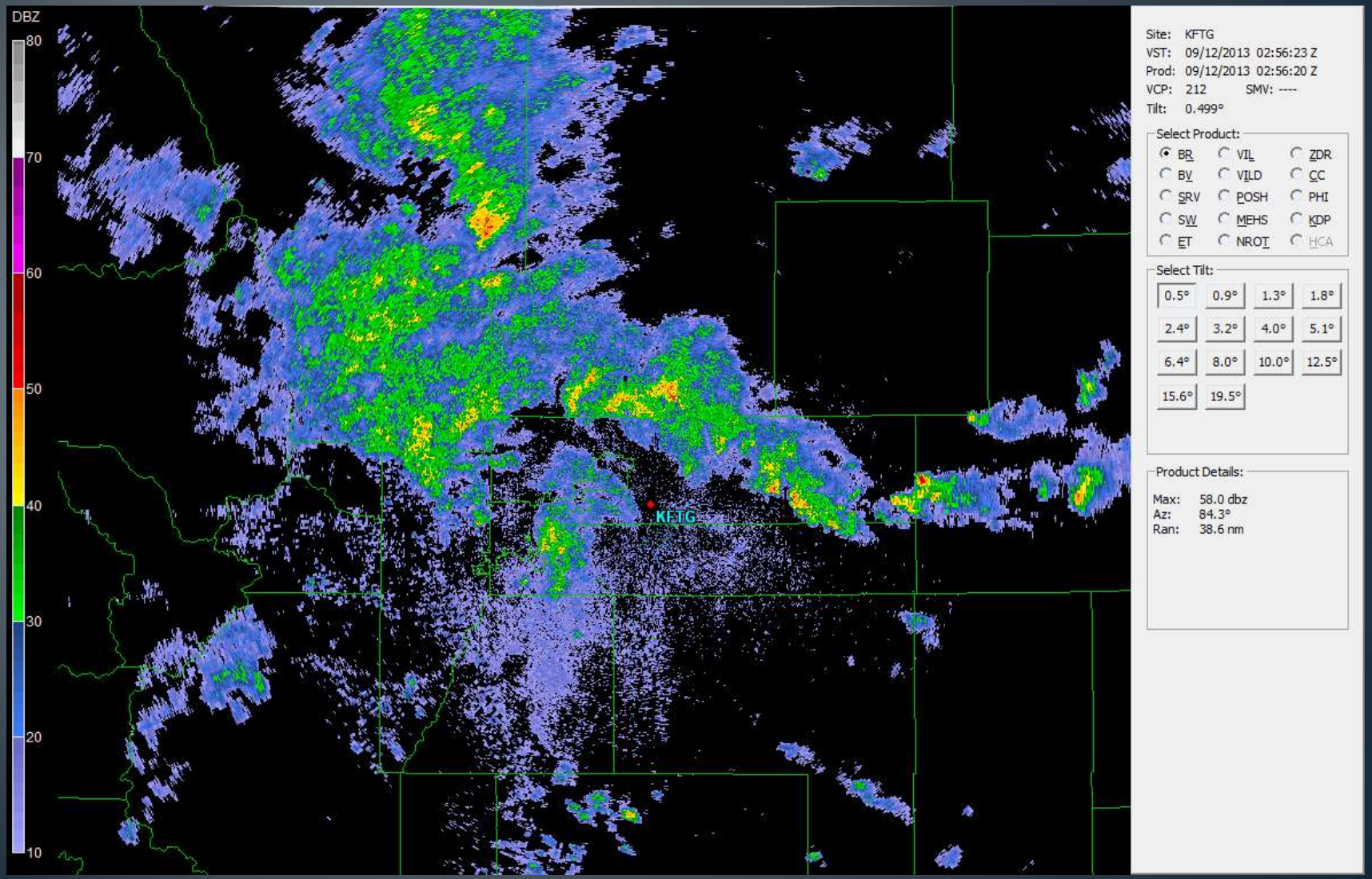




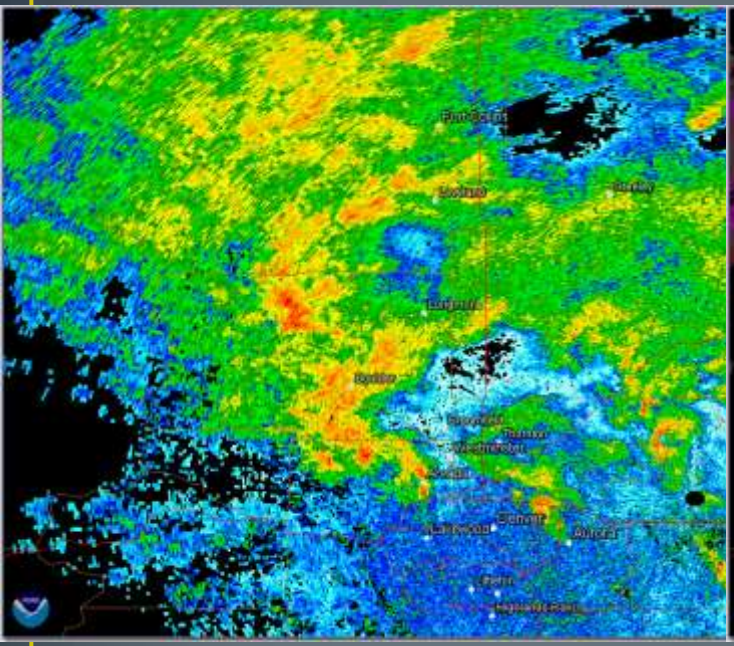

CAVE:BOU - D2D
CAVE File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite kftg tden Radar SCAN Maps Annotation Help
Valid time seq
WFO
Clear
Frames: 12
Mag: 1.0
Density: 1.0
WarnGen
Hydro
D2D
*Map
Map
VCP 212
0.25 km, 0.5 dAz
MX: 68dBZ
Local & Regional Flood Advisories Mon 21:27Z 14-Jul-14
Local & Regional Flood Warnings Mon 21:27Z 14-Jul-14
Local & Regional Flash Flood Warnings Mon 21:27Z 14-Jul-14
Local & Regional Flood Warnings Mon 21:27Z 14-Jul-14
Local & Regional EWW Warnings Mon 21:27Z 14-Jul-14
Local & Regional TOR Warnings Mon 21:27Z 14-Jul-14
Local & Regional SVR Warnings Mon 21:27Z 14-Jul-14
Local & Regional Warnings Mon 21:27Z 14-Jul-14
METAR Plot Mon 21:00Z 14-Jul-14
30 min Local Data Plot Mon 21:30Z 14-Jul-14
15 min Local Data Plot Mon 21:30Z 14-Jul-14
kftg 0.5 Z 8bit Mon 21:25Z 14-Jul-14
kftg 0.5 V 8bit Mon 21:25Z 14-Jul-14
Frames: 12
Time: 21:27Z 14-Jul-14

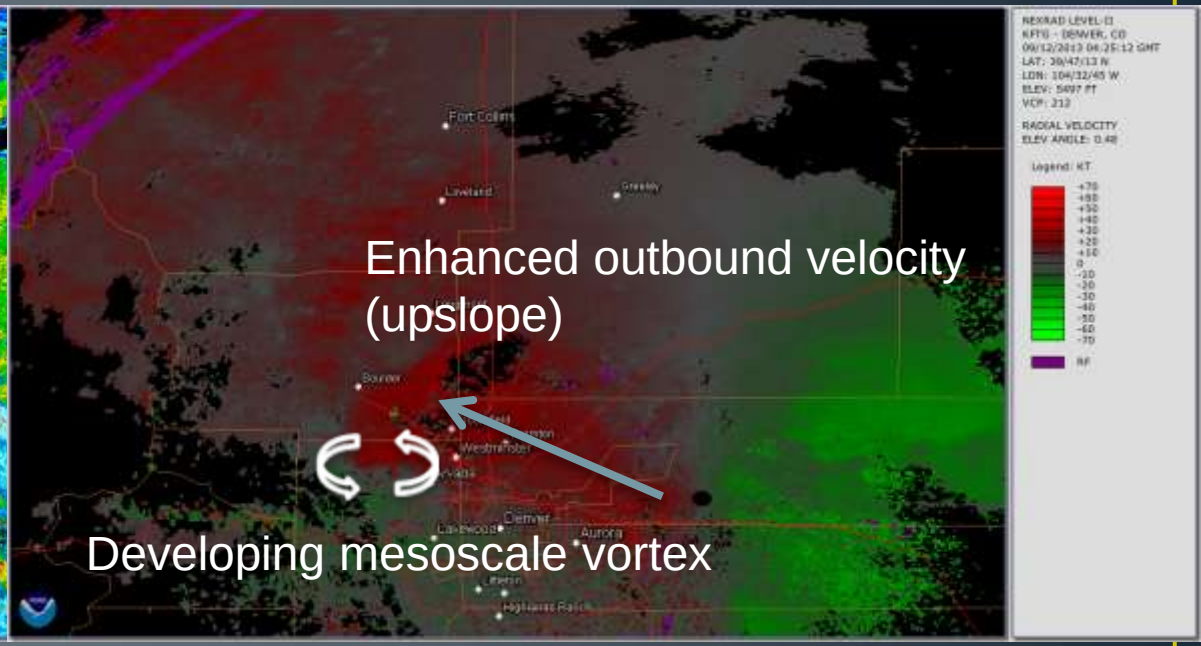
KFTG

9/12 03Z – 9/12 08Z



Mesoscale Features
KFTG 0425 UTC

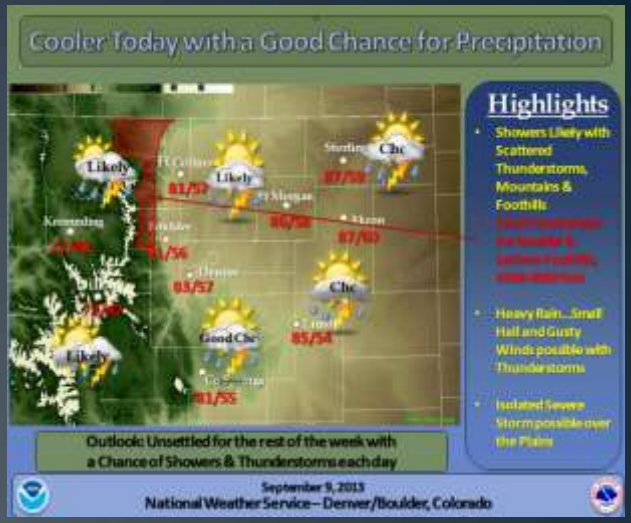




0.5° Reflectivity

0.5° Radial velocity

Warning Operations



- Forecast
  - Strong wording in discussions and conference calls
- Warning Products
  - Urgent wording
- Conference Calls
  - 5 days before event
  - Multiple calls and statewide briefings once event was underway
- Web Page
- FaceBook
  - 320,000 reached on Facebook over nine days
- Twitter
  - Near constant Tweeting Wed night/Thursday, urgent wording
  - Many area jurisdictions/emergency managers use Twitter extensively
- Chat applications
- WebEOC

Extended Decision Support

- **State EOC** calls through September
- **On site meteorologists** supporting response and recovery operations, primarily helicopter rescue and evacuations.
- **FEMA** – Daily email and phone briefings through the winter
- **FEMA** – Temporary housing options – first snow dates, average snow depth, wind and snow load criteria
- **Colorado Department of Transportation** – web and phone briefings through December supporting road reconstruction

First we had a fire…

- **Nine fires** 2010 - 2013
- **Fire begets Flash Flooding**
  - Identification, definition, and coordination of enhanced flash flood threats
- **Teamwork** – Intense outreach, community meetings, County and City officials, Colorado University, water agencies, USGS, Bureau of Reclamation, and many others
- **Our successes** in September 2013 are a direct result of
  - **Improved forecast capability**
    - Meteorological research, modeling, technology/tools and communications
  - **Relationships** with emergency management, media, and the public
  - **Decision Support Services** over three years …and even decades before