ATLANTA FLOODS: SEPTEMBER 20-23, 2009

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American Meteorological Society Annual Meeting 2010
**Flooding Set-Up**

- Wetter than normal August into September

- Persistent low pressure area feeding Gulf of Mexico moisture into the southeast, with daily rain starting in the Atlanta metro area on September 15

- Some areas had already received 6+ inches of rain prior to the heavy rainfall overnight September 20
Flooding Set-Up

Source: National Weather Service Forecast Office, Peachtree City, GA
Flooding Set-Up

- Heavy rains, Sept. 20-21

Sept. 20, 2009 2329Z

Image: National Weather Service Forecast Office, Peachtree City, GA
Flooding Set-Up

- Heavy rains, Sept. 20-21

Sept. 21, 2009
0143Z

Image: National Weather Service Forecast Office, Peachtree City, GA
Heavy rains, Sept. 20-21

- Sept. 21 1300Z (9 AM EDT)
  18-hour accumulation
  Max: 15.04 inches

- Some locations received 20 inches of rain in 24 hours

Image: National Weather Service Forecast Office, Peachtree City, GA
Flash Floods, Sept. 20-21

- **Fatalities**
  - Nine flash flood fatalities in the Atlanta metro area
    - Eight in vehicles
    - One in a mobile home
  - One additional flood fatality in NW Georgia (rescue attempt) and another near Chattanooga, TN ($5 bet)

- **Roads**
  - Numerous roads and bridges washed out

Winston, GA, Monday, Sept. 21

(AP Photo/Atlanta Journal Constitution, John Spink)
Flooding, Sept. 21-23

- Cumulative heavy rainfall lead to urban flooding and historic river flooding

- **26 new record high crests** were established at locations on 21 different creeks/rivers

- **20 USGS streamgauges** were overtopped, one by 12 feet

“At some sites, the annual chance of a flood of this magnitude was so significantly less than 1 in 500 that, given the relatively short length of streamgauging records (well less than 100 years), the U.S. Geological Survey cannot accurately characterize the probability due to its extreme rarity.”

- Robert Holmes, USGS National Flood Program Coordinator
Flooding, Sept. 21-23

AUSG1 – Sweetwater Creek, 3SE Austell, GA

8:55 PM EDT Sept. 22

Last observed value was 18.21 feet when gauge failed at 3:30 PM, Sept. 21

Crest recorded at 30.17 feet, later corrected to 30.80 feet using high water marks.
Flooding, Sept. 21-23

Gauge Height Hydrograph, Sept. 15-26

Actual Crest: 30.80 feet
Previous Record Crest: 21.81 feet
Forecast Crest: 21.21 feet
Flood Stage: 10 feet
Normal Stage: 1-2 feet
Flooding, Sept. 21-23

Normal days at Sweetwater Creek State Park (1-3 feet)
Flooding, Sept. 21-23

Sept. 23, 2009, day after crest

Approx. 21.8 feet in this photo (previous record crest)
Flooding, Sept. 21-23
Flooding, Sept. 21-23

- Impacts
  - $500 million in damages
  - 17 counties under federal disaster declaration
  - 27,000 families, individuals and businesses registered with FEMA (as of 11/22/09)
  - 40% of homes in town of Austell significantly damaged or destroyed
  - Many school districts closed for days
  - Hundreds of people rescued from homes via boat
  - Approx. 300 roads closed/destroyed
  - I-75/85, I-20, I-285, I-575 all had closures
Flooding, Sept. 21-23

- Road Closures

Downtown Connector (I-75/I-85) at evening rush hour, Sept. 21 – Urban flooding/ heavy rain

Photo: AJC
Flooding, Sept. 21-23

- Road Closures

I-20 near Lee Road west of Atlanta, Sept. 23

Photo: Phil Skinner, AJC
Flooding, Sept. 21-23

- Road Closures

Veterans Memorial Highway in Austell as Sweetwater Creek continued to rise, Sept. 21
River Flooding, Sept. 21-23

- Businesses Damaged
River Flooding, Sept. 21-23
River Flooding, Sept. 21-23
River Flooding, Sept. 21-23
River Flooding, Sept. 21-23
River Flooding, Sept. 21-23

- Schools Damaged

Clarkdale Elementary School, Austell

Photo courtesy Phil Skinner, AJC
River Flooding, Sept. 21-23

Photos taken Mid-October
River Flooding, Sept. 21-23
River Flooding, Sept. 21-23
River Flooding, Sept. 21-23
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River Flooding, Sept. 21-23

Mid-October: Water line still evident
River Flooding, Sept. 21-23

- Water Quality Issues
  - Rivers contained high levels of E. Coli, raw sewage (broken sewage lines, water treatment plant inundation)
Woes continue...

- Many flooded homes still not fixed and are unoccupied
- Many homeowners walking away from damaged homes
- Cobb County and town of Austell to ask government to buy out 250 flooded homes (AJC, January 14, 2010)
Acknowledgements

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  - Report forthcoming

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