Beyond Mapping Floodplains: Increasing Flood Risk Awareness and Resilient Communities

Alabama Water Resources Conference

September 8, 2016

Is this the time to communicate risk?

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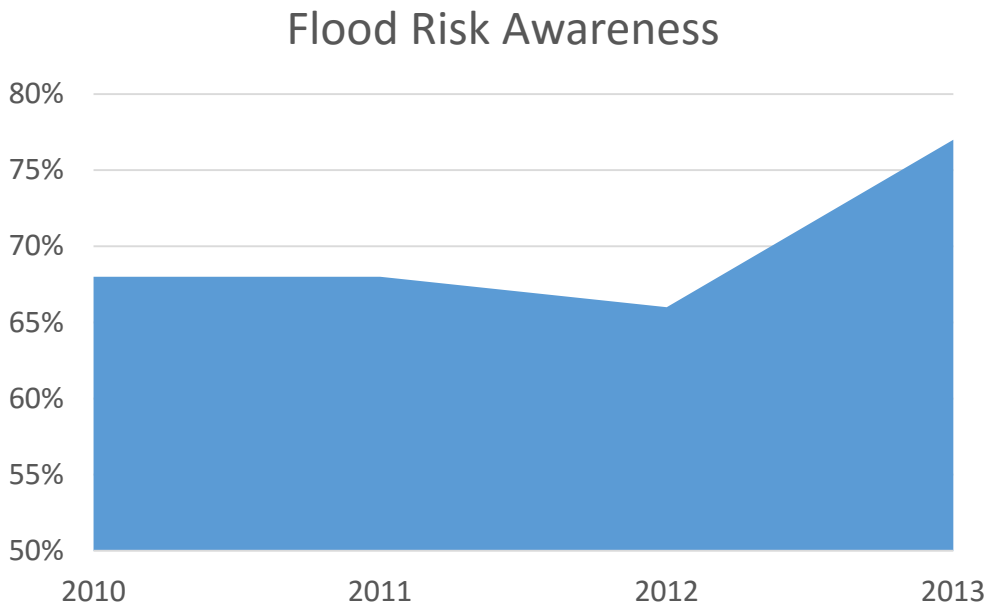
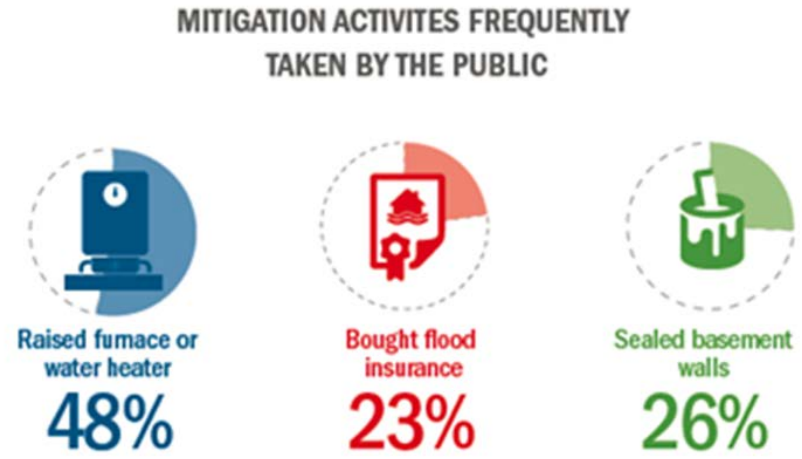
How about this?

Flood Risk Awareness



- 3 out of 4 Community Leaders are aware their community is at risk of flooding
  - 1/3 of those considered flooding to be their community's primary hazard
- Less than 15% of Homeowners are aware of their flood risk

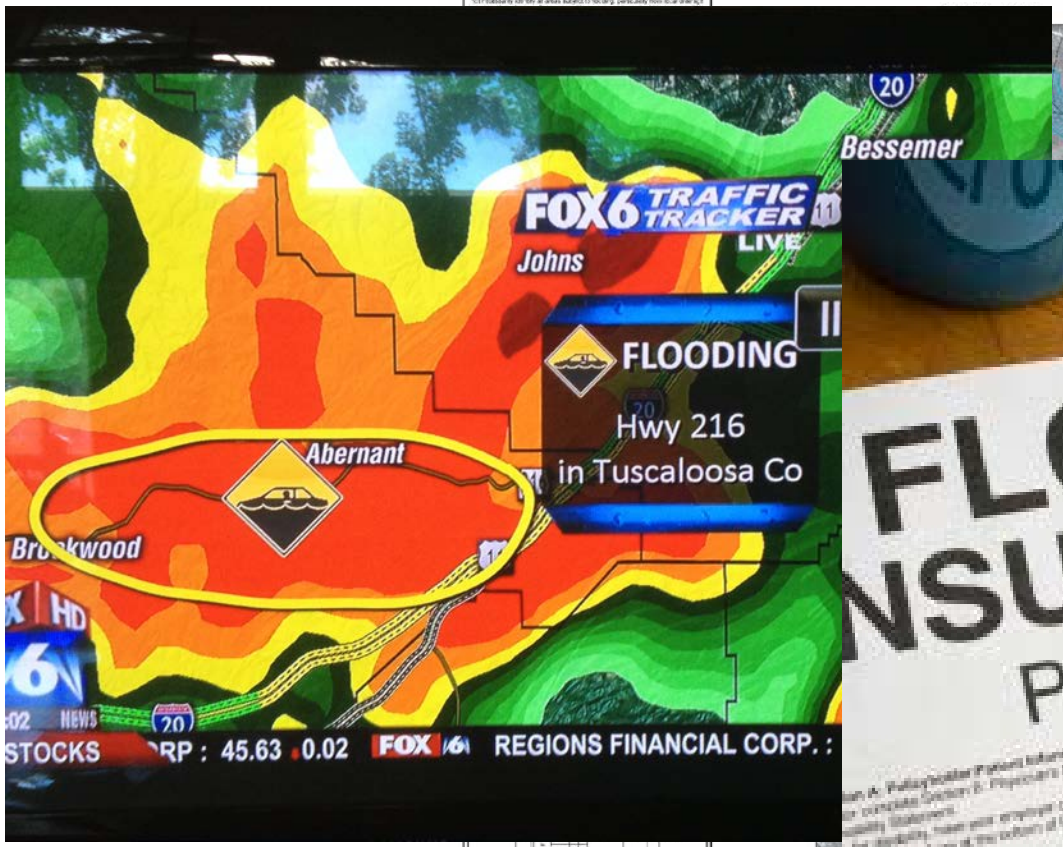


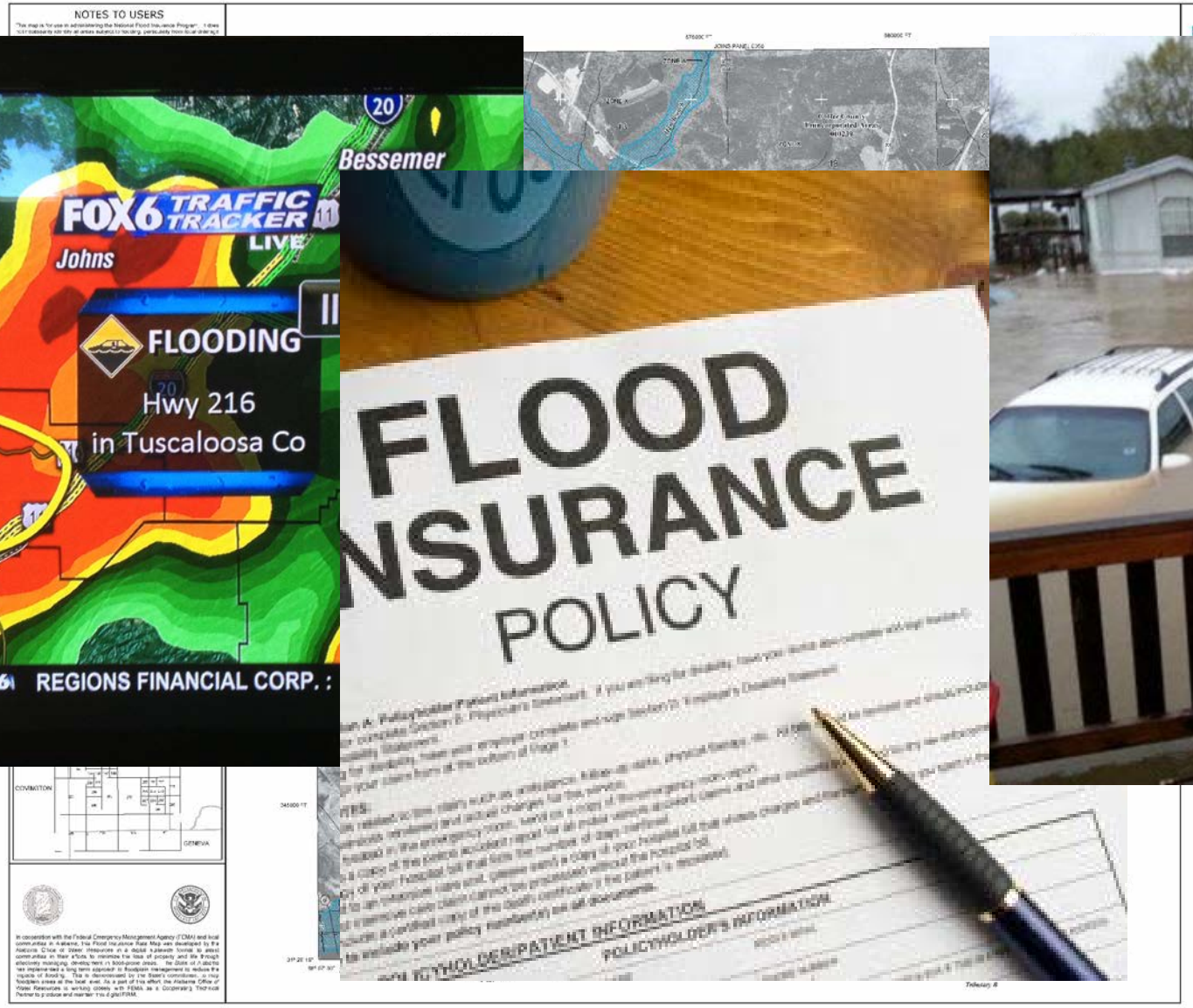
How can we improve risk communications?

"people at risk from disasters, whether natural or human in origin, can take actions that save lives, reduce losses, speed responses, and reduce human suffering when they receive accurate warnings in a timely manner"

2000 Effective Disaster Warnings Report
National Science and Technology Council

When are we aware of our flood risk?

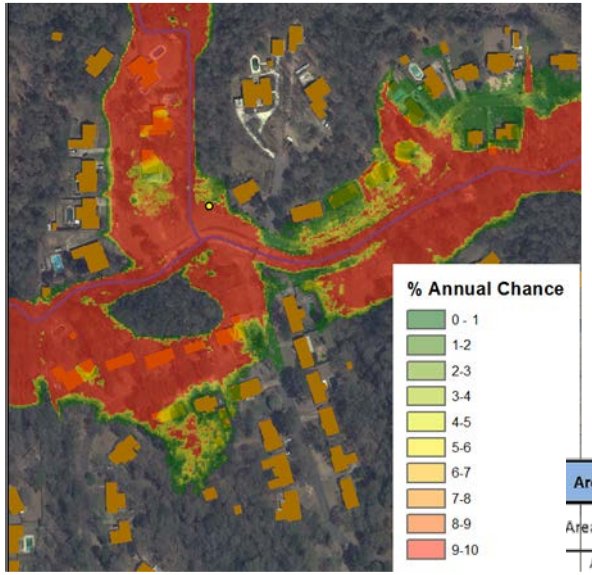


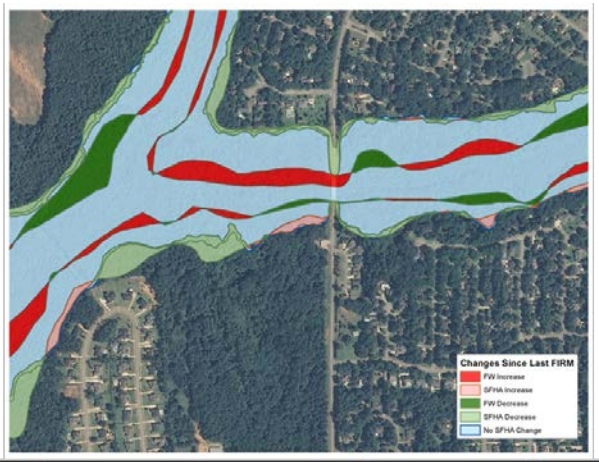


How should we communicate flood risk?

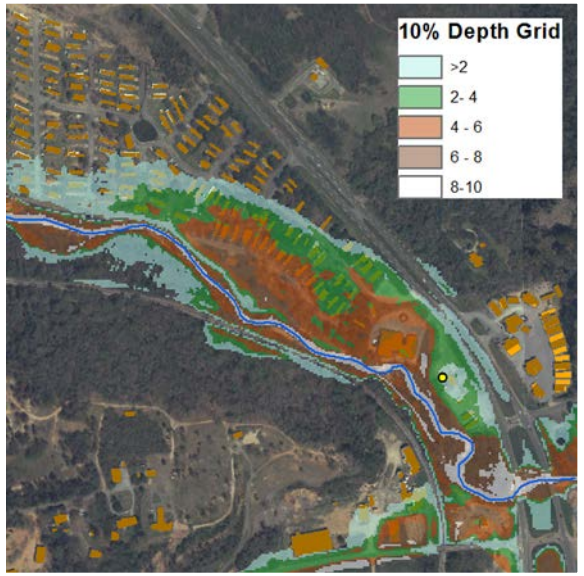
In communications, one size does not fit all

- End goal of FEMA and OWR Floodplain Management message
  - *Helping communities determine and invest in mitigation actions that result in more resilient communities*
- Public wants - who, what, when, where, why



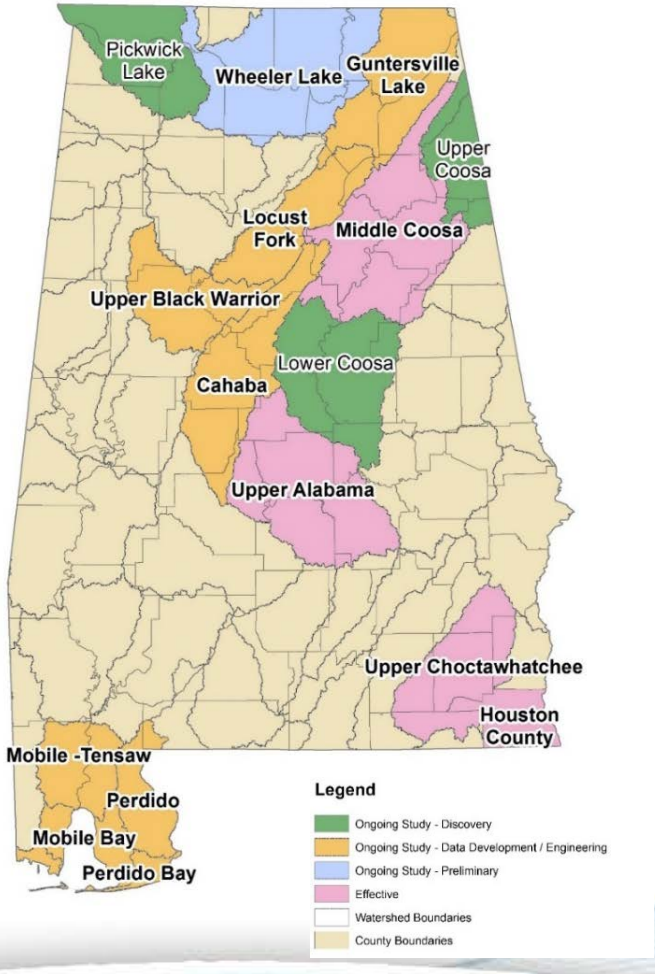


Area of Interest	Total Area (mi^2)	Increase (mi^2)	Decrease (mi^2)	Net Change
Area within SFHA*	146.3	31.8	46.1	-14.4
Area within Floodway*	11.4	6.5	0.2	6.3



Floodplain Management in AL

- Flood Mapping
  - All 67 counties updated
  - 37,000 miles of mapped floodplain
  - 295 miles of coastline
- LOMR Delegation
  - Flood Map Revisions
  - 20-30 LOMR requests annually
- NFIP Coordination
  - 432 participating communities
  - 54,881 NFIP policies
  - $12.3B insurance coverage
  - $1.0B total claims since 1978



Educating Local Stakeholders

- Risk MAP Tools Training
- YouTube Channel
- Flood Risk Mapping Application
- LOMR Training
- Mitigation Tools Training
- L-273 Course (2 annually)
- CRS Workshops

Alabama Flood Map Website!

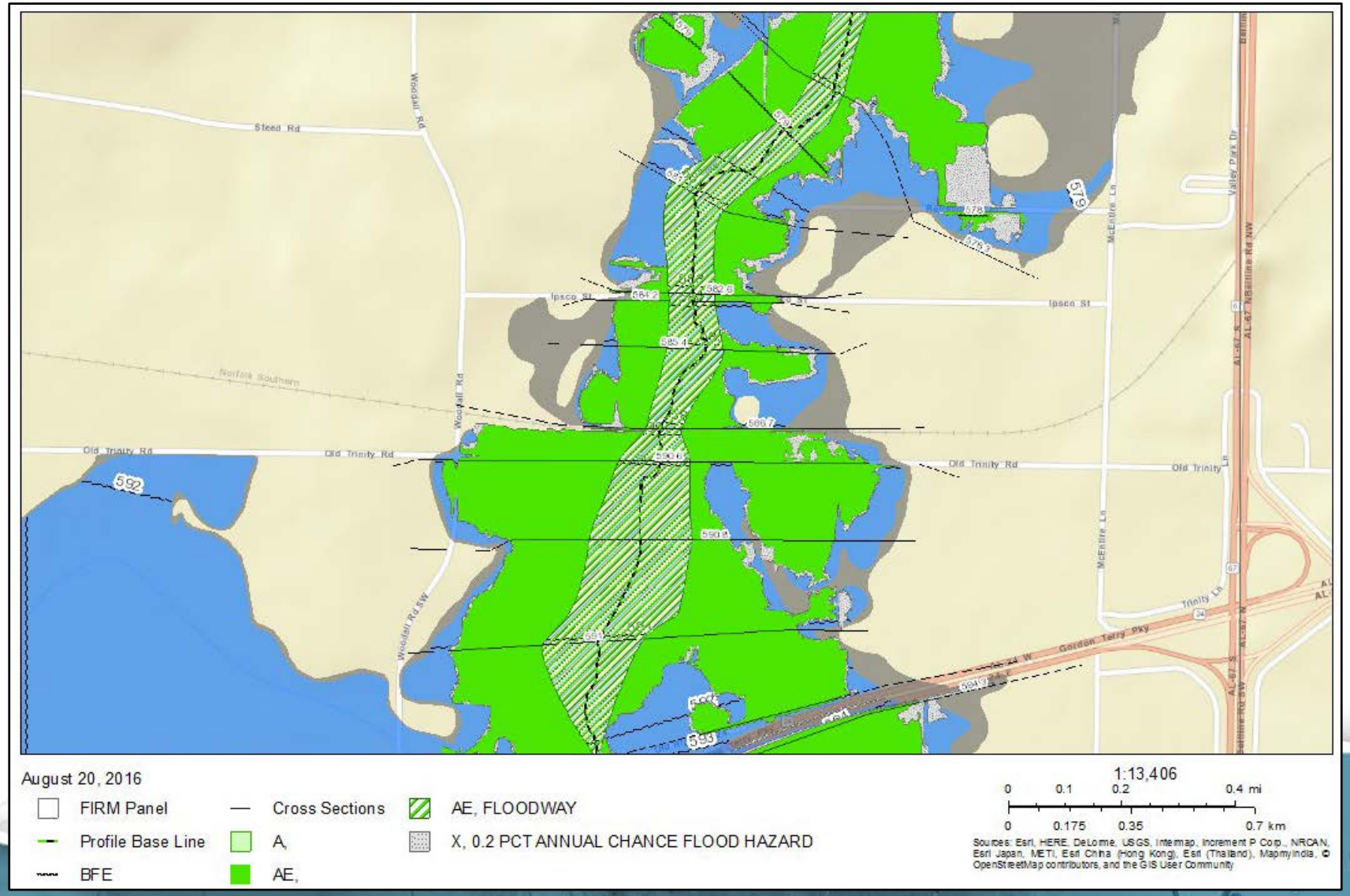
The goal is to provide a more efficient means of reviewing preliminary data and retrieving effective data as well as determining areas for potential mitigation actions.

- ***Website will contain:***
  - Regulatory Data
    - FIRMs
    - DFIRM database
    - FIS
  - Non-Regulatory (RiskMAP) Products
    - Depth and Probability Grids
    - Flood Risk Assessment
    - Areas of Mitigation Interest
  - Effective Hydraulic Models

- ***Features:***
  - Basic and Advanced Options
  - Address Lookup
  - Search and Identify
  - Measure Tool
  - Print Options
    - PDF
    - JPG
    - PNG

http://54.175.184.243/AlabamaFlood

Preliminary vs. Effective Map Viewer



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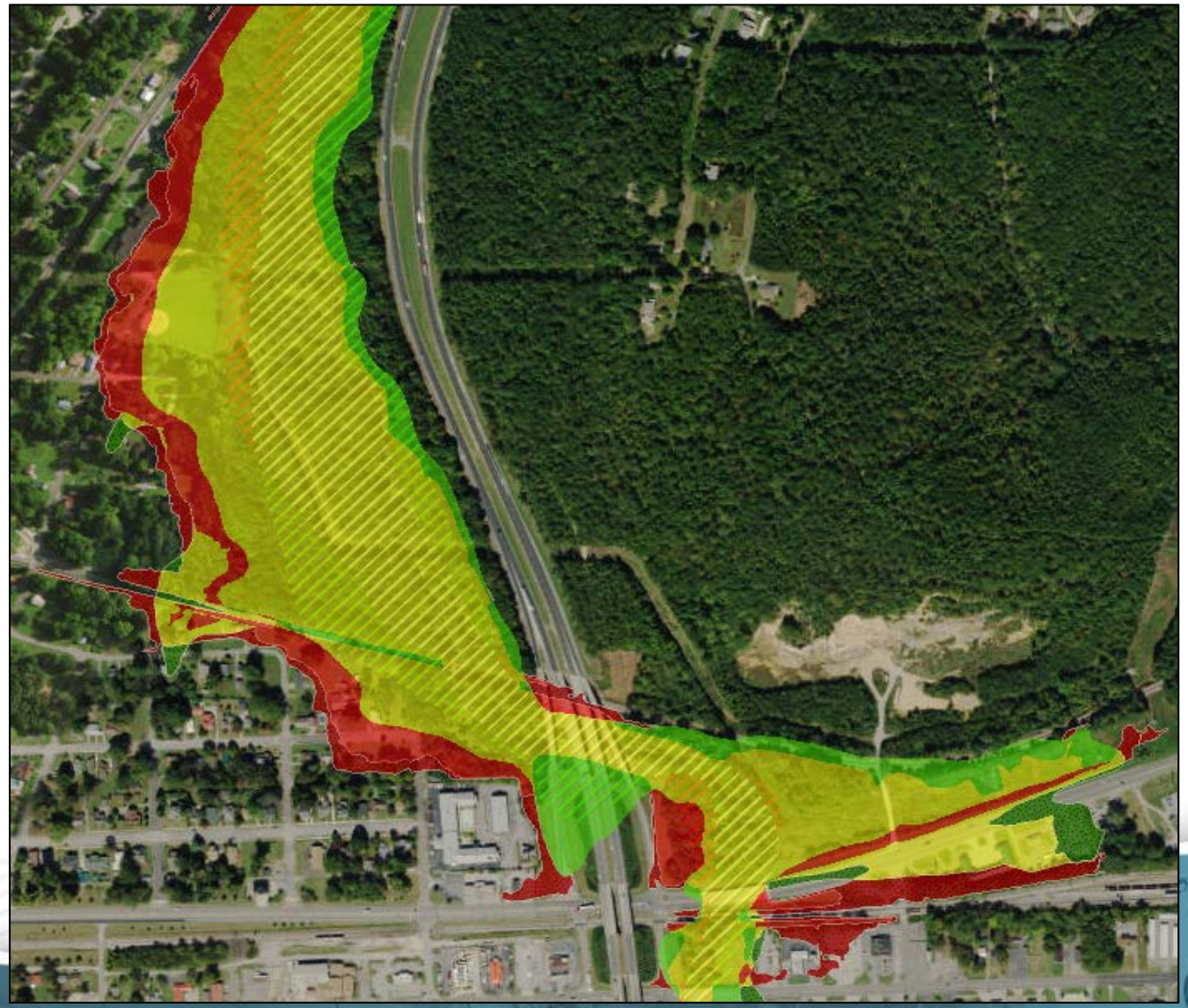
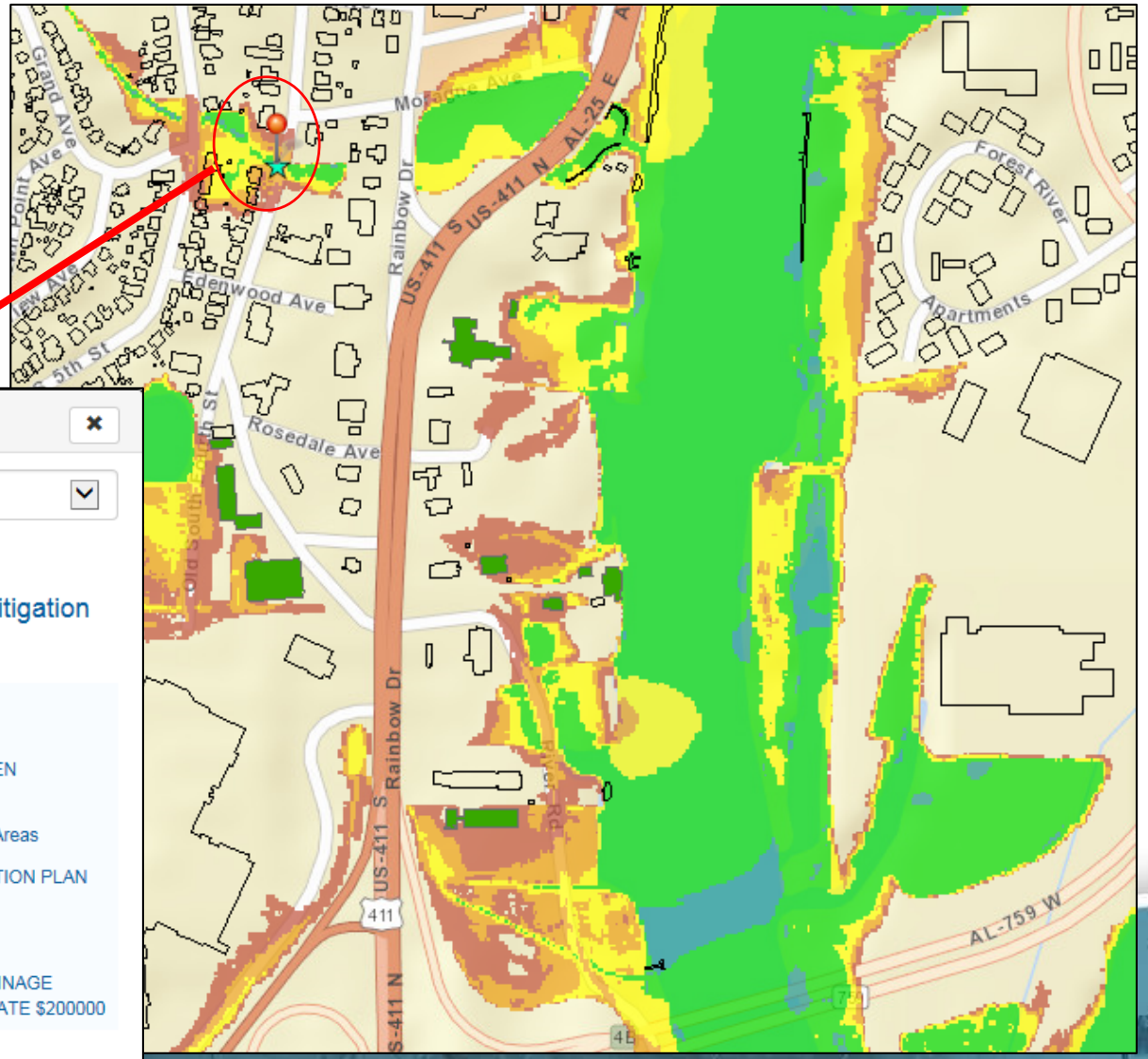
Changes Since Last FIRM



- [x] **SFHA Changes**
  - 1% Annual Chance Flooding Increase
  - 0.2% Annual Chance Floodplain Increase
  - 1% Annual Chance Flooding Decrease
  - 0.2% Annual Chance Floodplain Decrease
  - No Change
- [x] **Floodway Changes**
  - Floodway Increase
  - Floodway Decrease
  - No Floodway Change

Flood Depths and Mitigation Areas



Identify Results

All Layers

1 2 3

AOMI Points(Area of Mitigation Interest)

Community ID	010080
Political Name	CITY OF GADSDEN
AOMI Type	Other Flood Risk Areas
AOMI Source	HAZARD MITIGATION PLAN
AOMI Info	S 4TH STREET
NOTES	PROPOSED DRAINAGE PROJECT ESTIMATE $200000

- ☑ AOMI Points(Area of Mitigation Interest)
- ☑ Building Footprints
  - Data
  - No Data
- ☑ 1% Annual Chance Flood Depth
  - 0' - 1'
  - 1' - 2'
  - 2' - 4'
  - 4' - 6'
  - 6' - 8'
  - 8'+

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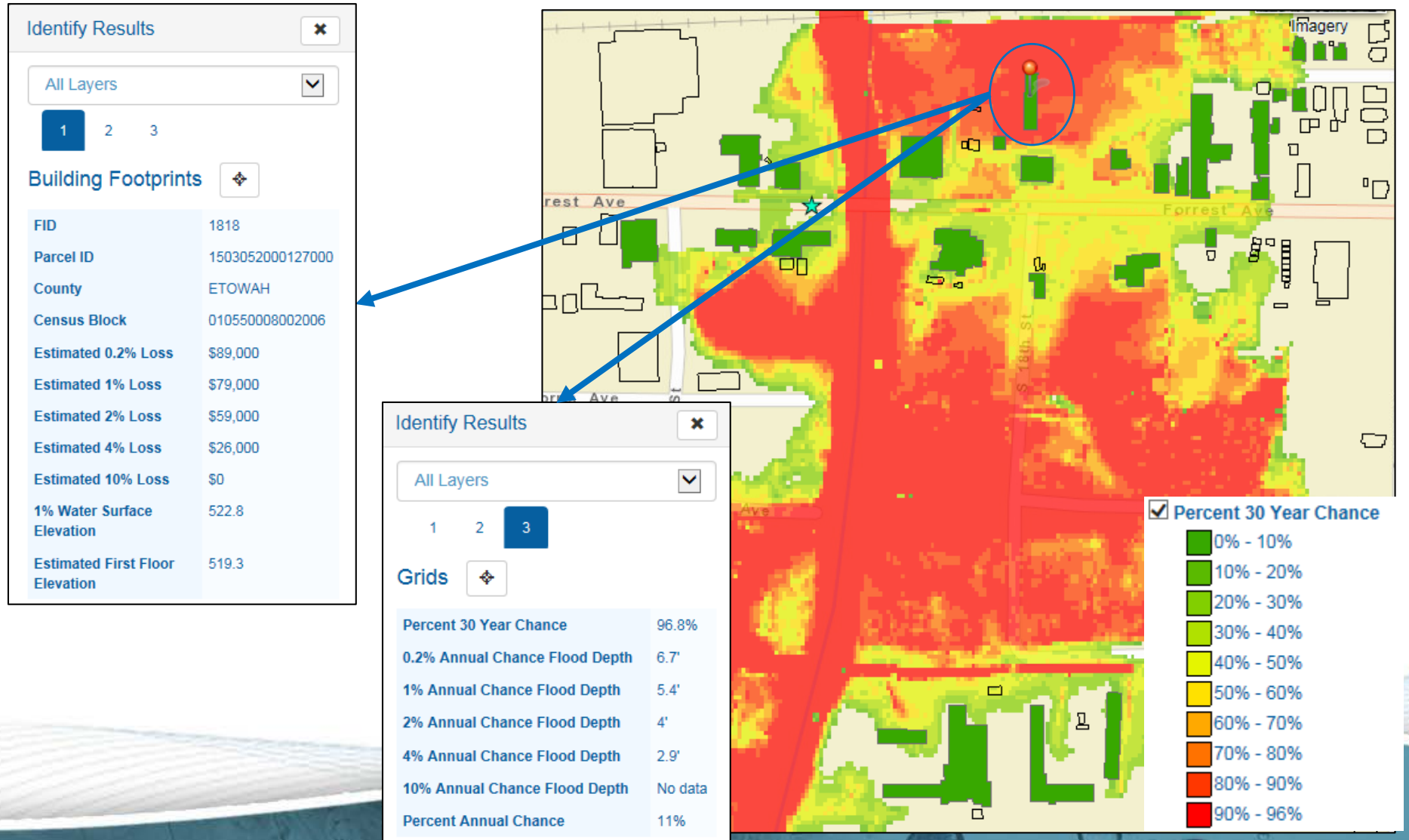
% Chance of flood in 30 years and Loss



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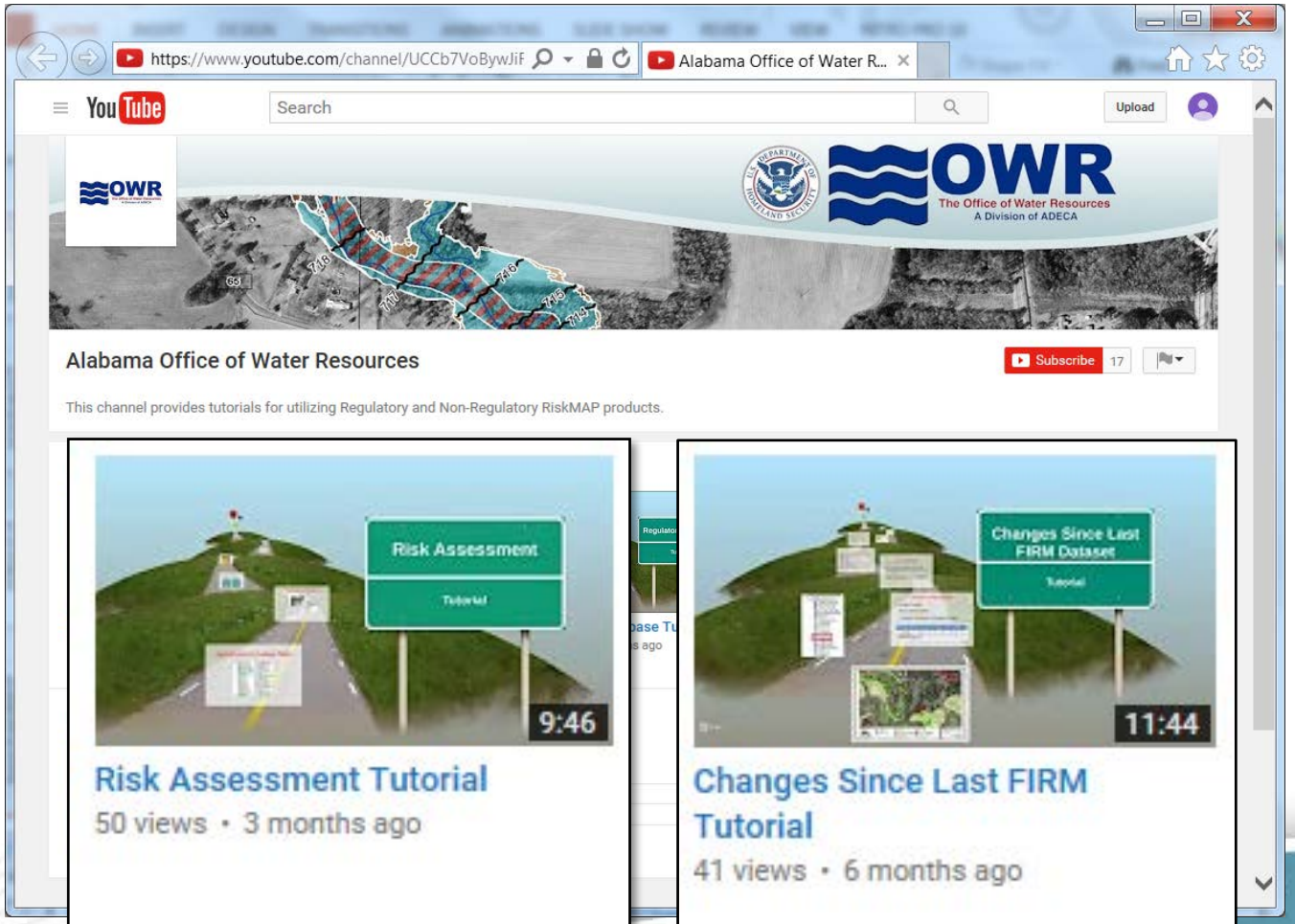
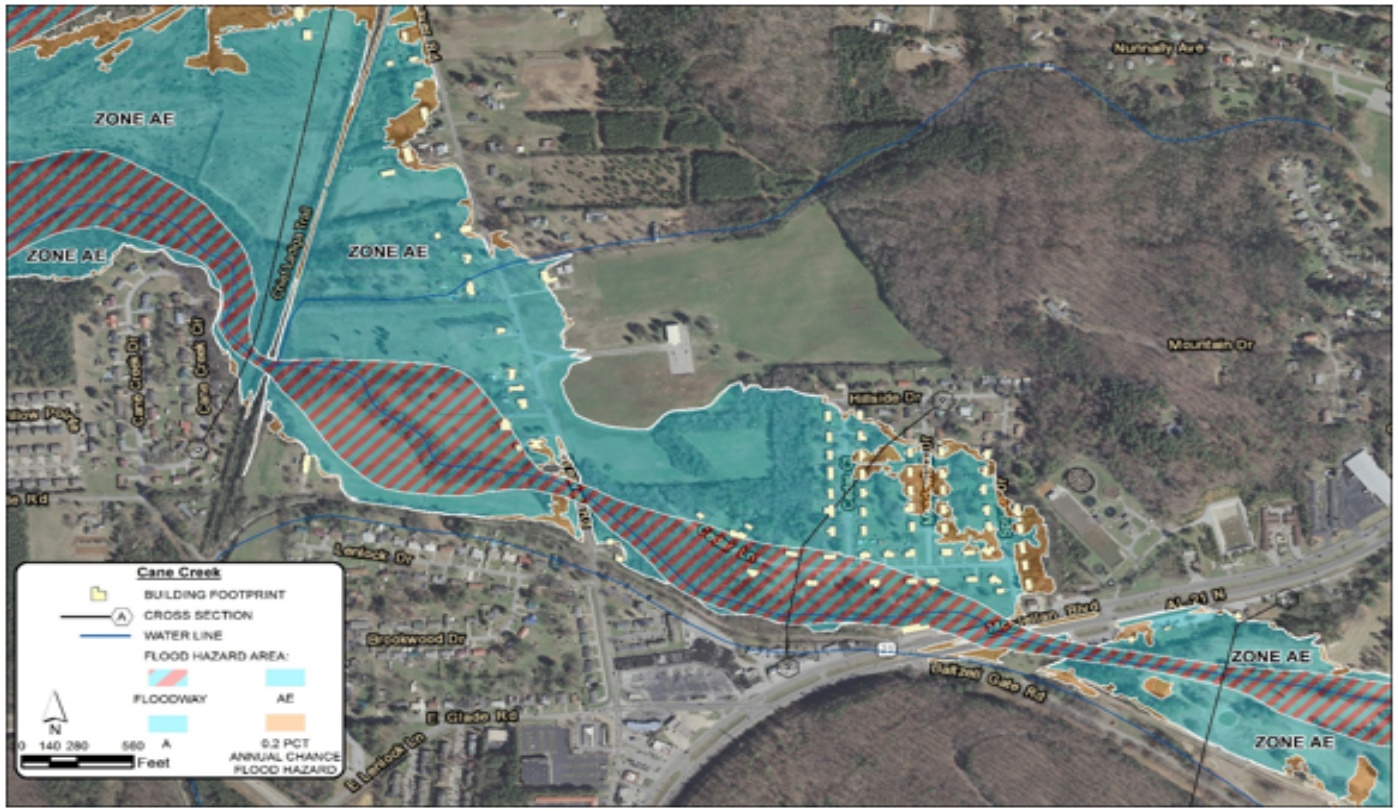
OWR YouTube Channel!

https://www.youtube.com/channel/UCCb7VoBywJiRG7vSXstEwXQ





3. Cane Creek, City of Anniston, Calhoun County

Location of Mitigation Opportunity

The location of this mitigation opportunity is near the Cane Creek crossing of Weaver Road and Chief Ladiga Trail, which was a Norfolk Southern railroad. Cane Creek flows generally east. The Cane Creek watershed has a drainage area of 16 square miles at this location. The watershed contains a large developed area for the City of Anniston and the City of Weaver. The estimated 1-percent-annual-chance peak discharge is 5,780 cfs. Based on the effective hydraulic model (HEC-2), the embankments and bridges at Weaver Road and Chief Ladiga Trail cause approximately 6 feet of backwater effects for the 1-percent-annual-chance flood. 73 building footprints are estimated to be in the 1-percent-annual-chance floodplain boundary.

Loss Value

The estimated AAL for affected buildings is $197,000. For this location, the estimated loss for a 1-percent-annual-chance flood is $2,270,000.

Potential Mitigation Action

The roadway embankments and bridge openings for Weaver Road and Chief Ladiga Trail cause a significant flow constriction for Cane Creek. Increasing the number and size of bridge openings in the road and trail embankments is expected to significantly reduce flood elevations.

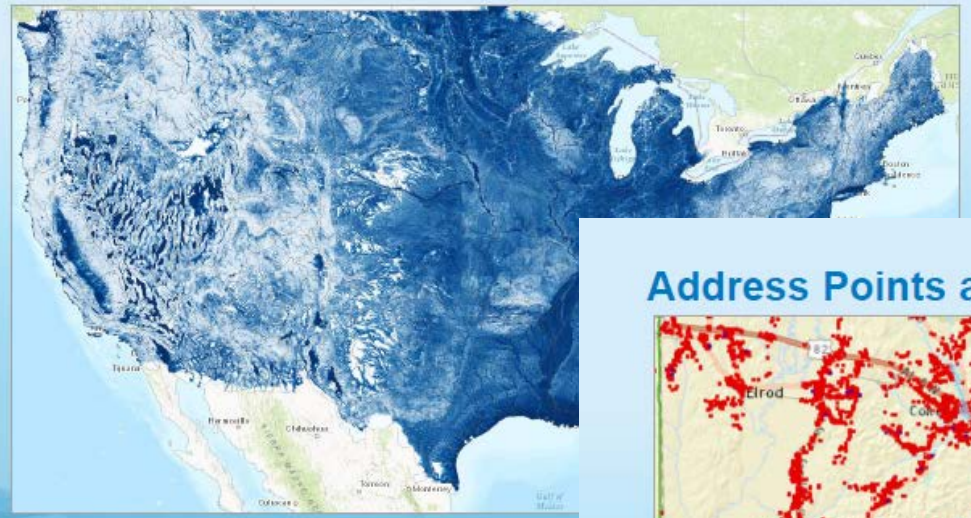
Mitigation Opportunities

- Anniston, Alabama
- Middle Coosa Watershed

The Wisdom of Charlie Brown…

National Water Center

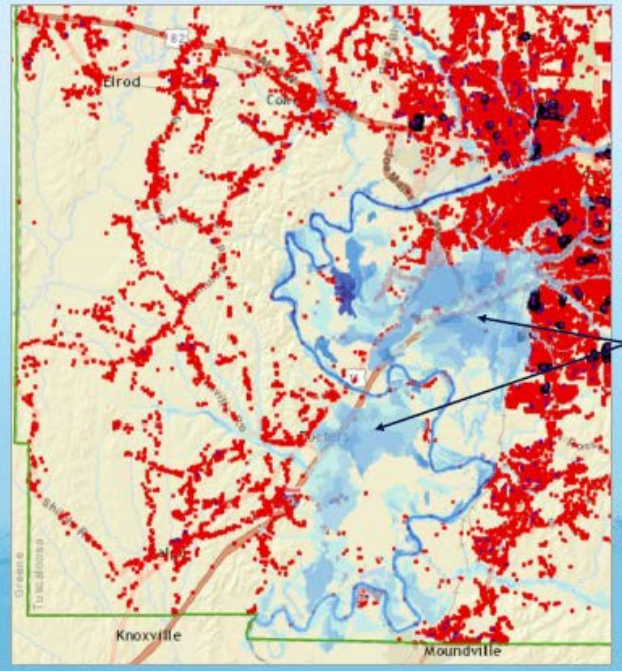
Height Above Nearest Drainage for Continental US



Source: Yan Liu and Hu Hao, University of Illin

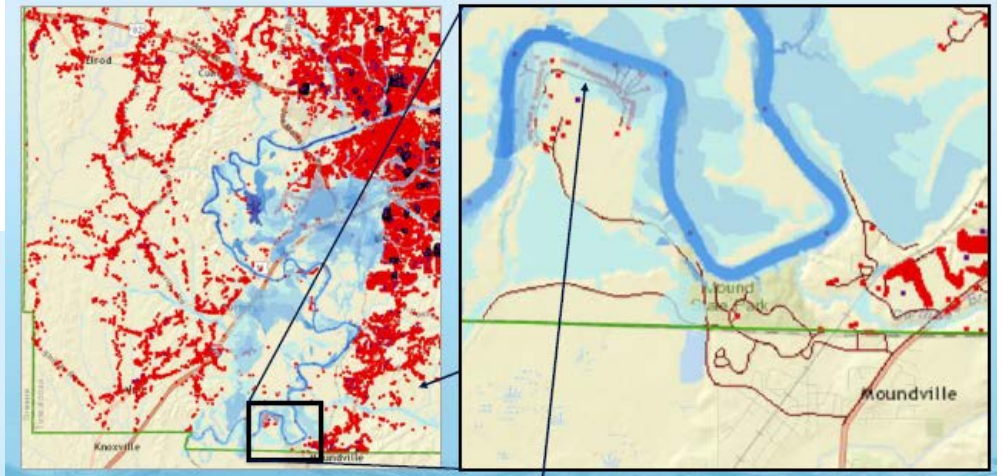
http://www.arcgis.com/home/webmap/viewer.html?webmap=

Address Points and Flooding



People don't live in flooded area

Area of Concern in Moundville



People trapped by floodwaters

Flood Hippo

- Operational Platform for Emergency Response and Awareness
- Unique approaches to disaster warning systems and response
- Georeferenced twitter alerts
  - Navigate or Evacuate
- Georeferenced, searchable map application
- Twitter news feeds
  - #Flooding

Questions?....or Answers?

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