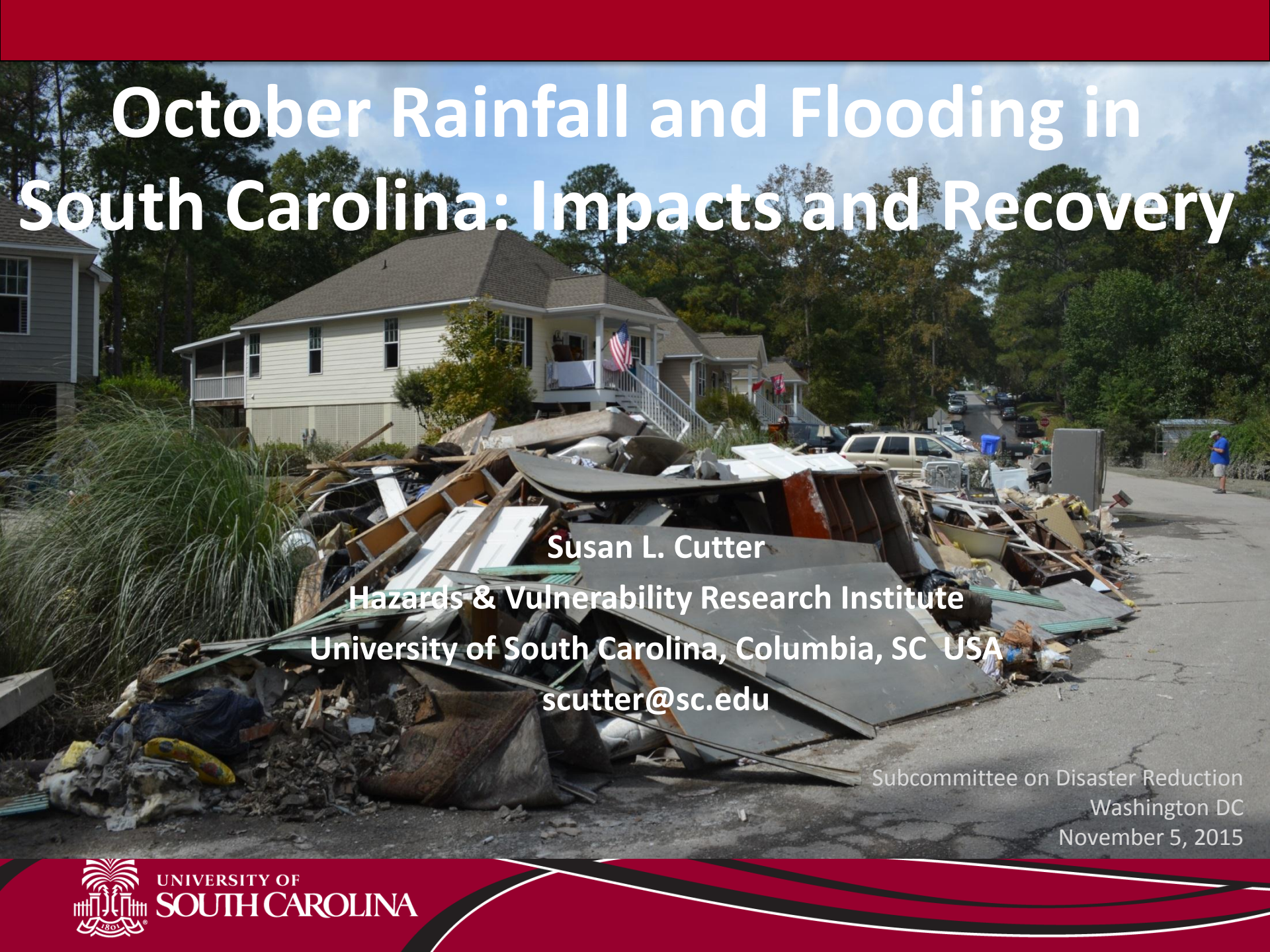


October Rainfall and Flooding in South Carolina: Impacts and Recovery



Susan L. Cutter
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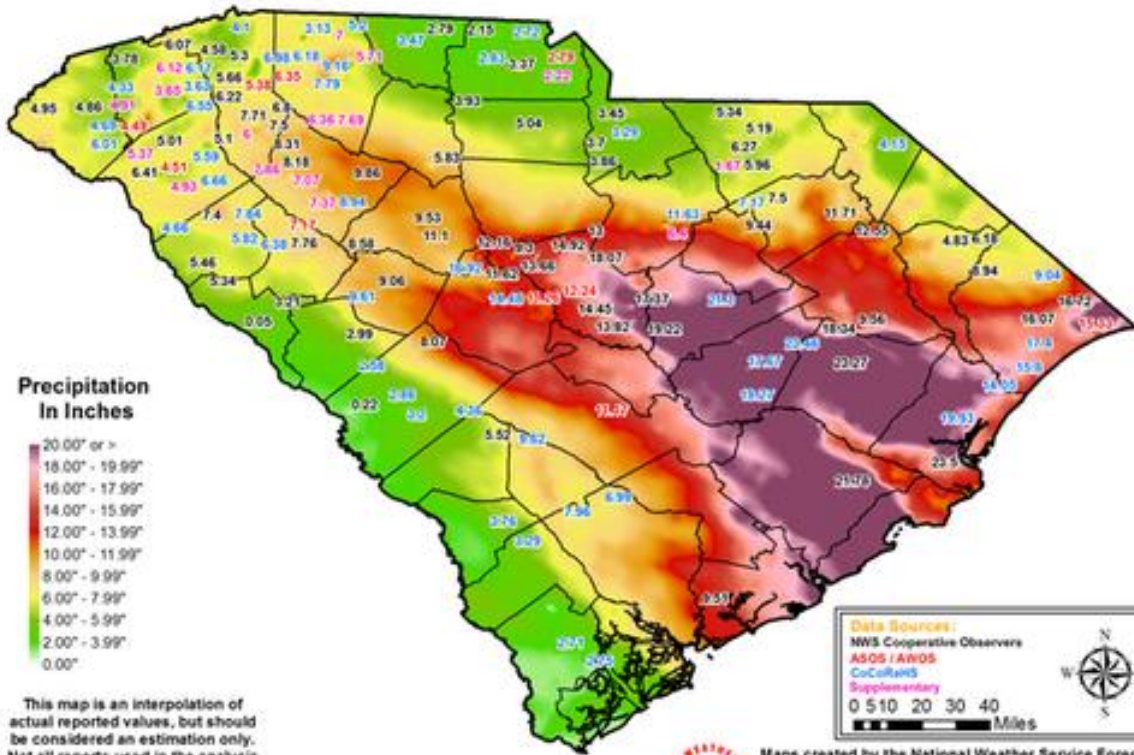
Subcommittee on Disaster Reduction
Washington DC
November 5, 2015



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Do extreme events always lead to extreme consequences?

South Carolina Precipitation Storm Total Ending at 7 AM Oct. 5th, 2015



This map is an interpolation of actual reported values, but should be considered an estimation only. Not all reports used in the analysis will be displayed due to space constraints. Reports are precipitation through the above mentioned period.



Maps created by the National Weather Service Forecast Office in Greenville/Spartanburg and in cooperation with the NWS Forecast Offices in Columbia and Charleston South Carolina as well as Wilmington North Carolina.

Function of.....

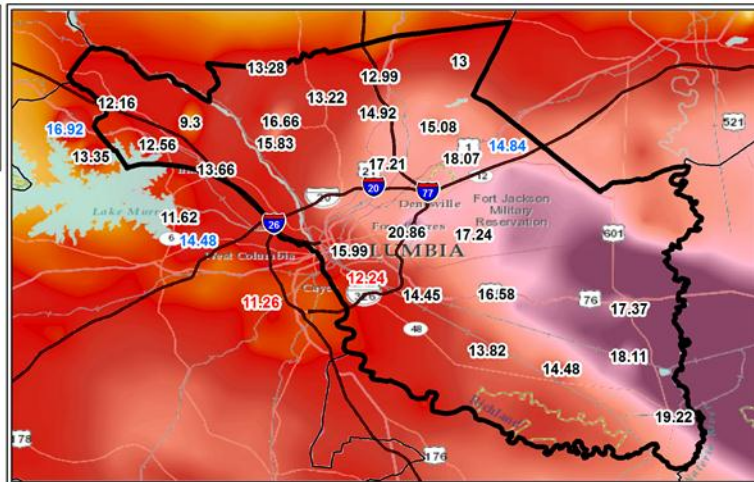
- Spatial variability
- Social vulnerability
- Temporal variation
- Cascading failures



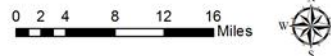
Spatial variability (land cover/land use, proximity, topography)



South Carolina Precipitation
Storm Total Rainfall Ending at 7 AM Oct. 5th, 2015



Data Sources: DCPs / NWS COOP ASOS / AWOS CoCoRaHS Supplementary
 Service Layer Credits: Sources: Esri, DeLorme, USGS, NPS



Maps created by the National Weather Service Forecast Office in Greenville/Spartanburg and in cooperation with the NWS Forecast Offices in Columbia and Charleston South Carolina as well as Wilmington North Carolina.

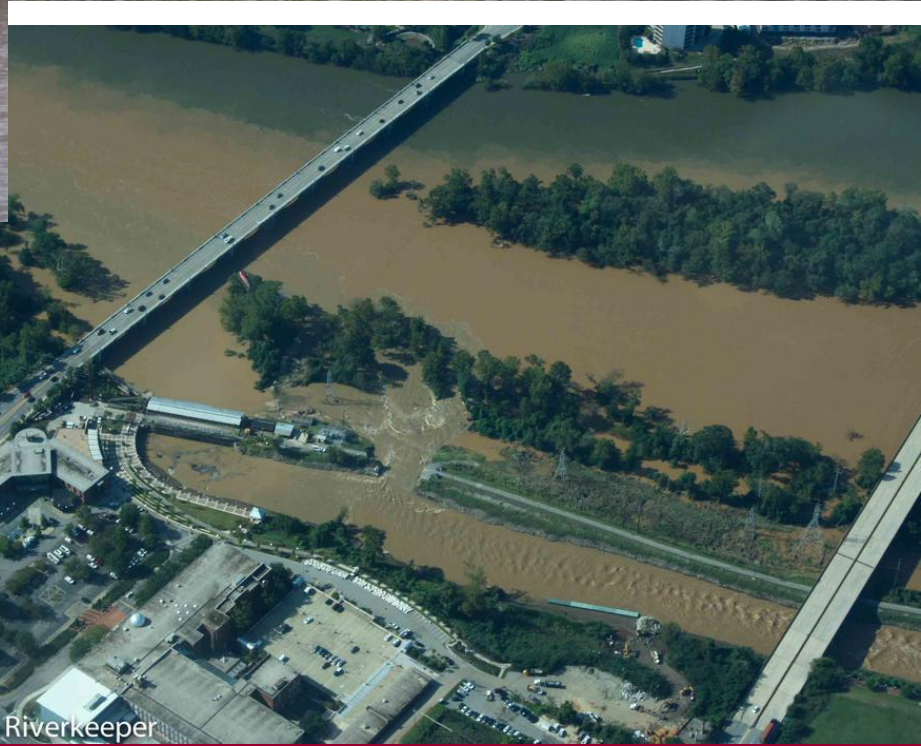


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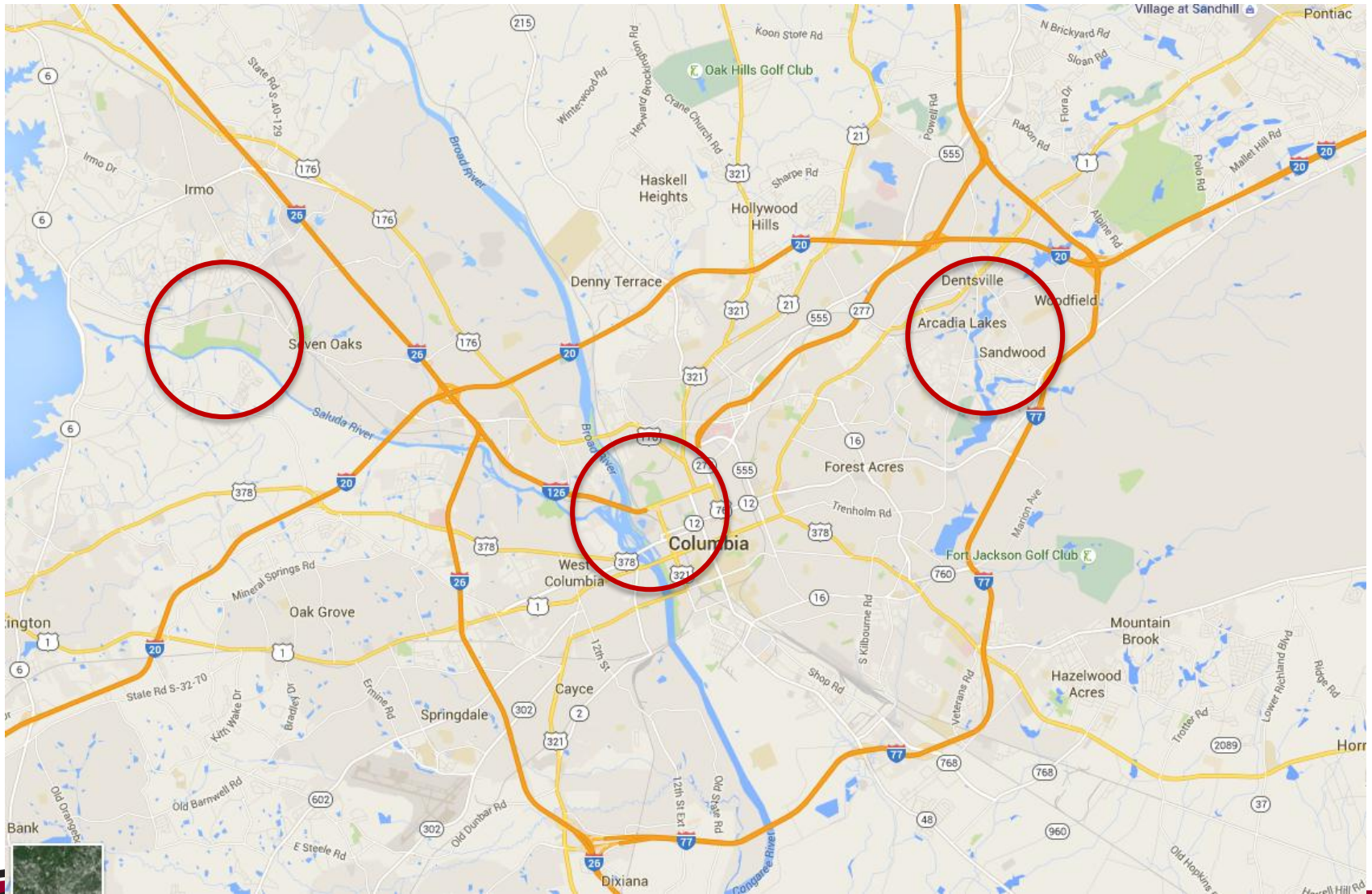
Social vulnerability



Temporal variability



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Cascading impacts of infrastructure failures



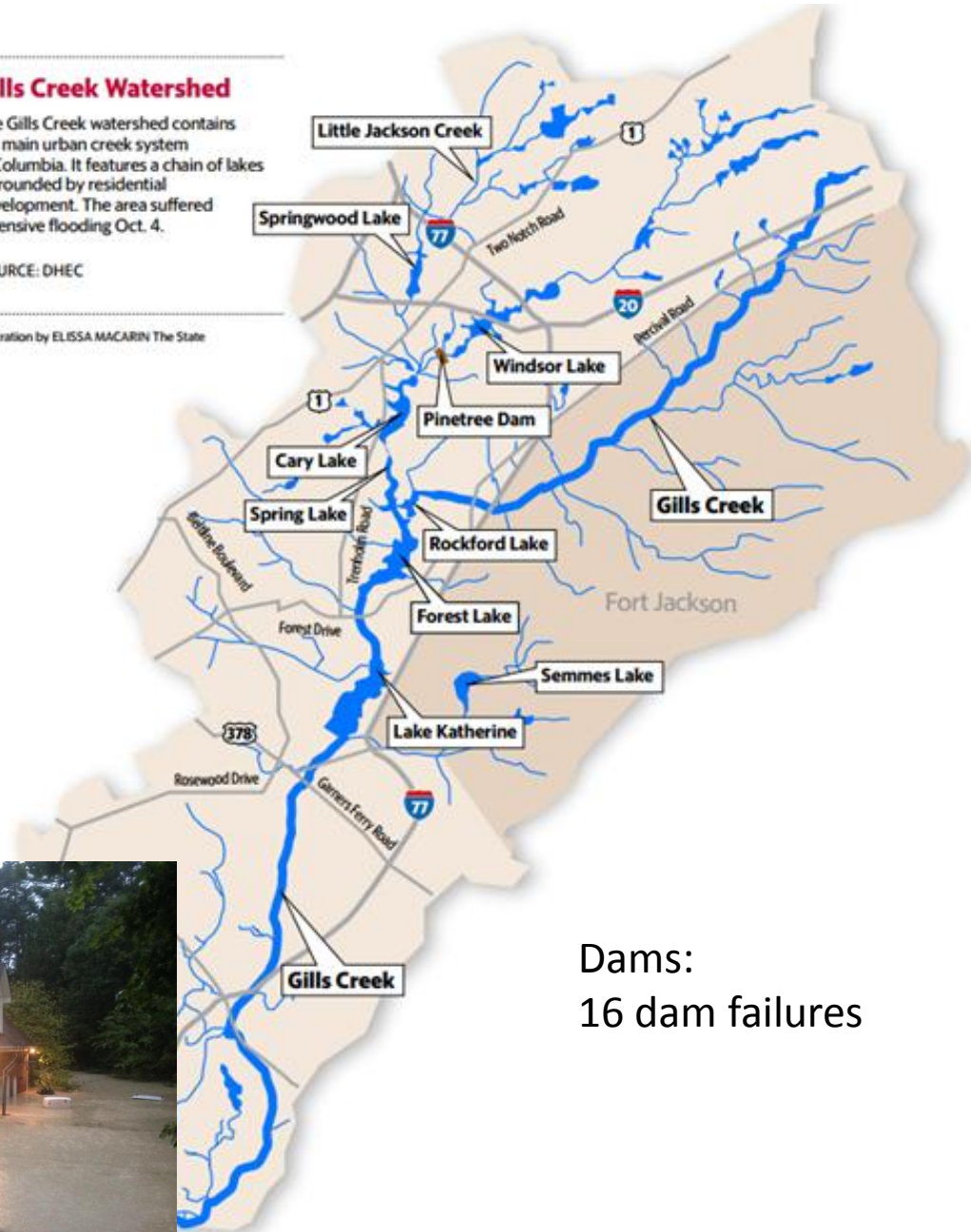
The Carys Lake Dam in Richland County, S.C., breached amid the historic flooding. (Facebook Photo/[Gills Creek Watershed Association](#))

Gills Creek Watershed

The Gills Creek watershed contains the main urban creek system in Columbia. It features a chain of lakes surrounded by residential development. The area suffered extensive flooding Oct. 4.

SOURCE: DHEC

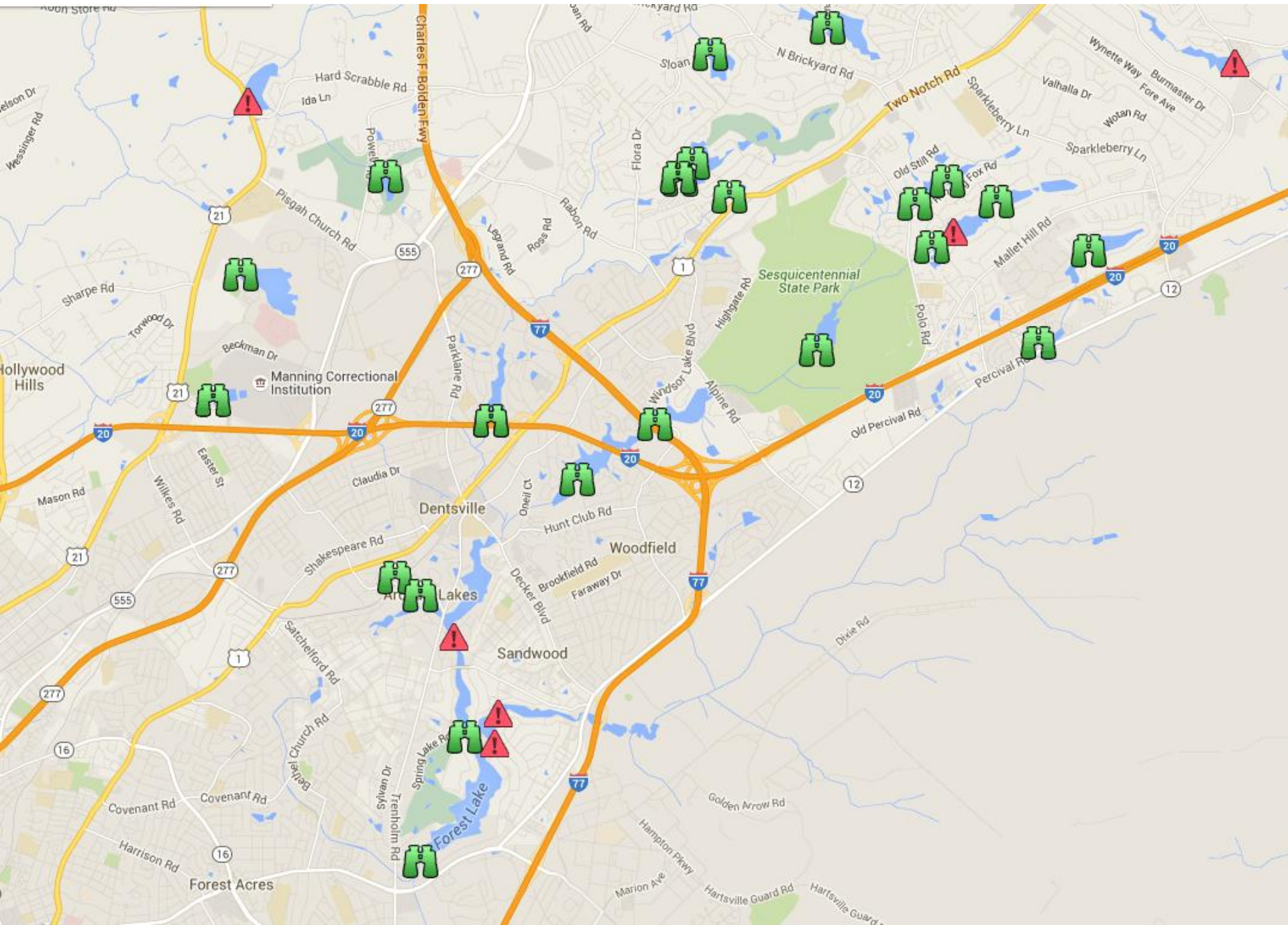
Illustration by ELISSA MACARIN The State



Semmes Lake dam collapse (L), Kings Grant neighborhood (R)



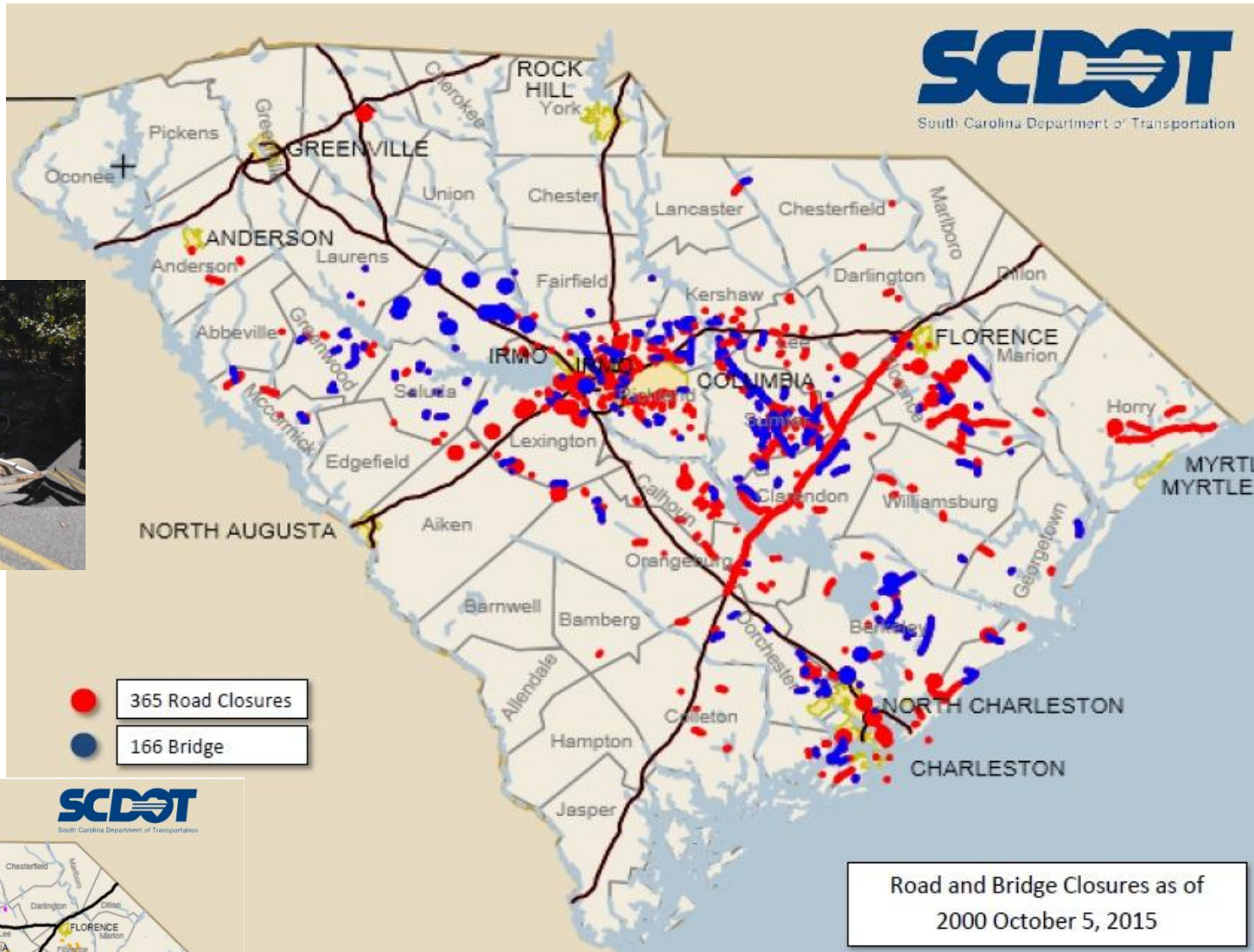
Dams:
16 dam failures



Roads and bridges

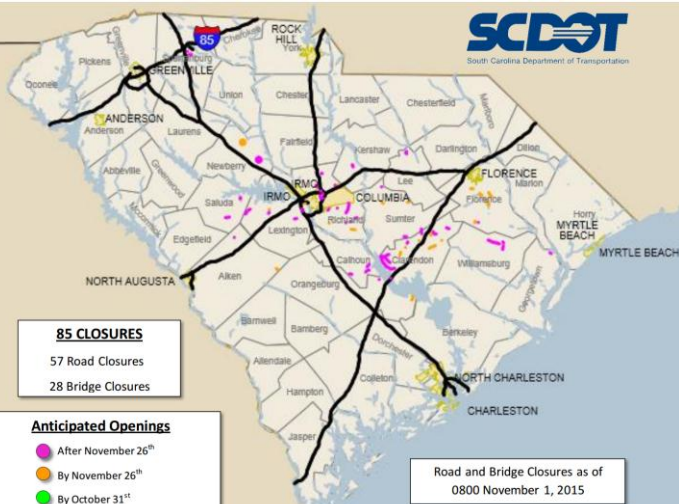


South Carolina Department of Transportation



- 365 Road Closures
- 166 Bridge

Road and Bridge Closures as of 2000 October 5, 2015



85 CLOSURES
57 Road Closures
28 Bridge Closures

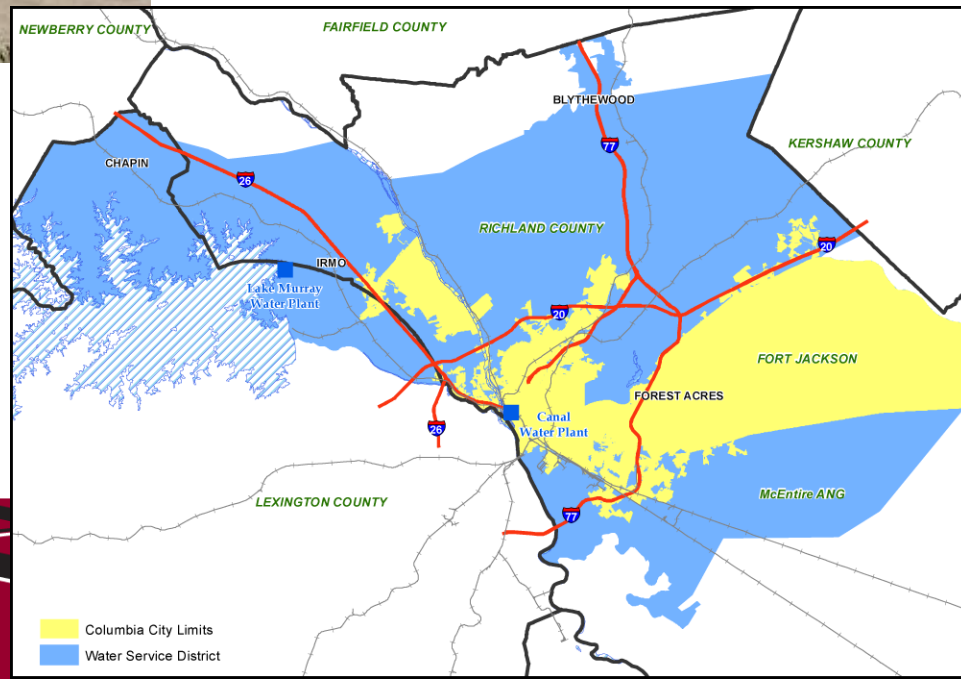
Anticipated Openings
● After November 26th
● By November 26th
● By October 31st

Road and Bridge Closures as of 0800 November 1, 2015



Public water supply system

375,000 customers without water
Boil water emergency 7-10 days



Downstream and down state



<http://www.sciway.net/maps/south-carolina-lakes-rivers.html>



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Recovery

- Strong social capital and helping behavior
- Houses gutted; many ongoing repairs
- Many not waiting for FEMA
- Fast road/bridge repair
- And now the lawsuits begin

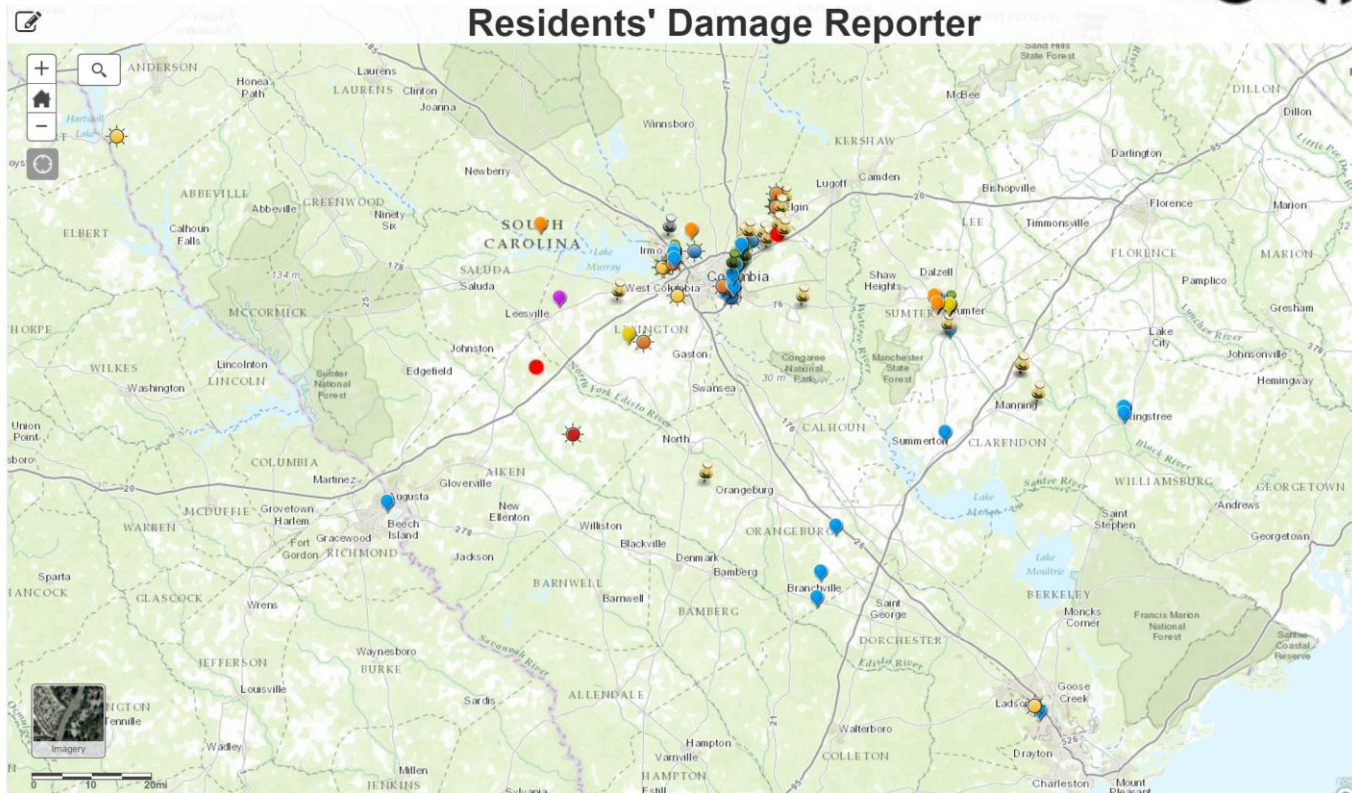


For more information

<http://artsandsciences.sc.edu/geog/hvri/>



- Citizen_Damage_Data
- Flood Water Extent
 - Tree Down
 - Flood Damage to Building
 - Road Damage
 - Family/Person in Need
 - General Flood Damage
 - Water Leak
 - Sewer Leak
 - High Water Mark (inches)
 - Sediment Present
 - Power line down
 - Vacant Building
 - Other



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