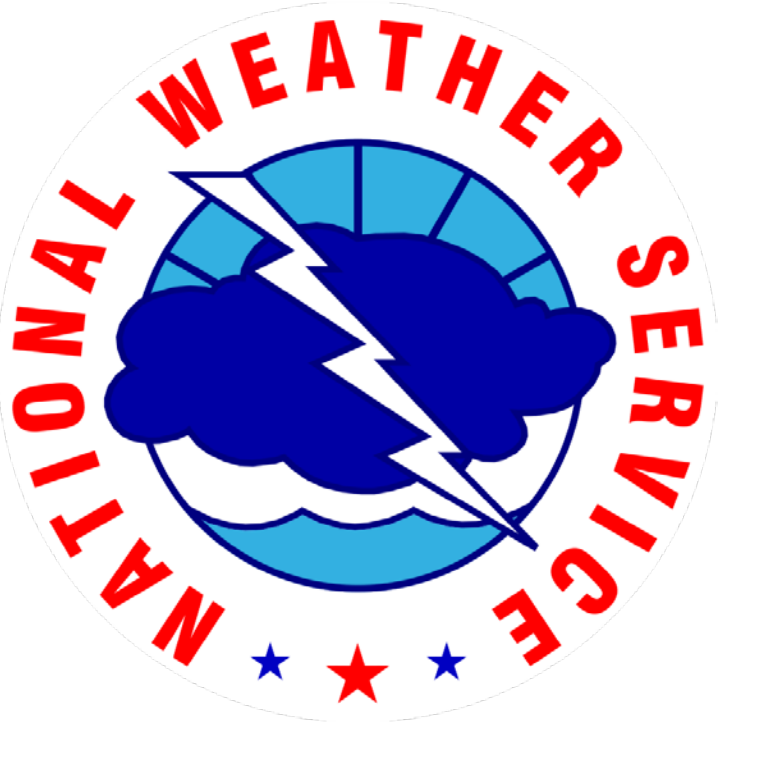
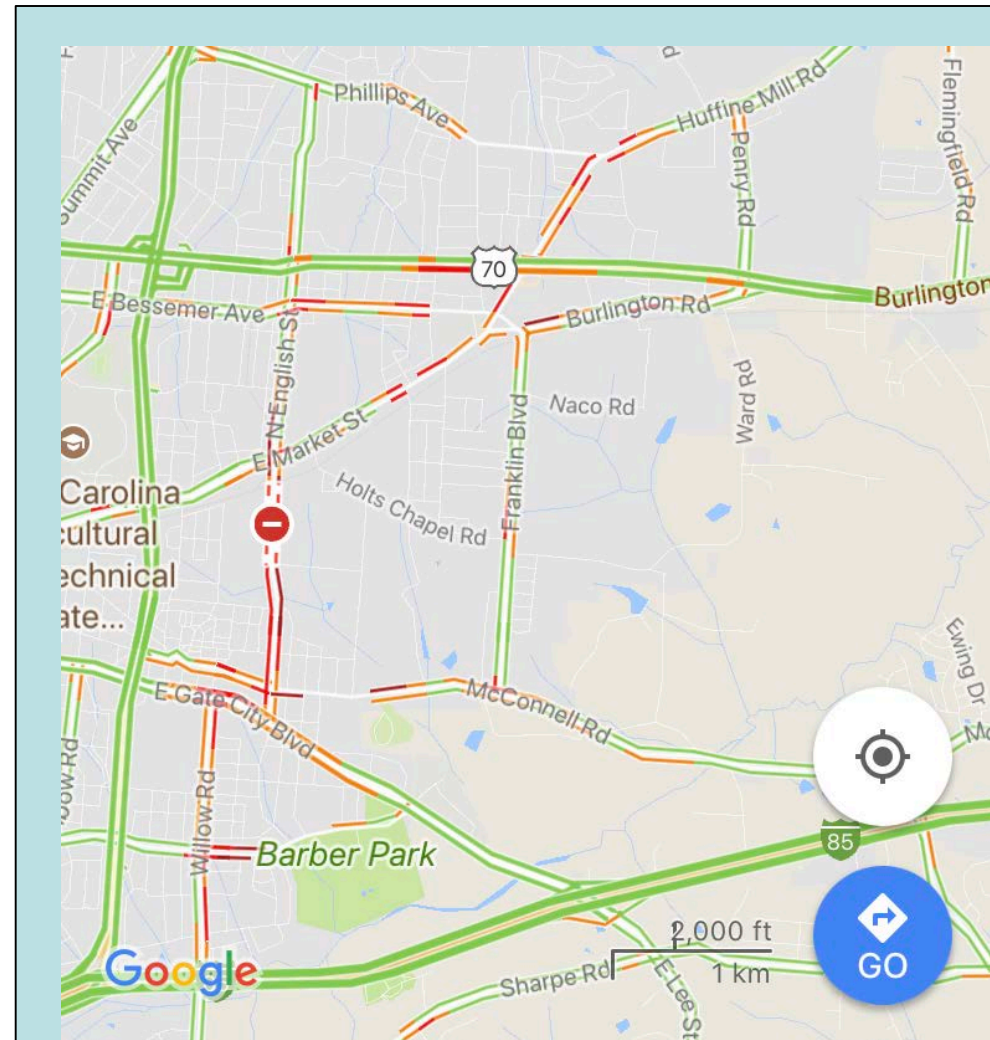


The 2018 Greensboro Tornado: Challenges of Surveying and Providing Relief in an Urban Environment

Ryan Ellis and Nicholas Petro, NOAA National Weather Service, Raleigh, NC
Donald Campbell, Emergency Management Director, Guilford County, NC



Overview: On April 15, 2018 an EF-2 (135mph) rated tornado touched down on I-40 in Greensboro and tracked northeastward across the densely populated eastern side of the city. The tornado damaged to three elementary schools and then continued northeastward across Guilford County for 16 miles before crossing into Rockingham County. After the storm, it was extremely challenging for emergency services to access the area and keep it safe for first responders and residents as well as for the NWS employees surveying the damage. Nine months later, multiple schools remain closed for repairs and students remain displaced. Many homes have yet to be repaired.



Google Traffic showing the extent of road closures and affected traffic due to the tornado.

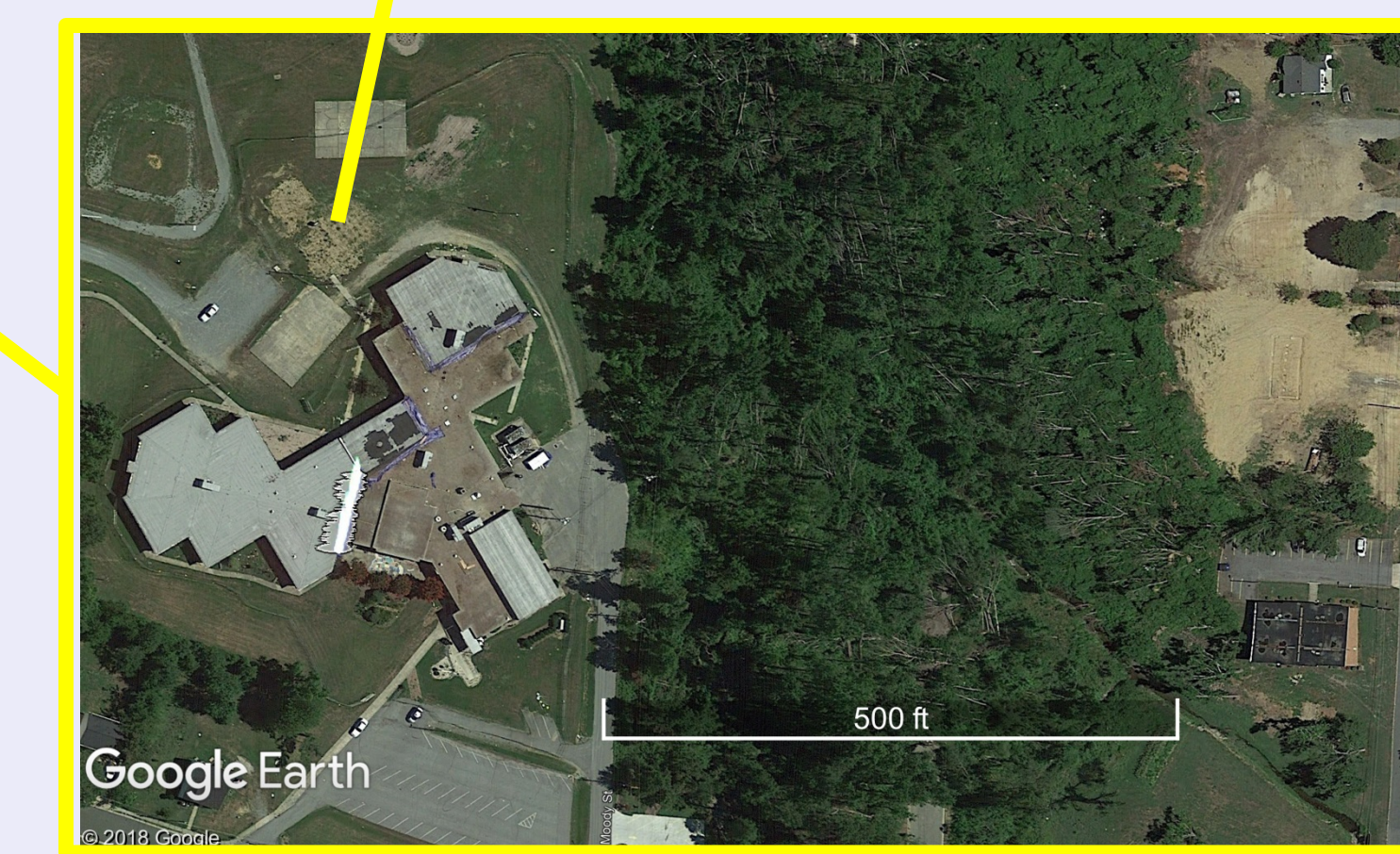
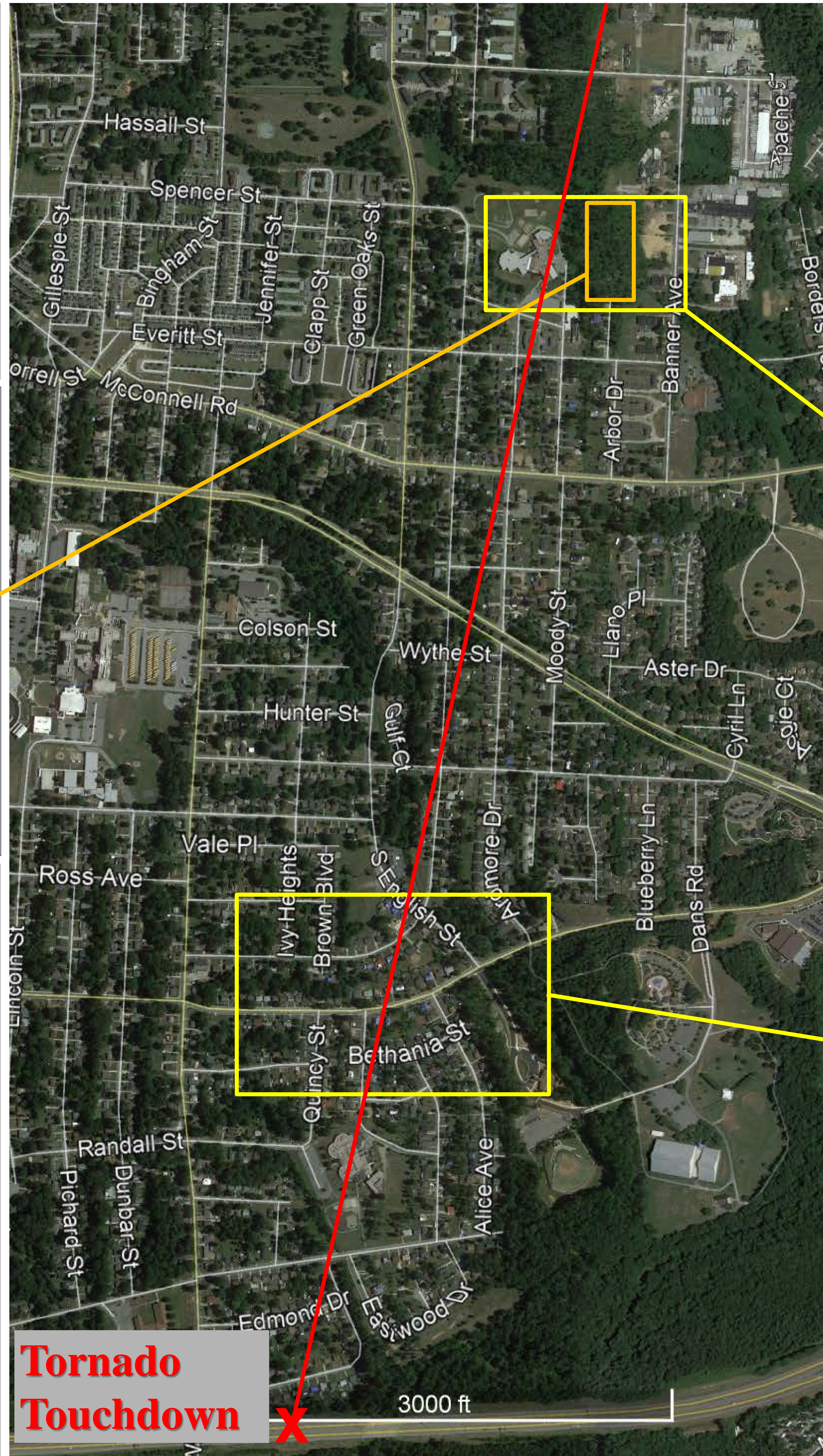
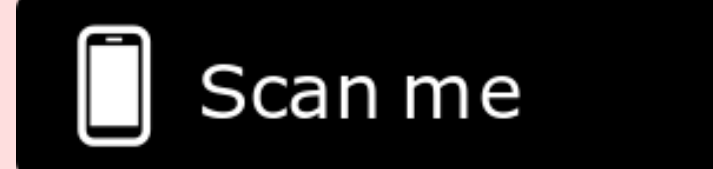
Aerial photographs of typical tornado damage pattern in the woods just east of Hampton Elementary School. You can see trees falling in different directions in a cross hatch pattern typically seen with significant tornado damage. Photo provided by Google. (July 2018)



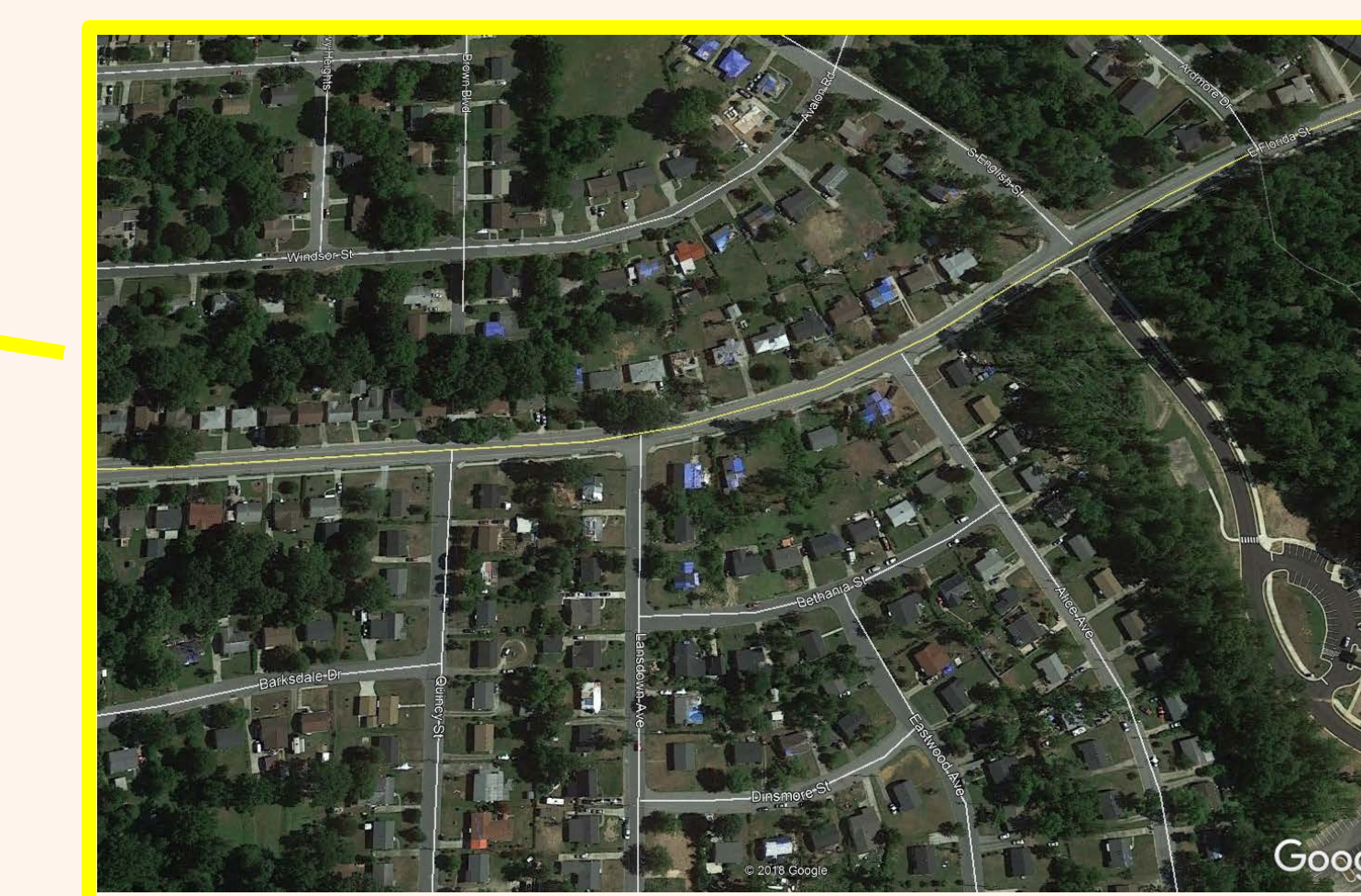
Partner Spotlight: Guilford County Emergency Services



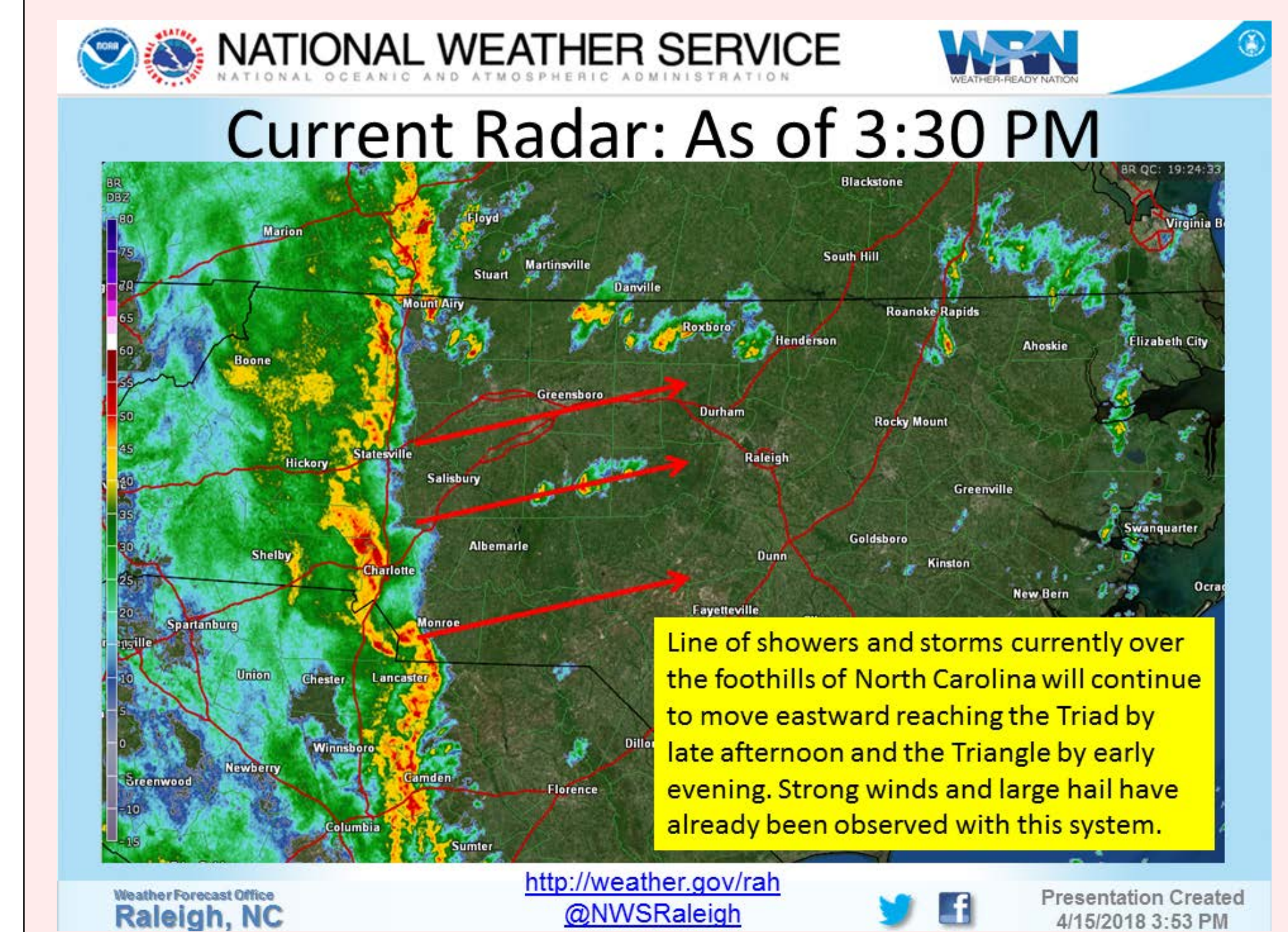
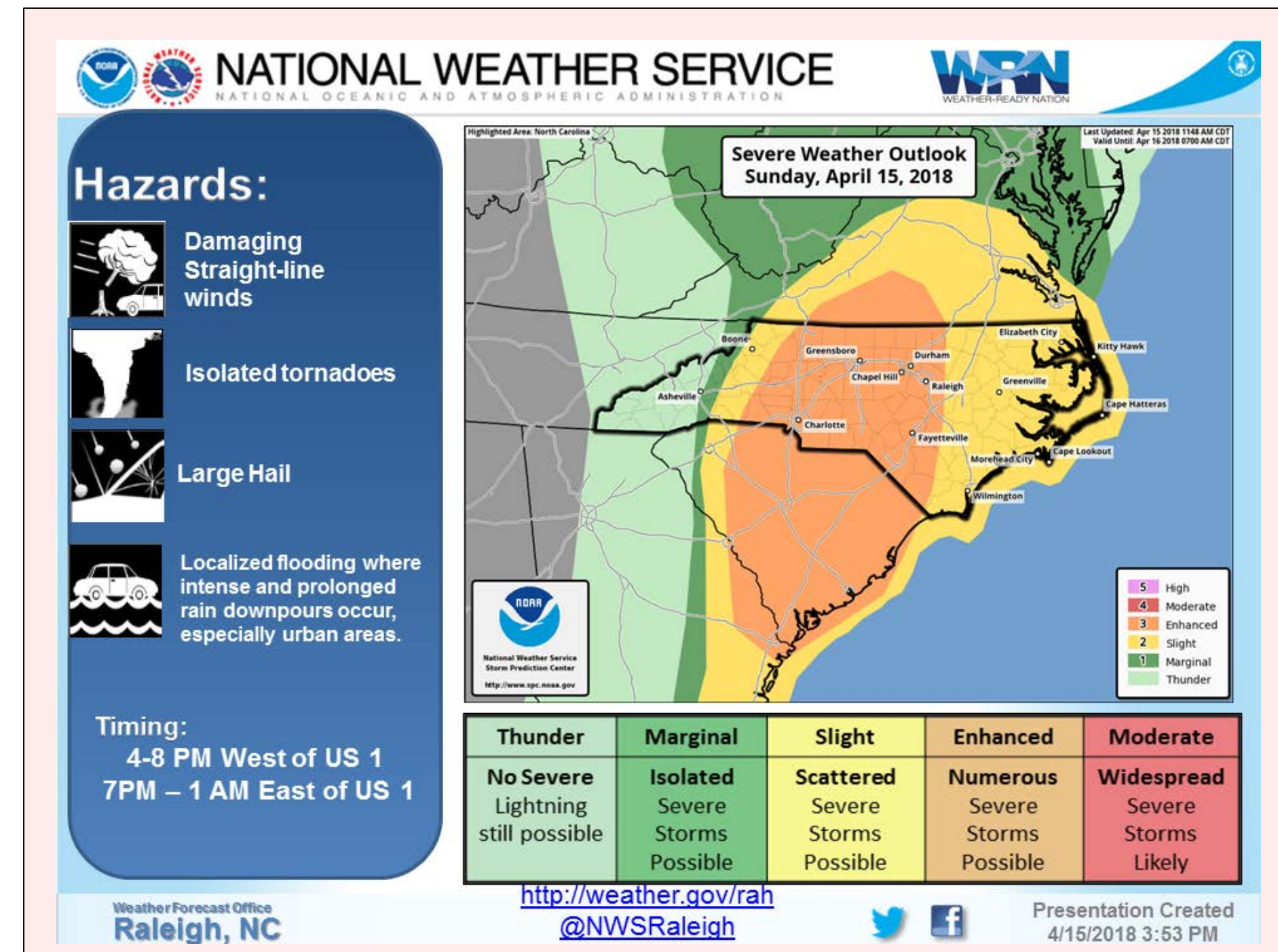
NWS Raleigh Meteorologist Ryan Ellis (right) conducted an in-depth post storm interview with Donald Campbell (left), Guilford County Emergency Manager. They talked about the challenges of surveying and conducting operations in an urban environment and weather support for the tornado. The 20 minute video can be found on the NWS Raleigh YouTube page at: <https://youtu.be/Or68KxV8yMg> or by scanning the qr code on the left.



A total of three elementary schools were hit by the tornado. Some of the greatest damage was to Hampton Elementary (above). Schools remain closed nine months later. Students are currently attending nearby schools.



In this July, 2018 satellite image from Google Earth, blue tarps can be seen on the rooftops of houses damaged by the tornado. Many remain tarped nine months later.



Slides taken from the NWS Raleigh partner briefing on the afternoon of April 15. The top slide shows the Storm Prediction Center convective outlook showing an enhanced risk for severe weather in the Greensboro area. The bottom slide shows a Quasi-Linear Convective System (QLCS) moving through central North Carolina. Several "broken S" structures supporting rotation can be seen on radar and environmental conditions favorable for tornadoes.

Acknowledgements:

Thanks to Don Campbell and Guilford County Emergency Management during the survey of the April 15, 2018 Tornado. Maps and aerial photos provided by Google.