



TRANSPORTATION INFORMATION MANAGEMENT SYSTEM

ncbussafety.org

North Carolina Department of Public Instruction-Raleigh North Carolina

TIMS Case Studies

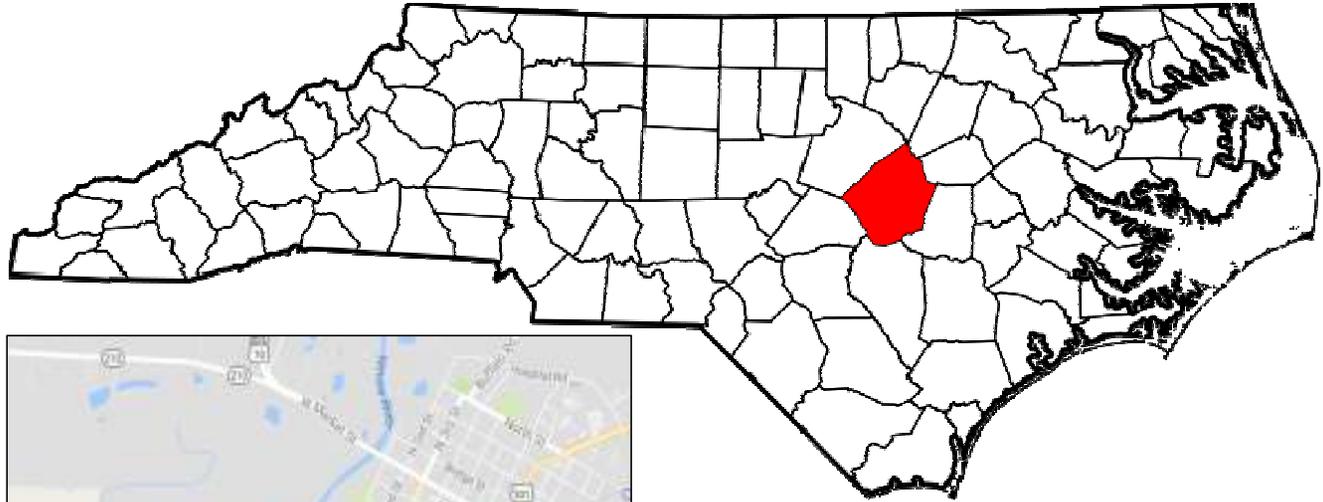
Rerouting Buses After Hurricane Matthew in Johnston County

JOHNSTON COUNTY SCHOOLS
Fostering a Flame for Learning

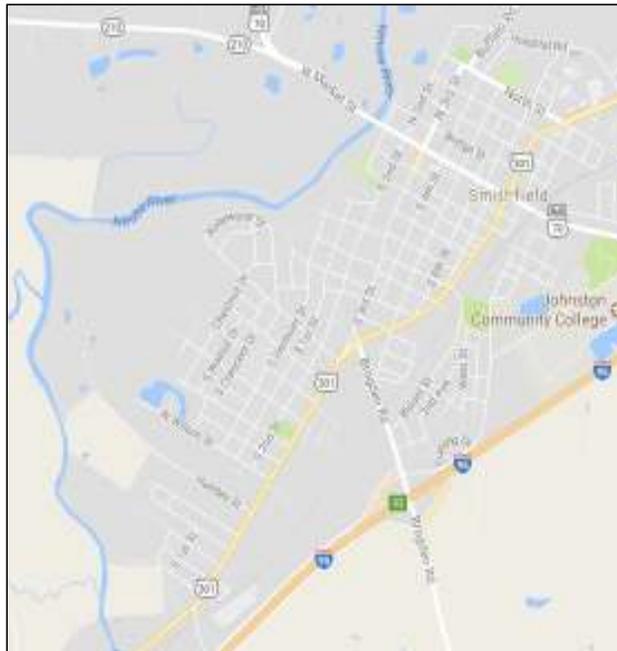


Johnston County is located near central North Carolina, just east of Raleigh.

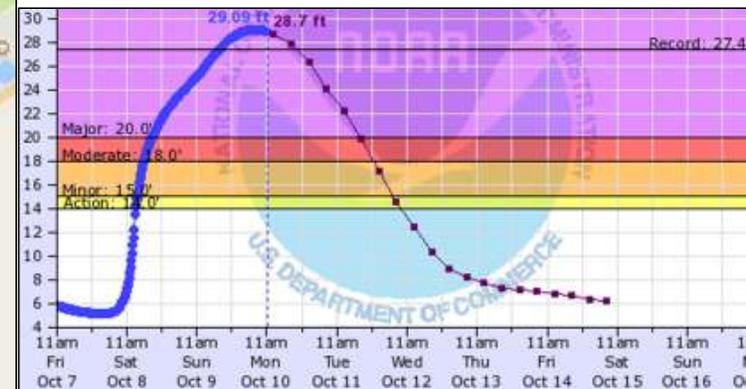
In October 2016, Johnston County experienced significant flooding as a result of Hurricane Matthew.



The Neuse River in Smithfield crested at over 29 feet, breaking the previous record of 27.4 feet.



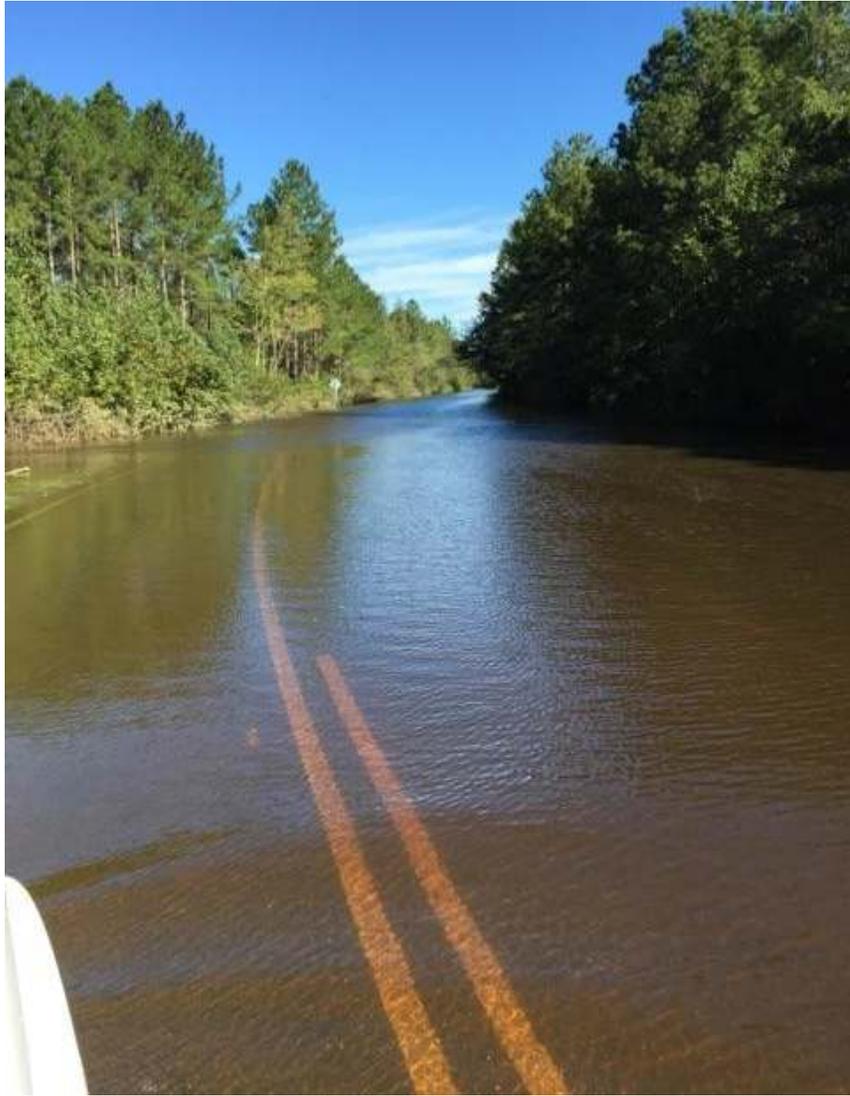
Dozens of streets, roads and bridges were under water, damaged, destroyed or washed away.





Smithfield, NC
following
Hurricane Matthew





JOHNSTON COUNTY SCHOOLS

Fostering a Flame for Learning

Lots of work went into constantly adjusting TIMS to account for flooded streets, closed roads and displaced students following Hurricane Matthew.

While staff from the Transportation Department carried out the work in TIMS, dozens of staff were involved with tracking student change requests and keeping up to date with the latest road openings and closings throughout the county.

TIMS Staff:

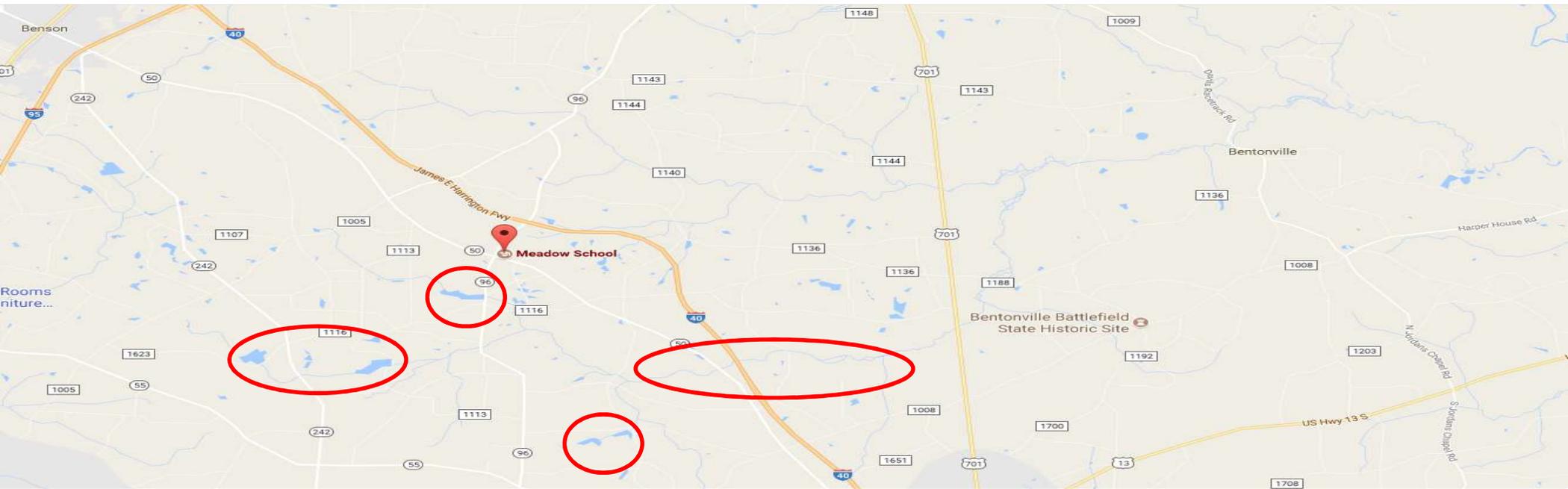
Misty Johnson
Bill Woods
Becky Brown
Angela Chapman

Transportation Administration:

Michael Taylor - Executive Director
Sherrie Turnage - Transportation Director
Sharon Fogelman - Transportation Supervisor
Debra Bridges - Growth & Planning Supervisor

School Area Coordinators:

Michelle Weaver - South Johnston Area
Josh Loseke - West Johnston Area
Gary Byrd - Cleveland Area
Joy Hedrick - Clayton Area
Donna Batten- Smithfield-Selma Area
Robin Peedin - Princeton Area / West & South
Danny Williams - North Johnston Area
Marge McGill - Corinth Holders Area



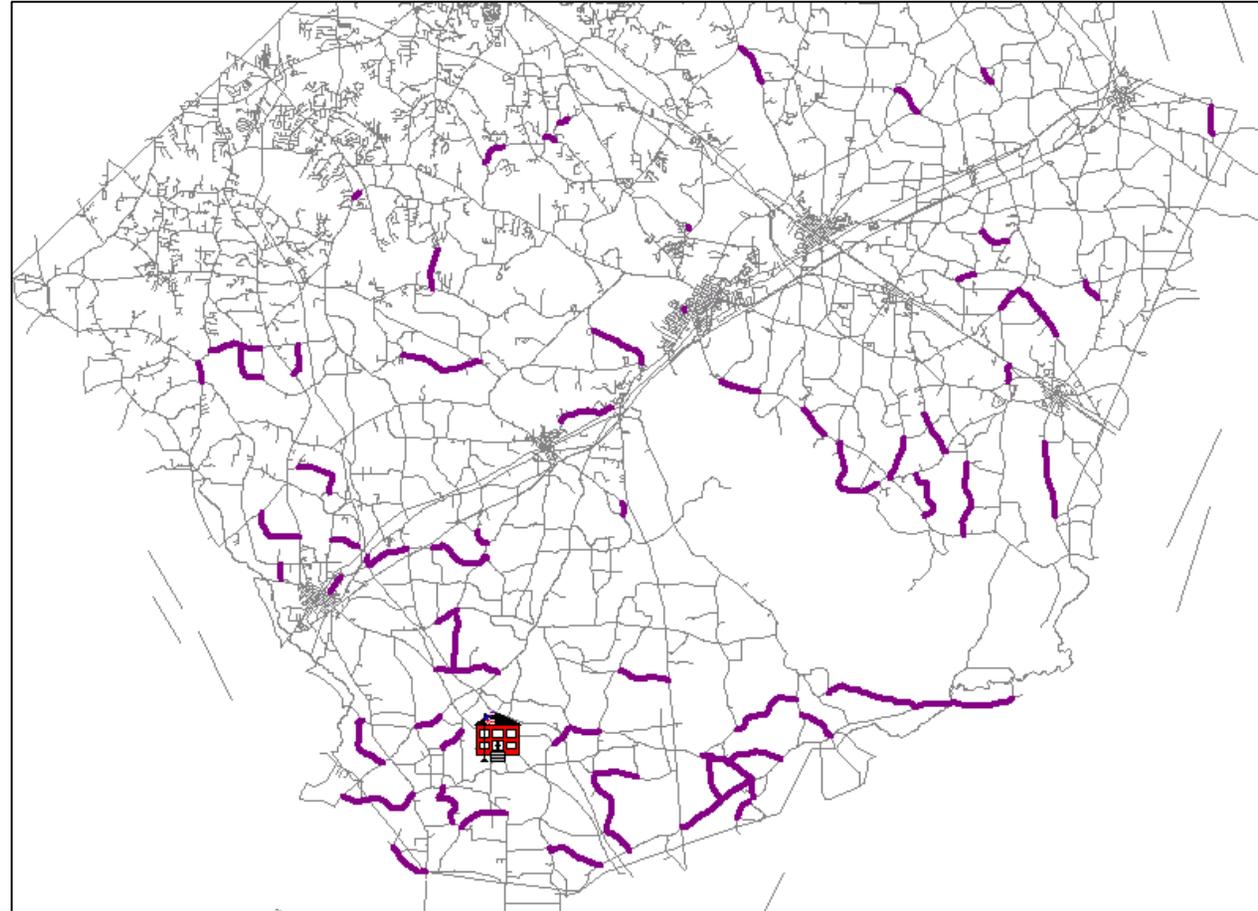
Benson, NC experienced a significant number of road closures in the area surrounding Meadow School. The ponds and bodies of water associated with Mill Creek and the John K. Swamp stream caused considerable flooding throughout the region.



Flooded roads in Johnston County were not isolated to just the area in Benson, NC around Meadow School.

Closed streets were scattered throughout the county as well.

Even today, Johnston County still continues to receive updates from NCDOT regarding streets impacted by Hurricane Matthew.

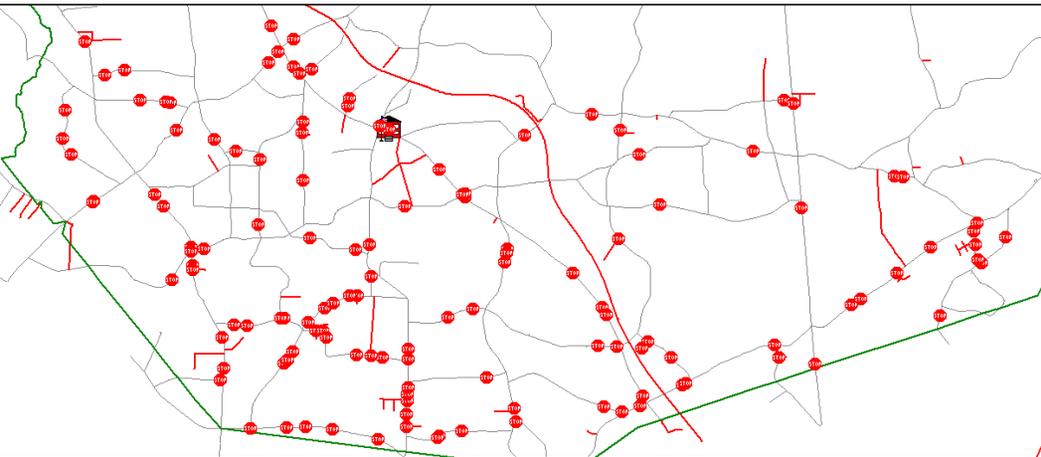
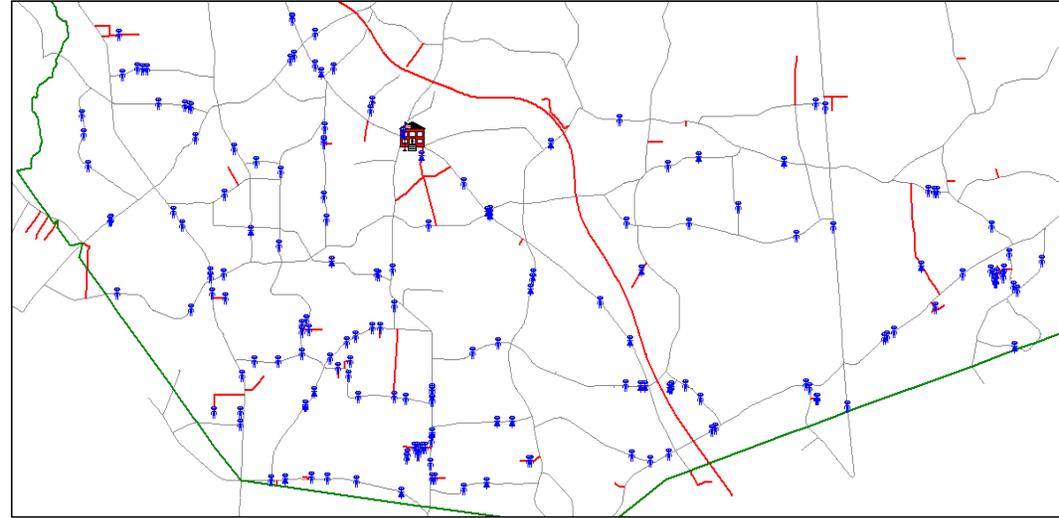


(Flood Roads Displayed in Purple)

On a typical day for Meadow School...

They Transport...

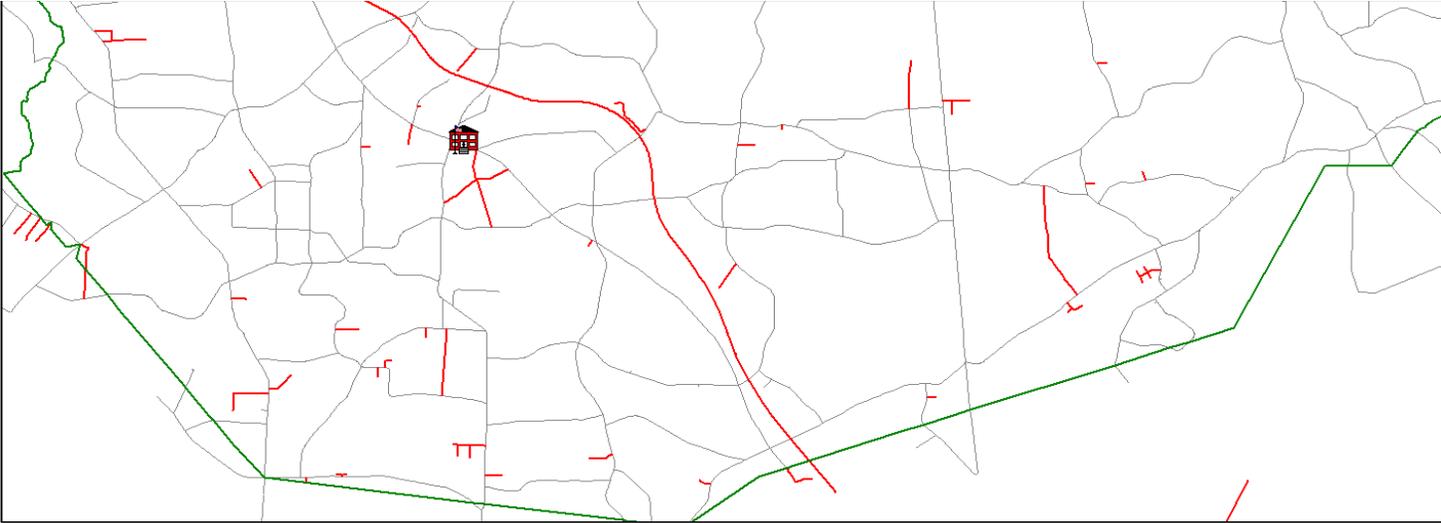
Up to 300 Students



**Getting On or Off
at
135 Stop Locations**

Under normal conditions, the street network in this area is mostly eligible for travel with just a few streets not serviceable by a school bus.

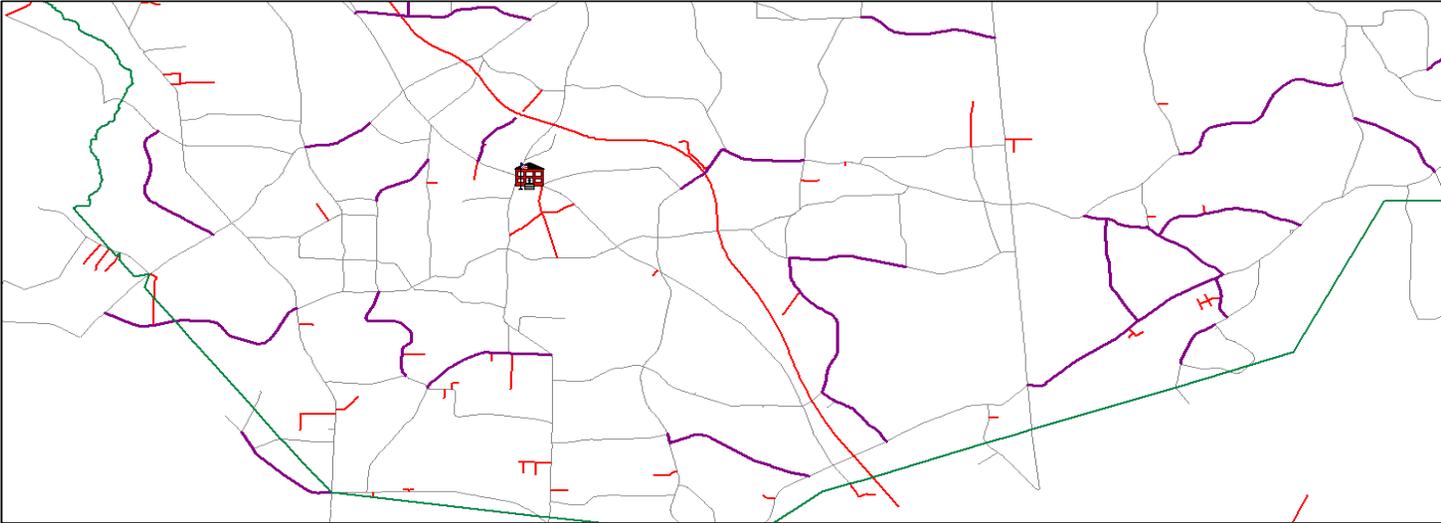
(No Travel Roads Displayed in Red)



As water levels increased throughout the region, Johnston County Schools Transportation Department was in daily communication with NCDOT as they received updated lists of closed roads and bridges over the next few weeks.

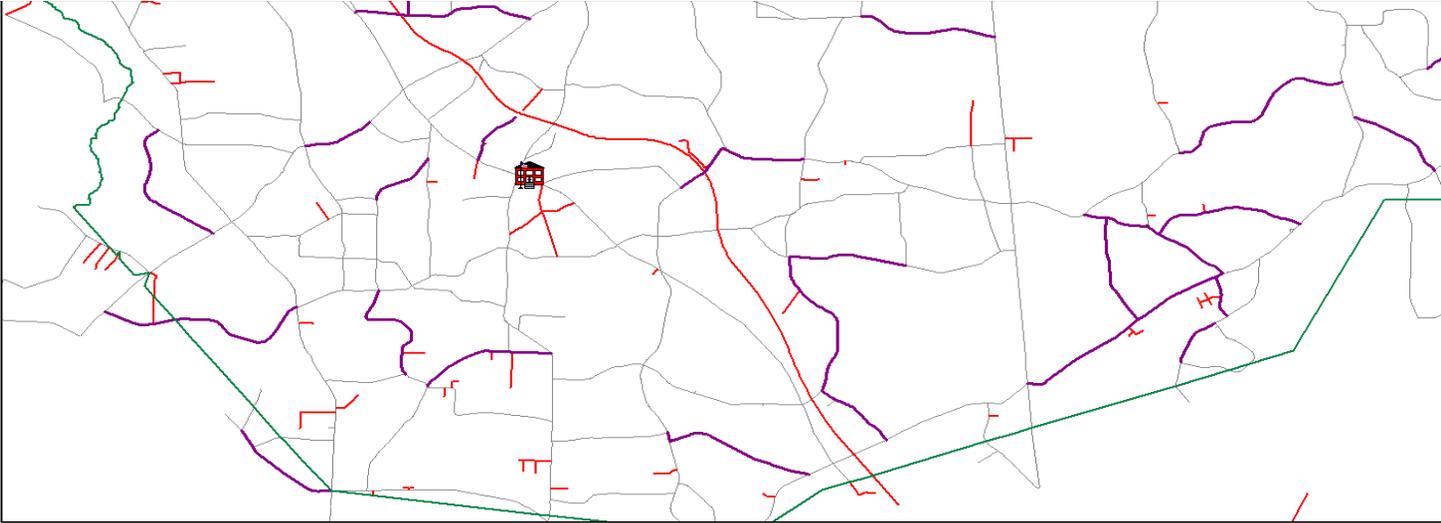
TIMS Staff identified these streets and not only labeled them as No Travel, but also coded each of the Flood Roads with a Speed of 97, so that a color-coded Autostreet Layer could be created.

(Flood Roads Displayed in Purple)

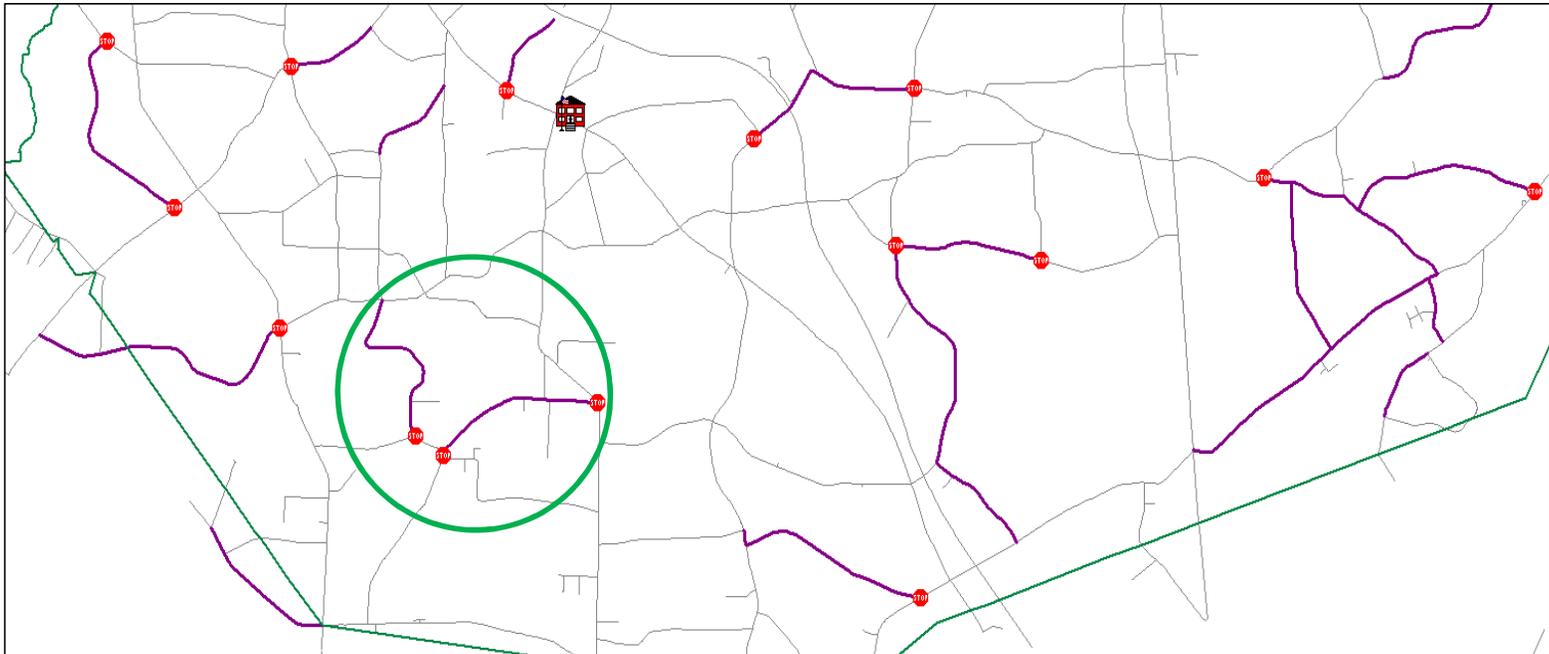


Based on the updated list of closed streets, TIMS Staff identified each of the students, stops and bus routes that were impacted by flooding.

If this wasn't a big enough challenge by itself, TIMS Staff also had to determine which students would still be living at their home (and would still need bus service) and which students were displaced by flooding and would need transportation to and from an alternate location... such as a relatives house, a temporary shelter and numerous hotels throughout neighboring counties.



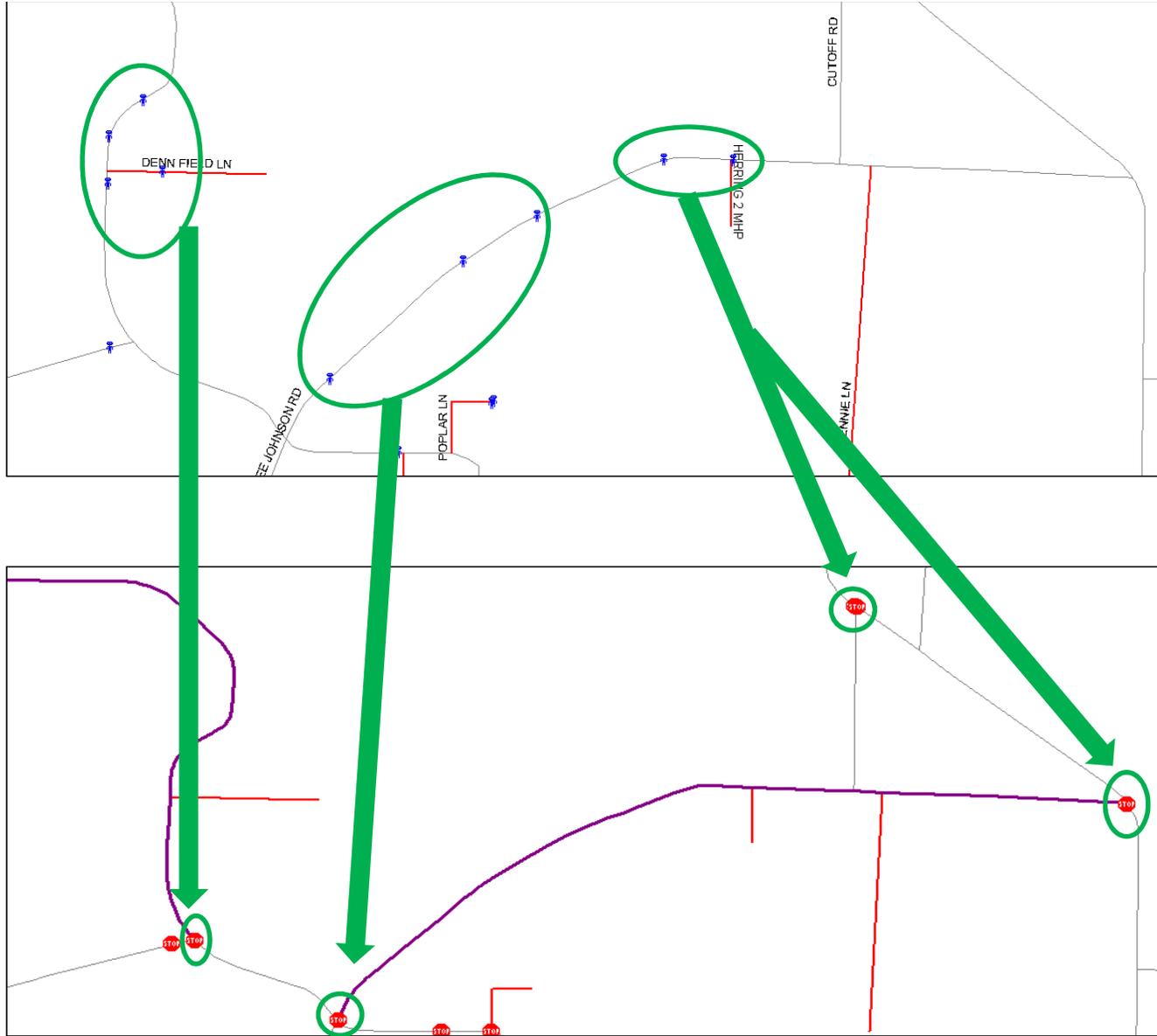
After identifying the flooded streets, corner stops were then created for students living in these areas.



Bus stops for Students living on Holly Grove Rd, Denn Field Ln, Lee Johnson Rd and Herring Mobile Home Park had to be relocated to the closest location that was safe for bus travel.

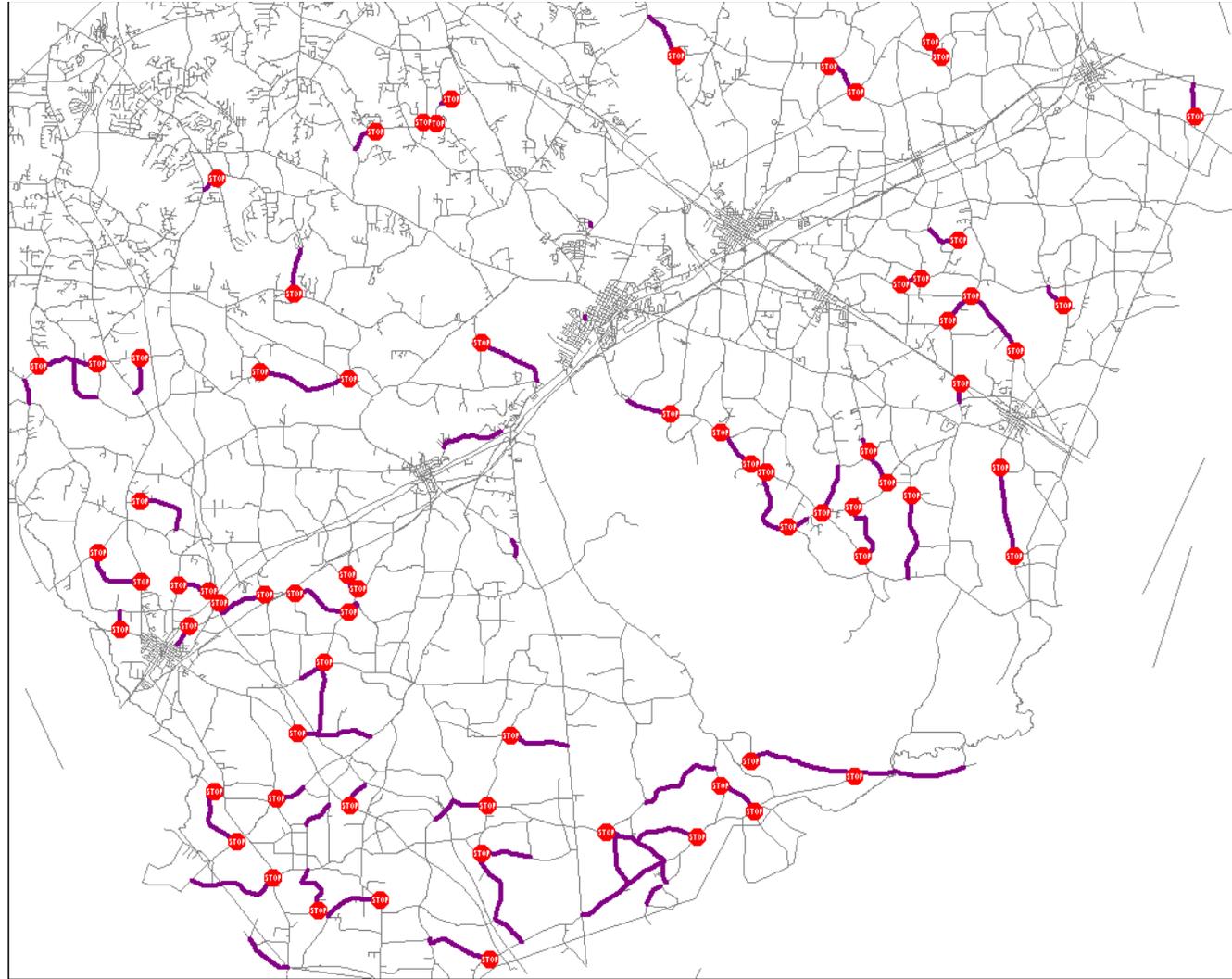
For the 20+ students living on these roads, corner stops were established and the students were then graphically reassigned to the closest stop servicing their street.

Each of the bus runs and routes in this area were then reviewed and adjusted for efficiency improvements based on the streets that remained travelable.



The end result of this project produced dozens of new corner stops, at safe locations, for students that continued to reside on closed streets.

Even today, Johnston County still continues to receive updates from NCDOT regarding streets impacted by Hurricane Matthew.



(Flood Roads Displayed in Purple)



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**Any
Questions?**

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