

Resilience On Demand

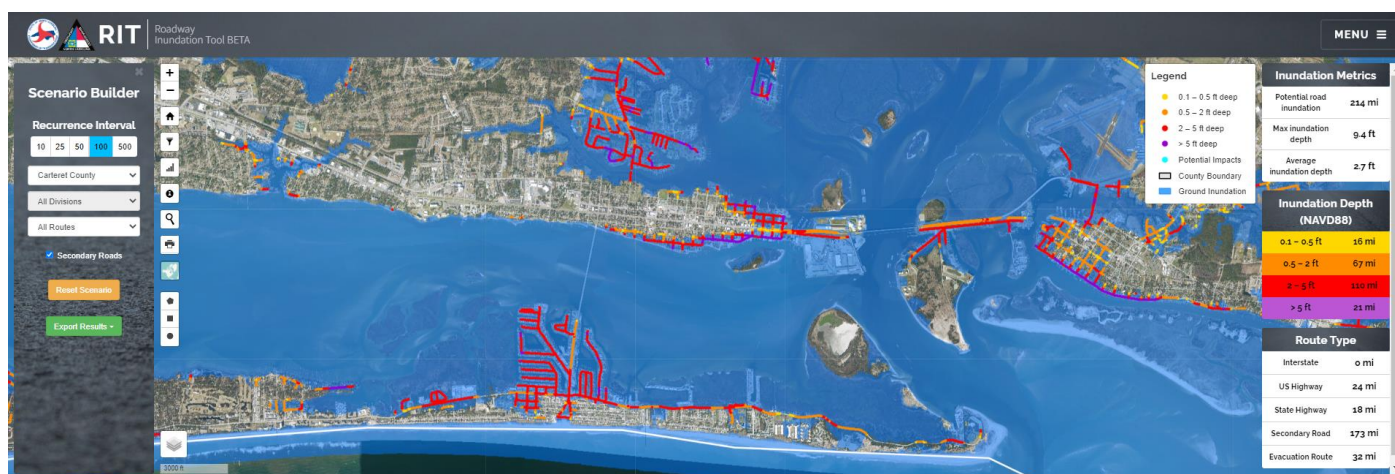
At its core, the Resilience Analysis Framework for Transportation (RAFT) system is a web-based framework, hosted in the Amazon Cloud (AWS) serving as an application and data gateway supporting the current NCDOT Risk and Resiliency Strategy. It serves as a clearinghouse for several resilience initiatives and applications funded by NCDOT and developed by our team with the ultimate goal of creating a secure, reliable and simple to use means to take once disparate and difficult to access datasets and house them in a unified repository.



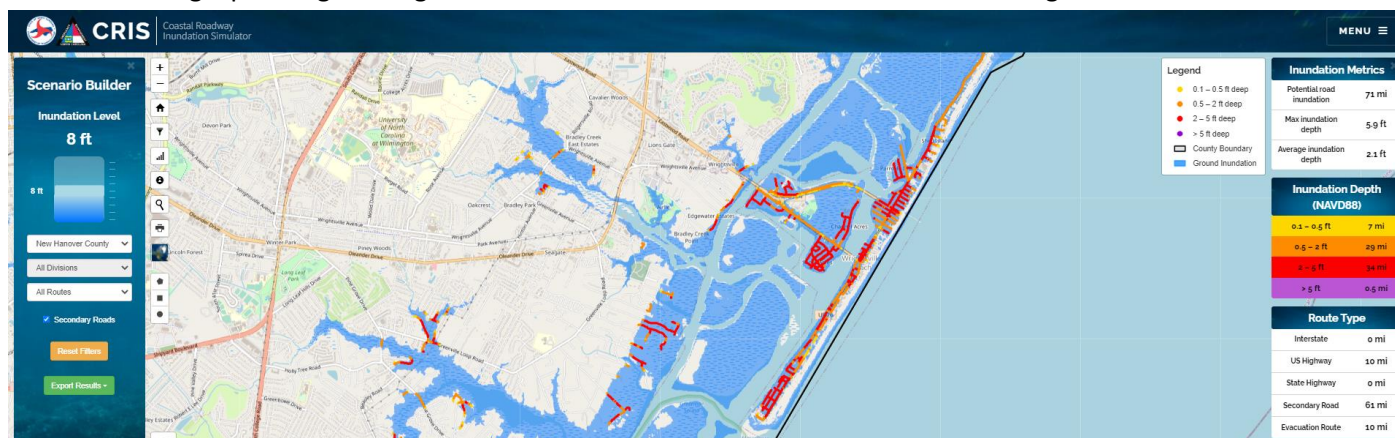
[Visit RAFT Site](#)

RAFT Applications

The **Roadway Inundation Tool (RIT)**, was created to simulate and quantify the effects of riverine flood inundation on our transportation system. Covering all 100 NC counties, RIT allows users to examine everywhere a primary or secondary road crosses a stream that has an approved hydraulic flood study completed by the state floodplain mapping program and both visualize and quantify flood impacts from multiple flood recurrence intervals. This application shows flood impacts from the 10-year, 25-year, 50-year, 100-yr and 500-yr recurrence intervals, where available. RIT application leverages the latest NC Aerial LiDAR to assign road centerline elevations (NAVD88 FT) to the road network. Inundation boundaries are produced from the same bare earth LiDAR sources and are depicted as all points on the ground at or below the selected inundation elevation (NAVD88 FT). Users also have the option to select custom areas of interest, clip and ship results based on multiple shape selections to both .CSV and .KML formats as well as export PDF maps and reports based on various simulation results.



The **Coastal Roadway Inundation Simulator (CRIS)** application retains much of the same functionality as its sister application RIT, but instead of simulating statistical recurrence intervals, CRIS analyzes the effects of coastal inundation between 1ft and 17ft of whole-foot inundation profiles. CRIS provides the NCDOT with the ability to view potential effects from multiple types of coastal flooding such as storm surge, tidal hazards like King Tides, as well as a glimpse into the future to begin planning for long term shoreline loss scenarios related to climate change.



For more information about RAFT and its tools, please contact:

NCDOT Hydraulics Unit

Matthew Laufer, PE, CPM

Assistant State Hydraulics Engineer

(919) 707-6700, mslaufer@ncdps.gov

Kurt Golembesky, PE, CFM

Highway Floodplain Program – Engineer III

(919) 707-6733, kpgolembesky@ncdps.gov