

IDENTIFYING THE CASCADING PUBLIC HEALTH IMPACTS TO VULNERABLE WATER INFRASTRUCTURE

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While the October 2015 heavy rainfall and flood event in South Carolina is considered a beyond 1 in 1000 year event, the aftermath is a stark reminder of the vulnerability of our infrastructure and our communities to natural disasters. As extreme events become more frequent, it will become more and more important to understand the interconnections between our infrastructure and social vulnerability. Funded by NOAA's Coastal and Ocean Climate Applications (COCA) program, a team from East Carolina University, South Carolina Sea Grant Consortium, the Carolinas Integrated Sciences and Assessments, North Carolina Sea Grant, and Saint Louis University are assessing water and wastewater infrastructure vulnerability in two coastal cities, Morehead City, NC, and Charleston, SC, and how failures in this infrastructure due to water-related hazards impact public health and subsequent social vulnerability. The team, working with local decision makers and community members, is developing a susceptibility index of populations within each community to health threats associated with vulnerable water infrastructure. The index will be weighted by the community to assign priority to acute conditions that may occur, since susceptibility varies by location, depending on the physical location and socioeconomic and demographic profiles. The portion of the project presented here addresses the socio-economic vulnerability variables to be incorporated in this project, moving beyond those variables traditionally identified as socially vulnerable to include vulnerability of both people and activities when infrastructure is compromised. During the short and sweet talk, we will address the characteristics of these populations and the place-related potential exposures that are likely to affect the activities. Emphasis at this stage of the project is on locations and spatial patterns, leading to analyses of potential exposures in later stages, as various scenarios are tested.