

Rhode Island Coastal Hazard, Analysis, Modeling, and Prediction system (RICHAMP)

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COE and program: Coastal Resilience Center of Excellence (A Component of the UNC Center for Natural Hazards Resilience)

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Abstract:

This research presents graduate student contributions to the development of the Rhode Island Consequence, Hazards, Analysis, and Prediction (RICHAMP) tool. The Participatory Action Research (PAR) approach captures critical infrastructure managers concerns about hurricanes and Nor'easters across the State of Rhode Island (USA) for use in an online dashboard viewer that integrates those concerns with wind, wave, and surge storm model outputs. Emergency managers (EMs) need access to nuanced data that contextualize the local-scale risks and impacts posed by major storm events (e.g., hurricanes and nor'easters). Traditional tools available to EMs, such as vulnerability assessments, do not provide actionable data regarding specific local concerns, such as emergency vehicle access and potential communication disruptions. However, the development of high resolution storm models can aid EMs in making informed storm preparedness measures at the local scale. The current work focuses on the Wastewater Systems and Maritime Transportation Systems critical infrastructure sectors, expanding upon methods and research developed during two DHS funded pilot studies which captured facility manager concerns in Providence and Westerly, RI. Data collection included focus group interviews and site interviews with critical infrastructure managers. Our new approach utilizes web and mobile applications to simplify the data collection process and establish a workflow for critical infrastructure managers to report and maintain their hazard concerns in an Infrastructure Assets Consequence (IACT) database. The online dashboard viewer that integrates numerical storm models outputs with the IACT database will be used in an Emergency Operations Center (EOC) to flag the potential flooding and wind impacts during a real-time storm event or for planning scenarios, thus informing local and statewide emergency response activities. This poster explains the various ways that graduate students contribute to research design, data collection, and analysis for the project.