The CRC conducts research and education to enhance the resilience of people, infrastructure, economies, and the natural environment to the impacts of coastal hazards such as floods and hurricanes.

Research and Education Capabilities

- High resolution coastal flood, storm surge and wind forecasting
- Hazard mitigation and recovery planning
- Education and training for the current and future homeland security workforce

Feedback from Our Partners

“I won’t show up to hurricane season without [ADCIRC],” said Rear Admiral Peter J. Brown, Commander, 7th Coast Guard District, in 2017 about his experience using the Advanced Circulation (ADCIRC) Prediction System to inform decisions during hurricanes Irma and Maria.

“The Resilience Scorecard [developed by CRC researchers] is an effective tool allowing us to evaluate our existing plans and policies against the backdrop of resilience... [W]e plan to revisit our scores and use the Resilience Scorecard as we begin developing our updated comprehensive plan so we can maximize our opportunities to transform Norfolk into the resilient coastal community of the future.”

George Homewood, Director of Planning & Community Development
City of Norfolk, VA, 2018
Impacts

Protecting flood-prone communities

CRC uses the ADCIRC Prediction System (APS) to predict location and severity of coastal flooding. APS was used at the North Carolina Emergency Operations Center during hurricanes Matthew (2016) and Florence (2018); at the Texas State Operations Center during Hurricane Harvey (2017) to execute search-and-clear operations, position resources in advance of the storm, aid evacuation, and make preliminary damage assessments; and during hurricanes Irma and Maria (2017) for the U.S. Coast Guard to position people and assets.

Guiding resilient planning and rebuilding

CRC developed the Plan Integration for Resilience Scorecard to assess community plans for their ability to work collectively to reduce future flooding and storm risks. The Resilience Scorecard has been used in Norfolk, Va., and League City, Tx., and is being used in Nashua, N.H., and to assess communities near Houston, Tx., following Hurricane Harvey. In the wake of Hurricane Matthew, CRC worked with several communities to develop community rebuilding plans.

Improving risk communication

Using tailored personal communications delivered by text messages, CRC relays disaster risk information to motivate individual actions to become more prepared.

Educating the next generation of hazards professionals

Through education programs, CRC educates future hazard researchers, educators and practitioners, emphasizing the development of courses, minors, and certificate programs at MSIs. Since 2016, instructors have taught more than 30 courses to more than 500 students across seven university campuses.