

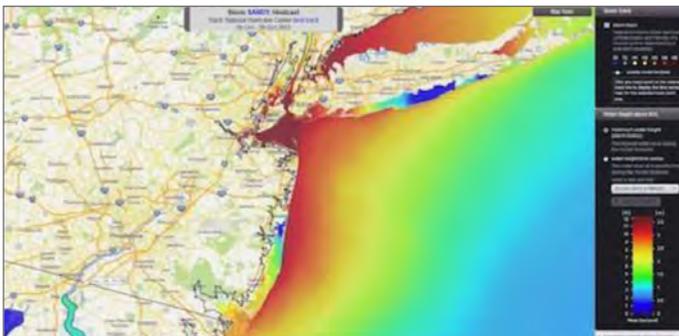


## See the Storm Surge Before It Happens

A Department of Homeland Security (DHS) Science and Technology (S&T) Coastal Resilience Center of Excellence model is helping the U.S. Coast Guard (USCG) and Federal Emergency Management Agency (FEMA) get people and property out of the way of life-threatening storm surges with highly accurate predictions of a storm's impacts.

## ADCIRC Predicts Floods

The **ADvanced CIRCulation (ADCIRC) storm surge model**<sup>®</sup> combines rain, atmospheric pressure, and wind forecasts to predict when, where, and to what extent flooding will inundate a coastal community with greater precision than other available models. This enables decision-makers to identify which locations will become unsafe and plan for mitigation and response before severe storms occur.



Maximum Water Inundation Forecast, Hurricane Sandy, Oct. 22, 2012, 8:00pm EDT

## The ADCIRC Model is Used to:

- Inform nearshore marine operations
- Predict hurricane storm surge and flooding
- Model oil spill movement in nearshore areas
- Model tides and wind-driven water circulation
- Model the impact of potential sea level rise on coastal communities

## Real Users, Real Results

- FEMA is using the ADCIRC model to update the National Flood Insurance Program coastal inundation maps.
- The U.S. Army Corps of Engineers uses the ADCIRC model for hurricane protection system design.
- The Louisiana Governor's Office of Homeland Security and Emergency Preparedness used ADCIRC model results to prepare for and respond to Hurricanes Gustav and Ike.
- National Weather Service forecast offices, USCG, and the North Carolina Division of Emergency Management use the ADCIRC model results to help guide storm response.
- The National Oceanic and Atmospheric Agency's (NOAA's) Extratropical Surge and Tide Operational Forecast System uses ADCIRC ahead of Nor'easters.
- NOAA funds an effort to deploy, extend, and support ADCIRCViz work with the National Hurricane Center storm surge team.
- ADCIRC has been run for all U.S. landfalling hurricanes for the past seven years.

## ADCIRC Helps the U.S. Coast Guard Respond to Hurricanes

The USCG used ADCIRC model results during Hurricanes Arthur, Irene, Isaac, and Sandy to aid storm-related decisions, such as deployment locations and maintaining continuity of operations.

*"Your academic research and development of a user-friendly storm surge model has been invaluable to the Coast Guard ... The fidelity of your model gives the Coast Guard a defensible method of determining high-risk areas during major weather events."*

~ R.C. Parker  
Vice Admiral  
U.S. Coast Guard

\* Winner of the DHS Science and Technology Impact Award, 2010 and 2012. DHS S&T Office of University Programs funding contributes to the development of the ADCIRC model Real Users, Real Results.