

PROJECT CI-FLOW - TRACKING THE RAINDROP FROM THE SKY TO THE SUMMIT TO THE SEA

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The CI-FLOW (Coastal and Inland **F**looding **O**bservation and **W**arning) project is a multi-agency, interdisciplinary research effort to demonstrate the capacities of emerging hydrometeorological technologies and research techniques to improve NOAA's monitoring and prediction capabilities for inland and coastal floods and flash floods. This project results from a NOAA initiative to connect technologies embedded within NOAA's Oceanic and Atmospheric Research (OAR) Laboratories with Sea Grant outreach specialists. The project location is the Tar-Pamlico and Neuse River basins of North Carolina. However, the research vision is to leverage NOAA's developing Coastal Estuary River Information System (CERIS) program to transition CI-FLOW project elements, including the coupled model system, to any of our nation's coastal watersheds. Research results will demonstrate the project's capability to forecast water quantity and quality for multiple locations in the Tar-Pamlico and Neuse River watersheds, including the tidal plain, by coupling ensembles comprised of inland river models and coastal ocean/estuary models, each using input from high-resolution weather forecast models and multi-sensor precipitation estimates.

It is important to understand the water information needed by communities in coastal watersheds and how that information should be delivered. Project CI-FLOW is designed to leverage the strengths of multiple organizations within NOAA, academia, other federal agencies, state agencies, and the private sector to answer such questions. Visualization techniques for the project's water information and the data dissemination methods developed to convey the research information is a direct result of the project's interactive exchange of ideas between project scientists, constituents, and operational offices responsible for hydrologic information. This dialog demonstrates the value of a truly integrated interdisciplinary water services program focused on improving the delivery of water information to eastern Carolina communities. It also serves as an opportunity for CI-FLOW research partners, including NOAA, to understand the informational needs of coastal watershed communities regarding flash floods, storm surge, and water quality.