

RESILIENT RESOURCES

FACULTY-SELECTED BEST MASTER’S PROJECT 2015

Preparing Rural America for an Uncertain Climatic Future Through Community Design and Ecosystem Service Provision

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Mikey is a planner and landscape designer at Design Workshop in Austin, Texas. He has worked at the UNC Institute for the Environment, the UNC Coastal Hazards Center, and the LSU Coastal Sustainability Studio to explore the linkages between hazard mitigation, climate change adaptation, and social justice. He is a former policy fellow at North Carolina Sea Grant and the 2014 recipient of the Wendy L. Olson Award for Public Service in Landscape Architecture. Mikey holds Masters degrees in City and Regional Planning from UNC-Chapel Hill and in Landscape Architecture from the North Carolina State University.

In 2012, Hurricane Sandy made landfall in New York City and nearby urban areas in New Jersey. In response to the second costliest natural disaster in the US since 1900, President Barack Obama unveiled the Rebuild by Design Competition, likely the largest federal investment in resiliency. Six international transdisciplinary teams will share \$920 million to design and implement infrastructural improvements throughout coastal New York and New Jersey that are massive in physical scale, temporal scope, and international renown.

Just as the mainstream public is likely familiar with the impacts of Hurricane Sandy on metropolitan New York, planners and designers from various disciplines are likely aware of the responses to the disaster that have been mobilized from these fields. However, neither group is likely aware that Hurricane Sandy left the same percentage of customers without power in hyper-urban New York as it did in largely rural West Virginia and New Hampshire. Voters and designers are also likely unfamiliar with rural Vermont’s ongoing struggle to recover from Tropical Storm Irene, where four to eight inches of rainfall caused nearly every river and stream in the state to flood, isolating much of Vermont’s non-

“...financially productive, contextually sensitive, and legally permissible floodplain design is eminently possible in rural North Carolina.”

urban population—many without power—for weeks. And designers and the public-at-large are almost definitely unfamiliar with the story of rural Kinston, North Carolina, where unprecedented rainfall from successive hurricanes caused the Neuse River to jump its banks, flooding a low-lying neighborhood, uprooting a historically close-knit African American population, and challenging a community to plan and design for resilience in a changing climate.

For the millions of Americans who do not live in cities, promoting more resilient planning and design decisions in rural areas remains a critical and under-examined endeavor, one that is literally a question of life or death. What can planners and designers do to achieve a more resilient physical environment in the distant, often isolated communities of the US? This project seeks to answer that question in Kinston, NC. First, I take an ecosystem services-based approach to redesigning nearly 750 acres of publicly-owned land along the Neuse River. By leveraging an asset common to all rural communities—lightly or undeveloped land—I examine methods of monetizing the ecosystem functions that naturally occur on the site. After establishing a baseline value for the site’s current ecosystem service provision, I design a masterplan for the site that both optimizes those ecosystem services and reimagines the site as an amenity for the community.



Image of Site. Photo Credit: Mikey Goralnik.

The full text of this project is available at carolinaangles.com