

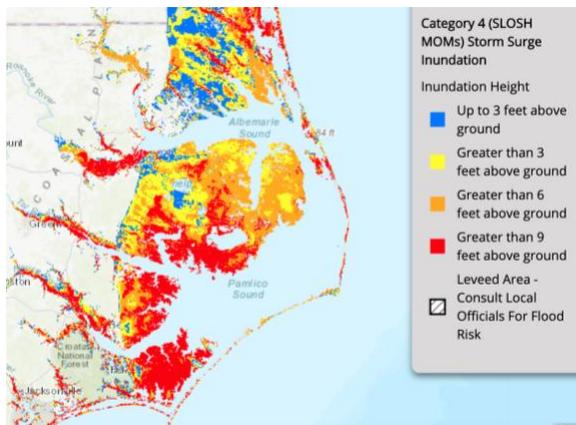
RISING WATERS

RISING WATERS VIRTUAL ACTIVITY 1 Coastal Communities in Rising Waters

Introduction

In August 2020, Hurricane Laura made landfall in Louisiana as a Category 4 storm. Scientists predicted there could be storm surge up to 20ft, though post-storm analyses revealed storm surge levels were much lower, the area likely experiencing closer to 9ft. Despite lower levels of storm surge, the hurricane still left [devastation](#).

While coastal Louisiana may have been spared some damage, other areas impacted by storms have not been so lucky. Take, for example, Mexico Beach, FL. Hurricane Michael made landfall there in October 2018 as another Category 4 storm. Post-storm analyses of storm surge in Mexico Beach revealed surge and water levels between 15 and 20ft had occurred. Combined with other factors of the storm, neighborhoods were completely [decimated](#).



Using the [National Storm Surge Hazard Maps](#), provided by the NOAA/ NWS/ NHC Storm Surge Unit, we see that if a Category 4 storm were to hit coastal North Carolina, much of the area would experience at least 3 ft of storm surge. Additionally, most of the Outer Banks would experience levels of storm surge greater than 6 and 9 feet. Combined with other storm factors, and based on damage seen from storms of lesser strength to hit the area, it is likely that such a storm would result in severe devastation.

Activity Guidelines

For this activity, imagine that a Category 4 storm has hit the Outer Banks and left destruction like that of Mexico Beach in its wake. Using the simplified, current rules and regulations listed below, you will need to help the community rebuild.

Current NC rules and regulations include:

- No hardened structures on the oceanfront (ie, no groins or seawalls).
- Once a dwelling's septic system is exposed, it will be condemned.
- No homes or commercial structures can be built within 30ft of estuarine shoreline, and within 75ft requires special permits.
- No development within coastal wetlands.



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In addition to the rules and regulations listed above, when redesigning the area, consider the *needs of the community* of people as well as the *needs of the aquatic community*. The natural environment is directly tied to the economic success of the Outer Banks as summer tourism is key to the *economy*, and people travel here to experience the *natural environment*. An increase of residents and visitors during summer months puts more pressure on our natural systems through an increase in waste, fuels, water usage, etc. The natural elements, especially winds and waves, can also result in stressors to our infrastructure over time, so *attention to science is key for good development*. Additionally, keep in mind that there are predicted to be an increasing number of large storm events due to climate change. At CSI, shoreline erosion is happening at a rate of up to 12 ft per year.

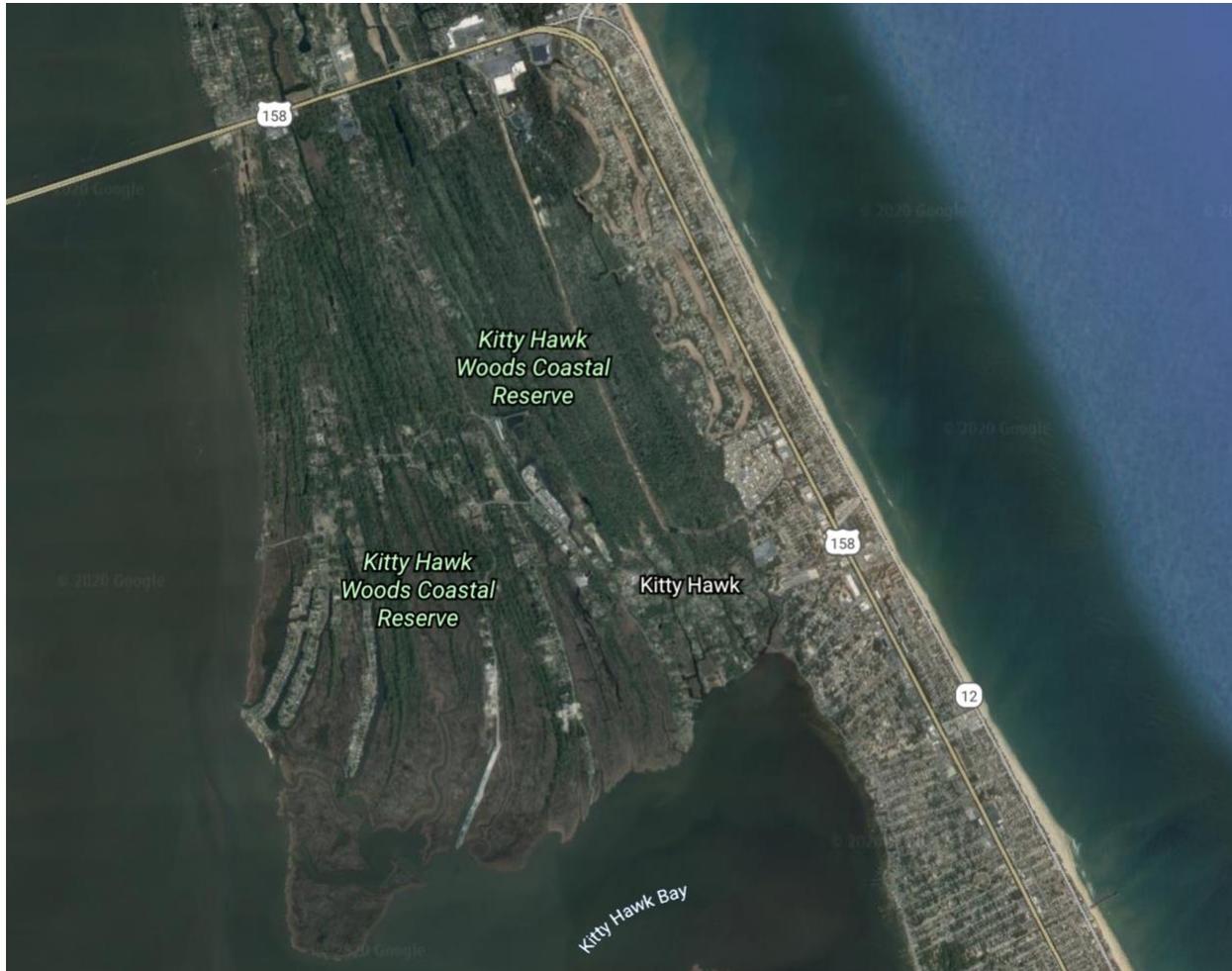
Finally, as you rebuild the Outer Banks community, be sure to think about *how people in the community will move around, interact with one another, and be secure and comfortable*. What are the basic human needs, and what would you want in your own community?

Now, get started! *Build your community for a minimum of 1000 citizens*, using your writing utensils, tracing paper, and one of the template communities from the following pages.



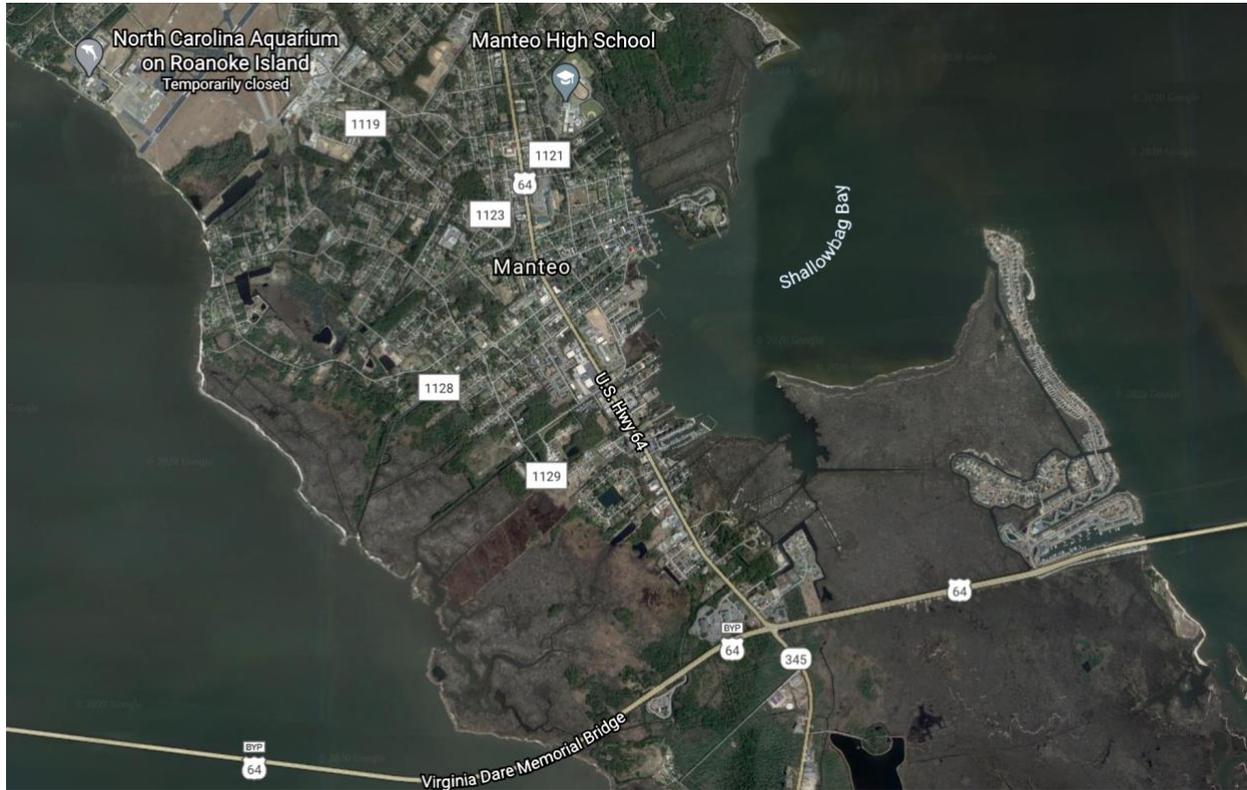
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Kitty Hawk



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Manteo



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Hatteras Village

