

Identifying the Cascading Public Health Impacts to Vulnerable Water Infrastructure

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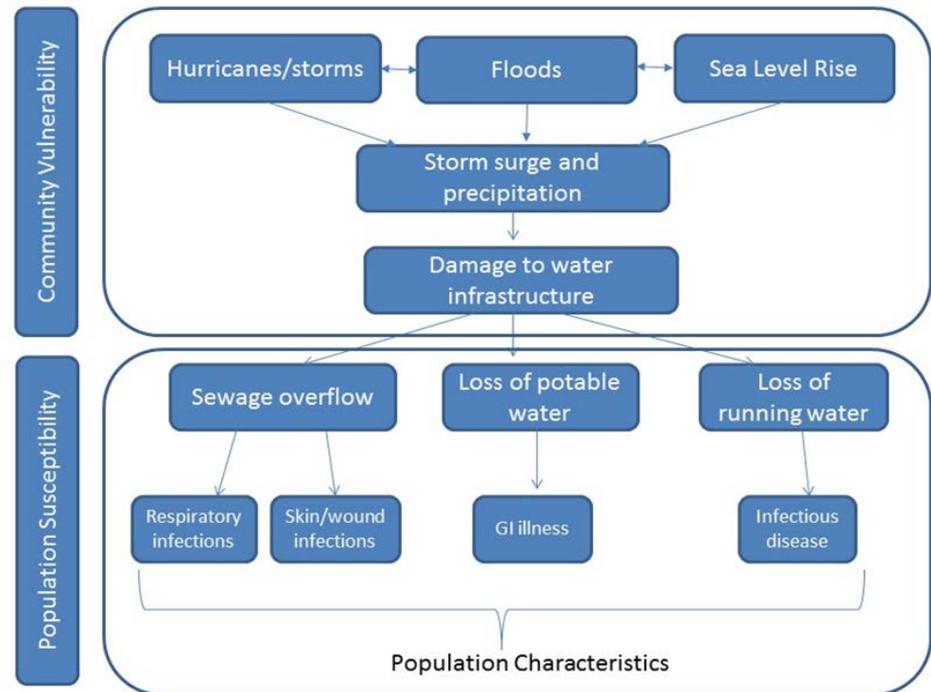
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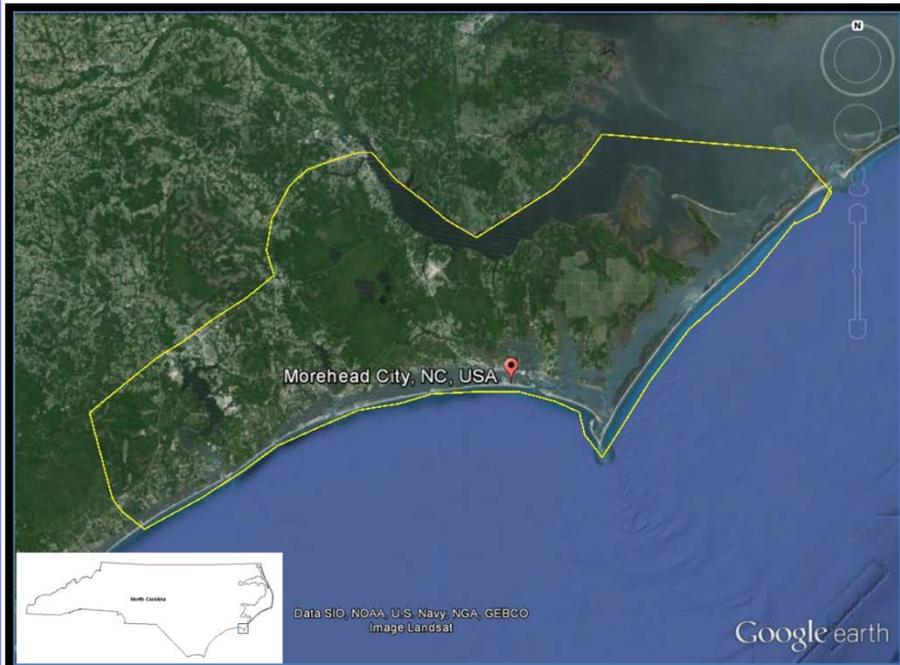
Research Questions

1. What infrastructure is vulnerable?
2. Under what circumstances is this susceptibility increased?
3. Who is most vulnerable to the different threats of failing water infrastructure?

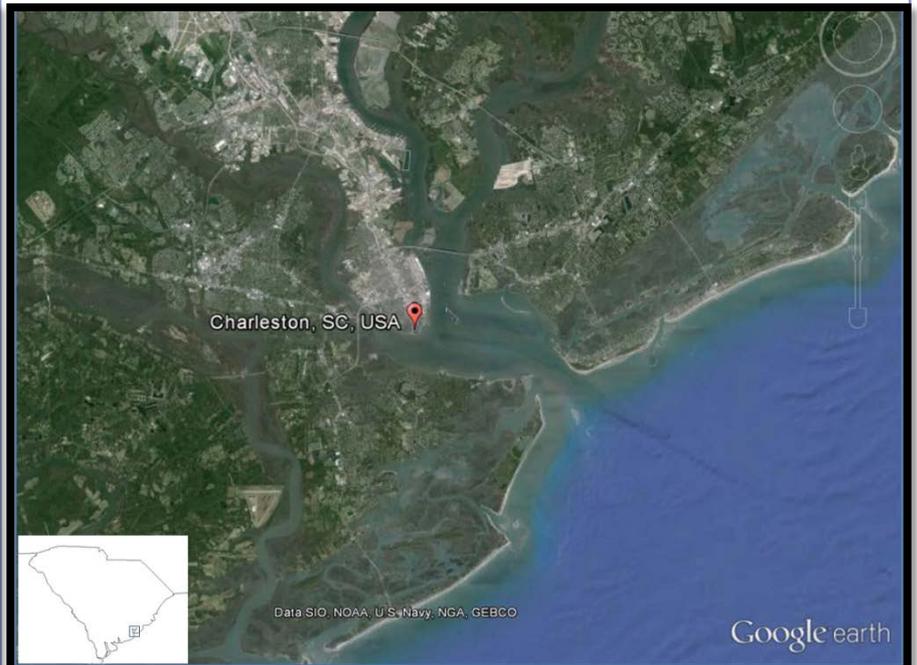


Study Areas

Morehead City, NC



Charleston, SC



Flooding

Morehead City



Charleston



Flooding

Health Impacts

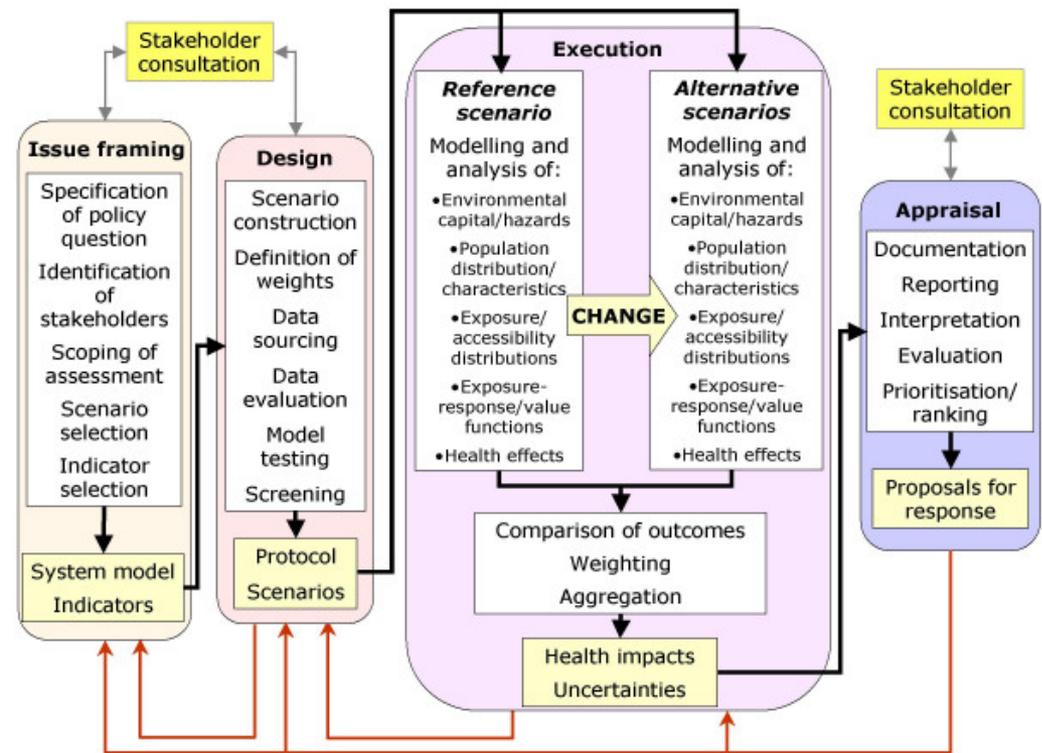
- Physical injuries (including drowning)
- Allergies (mold)
- Food and water-borne illnesses
- Food security
- Displacement
- Mental health issues
- Interruption of emergency services

Impacts on Water Quality

- Disruption of and damage to water supply/sewage systems
- Overflow of toxic waste sites
- Waterborne infections
- Expanded range of vector habitats and vector borne diseases
- Contamination of recreational areas

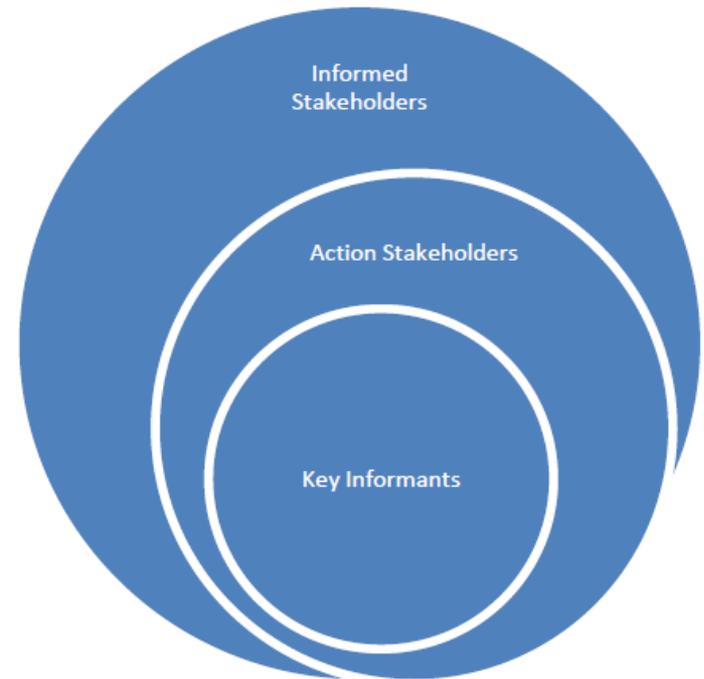
Susceptibility Index

- To be shaped by stakeholders
- To include
 - Vulnerable populations
 - Vulnerable activities
 - Vulnerable infrastructure
- Vulnerable activities
 - Boating, kayaking, paddle-boarding
 - Fishing
 - Tourism facilities
 - Medical facilities
 - Transportation
 - Basic hygiene



Stakeholders

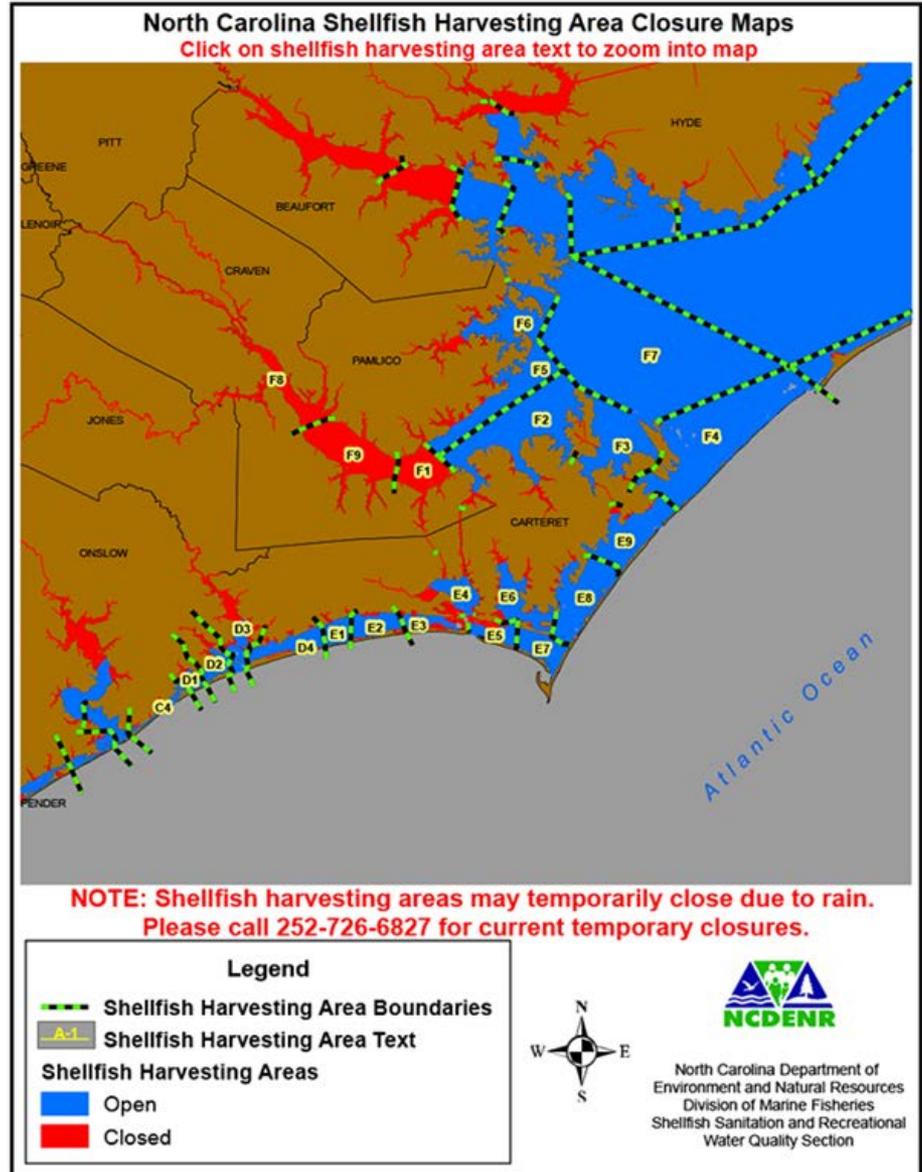
Public health officials	Municipal planners	Municipal engineers
Emergency management	Fishermen	Marina operators
Municipal Council members	Nature-based tourism operators	Hospital community liaisons
Wastewater plant supervisors	Water treatment supervisors	Solid waste supervisors





**Water quality
swimming
advisory issued
for sound-side
site near
Morehead City**

Jacksonville Daily News, June 2015



**NOTE: Shellfish harvesting areas may temporarily close due to rain.
Please call 252-726-6827 for current temporary closures.**

Legend

- Shellfish Harvesting Area Boundaries
- Shellfish Harvesting Area Text
- Shellfish Harvesting Areas**
- Open
- Closed

North Carolina Department of Environment and Natural Resources
Division of Marine Fisheries
Shellfish Sanitation and Recreational Water Quality Section

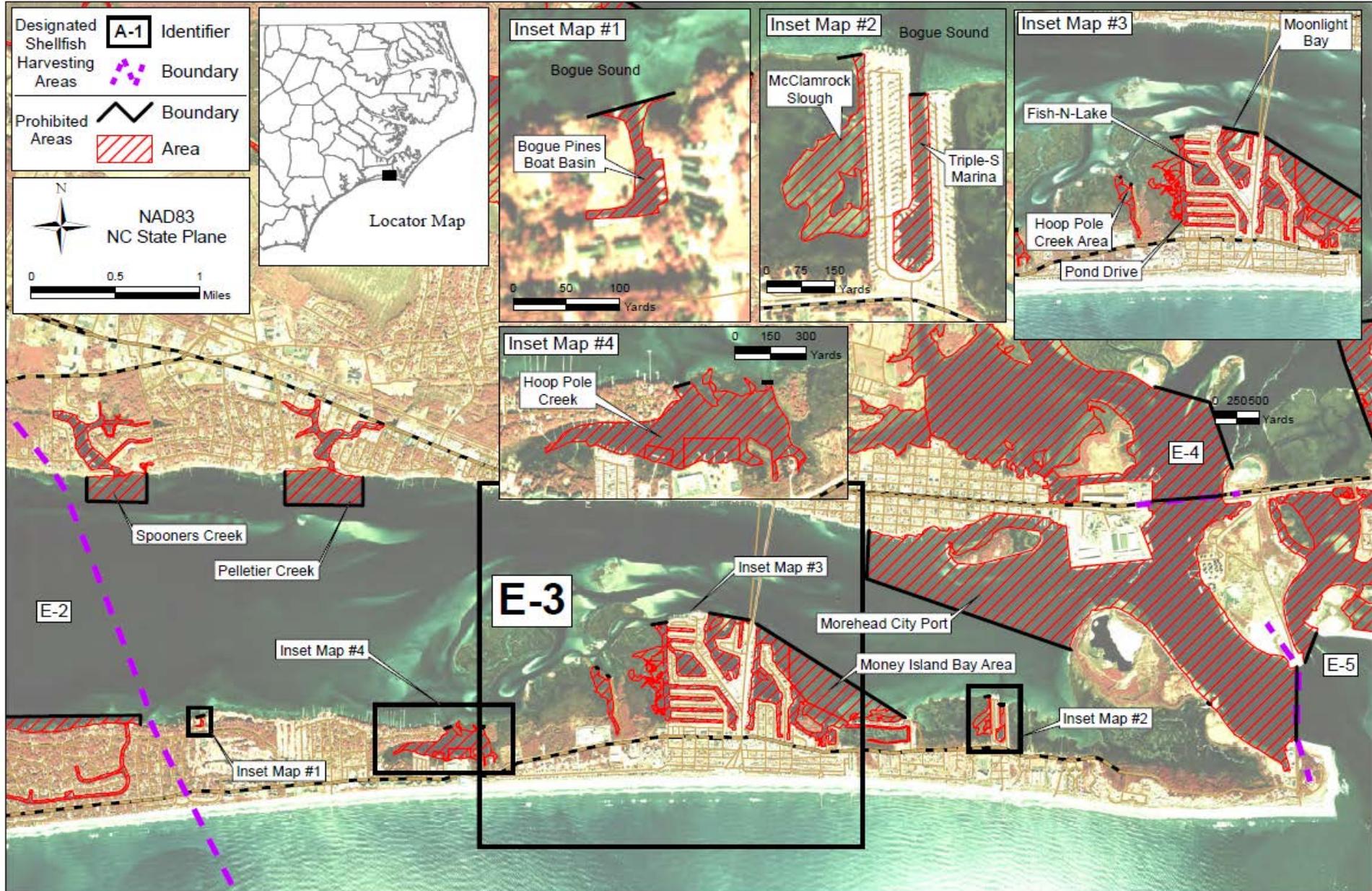
PROHIBITED TERRITORY

MOREHEAD CITY AREA

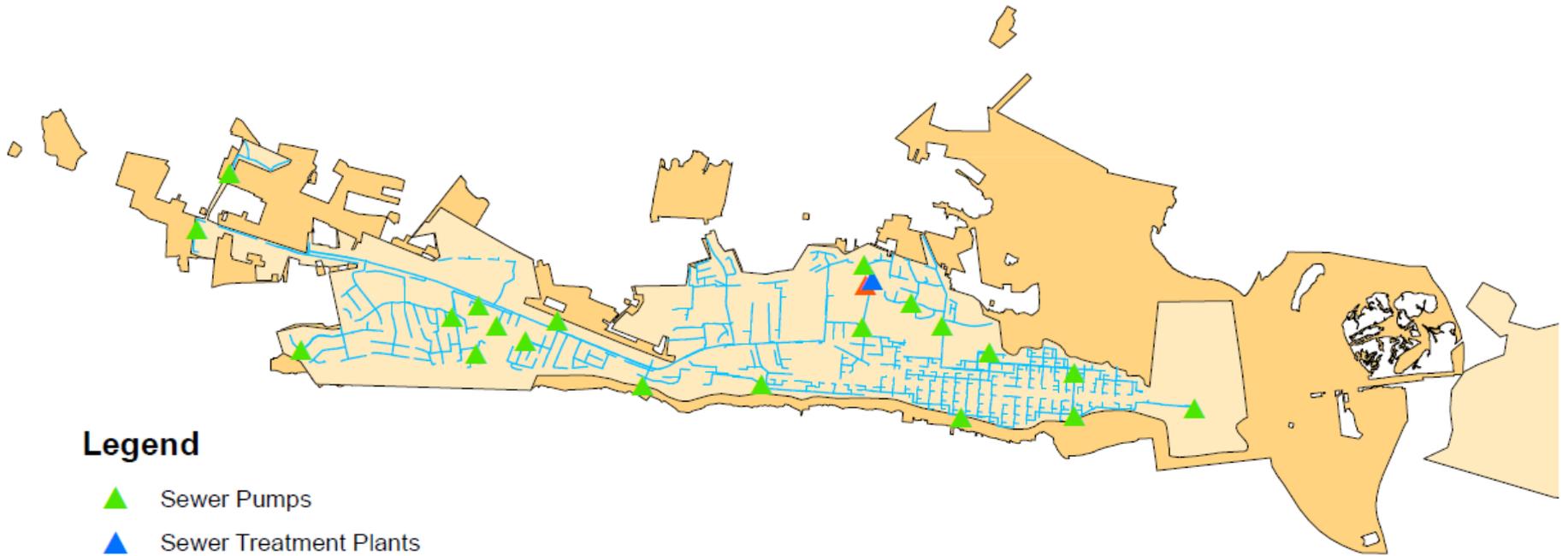
Area E-3 (Map 31)

(Prohibited areas are hatched)

COUNTY: CARTERET



Morehead City Sewer Infrastructure



Legend

- ▲ Sewer Pumps
- ▲ Sewer Treatment Plants
- ▲ Sewer Discharge Areas
- Sewer Pipes
- Sewer System Area A
- Morehead City Municipal Boundary



Questions?

Comments?

