**INTRODUCTION**

- Chronic erosion, powerful storms, and gradual sea level rise threaten people and property.
- > 50% of US population lives in coastal counties, → economic, social, and ecological impacts.
- 1988 SC Beachfront Management Act (BMA) was implemented to protect "life, property, and unique habitats…for the future."
- BMA regulates beachfront construction/reconstruction, repairs, and erosion control structures (new erosion control structures are prohibited), and limits seaward movement of development.
- BMA established both a jurisdictional baseline and setback line to guide development. However, the area between these lines can be developed with some limitations (e.g. max 5000 ft² heated space).
- Beachfront Vulnerability Index (BVI) evaluates existing oceanfront development within communities that may be most affected by chronic or episodic erosion or other coastal hazards.

**METHODS**

**Select Variables**

- a) Elevation (LiDAR)
- b) Erosion Rates (SCDHEC-OCRM)
- c) Habitable Structure to Regulated “Lines” (Digitized)
- d) Inlet Proximity (SCDHEC-OCRM)
- e) Hazard Probability (FEMA)
- f) Tidal Range (NOAA/NOS)
- g) Wave Height* (NOAA)
- h) Renourishment* (SCDHEC-OCRM)
- i) Slope (LiDAR)*
- j) Dunes (LiDAR)*

**Standardize Variables: Rank & Reclassify**

- Weighted Overlay
- Beachfront Vulnerability Index

**PRELIMINARY RESULTS**

Figure 2. Example of a BVI Scale used in analysis.

Figure 3. Convert shapefile layer (left) to a 10 x 10 m raster layer (right), with ArcGIS™ Polygon to Raster tool.

- Variable 1
- Variable 2
- Variable 3
- Variable 4
- Variable 5

**PROJECT STATUS**

- Rankings for each variable were derived from the previous studies in the literature or internal DHEC-OCRM staff discussions. These will likely change once the statistical analysis of the data is completed.
- Relative weight, or importance, of each variable will be assigned since some variables (e.g. elevation, erosion rate, inlet proximity) influence vulnerability more than others (e.g. statewide difference in tidal range or significant wave height).