



# RESILIENCE OUR BEGINNING JOURNEY

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## OVERVIEW

### Overview- What is Resilience?

*Resilience* is the ability of a community to *respond, adapt, and thrive* under changing conditions, including, but not limited to, recurrent burdens and sudden disasters.

**By committing *time, effort, and funding now* we can research, assess, and implement projects to protect our citizens and natural resources for future generations.**



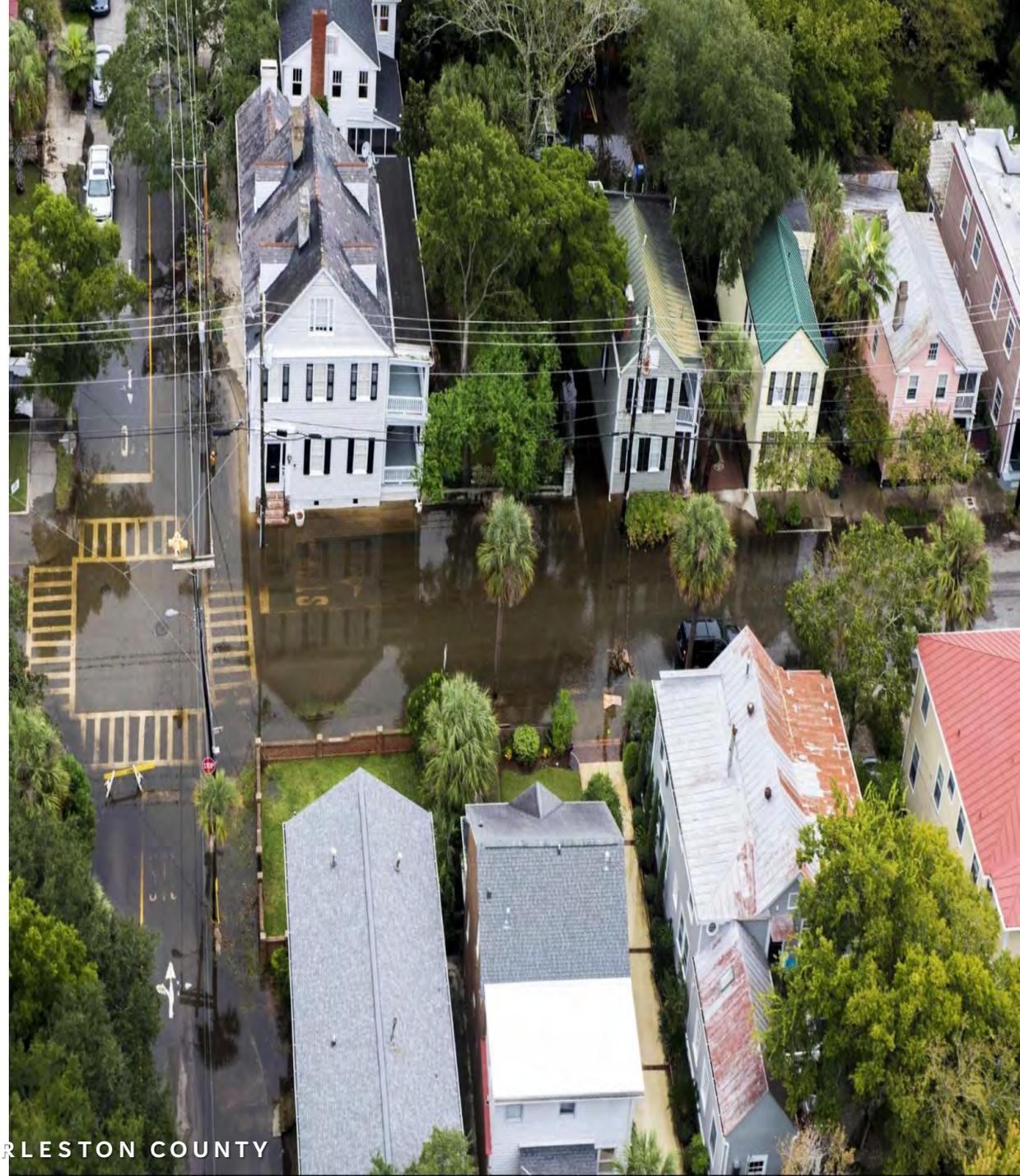


## PROBLEM

Considering the increasing frequency of major flooding events, along with annual hurricane threats, the proximity to a major fault line, and unprecedented growth, it has become overwhelmingly apparent that Charleston County and surrounding areas need to plan and proactively approach resilience now to be prepared for changes in the future.

# FLOODING

- Charleston County's geography is first and foremost defined by water. The Cooper River, Ashley River, Edisto River, Wadmalaw River, Stono River, Wando River and their many tributaries all drain into the Atlantic Ocean
- According to NOAA, flooding is an overflowing of water onto land that is normally dry. Because about 68% of the County lies within the floodplain, a proactive approach to flooding is necessary to protect the community and make it more resilient





## BACKGROUND

- **2019 The Planning Commission created a Resilience Committee**
- **Resilience Committee Mission:**
  - Create a Resilience Element for incorporation into the Charleston County Comprehensive Plan that explains high water impacts and other resilience related issues, is coordinated with the efforts of other jurisdictions, and identifies a goal, needs, and strategies

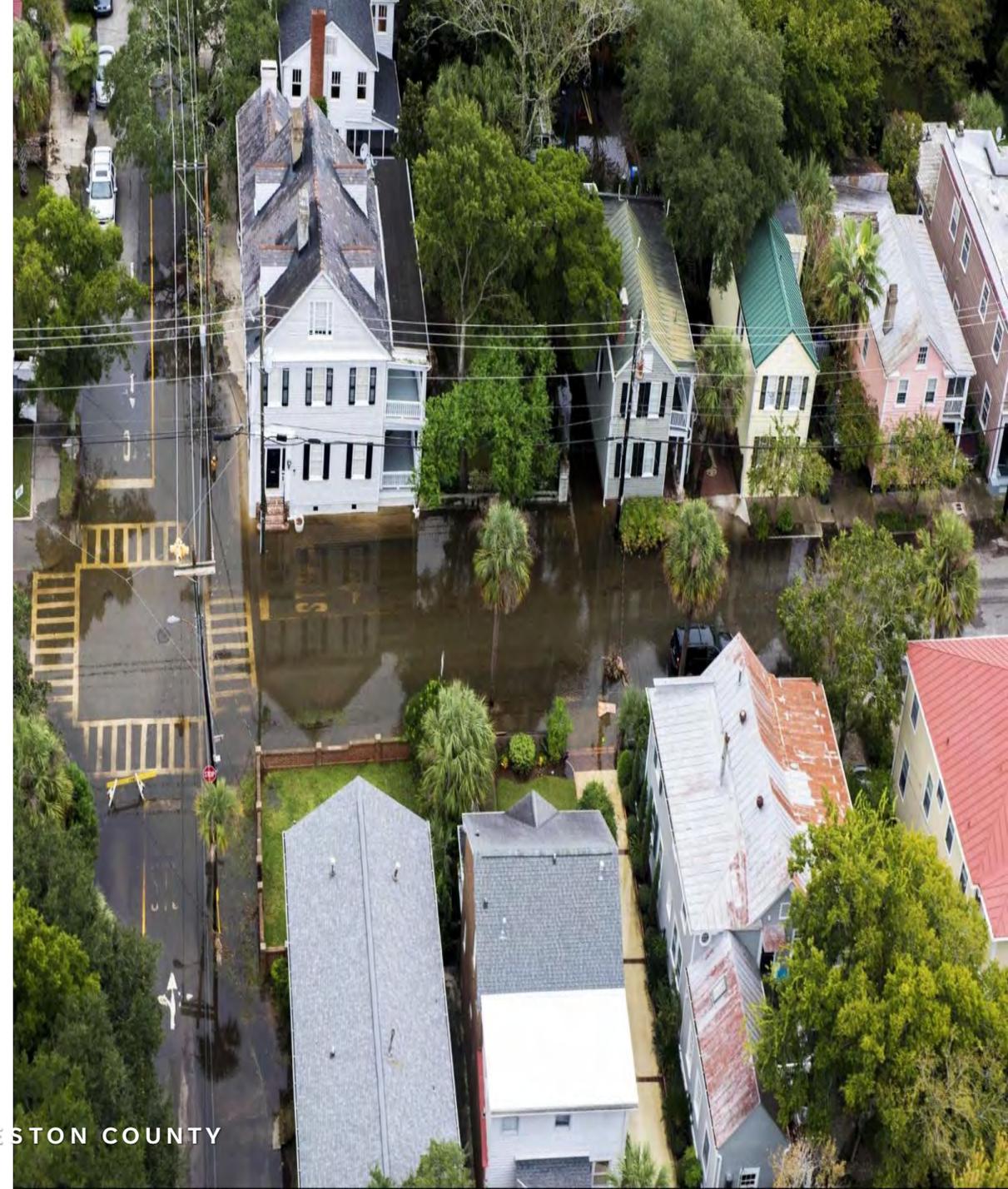


## BACKGROUND

- The Committee met monthly and heard presentations from different subject matter experts to include case studies from the Netherlands, the city of Norfolk, VA, and the City of Ft. Lauderdale, FL
- In addition to the subject matter presentations, drafts of the Element were developed, reviewed resulting in the final proposed Comprehensive Plan - Resilience Element
- This Element was approved by Council March 2020

# ALL HAZARD ASSESSMENT

The vulnerability assessment is a huge step for resiliency in the county, this assessment will be used as the “source” or starting point for data for all other resilience initiatives as the County works to prioritize “what to do now” and “what to do next”



# ALL-HAZARDS VULNERABILITY AND RISK ASSESSMENT TO ADDRESS:



**Floodplain  
Inundation  
and Current  
Tidal  
Flooding**



**Mid-term and  
Long-Term  
Sea-Level Rise  
and Future  
Tidal Flooding**



**Storm Surge**



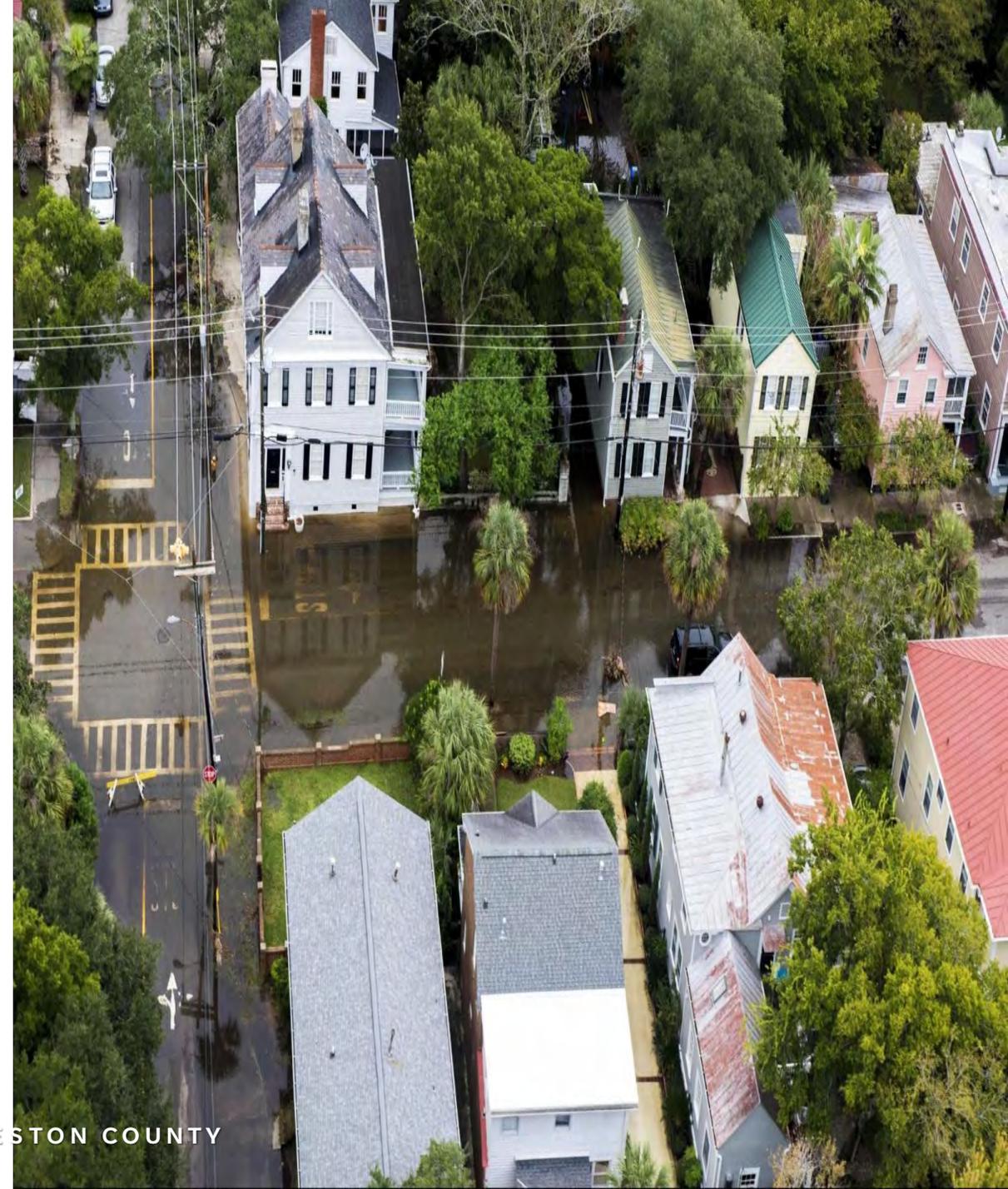
**Property Based  
and Social  
Vulnerability-  
and Risk Metric**



**Earthquakes**

# ALL HAZARD ASSESSMENT

- The assessment will take approximately 12 months to complete
- The County will be responsible for gathering a core planning team:
  - RSAC
  - County Staff
  - Community Engagement
- We will use the planning team throughout the assessment



# TREE CANOPY STUDY

- Conducted by the US Forestry Commission
- Study will possibly be used in the County's Comprehensive Plan
- Focusing on two key areas, Johns Island and West Ashley
- Land Cover Map at 1 meter for urban areas and 30 meters for rural areas
- Plantable area maps (to calculate how many additional trees that could be added in a specific area)
- Ecosystem Services we will receive in study:
  - Analysis of air quality benefits and carbon storage
  - Urban Heat Island Analysis



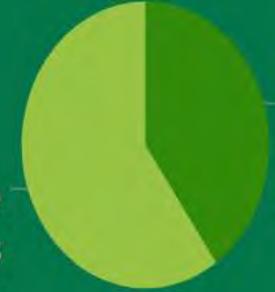
# Number of New Trees Possible

# 1,793,228

Possible Canopy Percentage

# 76 %

Large  
Trees  
59.68%



Small  
Trees  
40.32%

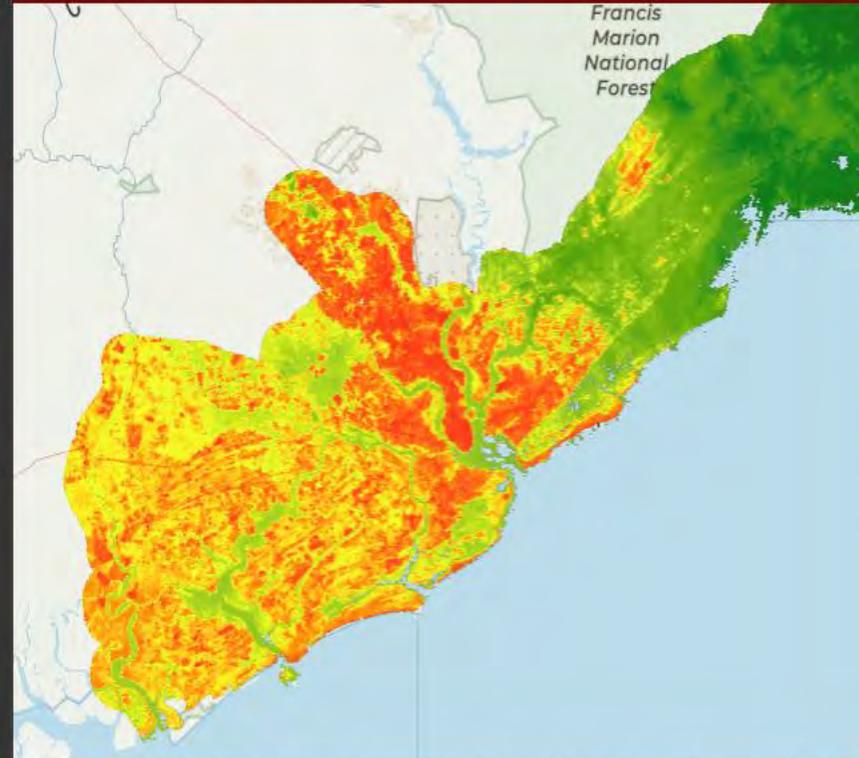
## Potential Canopy Area in Charleston County



Earthstar Geographics

Powered by Esri

## Charleston County Average Surface Temperature



Esri, CGIAR, USGS | Charleston County GIS, Esri, HERE, G... Powered by Esri

Average Surface Temperature

# 87°

in Charleston County

# COLLABORATIONS

## WOODWELL

A science-based non-profit that does long term compound flood modelling

## DELTARES

Critical Infrastructure failure- flood modelling

## WAZE

Offers drivers real-time, street-level alerts of flooded roads

# COLLABORATIONS

## TRI-COUNTY TASK FORCE

City of Charleston, Town  
of Mt. Pleasant, City of  
North Charleston,

## CHARLESTON RESILIENCE NETWORK

Currently looking into resurrecting  
this network. This is a network with a  
commitment to increasing resiliency

## ***IN CONCLUSION...***

**THE SCOPE OF RESILIENCE GOES FAR BEYOND THE TOPICS COVERED IN THIS PRESENTATION, AND THE COUNTY WILL WORK TO INTRODUCE ADDITIONAL AREAS OF CONCERN, CAUSES, AND POTENTIAL SOLUTIONS OVER TIME TO HELP CREATE A MORE RESILIENT CHARLESTON COUNTY**

**RESILIENCE AND SUSTAINABILITY WEBSITE:  
[HTTPS://WWW.CHARLESTONCOUNTY.ORG/CCRS/](https://www.charlestoncounty.org/ccrs/)**

**RESILIENCE STORYBOARD:  
[HTTPS://STORYMAPS.ARCGIS.COM/STORIES/28A03DE26CB4415CB92B117E349F9BC2](https://storymaps.arcgis.com/stories/28A03DE26CB4415CB92B117E349F9BC2)**

A background image of green grass, heavily blurred to create a sense of motion and depth. The colors range from light green to dark, almost blackish-green, with a white border framing the entire scene.

**QUESTIONS?**