

**Resiliency and  
Sustainability  
Advisory  
Committee  
Meeting**

**May 16, 2024**

# Welcome and Moment of Silence

By: Stewart Weinberg, Vice Chairperson

# Agenda

- |  |  |
|--|--|
| 1. Welcome, Moment of Silence  | Mayor William Cogswell, Chairperson                        |
| 2. Comprehensive Water Plan Update   | Dale Morris, Chief Resilience Officer                      |
| 3. City-USACE Tidal / Inland Flood Risk Management Project Update                    | Dale Morris, Chief Resilience Officer                      |
| 4. Groundwater Monitoring Update   | Evan <u>Cizler</u> , Resilience Intern                     |
| 5. Grant Progress: Federal Funding Update and Enhancing Recycling in City Parks      | Katie McKain, Director of Sustainability                   |
| 6. Presentation and Request for Input on Draft Charleston County Climate Action Plan | Arielle Gerstein, Charleston County Sustainability Manager |
| 7. Public Comment Period*  |  |

# Resilience Status Updates

By: Dale Morris, Chief Resilience Officer

## **USACE Tidal / Inland Flood Risk Management Study**

FCSA signed and study start March 2024.

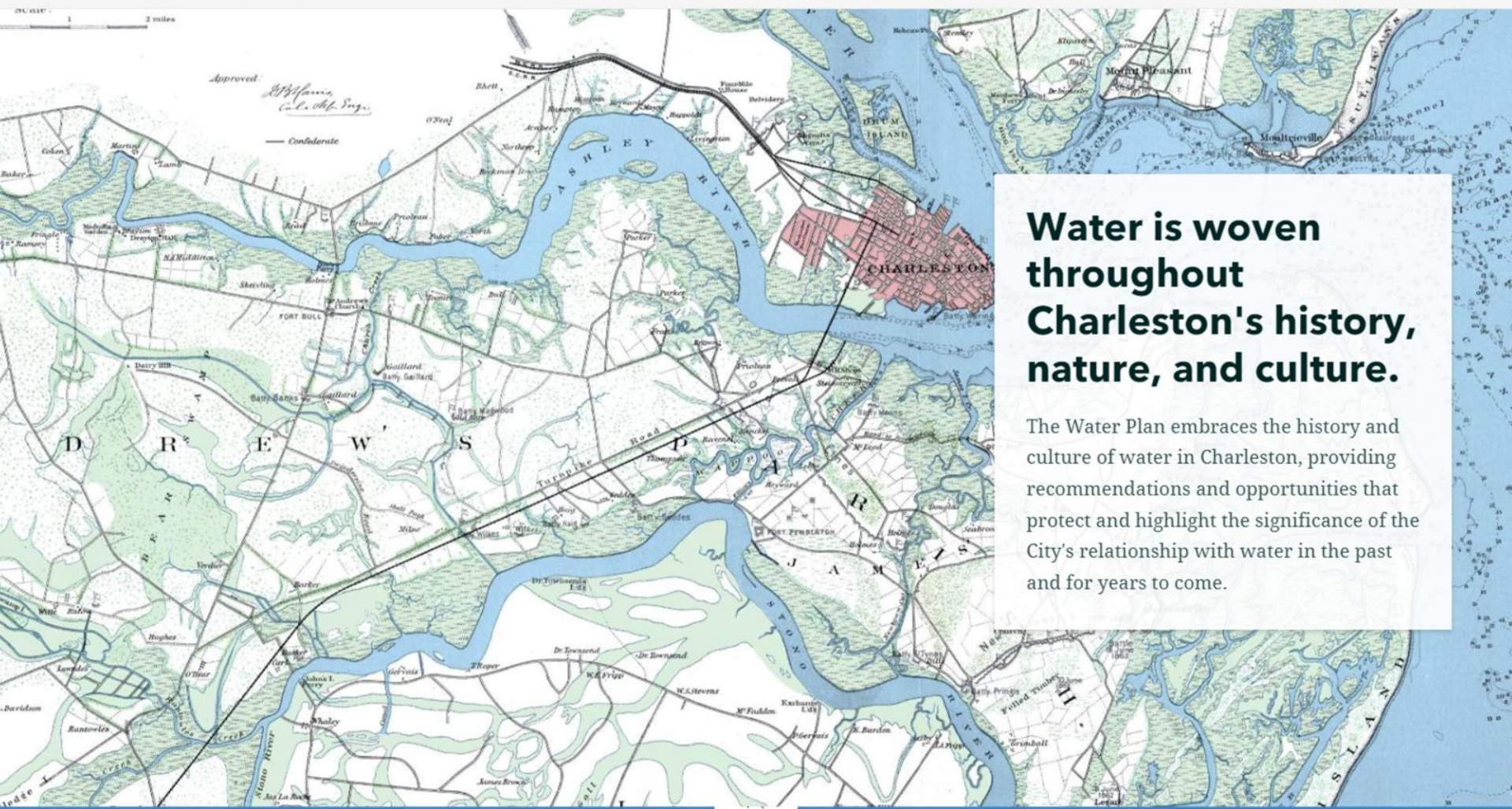
Project Team – core disciplines: risk assessment, planning, engineering, environmental, cultural/historic, environmental justice, economics.

City (Resilience, Stormwater, City Design Center) is integral part of Project Team.

Flood types: surge, tidal, rainfall, groundwater, compound.

“Water Plan” risk mapping and conceptual project recommendations have jump-started the risk identification, alternatives and opportunities phase of study. Highest risks areas: West Ashley, James Island, Peninsula.

0 1 2 miles

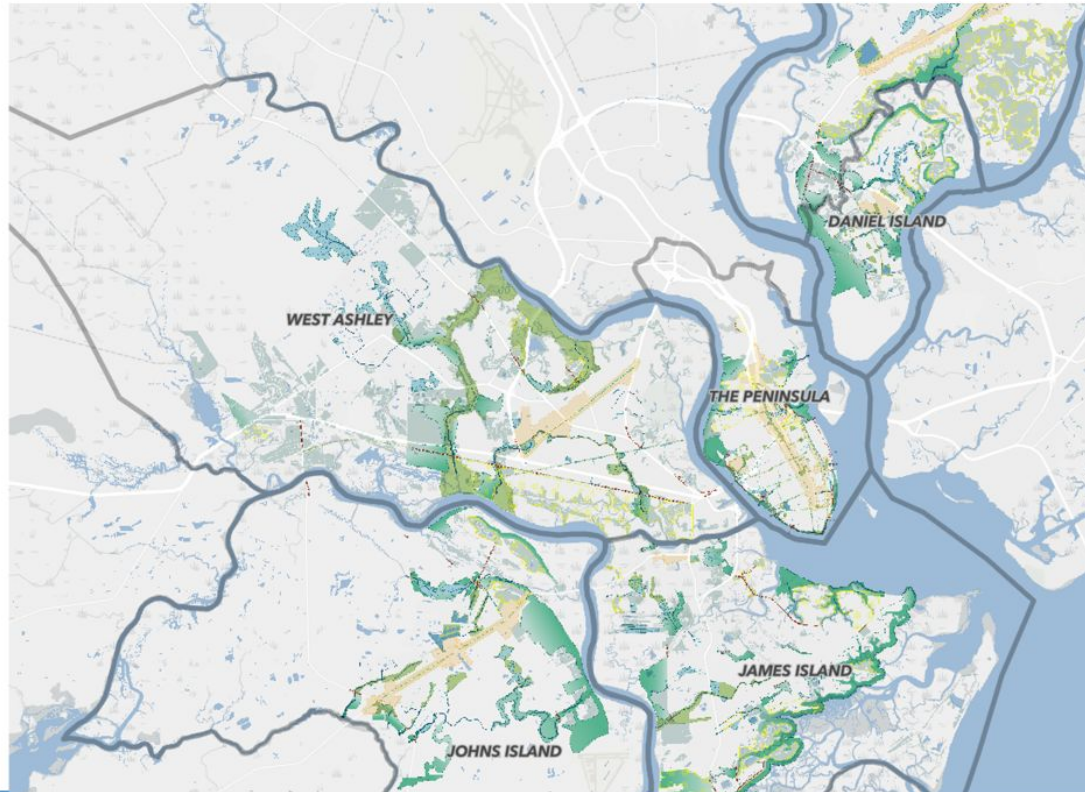


## Water is woven throughout Charleston's history, nature, and culture.

The Water Plan embraces the history and culture of water in Charleston, providing recommendations and opportunities that protect and highlight the significance of the City's relationship with water in the past and for years to come.

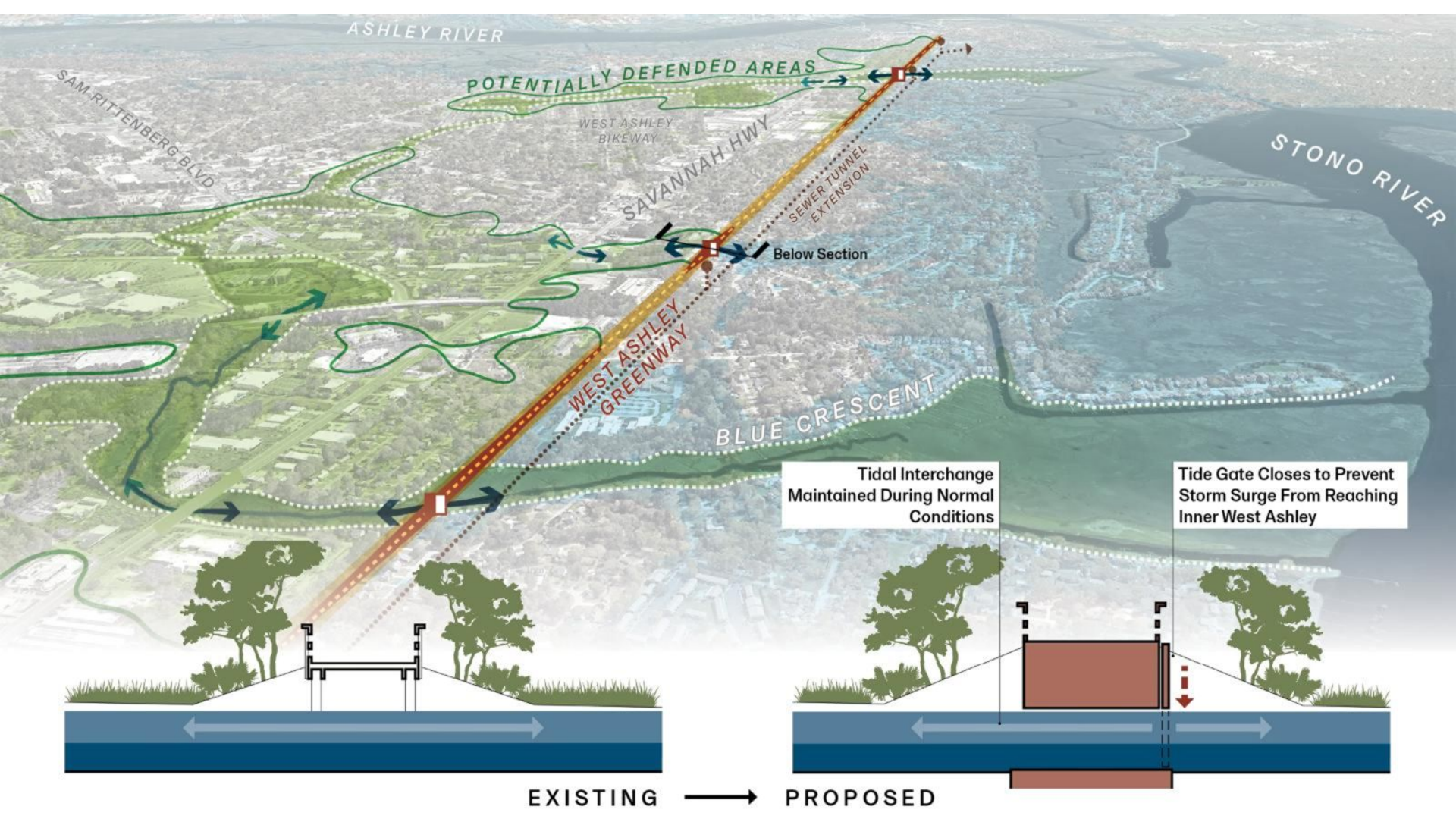


# Charleston Comprehensive, Integrated Water Plan. Final polishing. Executive reviews. Release: +/- Summer 2024









# Water Plan: Value, Principles and Strategies

## Values & Principles

- **Safety First:** Prioritize flood mitigation and adaptation pathways.
- **Work from the Ground Up:** Protect, conserve, & restore nature.
- **Change for Good:** Create systems and resources for equity and access.
- **Work Together:** Coordinate and communicate across communities, sectors, departments & jurisdictions.
- **Build Value:** Implement and invest for the long-term.

## Strategies

- Live with Water
- Make Space for Water
- Connect Low Ground, Prepare High Ground
- Conserve and Restore Nature
- Migrate with the Marsh
- Embrace Waterfront Value through Development & Access
- Protect the Peninsula
- Build upon past and ongoing flood mitigation efforts
- Integrate Water & Transportation Infrastructure
- Protect and Diversify Critical Ecological Systems
- Identify & Empower Communities based on Common Water Interests
- Costs come before Benefits
- Ensure Equitable Distributions of Resources
- Communicate Vision and Progress
- Educate to Build Awareness
- Adopt, Monitor, & Adapt



# Water Plan / Groundwater Monitoring

# City of Charleston Groundwater Monitoring Project

Office of Resilience, Sustainability and Emergency Management

**Deltares**





# Why Does Groundwater Matter?

- **Ground Subsidence and Heaving:**

- Subsidence: Ground sinks when groundwater level drops, critical for areas at or below sea level.
  - Drought and the resulting low groundwater levels accelerate subsidence, which increases flood depths during flooding and causes surface buckling that damages infrastructure.
- Heaving: Ground lifts when groundwater rises, posing risks to infrastructure like roads and pipelines.

- **Groundwater Capillary Intrusion:**

- Groundwater moves upward through porous materials, posing risks to buildings and infrastructure.
- Risks include moisture problems, mold growth, and structural deterioration.

# Why Does Groundwater Matter?

- **Public Health Concerns with Standing Water:**

- Standing water can harbor waterborne diseases, chemical contamination, and disease-carrying insects.
- Hazards to pedestrians, motorists, and infrastructure.

- **Groundwater Recharge/Absorption Rates:**

- Proper recharge is crucial for preventing oversaturation of soil, which can harm plant and animal life.
- Impact on soil structure and surface water absorption.

# Why Does Groundwater Matter?

- **Flooding Risk Assessment:**

- Monitoring groundwater levels aids in understanding water movement, which is crucial for floodplain mapping and zoning.

- **Infrastructure Planning and Maintenance:**

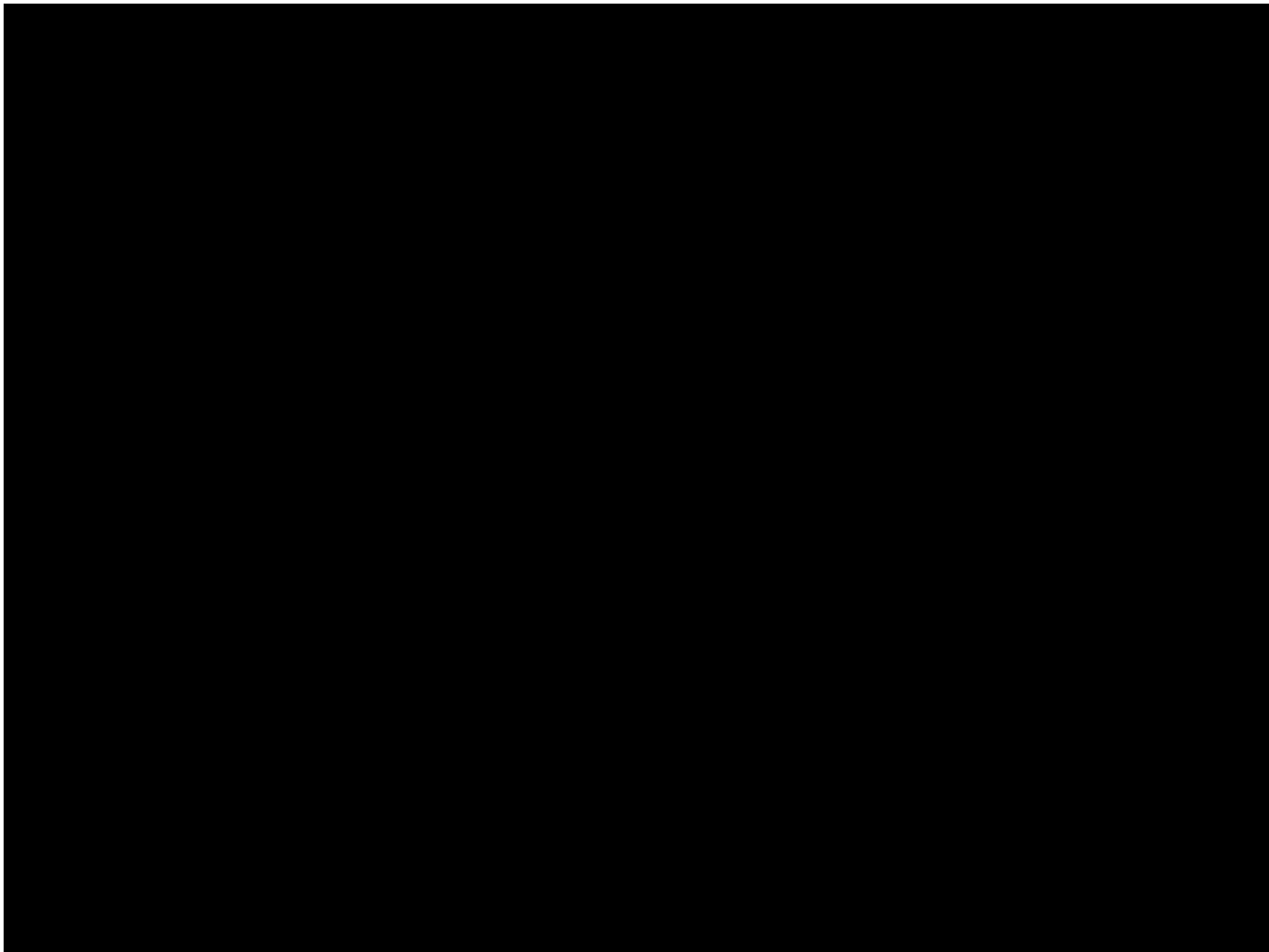
- Groundwater considerations are essential in planning building foundations and underground utilities.
- Insights into environmental risks and disturbance to waterways.



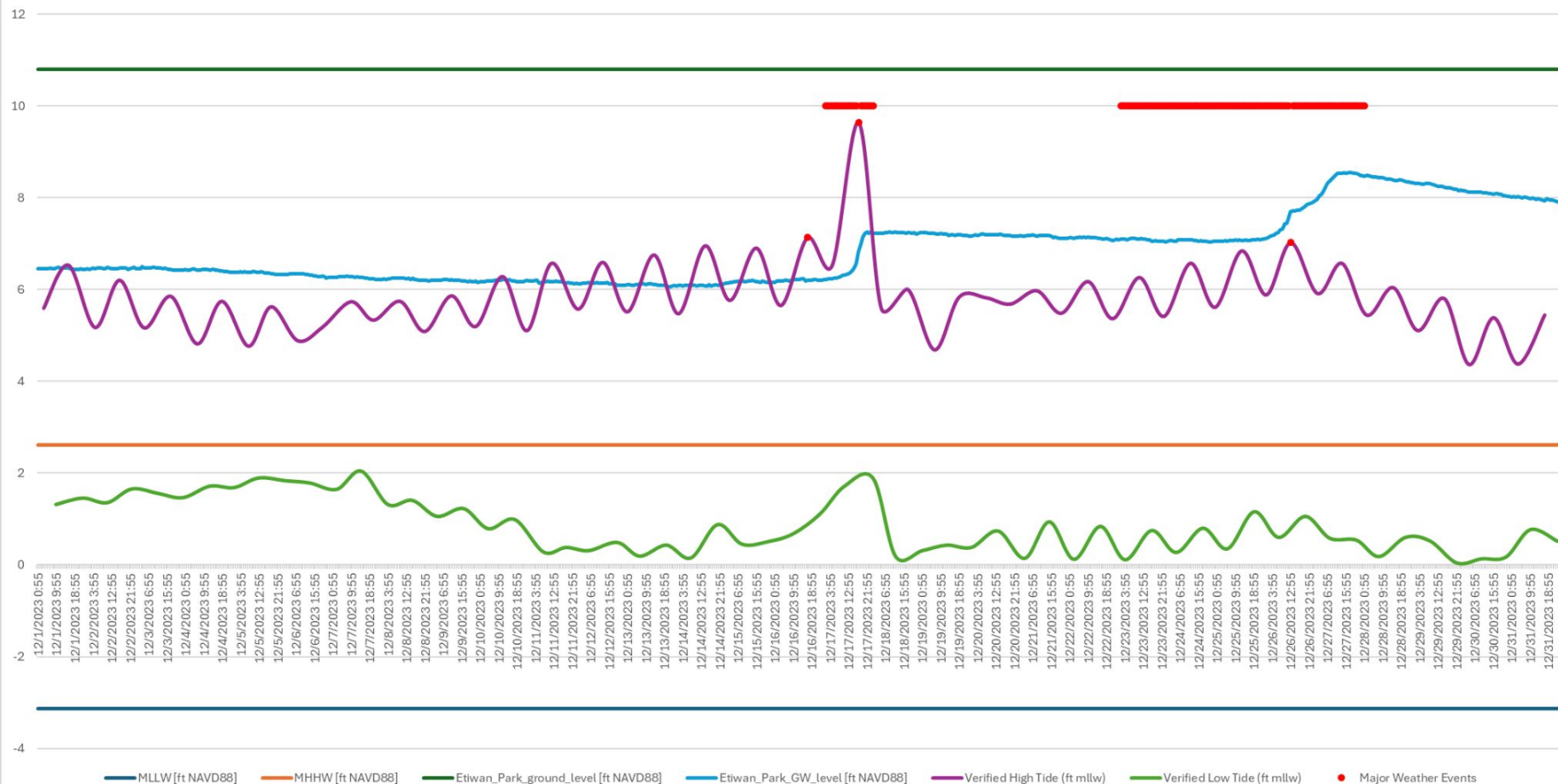






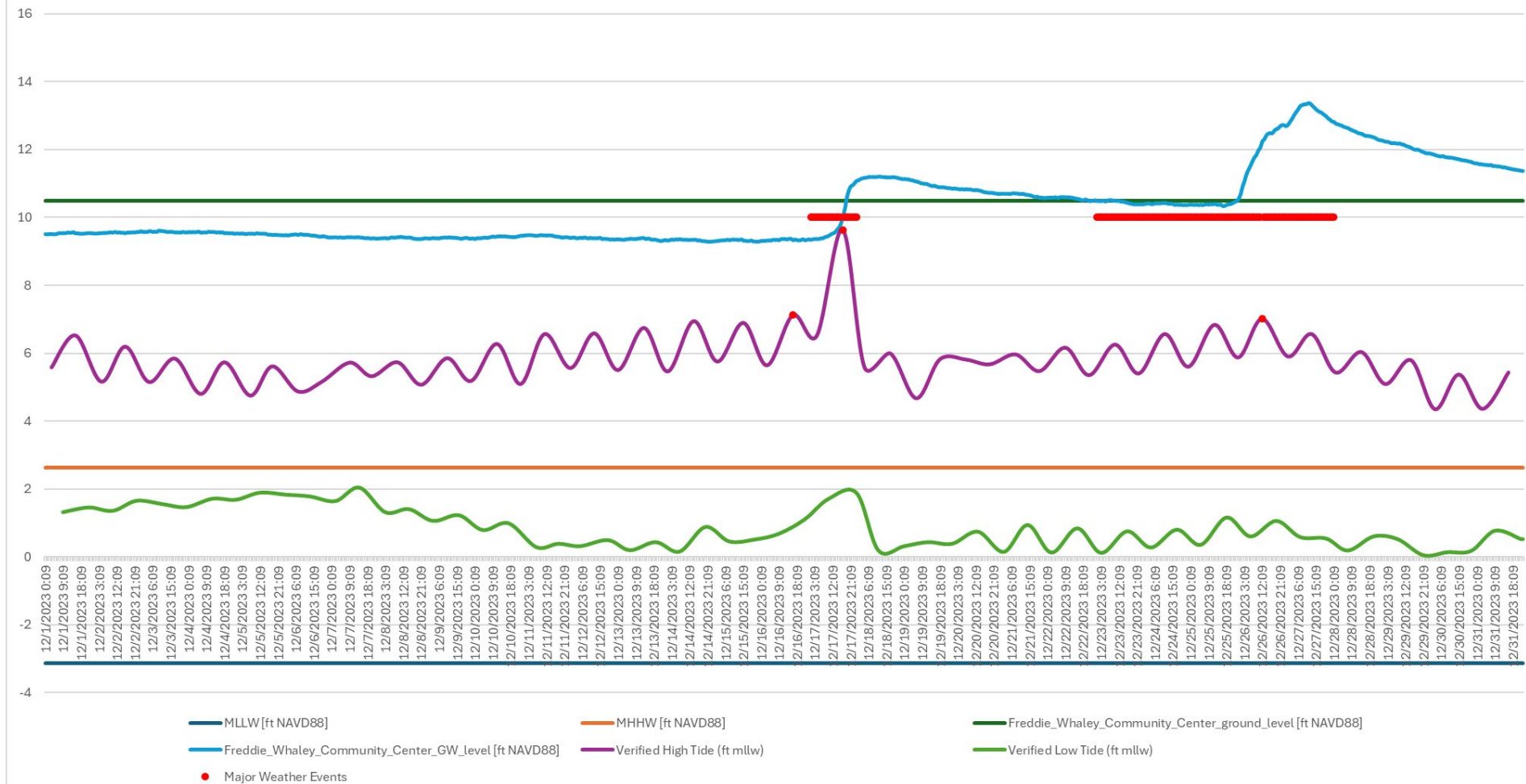


# Etiwan Park December 2023

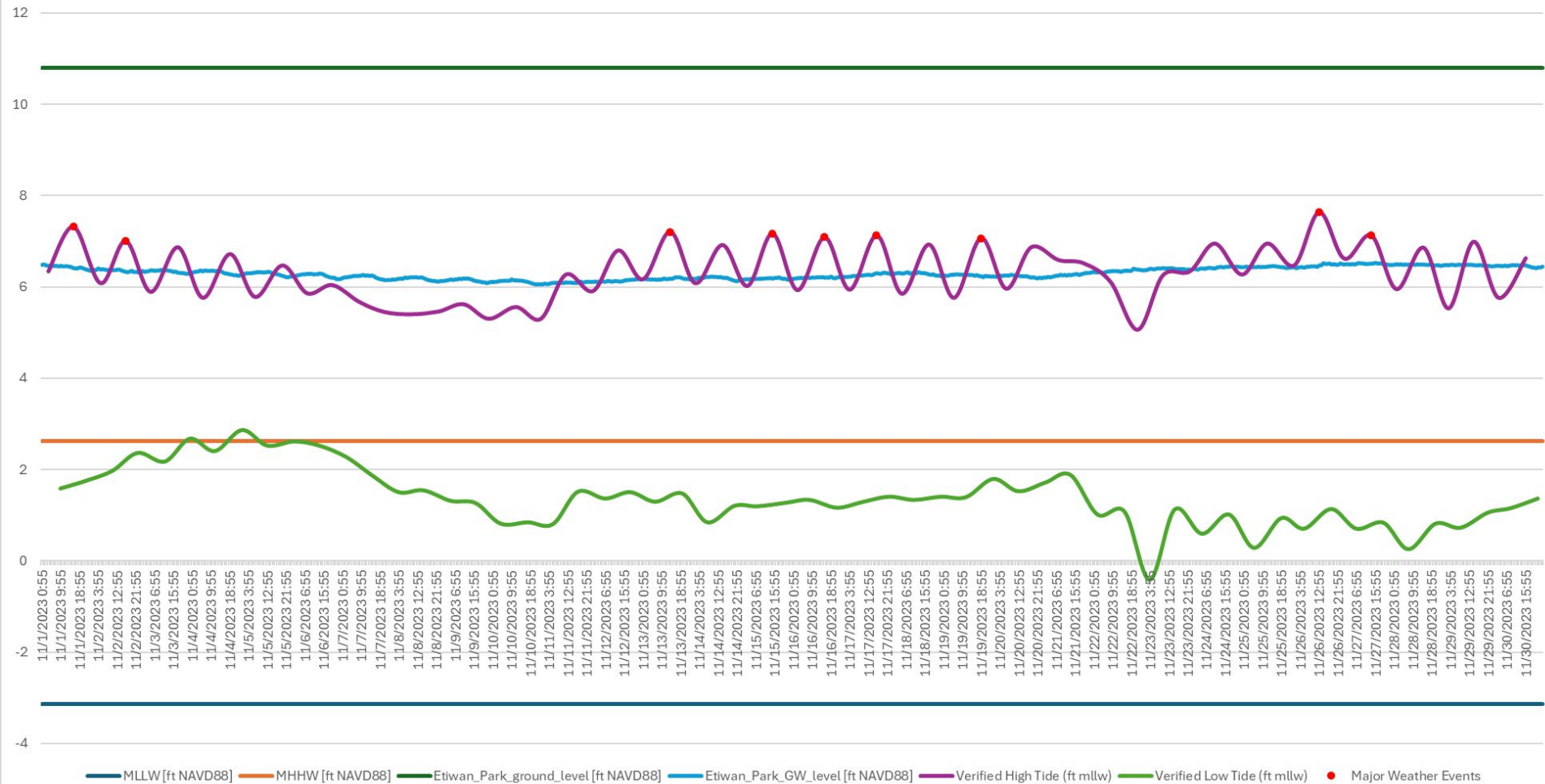




# Freddie Whaley Community Center December 2023

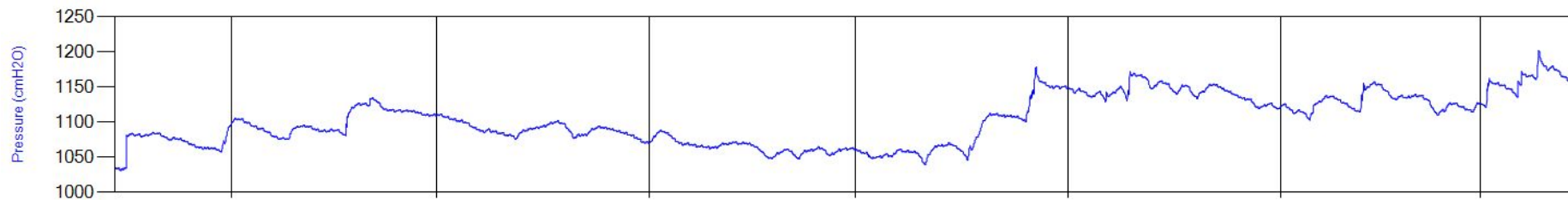


# Etiwan Park November 2023



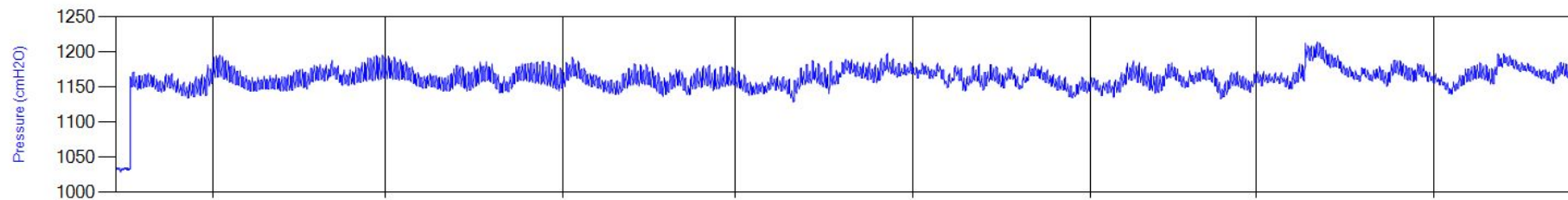
# Lenevar Playground

CH\_GW\_11\_VEI\_EJ684 - EJ684 - [8/15/2023 1:06:52 AM - 3/14/2024 11:06:52 PM]

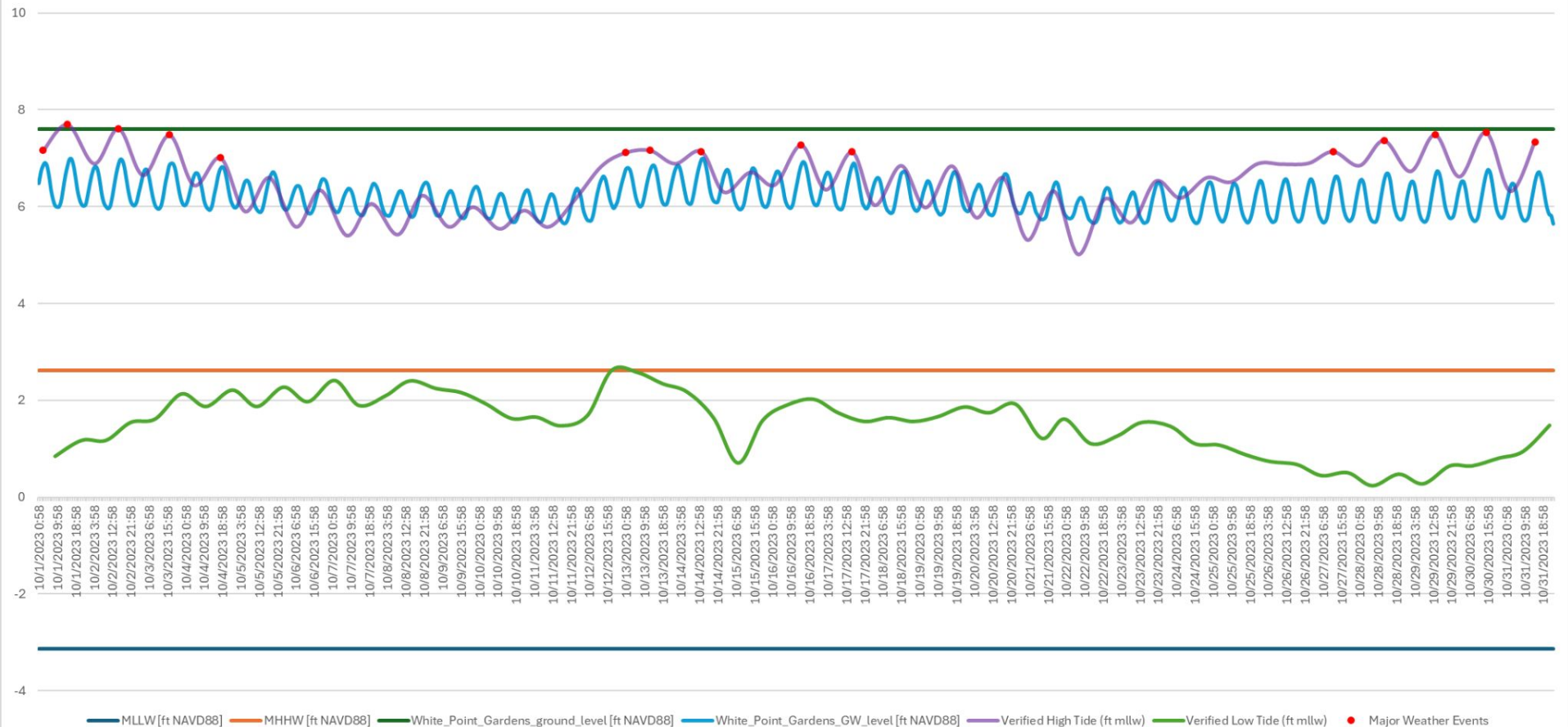


# White Point Gardens

CH\_GW\_05\_VEI\_EJ869 - EJ869 - [8/15/2023 12:58:54 AM - 4/25/2024 5:58:54 PM]

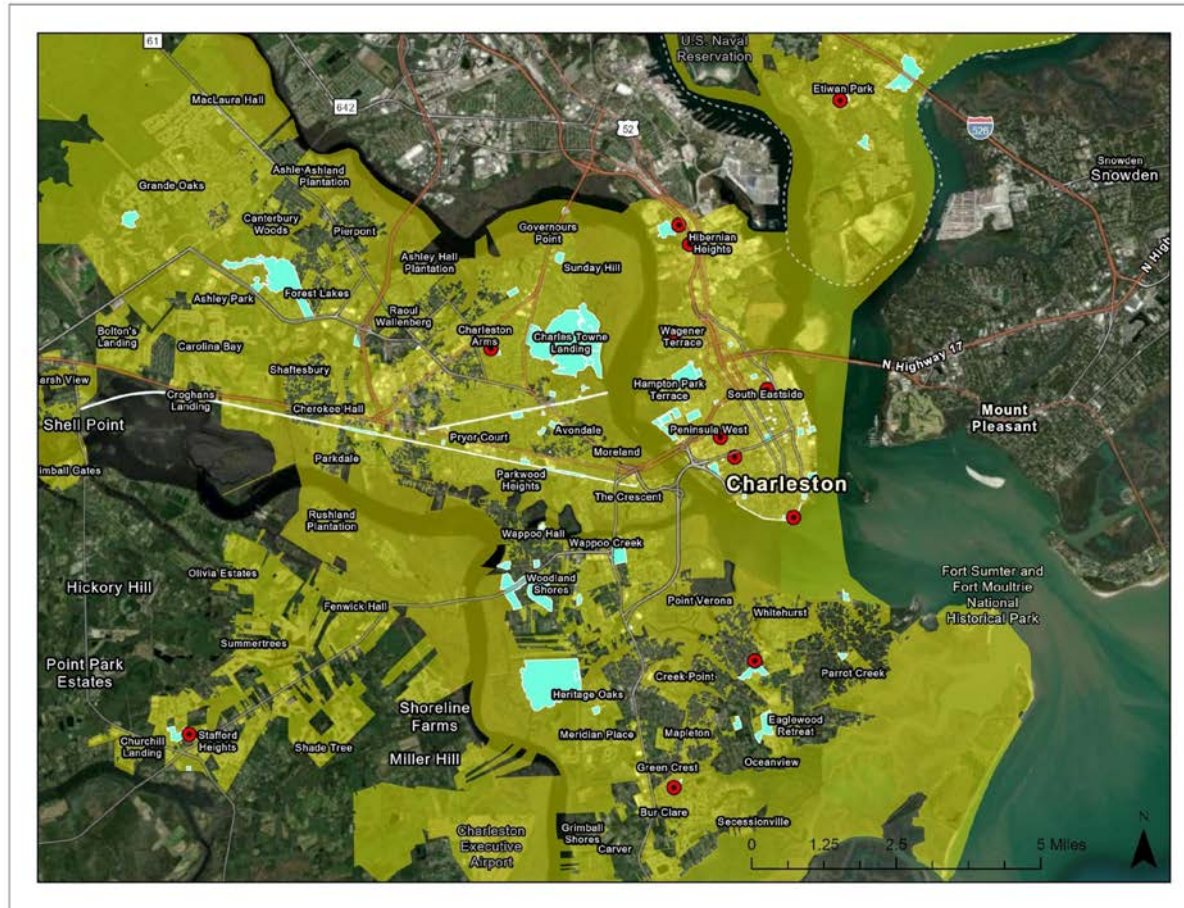


# White Point Gardens October 2023

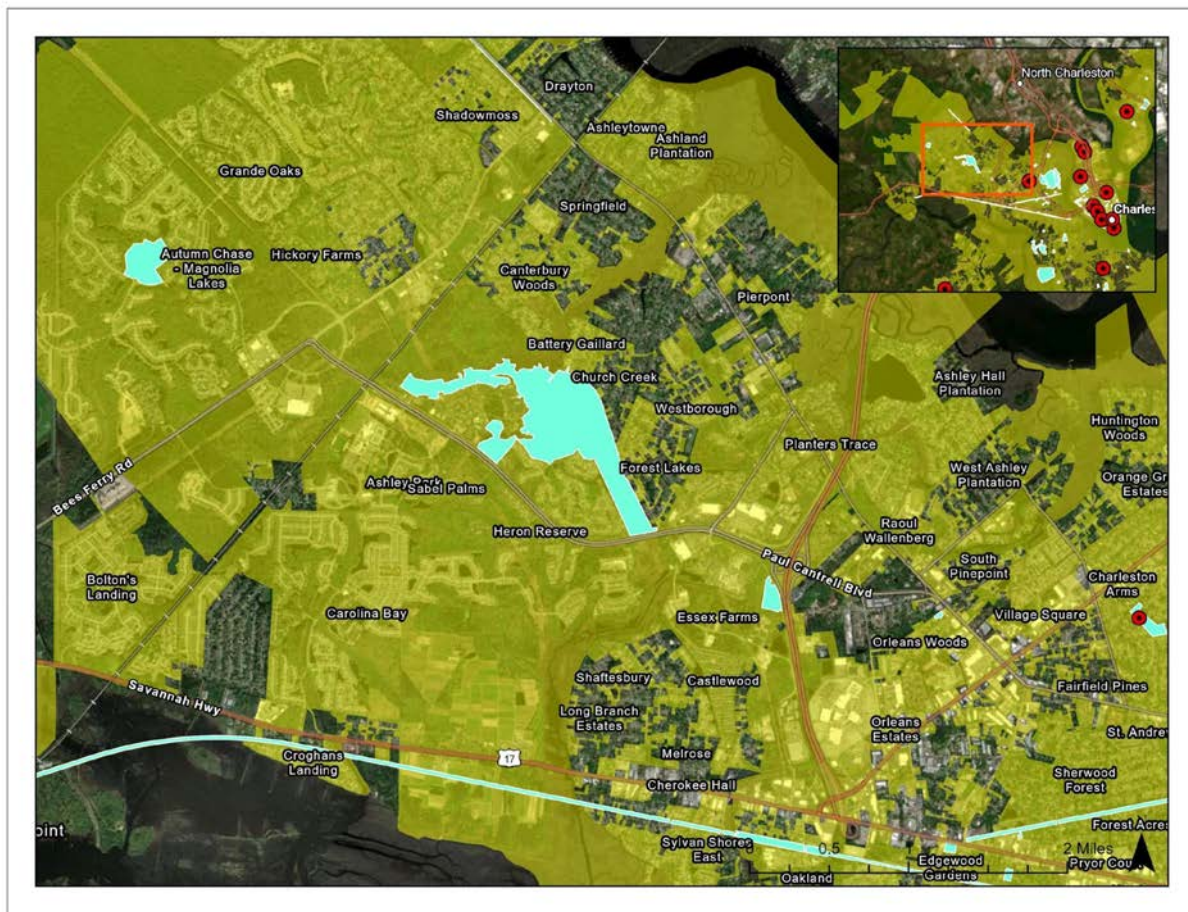




# Future Well Sites



# West Ashley Park





# Haygood/Fishburne Intersection

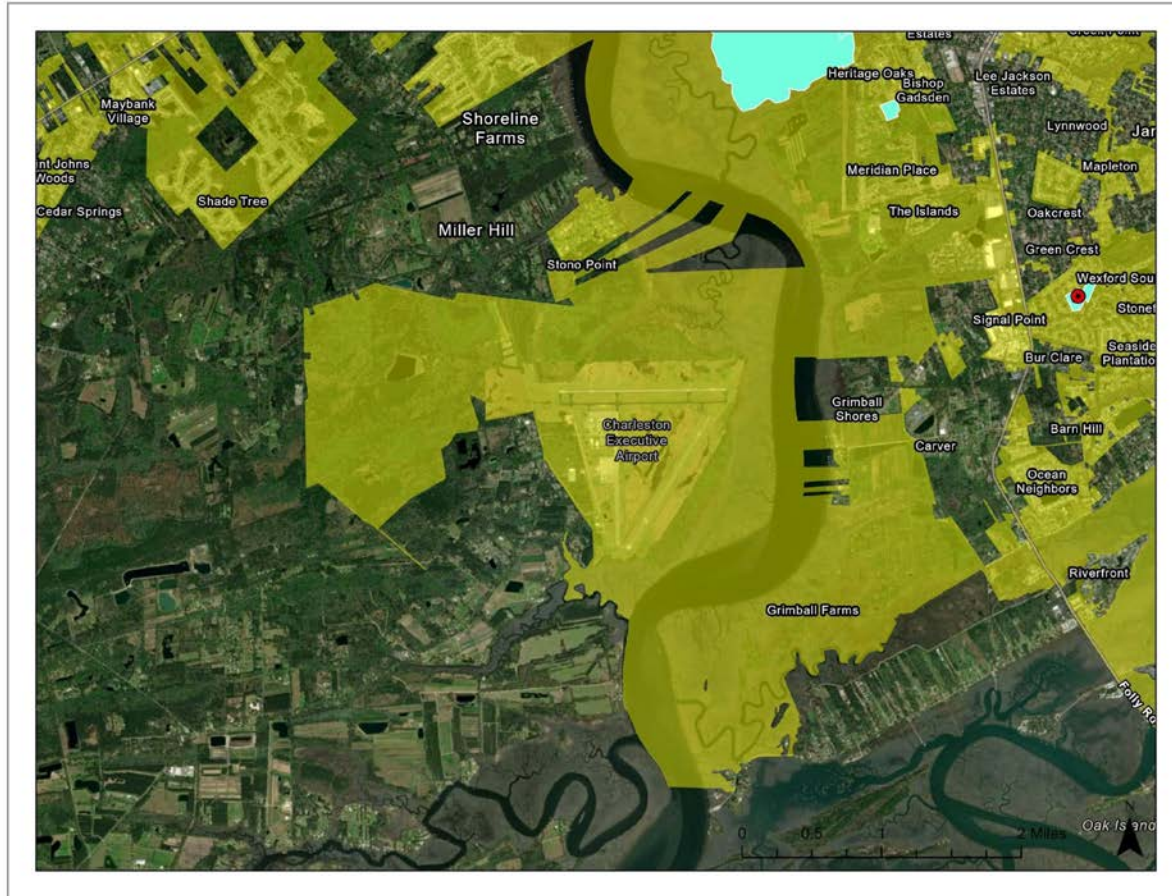


# Riverland Terrace



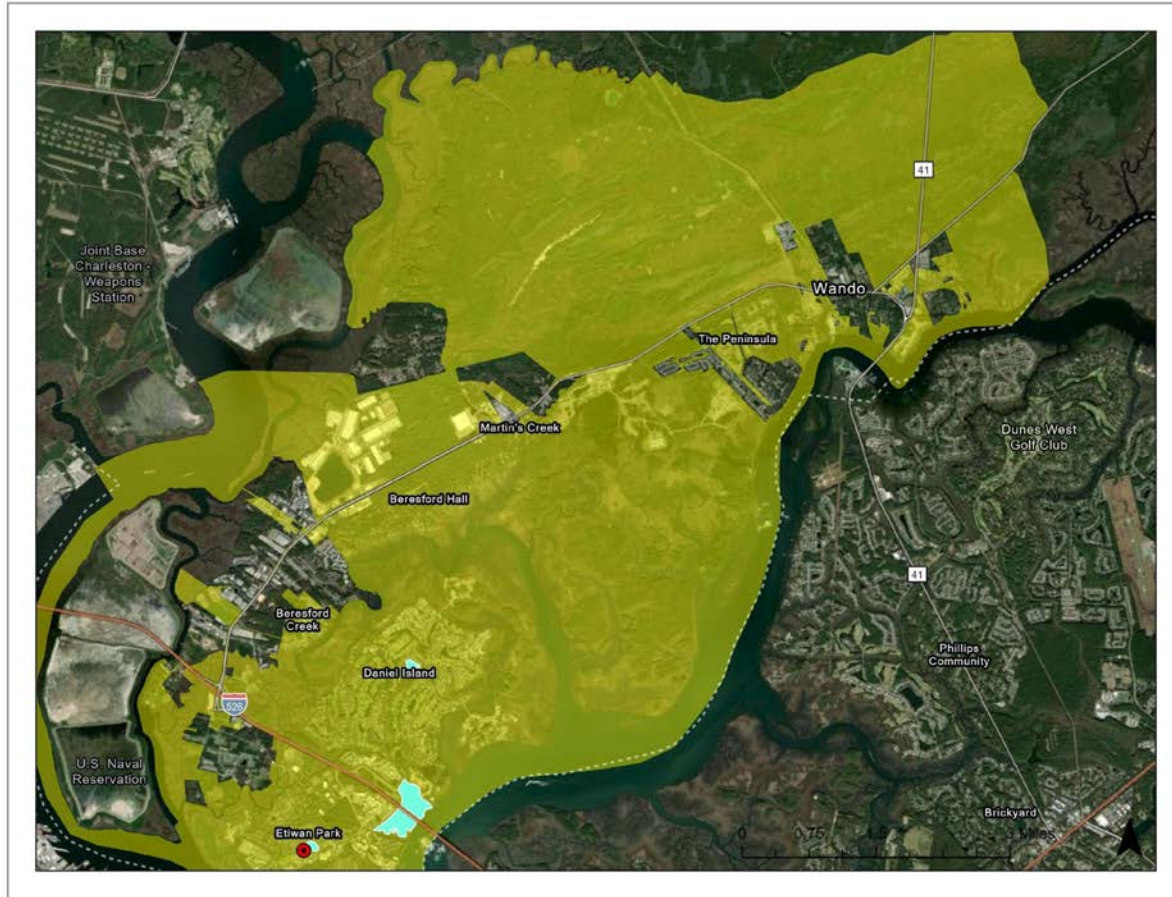


# Southern Johns Island





# Clements Ferry/ Cainhoy



# Additional Suggestions



- Installation of Vanessen CTD-Diver(s) which have the additional capability of measuring Salinity.

# Grant Progress: Federal Funding Update & Enhancing Recycling in City Parks

By: Katie McKain, Director of Sustainability

# Grant Success

- EPA “Solar For All”: SCOR awarded **\$124 M**

Access to solar investment for low-income and disproportionately burdened communities

Implemented expected across four main areas:

1. SC Community Solar Initiative
2. SC Solar Innovation Fund
3. Workforce Training and Development
4. Coordination with Energy Efficiency Programs

- EPA Climate Pollution Reduction Planning Program: BCDCOG awarded \$1M

# Grant Applications

Submitted/Pending Notice:

- Energy Efficiency and Conservation Block Grant (City)
- EPA Climate Pollution Reduction Fund (SCOR)
- DHEC Solid Waste Grant (City)



# Grants

## Working on Application:

- Charging & Fueling Infrastructure (BCDCOG)

## Upcoming Considerations:

- EPA Clean Heavy Duty and/or DERA (City)
- SC Energy Office Mini Grant (City/County)
- EPA Community Change (Local non-profits)
- USDA Urban & Community Forestry grant (City)

## Recycling In City Parks



Worn Labeling on Recycling Cans  
Led to Frequent Contamination



# New Standard Signage



# Results

110 Well Labeled  
Recycling Cans  
in 30 City Parks



# Budget

100% Grant Funded (no City match)

Recycle Lids	Qty 75 at \$155/ea	\$14,100
Recycling Square Signs for sides of cans	Qty 200 at \$17/ea	\$3,400
		<b>\$17,500</b>



# Next Steps

- Expand recycling access to all 120 Parks
  - Inventory for all 120 Parks is complete.
- Continue training staff
  - Use clear bags
  - Empty the contents loosely (no bags allowed in recycling).
- Special thanks to the Parks Department!

# Charleston County: Draft Climate Action Plan

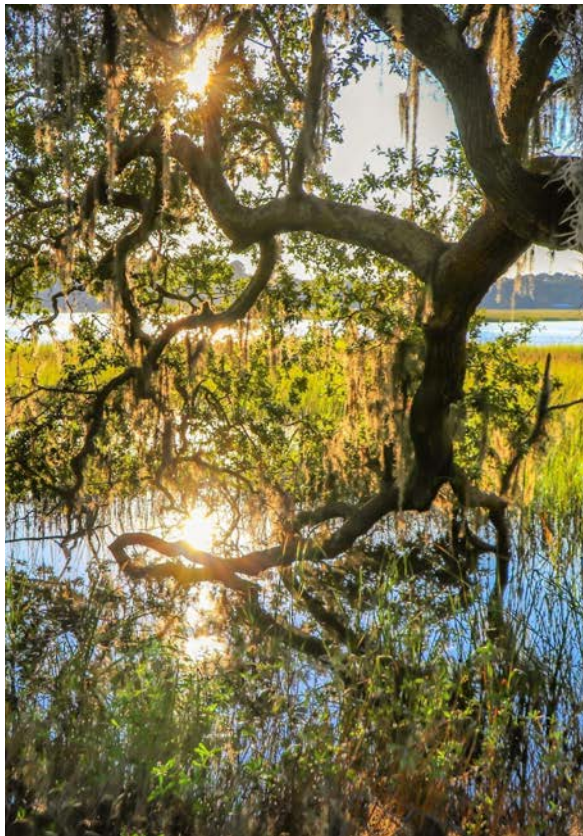
By: Arielle Gerstein,  
Charleston County Sustainability Manager



City of Charleston RSAC

# Climate Action in Charleston County

Arielle Gerstein, Sustainability Manager  
May 16, 2024



# Sustainability Overview

# Sustainability History

- In 2021, Charleston County Council prioritized sustainability by hiring its first sustainability professional and they voted to adopt the [Climate Action Resolution](#) to:
  - support the education of residents and businesses on matters related to the climate crisis;
  - establish its commitment to climate action by working closely with municipal governments on climate resilience and sustainability policies; and
  - encourage the development and implementation of an equity-centered, community-based, integrated Climate Action Plan.
- In addition, the [FY2025-FY2027 County Strategic Plan](#) is included as a strategy under the Infrastructure pillar with the goal of reducing vulnerability of flood hazards.



# Climate Action Planning



# Why Develop a Climate Action Plan for Charleston County?

The Climate Action Plan will:

- Demonstrate leadership in the challenge to reduce emissions
- Help us anticipate and manage climate-related risks
- Ensure infrastructure is resilient to climate change
- Have an interim target for 2035 and be net-zero by 2050

# Charleston County Climate Action Plan



## FAQs

### About Climate Action Plan

**Q: What is a climate action plan?**  
A: A climate action plan is a roadmap for the community to reduce greenhouse gas emissions, increase energy efficiency, advance equity objectives and increase affordability for households and businesses.

**Q: Why did Charleston County create a Climate Action Plan?**  
A: The County and Charleston County residents are committed to increasing energy efficiency and reducing greenhouse gas emissions.

**Q: What is the goal of the Climate Action Plan?**  
A: The Climate Action Plan is a roadmap for the community to reduce greenhouse gas emissions, increase energy efficiency, advance equity objectives and increase affordability for households and businesses.

**Q: How are we measuring progress?**  
A: Sustainability Resilience is essential to the County's future.

**Q: What is the role of the County Council?**  
A: There are many climate action projects that the County Council can support to benefit the community.

### How was the Climate Action Plan developed?

**Q: How was the Climate Action Plan developed?**  
A: The Climate Action Plan was developed by the Charleston County Sustainability Resilience Task Force, an advisory committee of experts in sustainability, resilience, and equity.

**Q: How was the Climate Action Plan approved?**  
A: The Climate Action Plan was approved by the County Council in September 2022. Its members include representatives from the Chamber of Commerce, higher education, the BCDCOG, the Home Builders Association, a resilience technical expert, a sustainability technical expert, an energy representative, a County Council member, and a County staff member.

## What is the Climate Action Plan?

The Charleston County Climate Action Plan is a roadmap for the community to reduce greenhouse gas emissions, increase energy efficiency, advance equity objectives and increase affordability for households and businesses.

## Why is it important for the County to have a Climate Action Plan?

The Climate Action Plan allows the County and its residents to leverage federal funding for a wide range of initiatives. The plan is Charleston County's contribution to addressing climate change. It describes actions to create new jobs and increase energy efficiency. It also looks at how the energy system is changing and will continue to change and how Charleston County can ensure these changes benefit community members.

The Big Moves are five key focus areas through which Charleston County can most effectively achieve greenhouse gas emissions reductions.

- |                   |   |   |
|-------------------|---|---|
| <b>Big Move 1</b> | <b>Affordable and Resilient Buildings</b>             | <ul style="list-style-type: none"><li>Construct new buildings to net-zero standards</li><li>Deep retrofit existing buildings</li></ul>  |
| <b>Big Move 2</b> | <b>Sustainable and Inclusive Transportation</b>       | <ul style="list-style-type: none"><li>Create complete communities</li><li>Expand transit and active infrastructures</li><li>Switch to zero-or-low emission vehicles</li></ul> |
| <b>Big Move 3</b> | <b>Clean Energy for All</b>                           | <ul style="list-style-type: none"><li>Advocate for grid decarbonization</li><li>Increase local, renewable energy generation capacity</li></ul>                                |
| <b>Big Move 4</b> | <b>Innovative Industrial and Agricultural Sectors</b> | <ul style="list-style-type: none"><li>Improve industrial sector processes</li><li>Improve and electrify agricultural sector processes</li></ul>                               |
| <b>Big Move 5</b> | <b>Circular Economy</b>                               | <ul style="list-style-type: none"><li>Reduce waste generation</li><li>Increase waste diversion from landfill</li></ul>  |

Full report

Executive summary

Actions summary

FAQ

One-Pager

18 Offer energy savings workshops for residents and businesses.

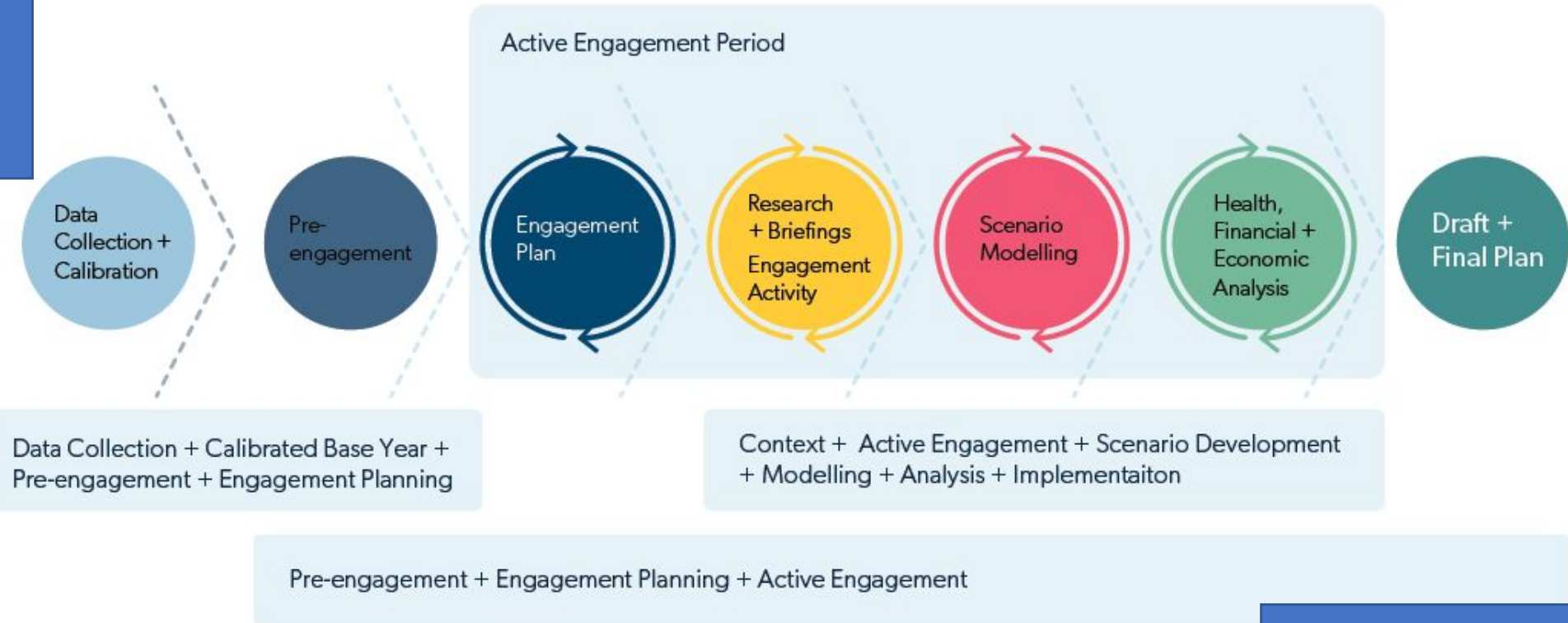
February 2024

CHARLESTON COUNTY  
SOUTH CAROLINA



# The Process

# The Engagement Process



# Engagement

## Inform

- Regular Project Updates
- Council Presentation
- Public Town Hall and Webinars
- Newsletter articles

## Consult

- Community Outreach Activities

## Involve

- Pre-engagement Interviews
- Resilience and Sustainability Advisory Committee (RSAC) Meetings
- Staff + Expert Climate Advisory Team (SECAT) Meetings

# Engagement by the Numbers

8

Pre-engagement  
interviews

7

Public Meetings

7

RSAC Meetings  
Resilience and Sustainability  
Action Committee

9

Outreach Events

7

SECAT Meetings  
Staff+Expert Climate Action  
Team

365

Online Questionnaire  
respondents





## RSAC Members

- Joe Boykin - Charleston County Council
- Sally Brooks - Charleston County Staff
- Diamond Curry - Chamber of Commerce
- Kyle James - BCDCOG
- Adrian Cain - Home Builders Association
- Scott Curtis - Resilience Technical Expert
- Scott Runyon - Energy Expert
- Stewart Weinberg - Sustainability Technical Expert

## SECAT Members

- Katie McKain - Director of Sustainability, City of Charleston
- Christine Von Kolnitz - Sustainability & Energy Manager, MUSC
- Kristin Miguez - Senior Planner, BCDCOG
- Belvin Olasov - Co-Director, Charleston Climate Coalition
- Rowan Emerson - Program Manager, Charleston Climate Coalition
- Flannery Wood - Planner II, Town of James Island
- Rowan Emerson - Program Manager, Charleston Climate Coalition
- Shannon Whitehead - Emergency Management & Resilience Officer, Town of Mt. Pleasant
- Adam MacConnell - Project Manager, City of North Charleston
- Cris Taylor - Charleston County Fleet
- Sally Brooks - Charleston County Zoning & Planning
- Kip Watson - Charleston County Economic Development
- Michael Kennedy/Glenn Hill - Charleston County Facilities
- Melissa Gilroy - Charleston County Finance

# The Challenge



# What does a greenhouse gas inventory measure?

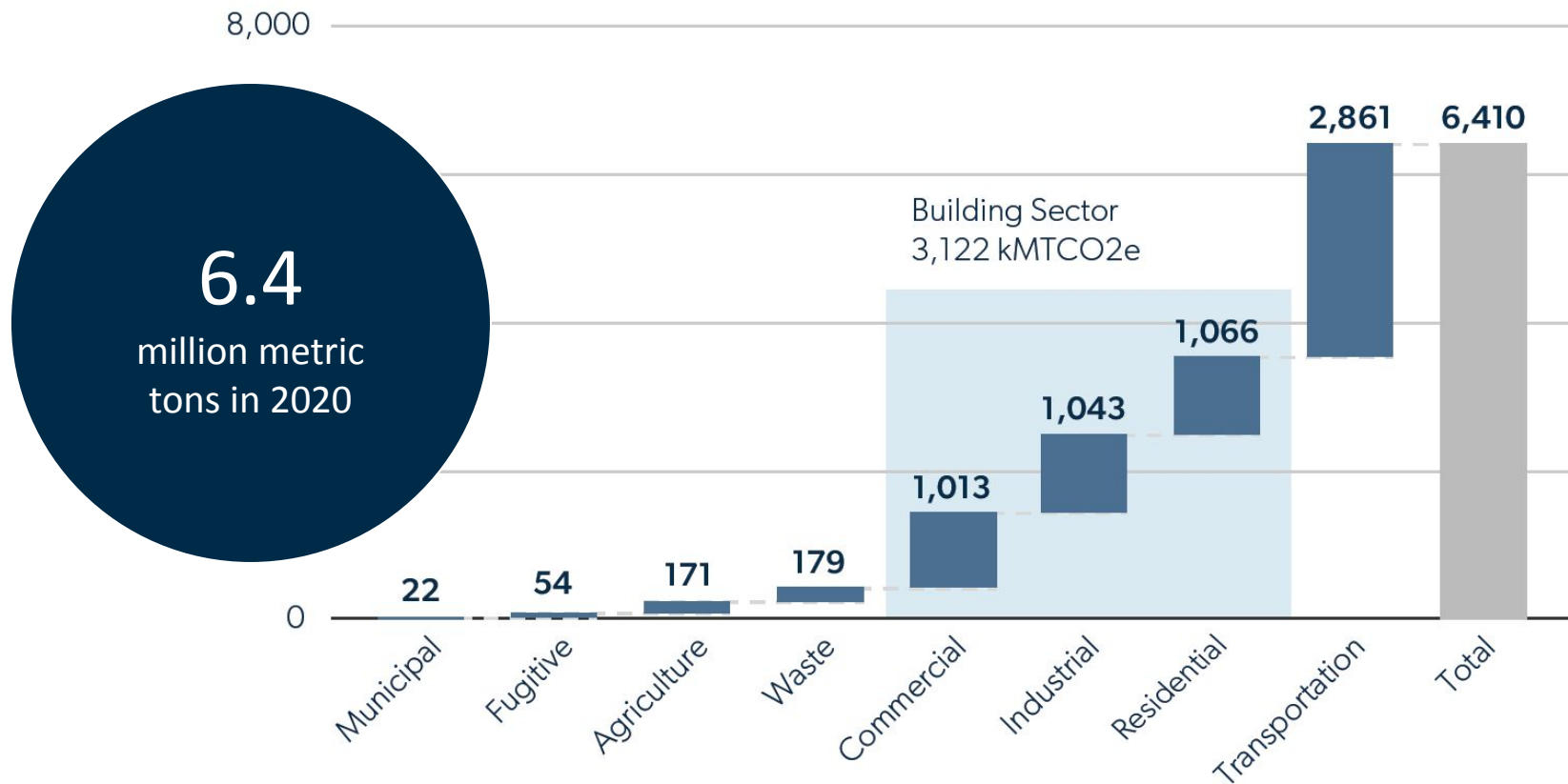
01

The amount of greenhouse gas emissions in a specific geographic area over a given timeframe.

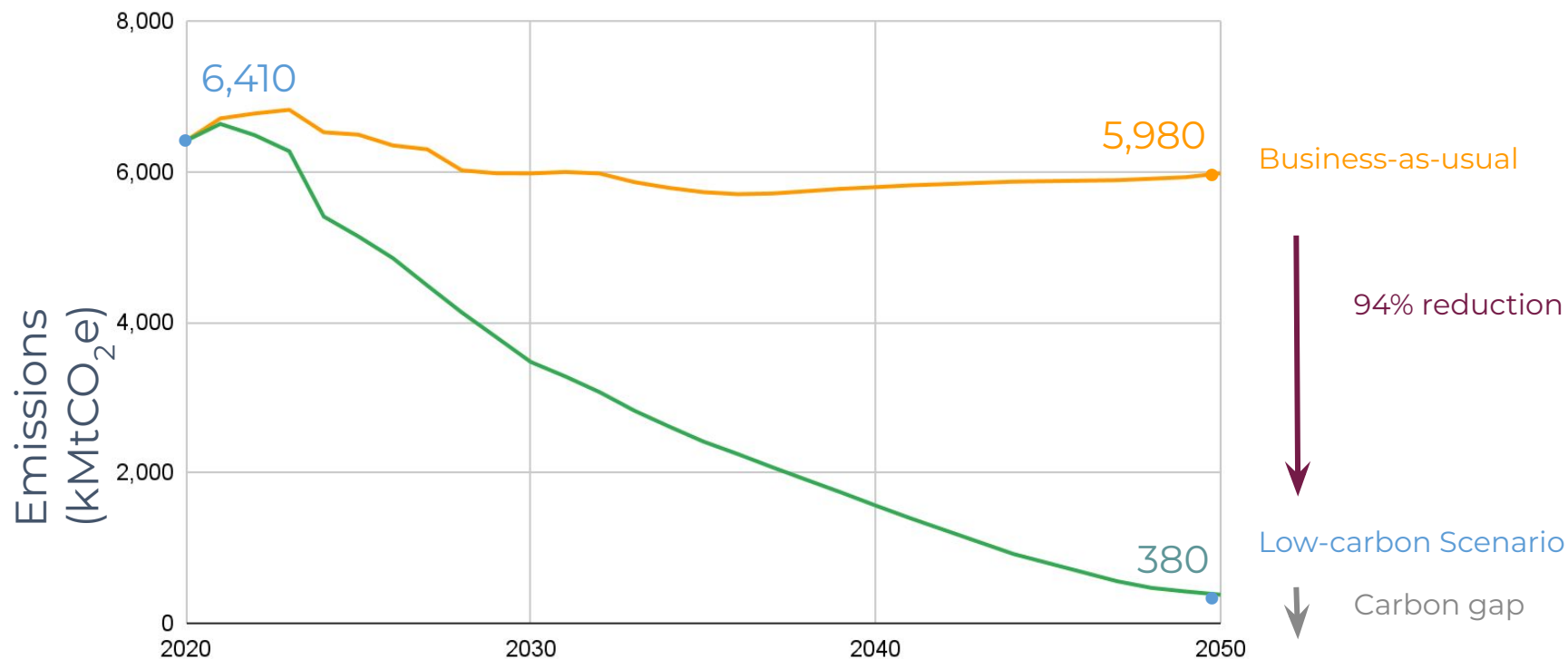
02

This inventory measures carbon dioxide equivalent emissions.

# Starting Point



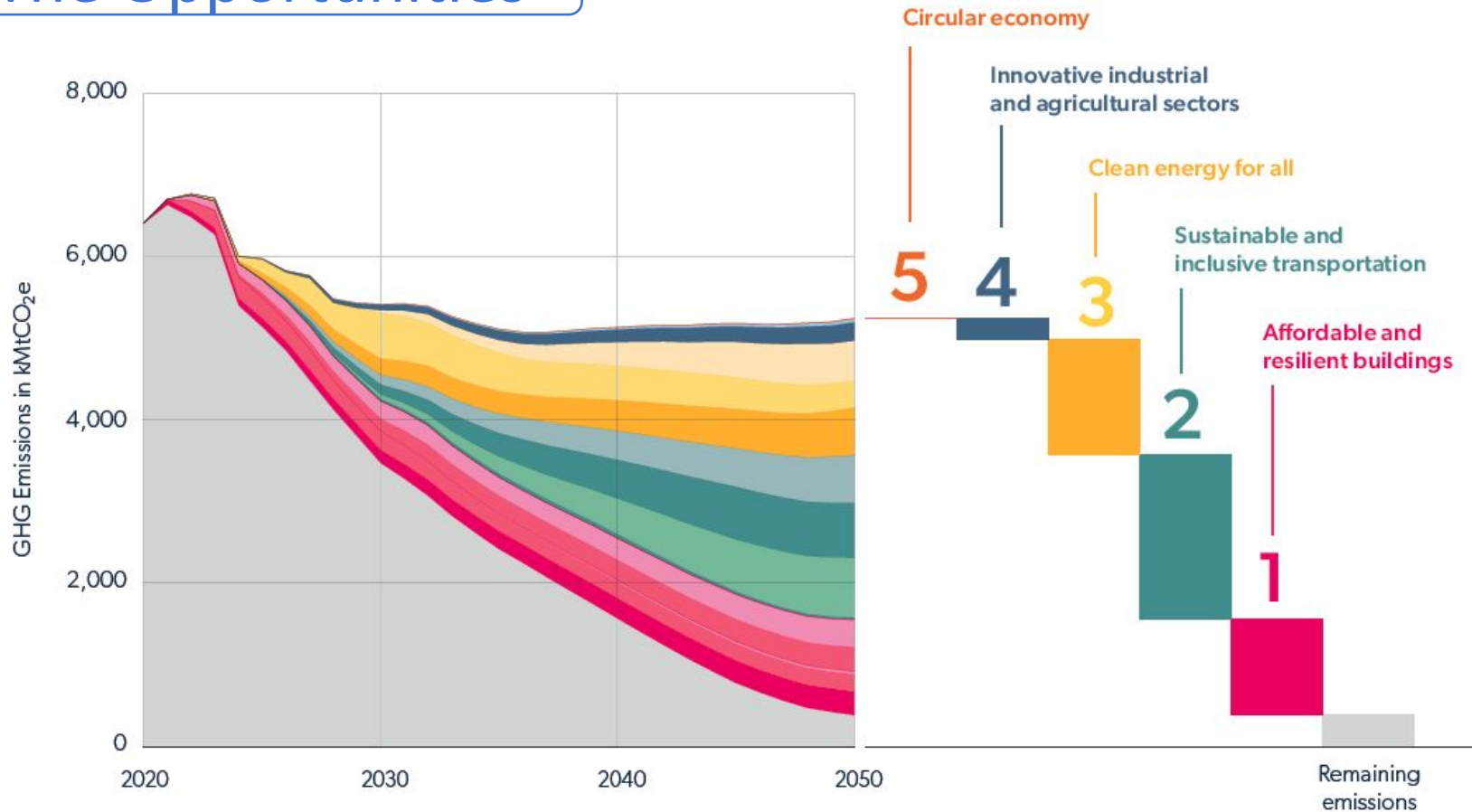
# The Pathway





# The Opportunities

# The Opportunities

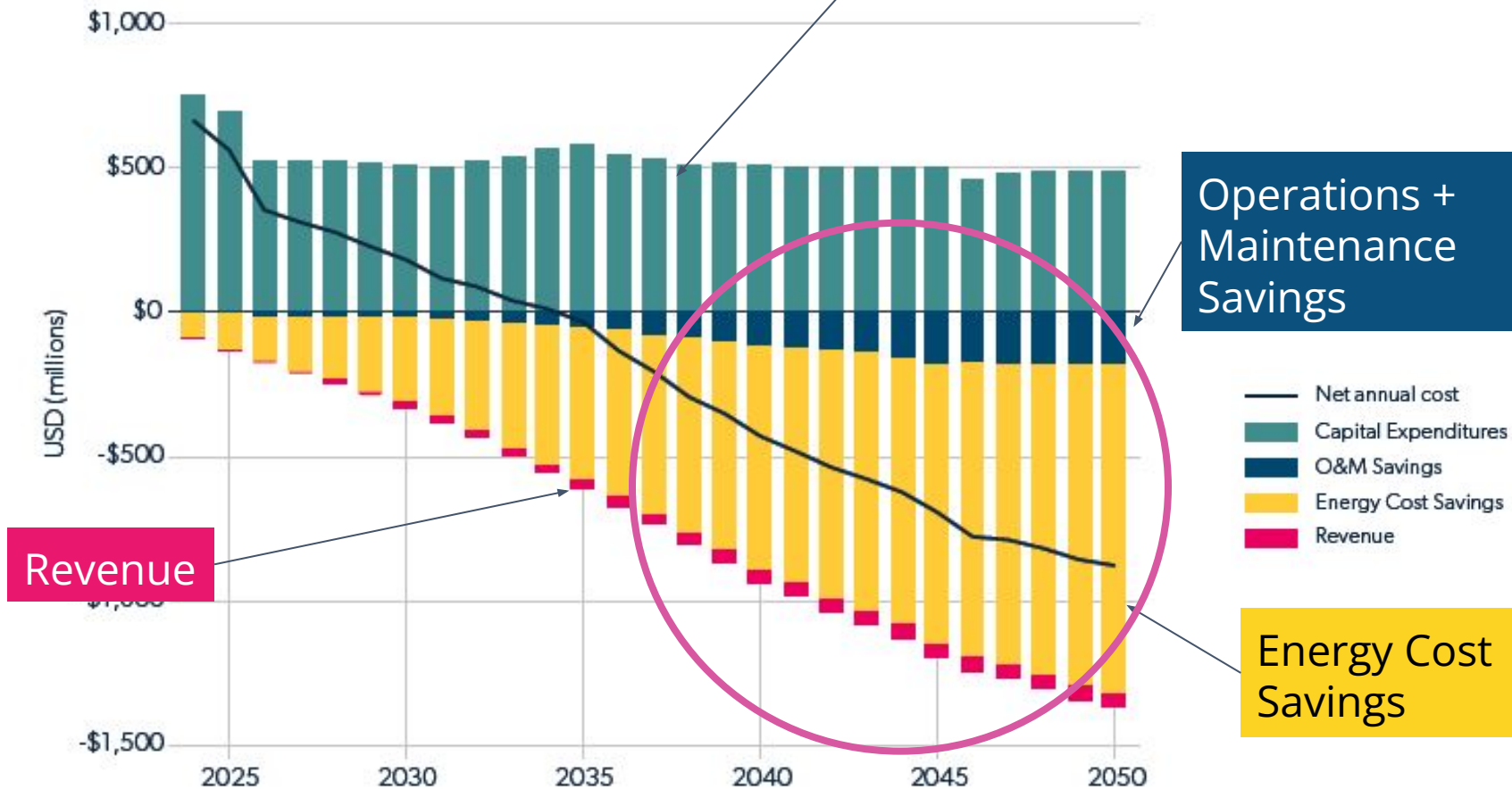


In 2023, households and businesses spent

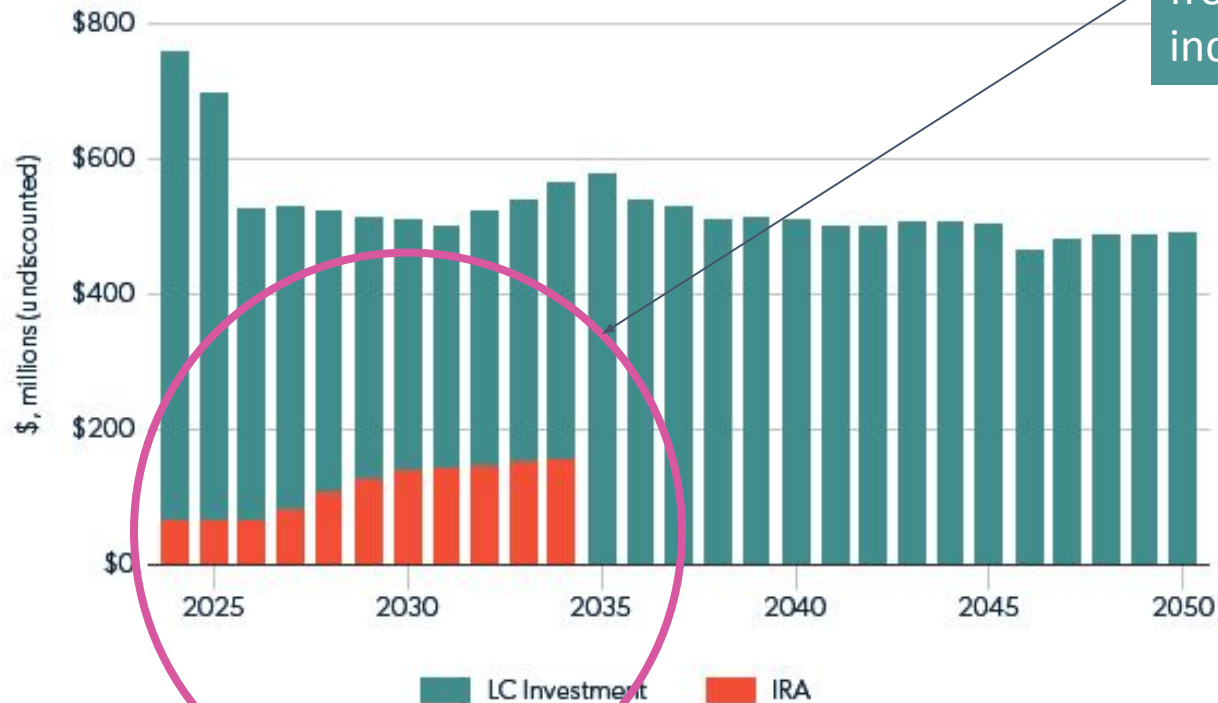
**\$1.7 billion**

on energy

# Investments



# The Inflation Reduction Act Opportunity



~\$150 million per year  
from IRA grants and  
incentives



Household expenditures on energy decline from

**\$5,200** in 2020

to **\$3,900** by 2050

3,400

jobs per year

# Implementation Strategy

# The Big Moves



**5** Big Moves

**11** Strategies

**53** Recommended Actions

# Big Moves

of the Charleston County's CAP



1



Affordable and resilient buildings

- Construct new buildings to net-zero standards
- Deep retrofit existing buildings

2



Sustainable and inclusive transportation

- Create complete communities
- Expand transit and active infrastructures
- Switch to zero-or-low emission vehicles

3



Clean energy for all

- Advocate for grid decarbonization
- Increase local, renewable energy generation capacity

4



Innovative industrial and agricultural sectors

- Improve industrial sector processes
- Improve and electrify agricultural sector processes

5



Circular economy

- Reduce waste generation
- Increase waste diversion from landfill

## The Strategies





# Charleston County CAP Remaining Timeline

- Final County presentation scheduled for June 13th
- To find all documents related to the draft climate action plan and to submit a public comment via questionnaire or email, go to:

<https://charlestoncounty.org/ccrs/cap-draft.php>





# Questions?



Arielle Gerstein, Sustainability Manager  
[agerstein@charlestoncounty.org](mailto:agerstein@charlestoncounty.org)  
843-958-4083

Sign up for Charleston County's Sustainability  
E-Newsletter: <http://eepurl.com/iB1t8E>



Public Comment Period