

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

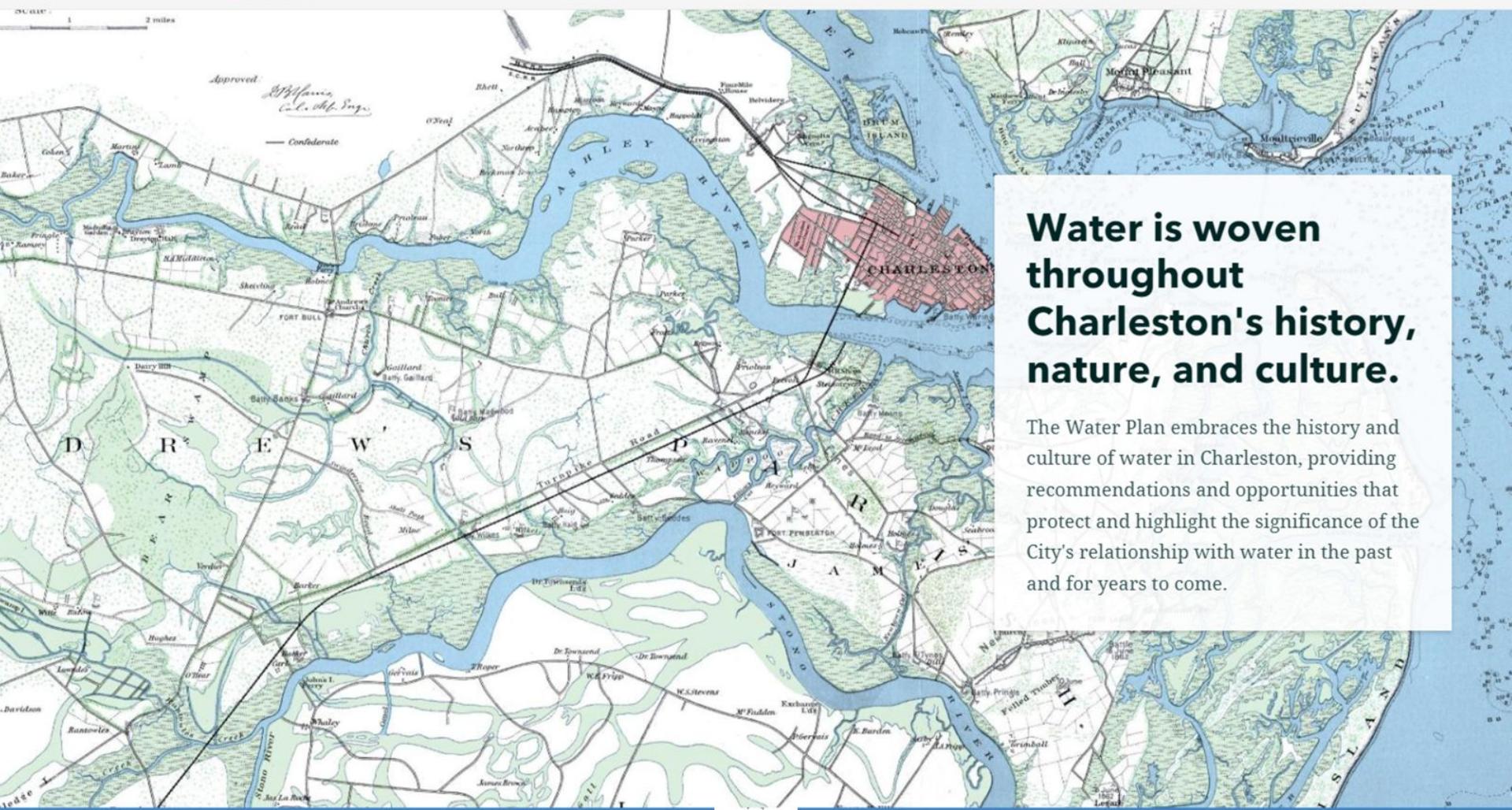
FCSA signed and study start March 2024.

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.

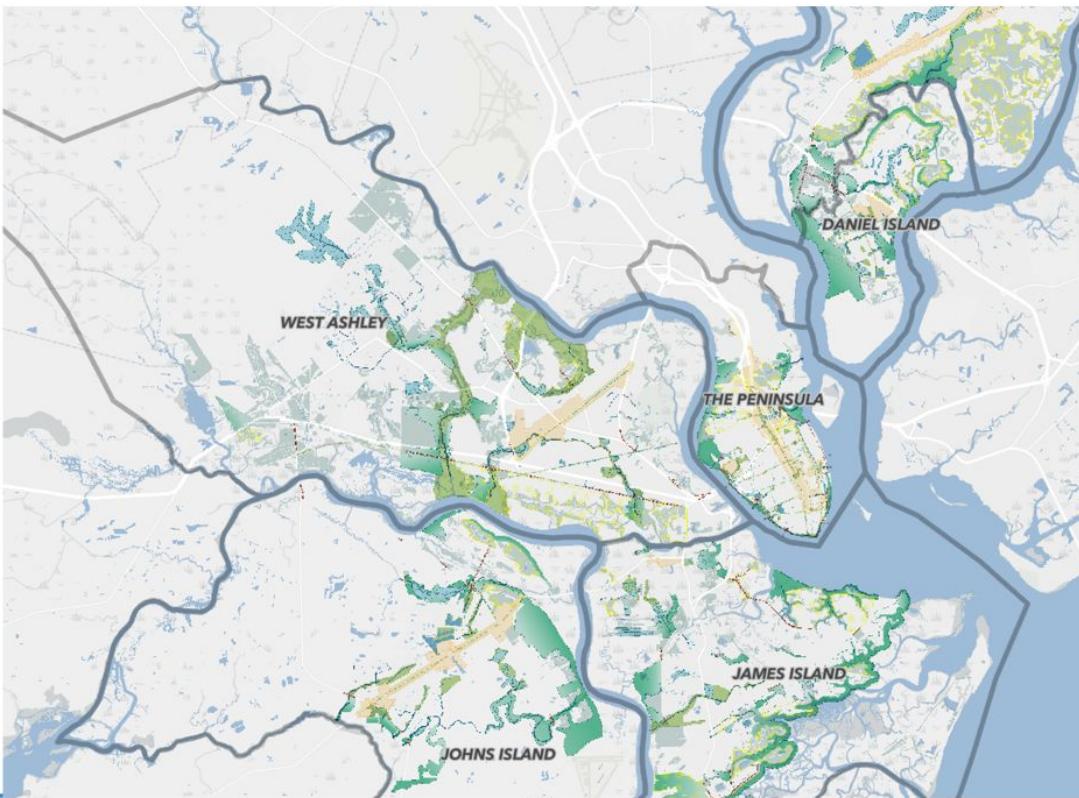
“Water Plan” risk mapping and conceptual project recommendations have jump-started the risk identification, alternatives and opportunities phase of study. Highest risks areas: West Ashley, James Island, Peninsula.



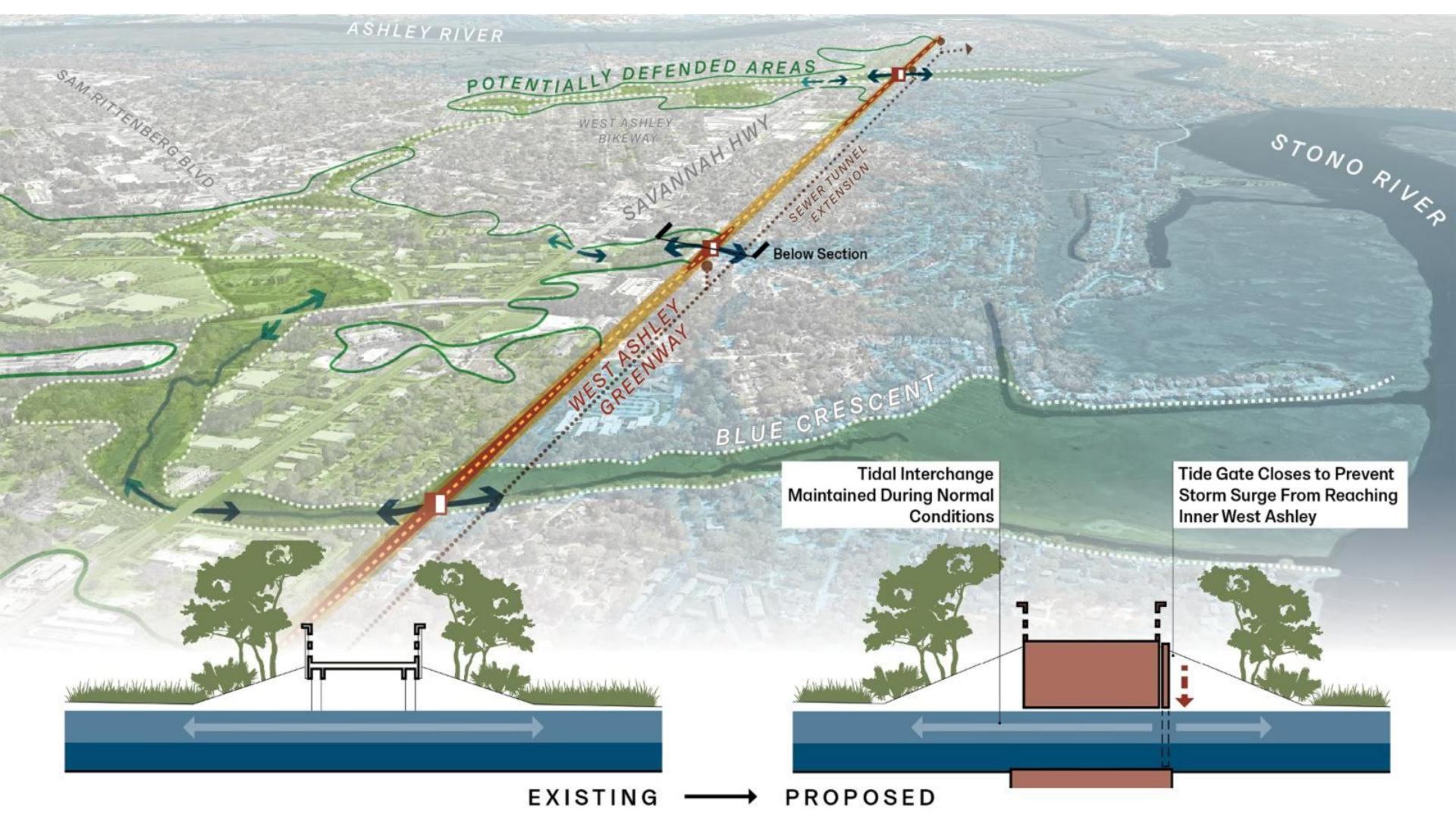
Water is woven throughout Charleston's history, nature, and culture.

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



COLLEGE of
CHARLESTON
M.S. IN ENVIRONMENTAL
AND SUSTAINABILITY STUDIES

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?

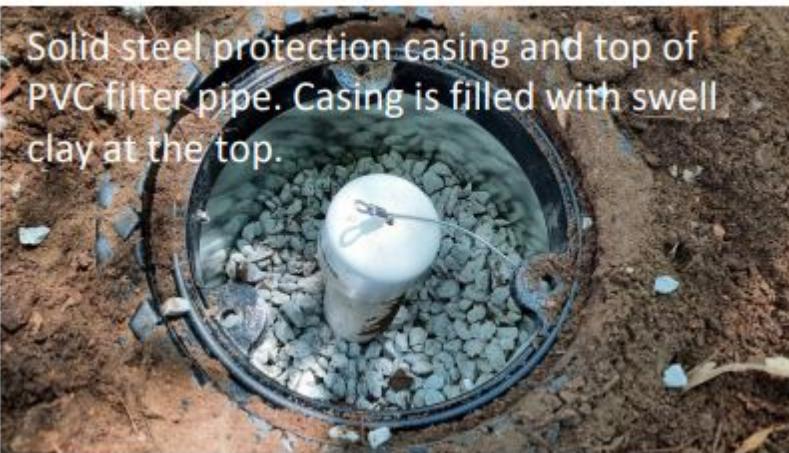
- **Flooding Risk Assessment:**

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

- **Infrastructure Planning and Maintenance:**

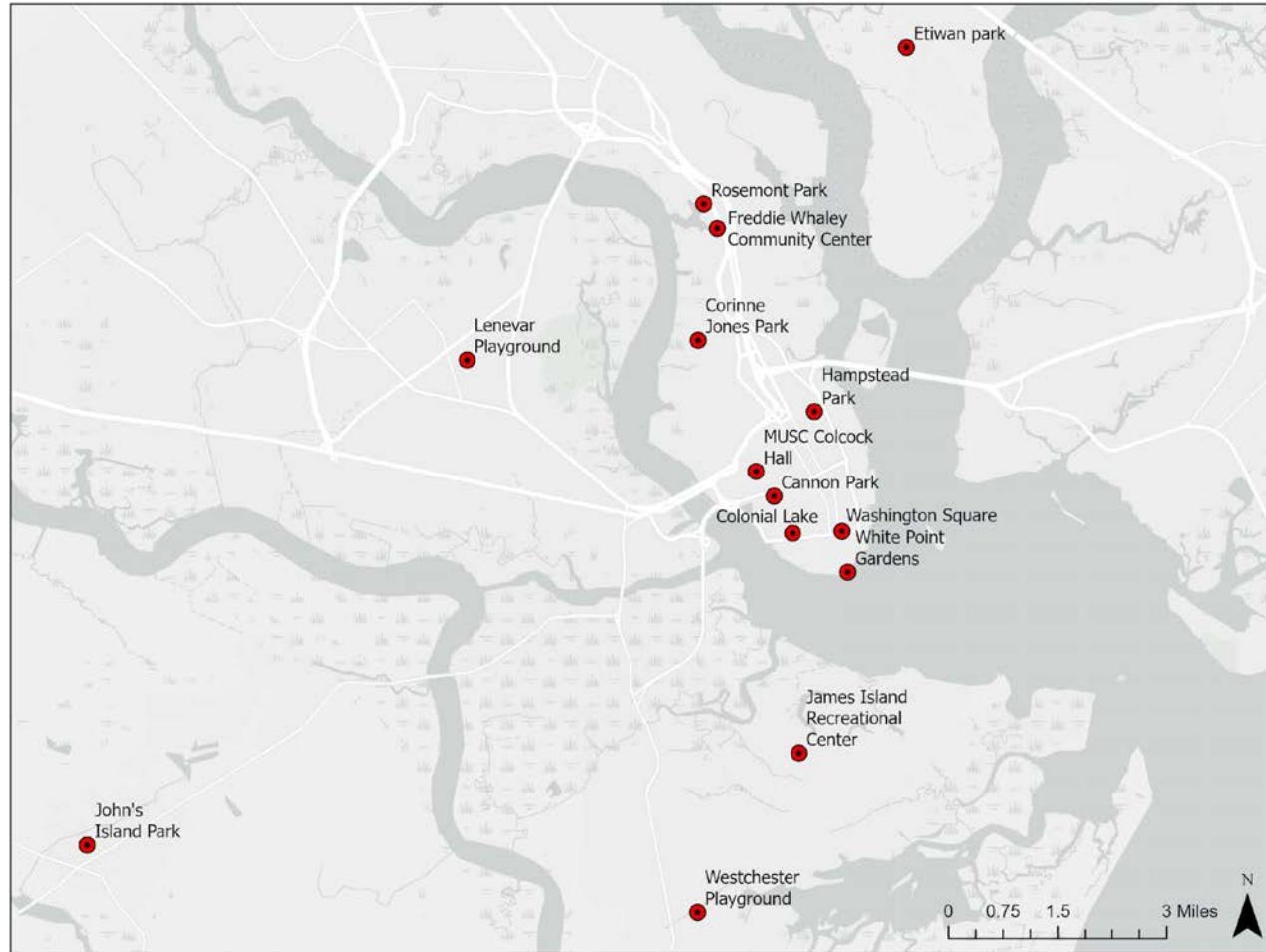
- Groundwater considerations are essential in planning building foundations and underground utilities.
- Insights into environmental risks and disturbance to waterways.

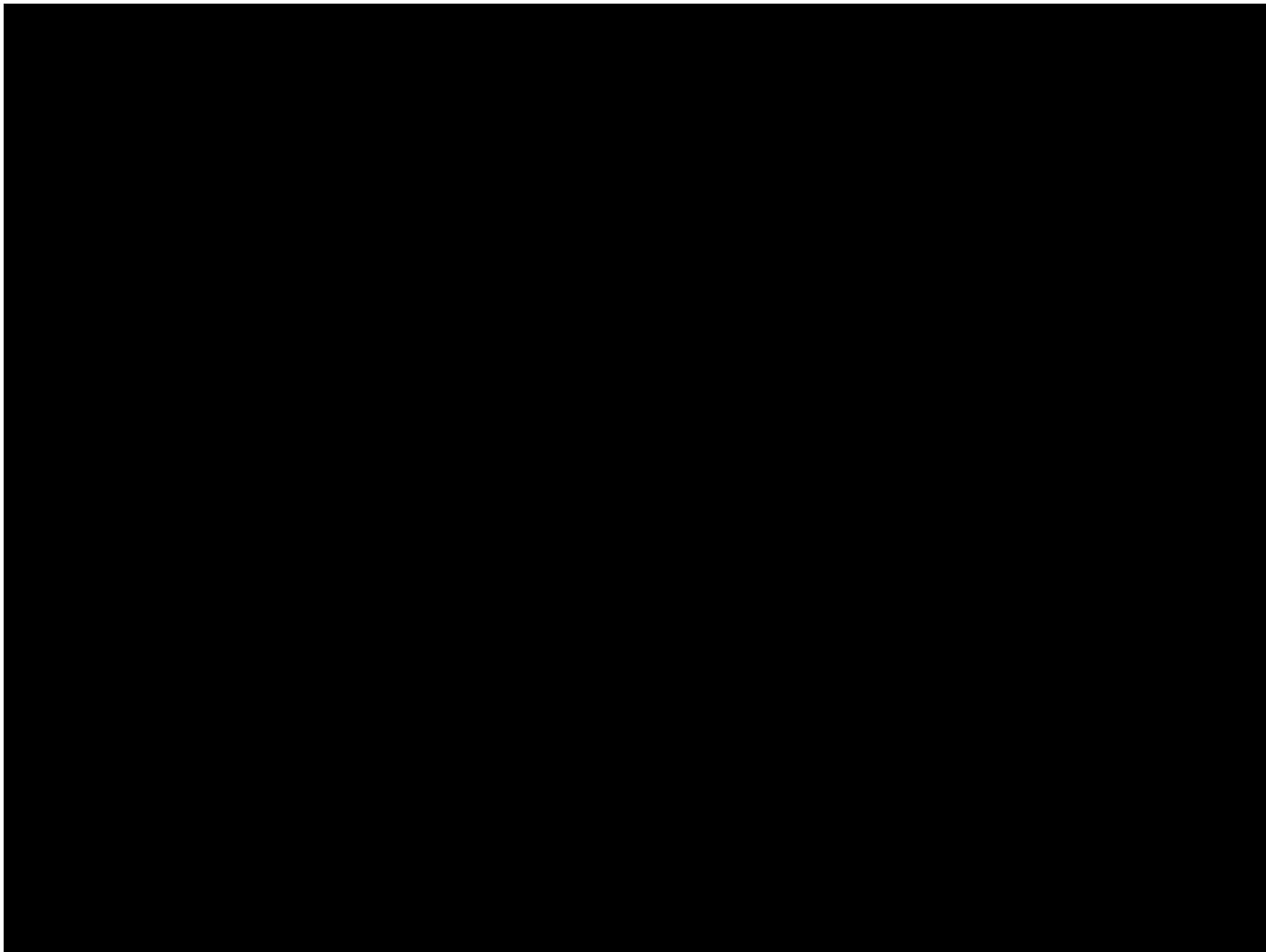




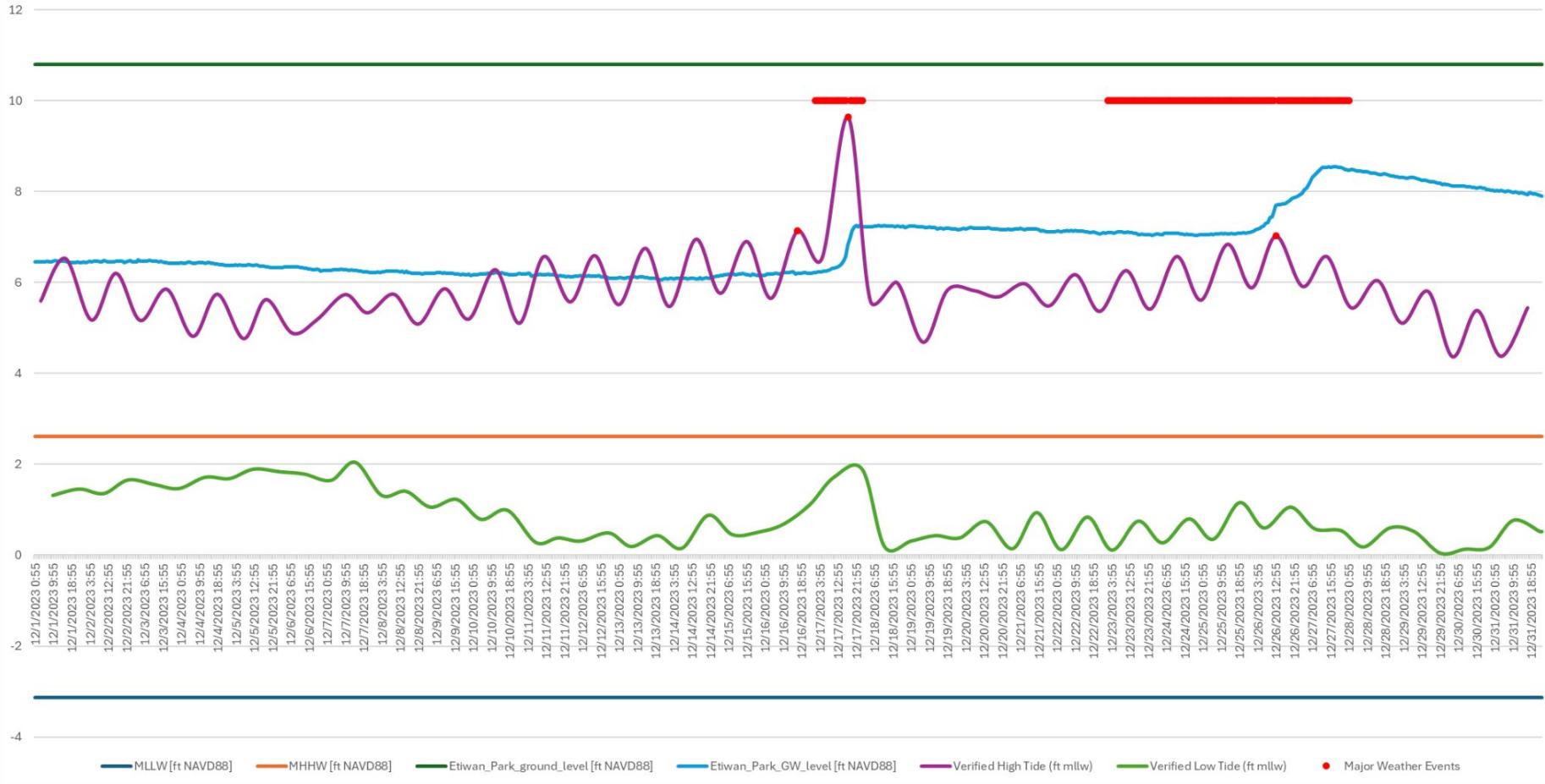
Solid steel protection casing and top of PVC filter pipe. Casing is filled with swell clay at the top.





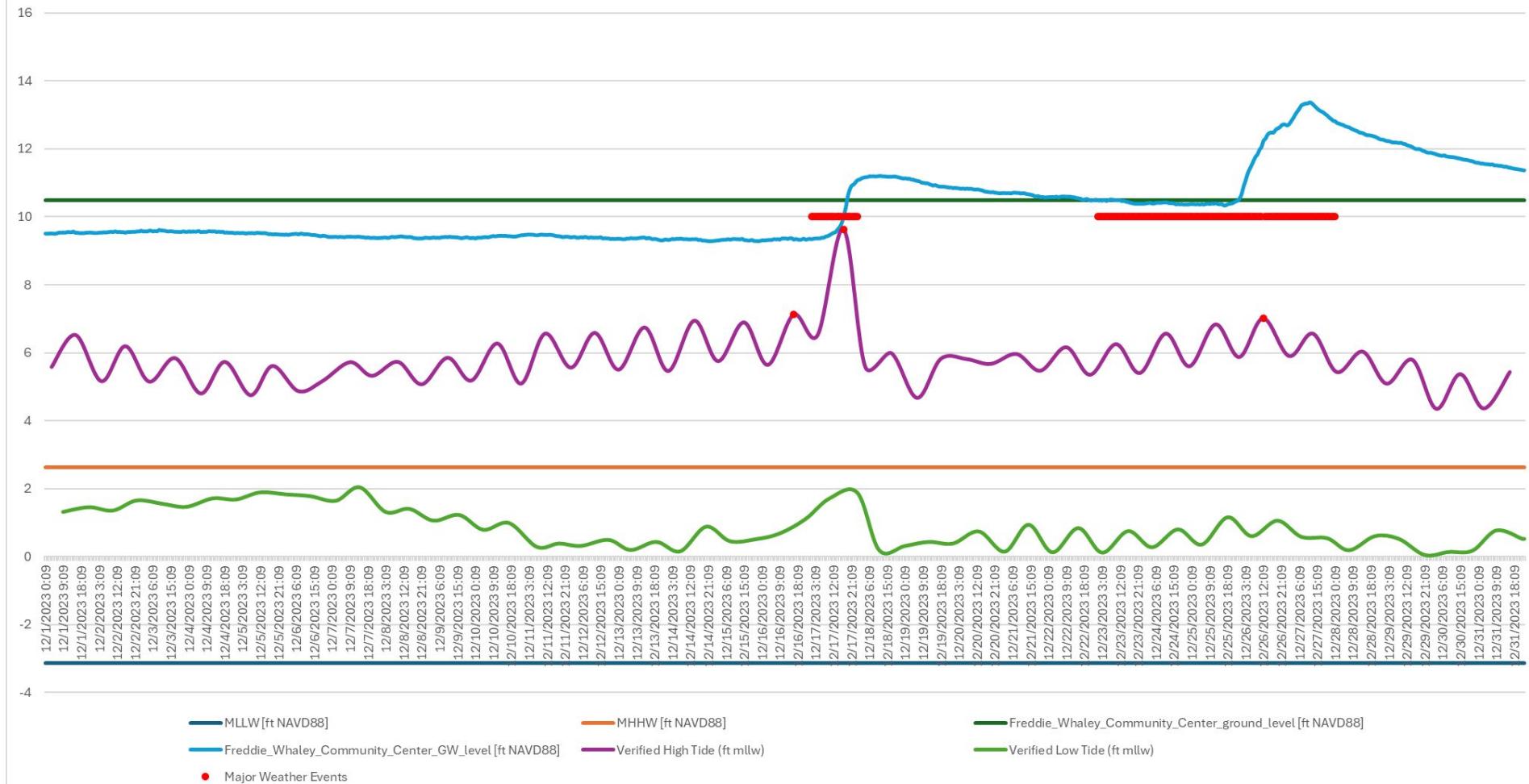


Etiwan Park
December 2023

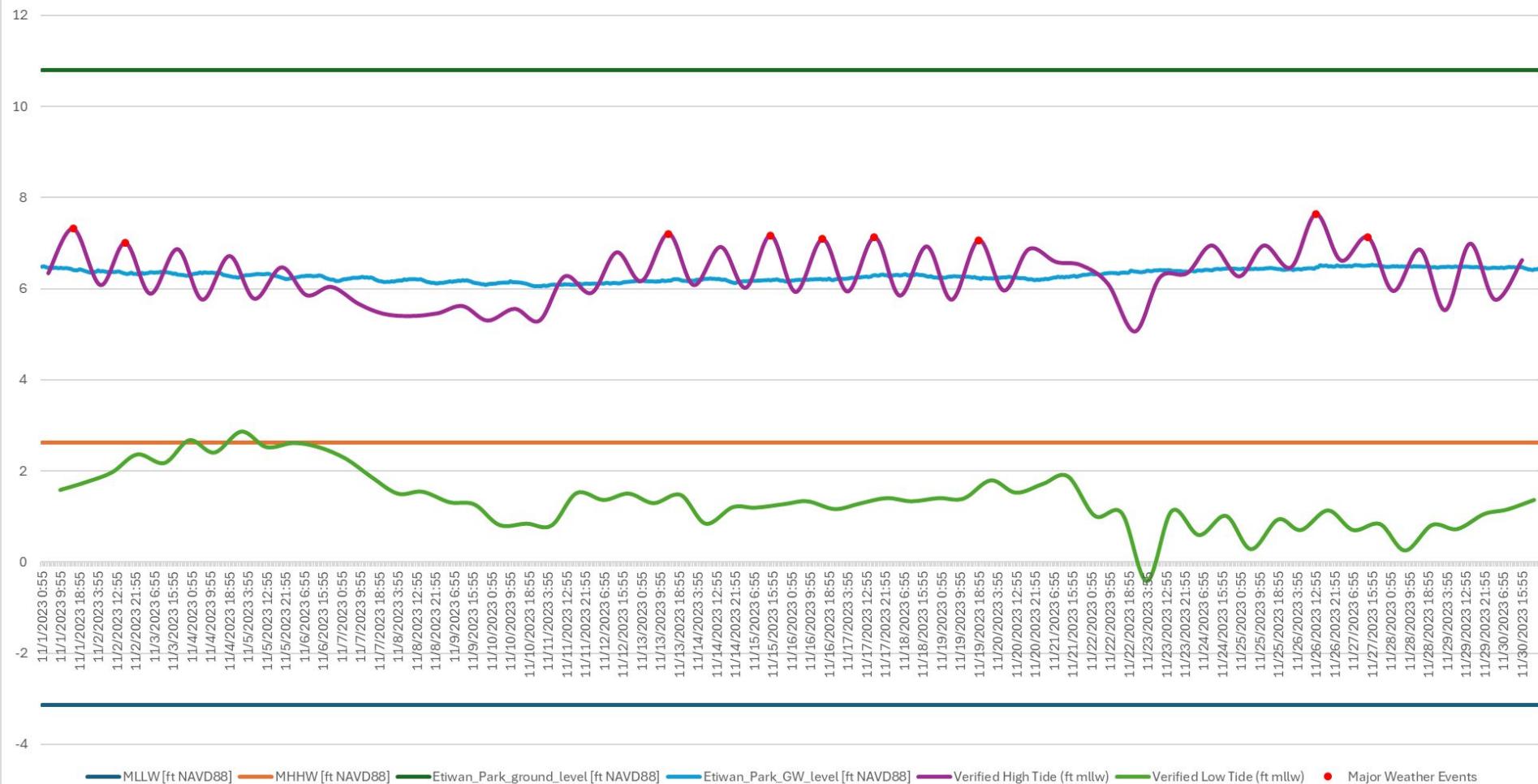


Freddie Whaley Community Center

December 2023

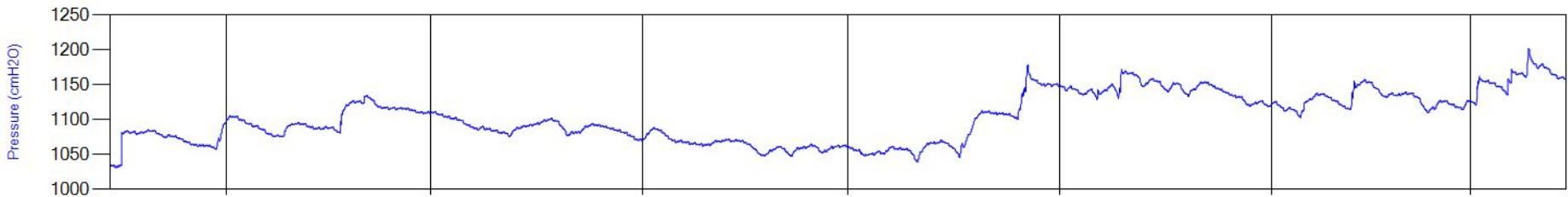


Etiwan Park
November 2023



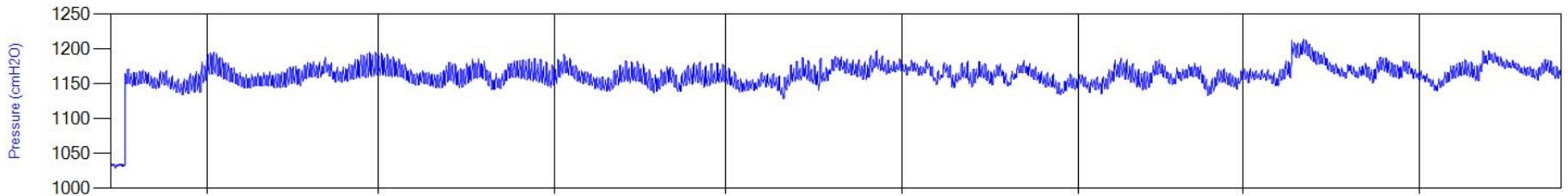
Lenevar Playground

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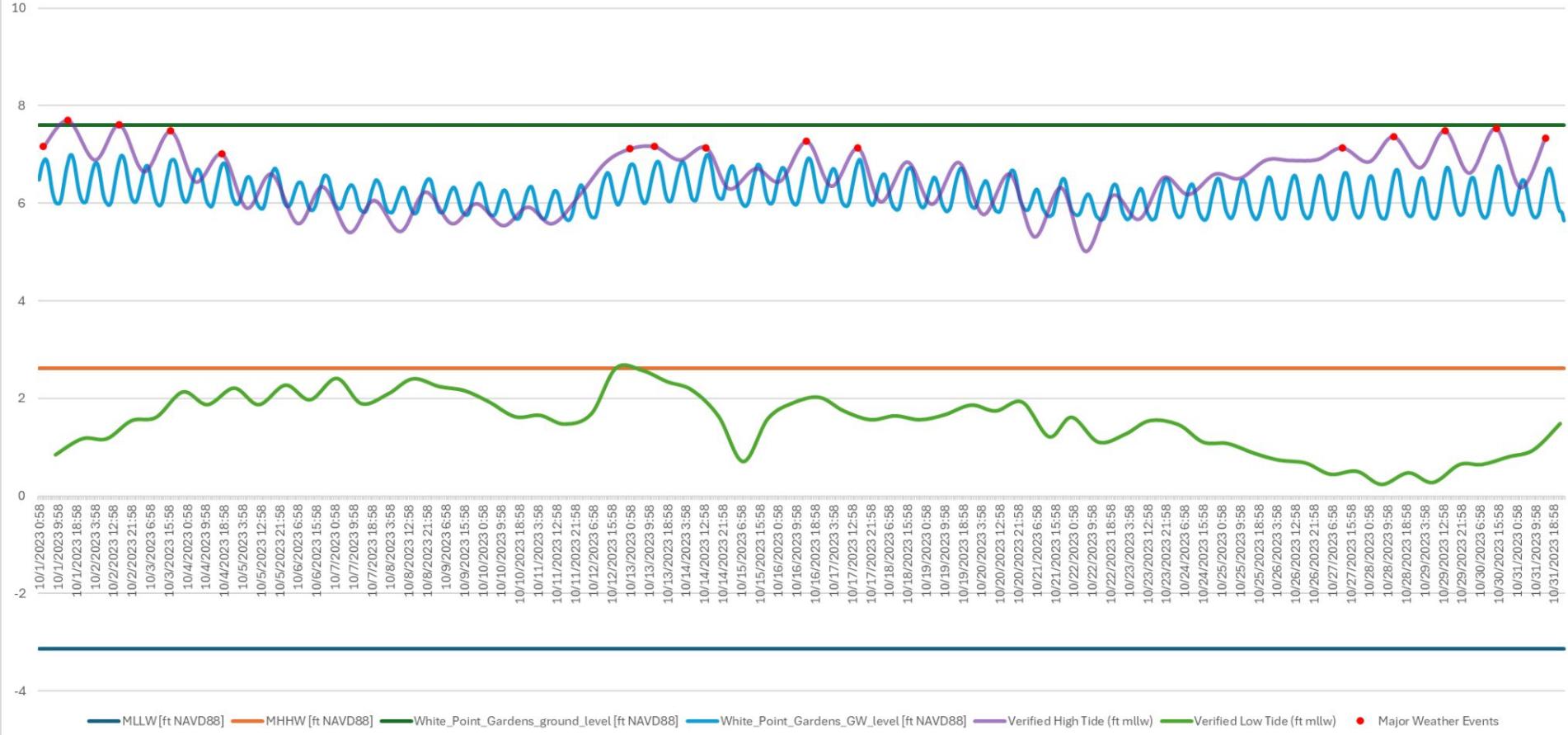


White Point Gardens

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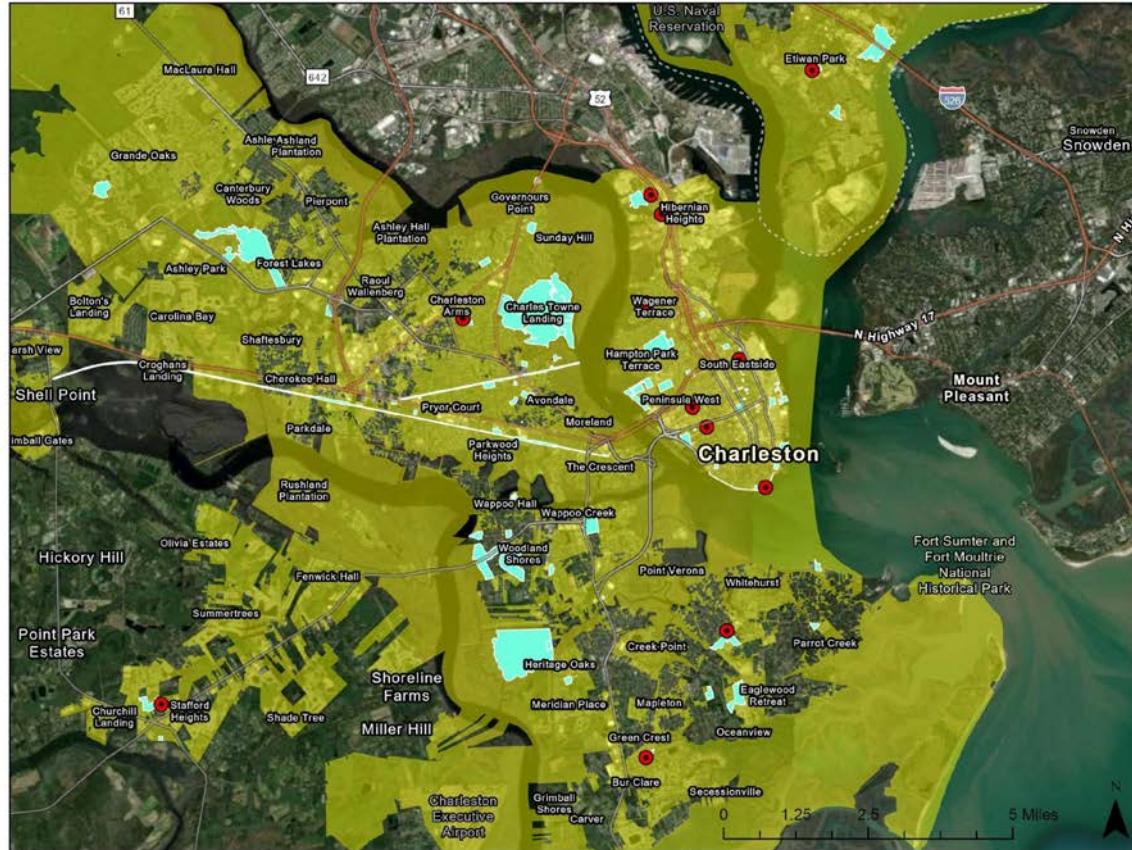


White Point Gardens
October 2023

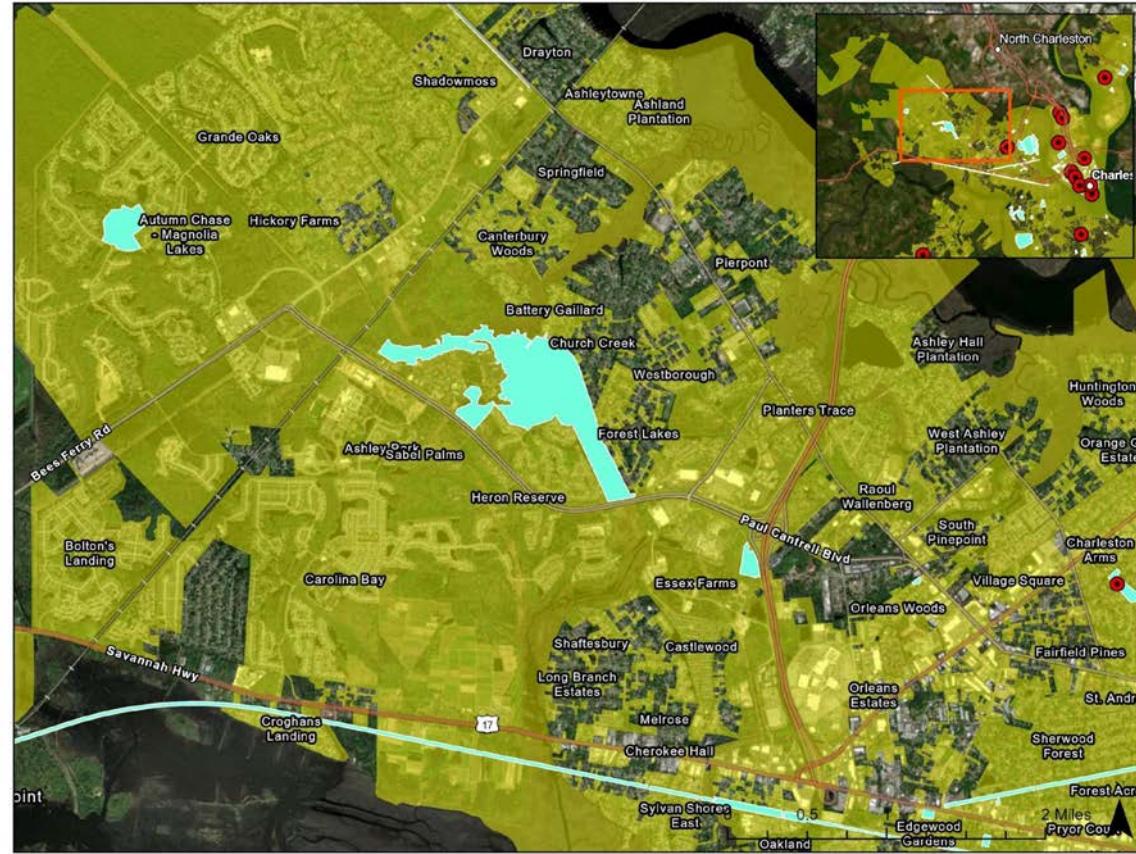


MLLW [ft NAVD88] MHHW [ft NAVD88] White_Point_Gardens_ground_level [ft NAVD88] White_Point_Gardens_GW_level [ft NAVD88] Verified High Tide (ft mllw) Verified Low Tide (ft mllw) Major Weather Events

Future Well Sites



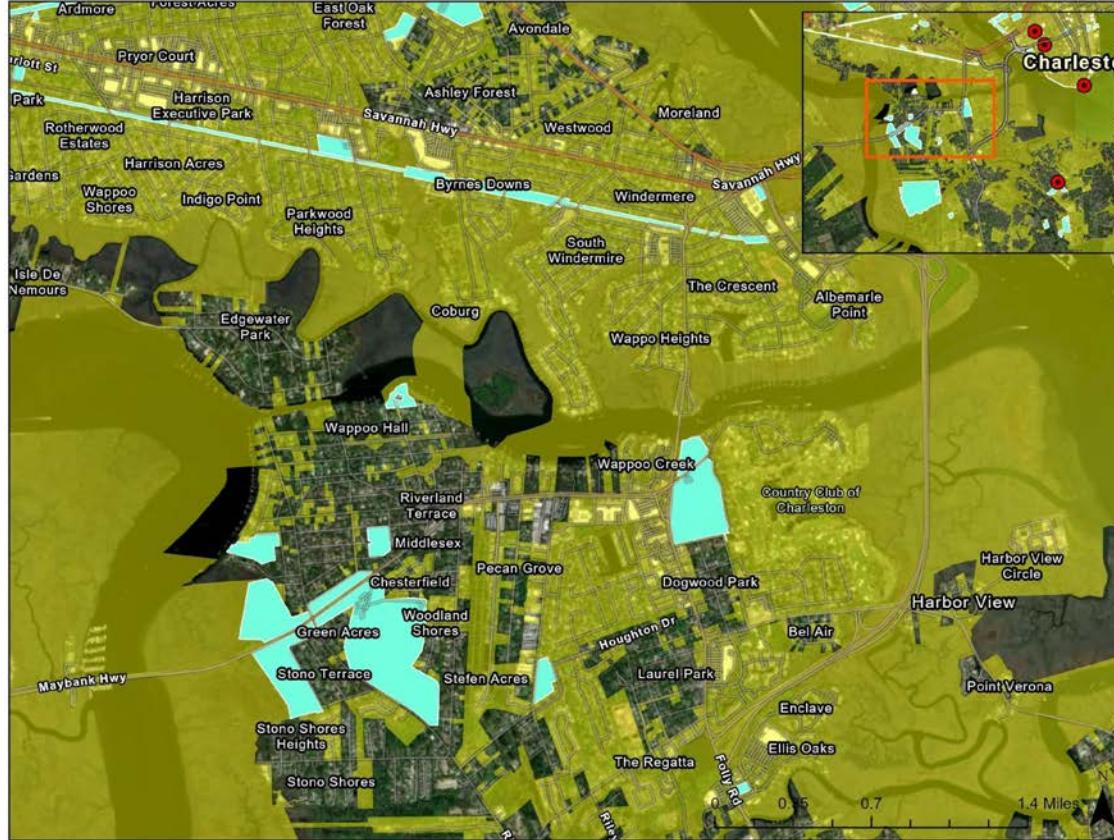
West Ashley Park



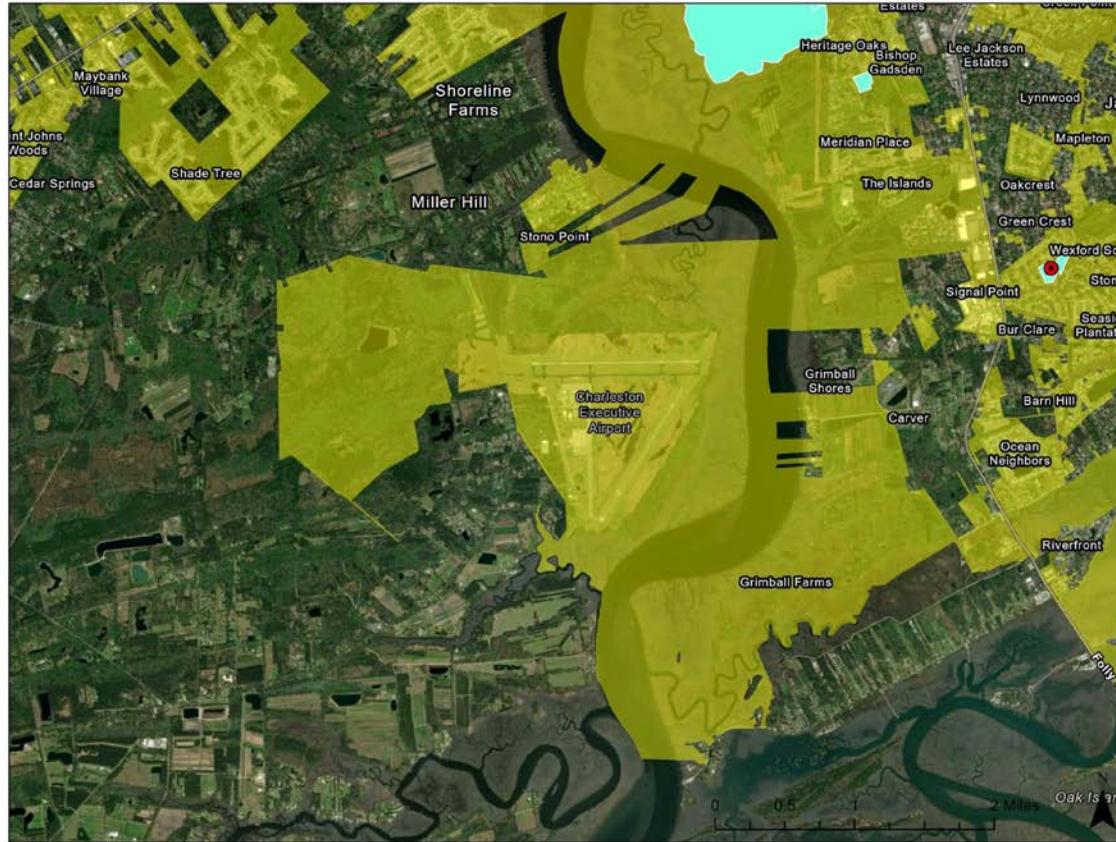
Haygood/Fishburne Intersection



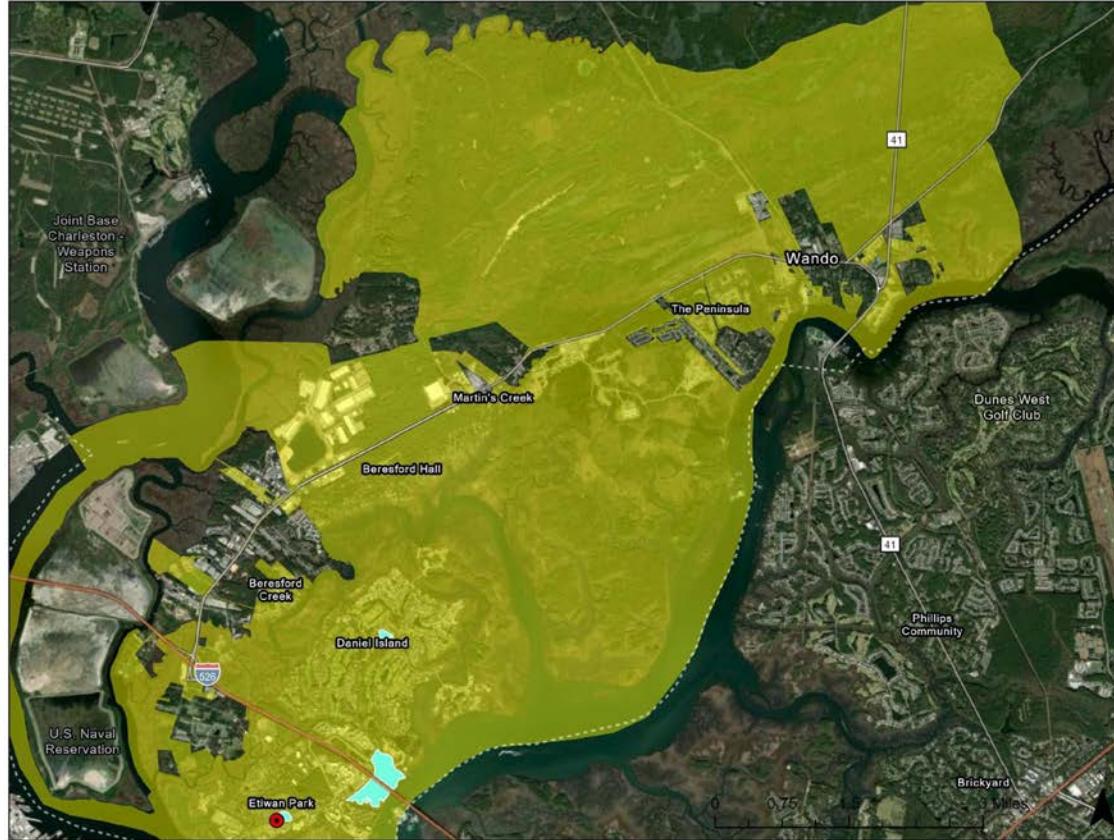
Riverland Terrace



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:

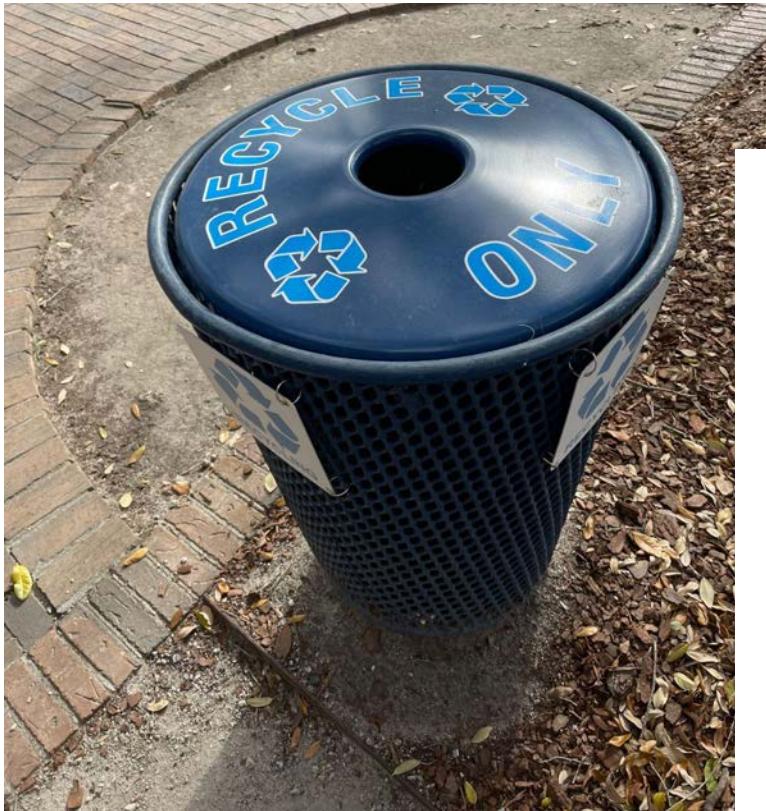
- EPA Clean Heavy Duty and/or DERA (City)
- SC Energy Office Mini Grant (City/County)
- EPA Community Change (Local non-profits)
- USDA Urban & Community Forestry grant (City)

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
		\$17,500

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.



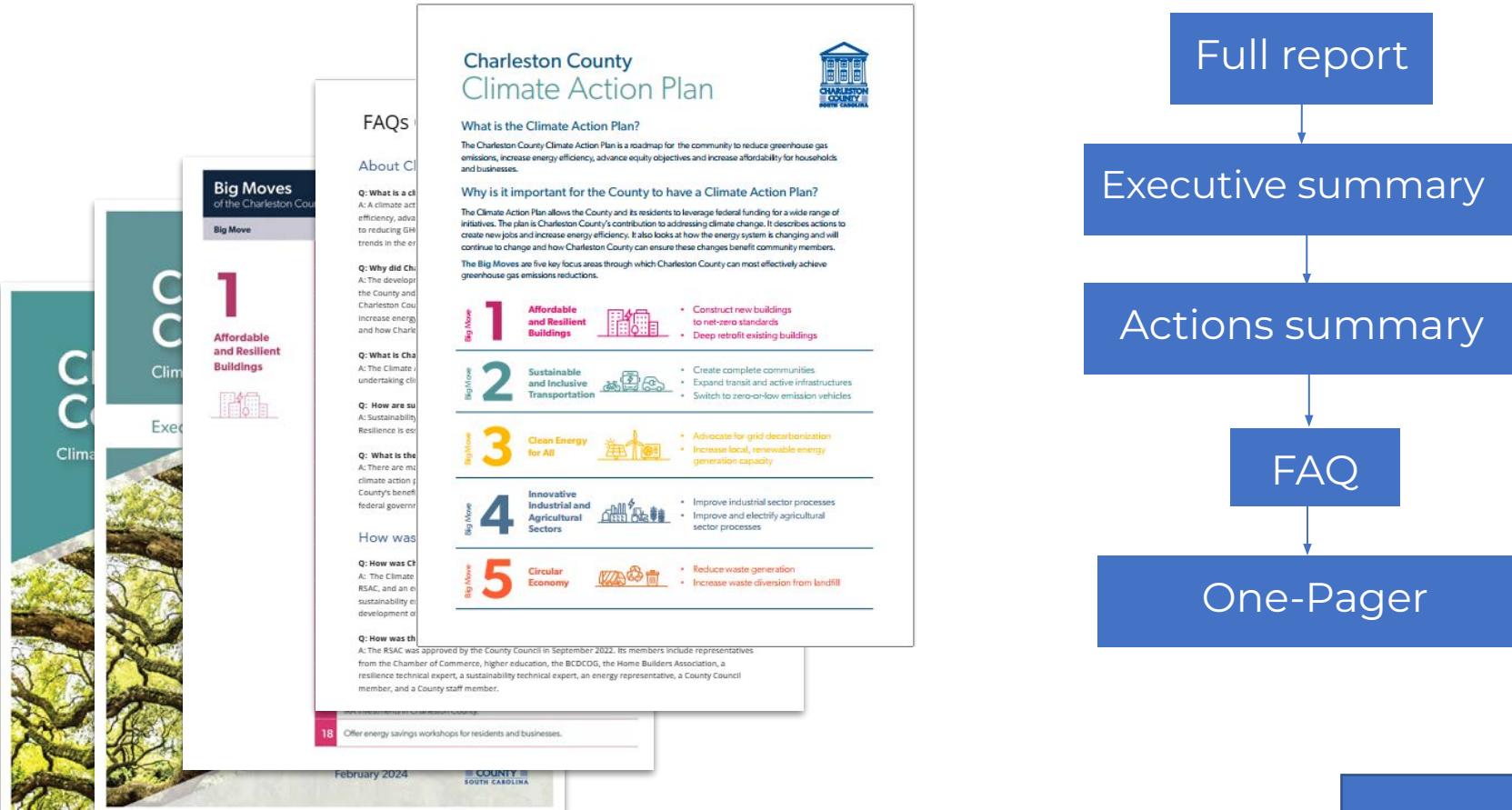
Climate Action Planning

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





The Process

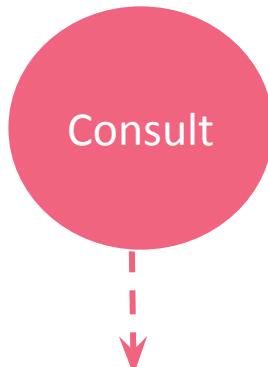
The Engagement Process



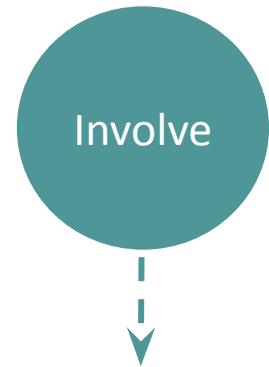
Engagement



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



- Community Outreach Activities



- 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

RSAC Meetings
Resilience and Sustainability
Action Committee

7

SECAT Meetings
Staff+Expert Climate Action
Team

7

Public Meetings

9

Outreach Events

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?

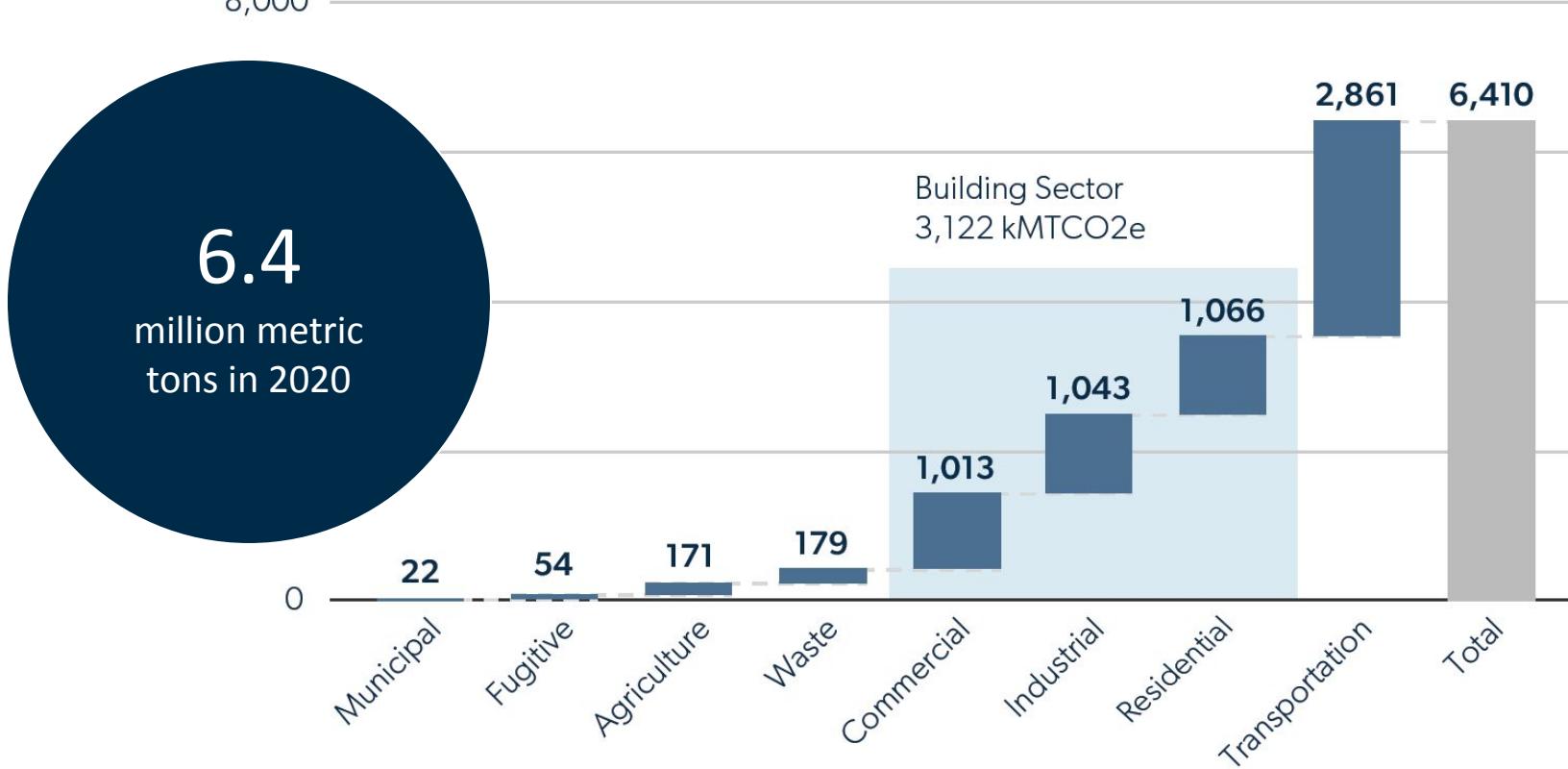
01

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

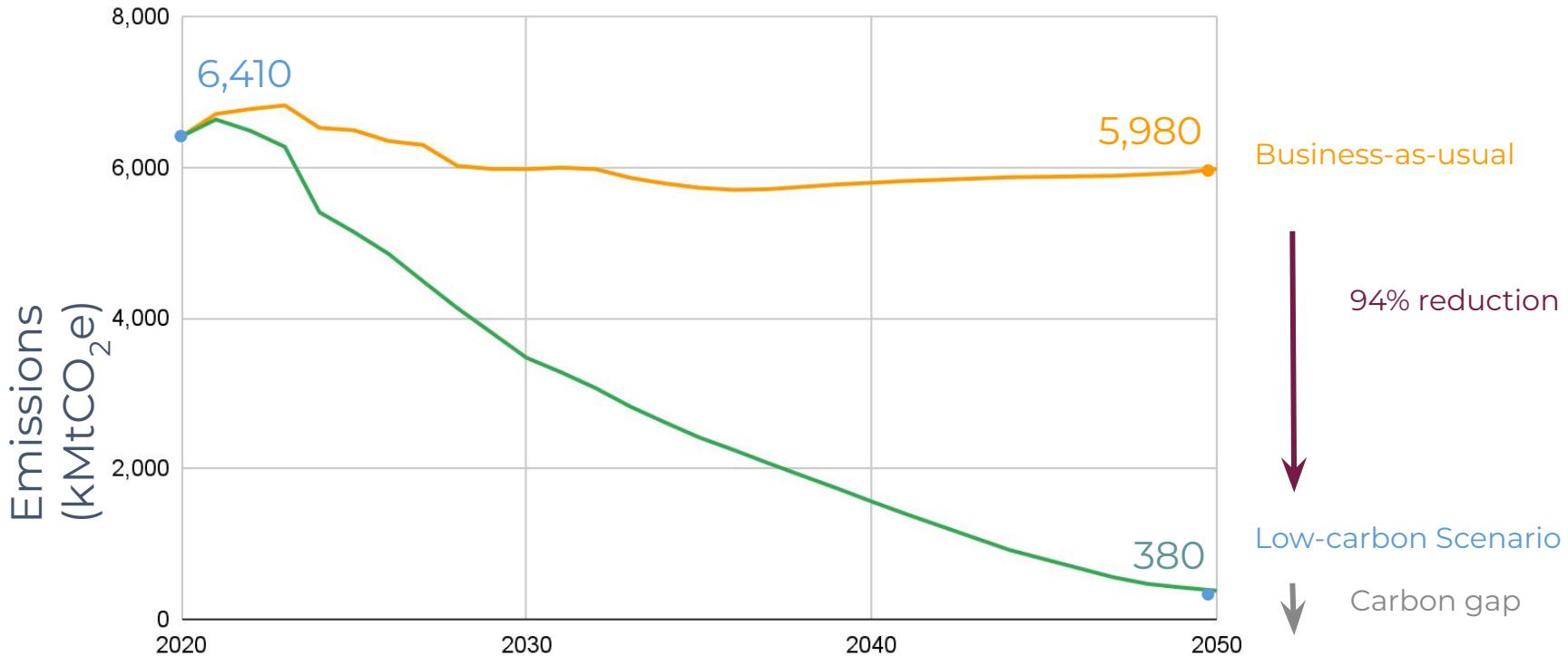
02

This inventory measures carbon dioxide equivalent emissions.

Starting Point

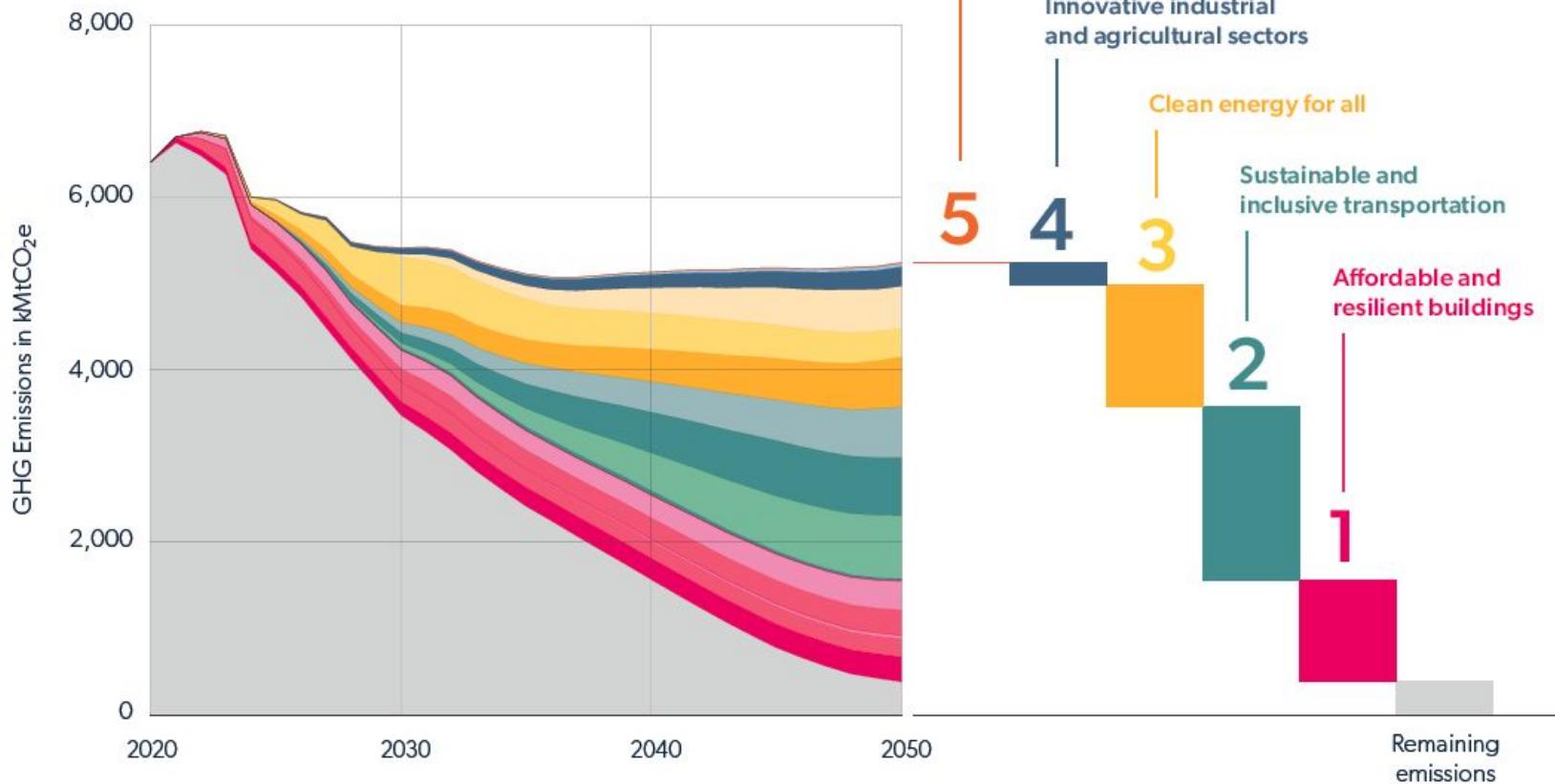


The Pathway



The Opportunities

The Opportunities



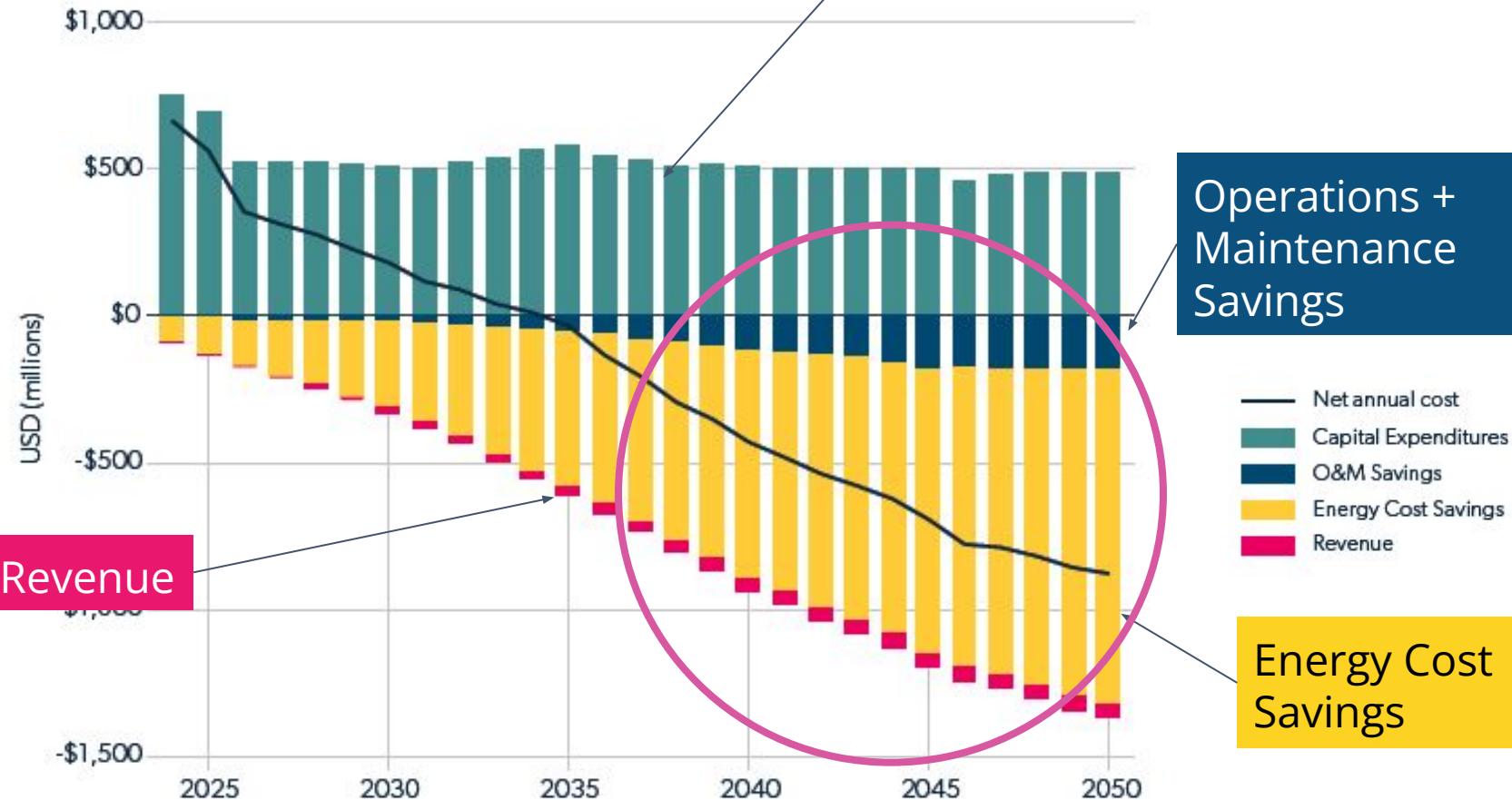
In 2023, households and businesses spent

\$1.7 billion

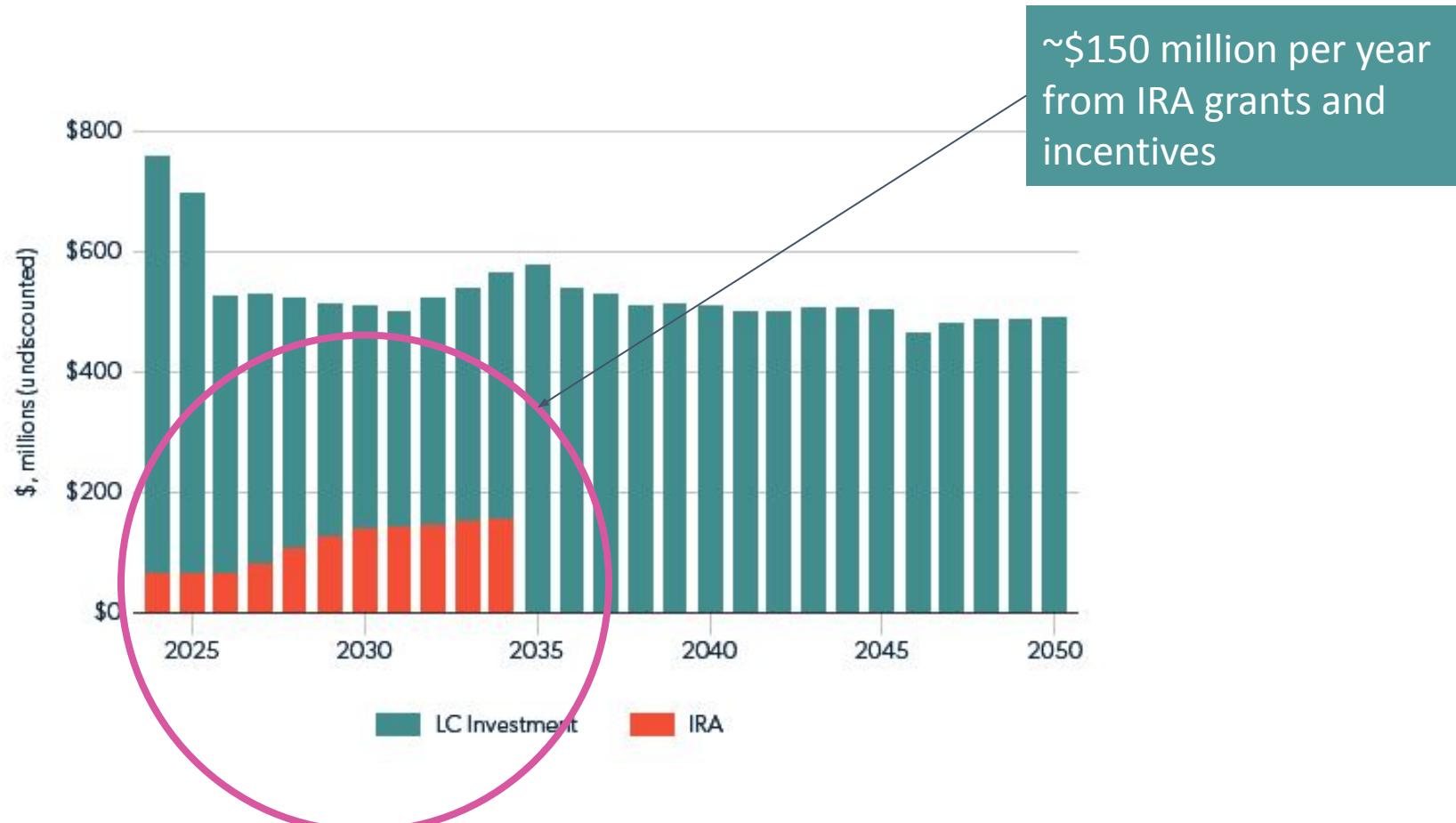
on energy

Investments

Investments



The Inflation Reduction Act Opportunity



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



The Strategies

1



Affordable and resilient buildings

2



Sustainable and inclusive transportation

3



Clean energy for all

4



Innovative industrial and agricultural sectors

5



Circular economy



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



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



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



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



- Reduce waste generation
- Increase waste diversion from landfill



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
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843-958-4083

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



Public Comment Period