

# Resiliency and Sustainability Advisory Committee Meeting

February 2, 2023

# Welcome and Moment of Silence

By: Mayor John Tecklenburg, Chairman

# Agenda

1. Welcome, Moment of Silence Mayor John Tecklenburg
  2. Resilience Status Updates: Dale Morris
    - Fill / Slab Policy in 100-year Floodplain
    - USACE CSRM Authorization
    - Comprehensive Integrated Water Plan progress
    - Zoning Ordinance Rewrite (Planning in lead)
    - Rosemont Resilience Plan
    - Flooding and Sea Level Strategy
  3. Climate Action Plan Progress Report Katie McKain and 2023 Priorities
  4. Review and Discuss Draft of Electric Vehicle Infrastructure Policy in New Construction Katie McKain and Aspen Caffee
  5. Public Comment Period\*

# Resilience Status Updates

By: Dale Morris, Chief Resilience Officer

# Resilience Status Updates

1. Fill / Slab Policy in 100-year Floodplain
2. USACE CSRM Authorization
3. Comprehensive Integrated Water Plan progress
4. Zoning Ordinance Rewrite (Planning in lead)
5. Rosemont Resilience Plan
6. Flooding and Sea Level Rise Strategy

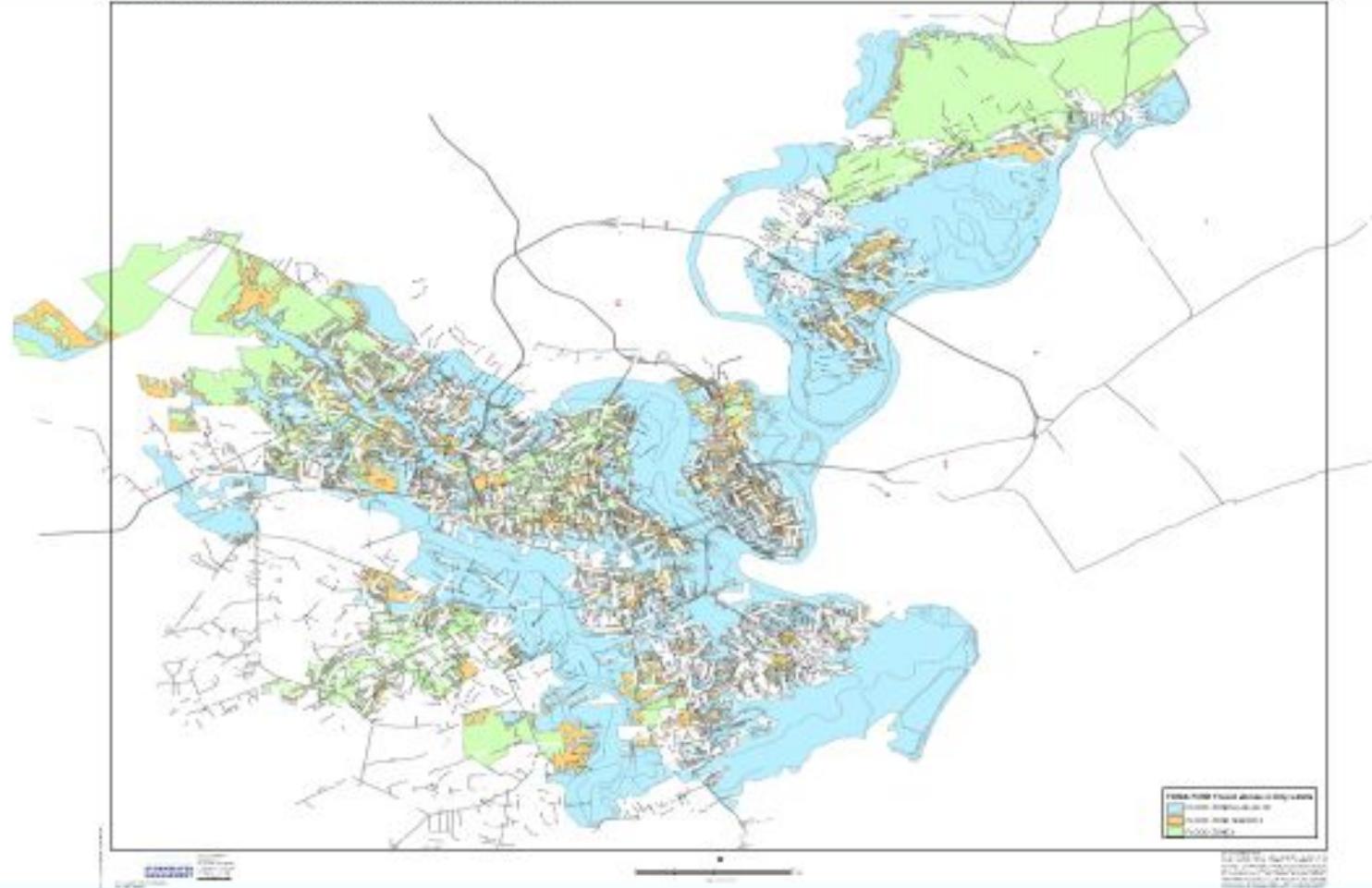
# Fill / Slab: Process to Date

- 2019 – 2020 City Council considers rigorous restrictions on fill, City-wide. Proposed ordinance(s) not adopted.
- 
- 2020 Stormwater Design Standards Manual addresses the quantity of fill within certain development sites.
- 
- 2020 – 2021: Stormwater starts informal discussions with key stakeholders to increase regulation of / further reduce volumes of fill in key (higher flood risk) areas.
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- **Stakeholder Workgroup (Spring – Summer 2022)**

- City Stormwater/Affordable Housing/Planning, Preservation and Sustainability/Resilience and Sustainability/Public Services/Legal
- Charleston Homebuilders Association
- Charleston Trident Association of Realtors
- Coastal Conservation League of SC
- Southern Environment Law Center
- Historic Charleston Foundation
- MetroChamber of Commerce



100-Year and 500-Year Floodplain in the City of Charleston, SC



**Single Family Detached Residential –  
New Foundations cannot be  
slab-on-grade or elevated slab**

**Single Family Attached Residential –  
New Foundations cannot be  
slab-on-grade**

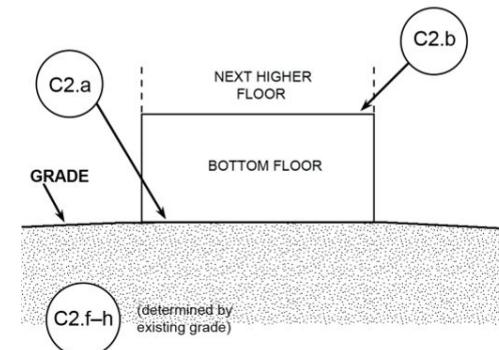
**Provide a Clear Timeframe for  
Adoption of Requirements –  
Recommendation 12 months**

**12 month post adoption review  
whether to extend to 500 yr  
floodplain**

**DIAGRAM 1A**

All slab-on-grade single- and multiple-floor buildings (other than split-level) and high-rise buildings, either detached or row type (e.g., townhouses); with or without attached garage.

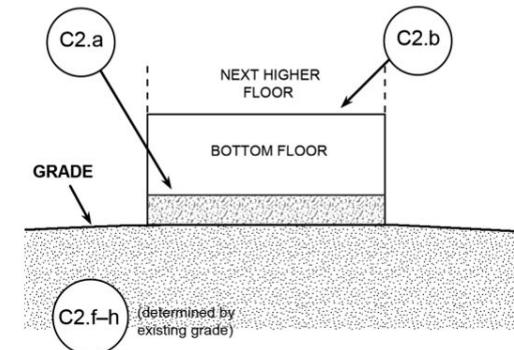
**Distinguishing Feature** – The bottom floor is at or above ground level (grade) on at least 1 side.\*



**DIAGRAM 1B**

All raised-slab-on-grade or slab-on-stem-wall-with-fill single- and multiple-floor buildings (other than split-level), either detached or row type (e.g., townhouses); with or without attached garage.

**Distinguishing Feature** – The bottom floor is at or above ground level (grade) on at least 1 side.\*



# USACE CSRM Authorization: WRDA 2022

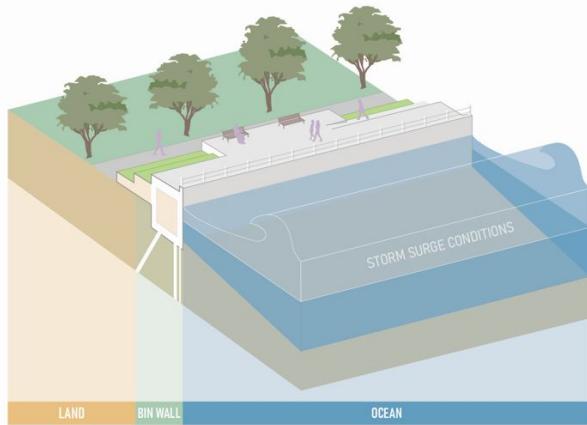
## Pre Construction, Engineering and Design (PED)

### Design Agreement / control



# No thanks...





Comprehensive Integrated Water Plan progress

Zoning Ordinance Rewrite (Planning in lead)

Rosemont Resilience Plan, w LAMC

Flooding and Sea Level Rise Strategy

# Climate Action Plan Progress Report and 2023 Priorities

By: Katie McKain, Director of Sustainability

**CAP is a 5 Year Plan, adopted May 2021**

CITY OF CHARLESTON

# **CLIMATE ACTION PLAN**

**PROGRESS REPORT AS OF DECEMBER 31, 2022**

# CAP Progress Highlights



## WASTE

- OVER 50 TONS OF FOOD SCRAPS COMPOSTED, 1,100 HOUSEHOLDS COMPOSTING, AND 100 METRIC TONS OF CO<sub>2</sub>E ELIMINATED\*
- 426 MATTRESSES RECYCLED DIVERTING 11 TONS FROM THE LANDFILL, 15,000 CUBIC FEET LANDFILL SPACE SAVED, 15 METRIC TONS OF CO<sub>2</sub>E ELIMINATED (2021 Data)

# CAP Progress Highlights



## TRANSPORTATION

- 63,185 TRIPS (119,561 MILES) IN BIKE SHARE  
PREVENTING 50 METRIC TONS OF CO<sub>2</sub>E\*
- \$7M LOWLINE GRANT TO SUPPORT UP TO 120M  
LESS VEHICLE MILES TRAVELED (Lifetime of project)
- 25% OF LEAF BLOWER FLEET IS ELECTRIC,  
ELIMINATING 80 METRIC TONS OF CO<sub>2</sub>E\*
- 7,358 REMOTE STAFF WORK DAYS, ELIMINATING  
90 METRIC TONS OF CO<sub>2</sub>E FROM COMMUTE\*

# CAP Progress Highlights



## CARBON SINKS

- 37 RAIN GARDENS INSTALLED AND 750,000 GALLONS OF WATER INFILTRATED AND DIVERTED FROM STORMWATER SYSTEM (Total as of 12/31/2022)
- 102.7 ACRES OF LAND RESTORED AND PRESERVED AS PERMANENT GREEN SPACE ABSORBING WATER AND CARBON (Total as of 12/31/2022)
- 1,335 TREES PLANTED ON PUBLIC PROPERTY\*
- 384 STORM DRAINS ADOPTED (Total as of 12/31/2022)

# CAP Progress Highlights



## BUILDINGS

- BOARD OF ARCHITECTURAL REVIEW ENCOURAGES SOLAR PERMITS WITH POLICY STATEMENT
- 2 NEW CAPITAL PROJECTS PLANNED TO HAVE SOLAR, AND ALL NEW CITY CONSTRUCTION PLANNED TO INCLUDE ELECTRIC VEHICLE READY INFRASTRUCTURE
- PROGRESS PLANNING TO EXPAND ELECTRIC VEHICLE INFRASTRUCTURE CITYWIDE

# CAP Progress Highlights



## EDUCATION AND COMMUNITY ENGAGEMENT

- 22 CLIMATE AMBASSADORS GAVE 43 PRESENTATIONS, INSPIRING 1,178 PEOPLE TO TAKE CLIMATE ACTION (Total as of 12/31/2022)
- 150 RESIDENTS AT ELECTRIC LAWN CARE EXPO TESTED EQUIPMENT AND PURCHASED OVER 50 PIECES OF BATTERY POWERED TOOLS (April 2022)
- 470 RESIDENTS REACHED ABOUT COMPOSTING AT WEST ASHLEY FARMERS MARKET (April - June, 2022)
- 12 MONTHLY COMMUNICATION CAMPAIGNS WITH HUNDREDS OF SOCIAL MEDIA POSTS\*
- 100+ VOLUNTEERS

# 2023 CAP Priorities

## Composting

1. Expand to 3 new food scrap drop sites in City limits
2. Host training workshops & kitchen bin giveaways
3. Add more regional local government partners and drop sites
4. Pilot vendor composting at both City farmers markets
5. Create sponsorship program
6. Organize a Pumpkin Smash and more options for pumpkin composting



# 2023 CAP Priorities

## Electric Vehicles

1. Pilot first electric vehicles in fleet
2. Education with City staff to deploy vehicles
3. Fleet Transition Plan and securing EECBG funding
4. Seek Federal grant opportunity to implement Fleet Transition Plan

## EV Charging Infrastructure

5. Upgrade 8 existing EV Stations in garages to 16 networked ports
6. Creating EV parking policy
7. BCDCOG Regional Electric Vehicle Infrastructure Plan (public parking)
8. Make Ready EV Policy for new construction

# 2023 CAP Priorities

- Greenhouse Gas Inventory for 2022
- Sustainable Events Manual
- Communication and Community Engagement Manager
  - Improve social media presence
  - Organize more frequent public engagement events
  - Train a new Climate Ambassador Program cohort
  - Pursue creation of a Green Business Challenge
- Rainproof Mini Grant Program (needs funding)
- Planning for Renewable Energy and a Facilities Management Plan
- Zoning Code Rewrite- many CAP actions (2 year project, Planning in lead)
- Street Tree Inventory (Parks Dept in lead)
- Tree Planting in underserved community

# Seeking Assistance

1. Volunteers to support composting at farmers markets
2. Research, plant and test super sink plants
3. Explore partnerships to create an urban forestry workforce training program with local school programs, such as Trident Tech Horticulture Program
4. Support with state advocacy efforts

# Review and Discuss Draft of Electric Vehicle Infrastructure Policy in New Construction

By: Katie McKain, Director of Sustainability  
and Aspen Lee Caffee, Sustainability Intern



# Goals and Reasoning

The goal of this ordinance is to promote increased charging infrastructure, which will support the growth of the EV industry.

Benefits of enacting a baseline Level 2 EV Ready requirement now

- Prepares for increased reliance on EV in the future
- Saves money preparing upfront rather than retrofitting
- Aids flexibility in growth and adaptation

Savings in New Construction of EVSE



# Levels of Charging

**Level 1**



Standard 120V Outlet



Averages about 5 miles per hour of charge

Electrical Capacity

**Level 2**



240V Outlet



Averages about 20-60 miles per hour of charge

**Level 3**



480V DC Fast Charging



Averages about 60-100 miles per hour of charge

# Types of Installation

## EV-Capable:

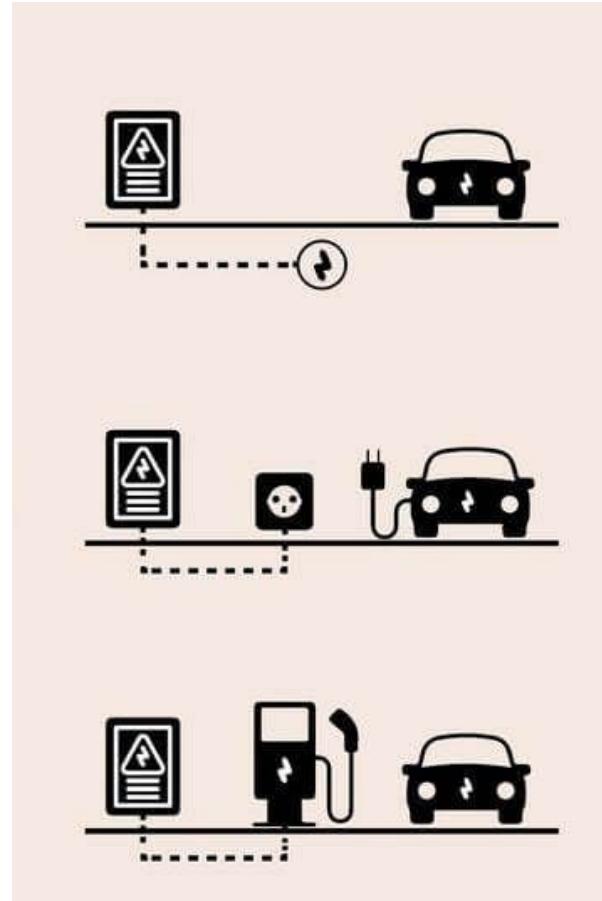
- Electrical panel capacity
- Conduit from panel to parking space
- Not ready for use

## EV-Ready:

- All EV-Capable requirements plus...
- Wiring installed with termination in junction box or outlet at parking space
- Sometimes can be used by drivers with portable chargers

## EVSE-Installed:

- All EV-Ready requirements plus...
- Fully connected Level 2 chargers or DCFC
- Ready to charge any EV (\*sometimes requires adaptors)



Types of Installation

# SC EV Investment Booming

SC Executive Order no. 2022-31

- SC EV Economic Development Initiative
- EV liaison in state government
- EV workforce

- BMW \$1.7B
- Envision AESC \$810M
- Volvo/Polestar: \$118M
- Mercedes Benz Sprinter: \$59M
- Proterra: \$76M
- ABB E-Mobility \$4M



**TOTAL: more than \$2B**

# SC Incentives

- Berkeley Electric Cooperative
- Duke DCFC installation along highways/interstates
- Alternative Fuel Infrastructure Tax Credit:
  - 30% tax credit up to \$100,000 through December 31, 2032



# Applicability

- New construction projects
- Major external renovation projects (with parking modifications) on existing establishments



# General Requirements

Land Use	Required EV-Capable spaces	Required EV-Ready spaces	Required EVSE-Installed spaces
1 or 2 dwelling units:		1 space per dwelling unit	
3 or more dwelling units:		1 space per 8 spaces	1 space per 25 spaces
3 or more dwelling units of Affordable Housing:	1 space per 4 spaces		
Office and workplace: (greater than 25 spaces)		1 space per 10 spaces	1 space per 40 spaces
Retail: (greater than 25 spaces)		1 space per 10 spaces	1 space per 50 spaces
Accommodations:		1 space per 15 spaces	1 space per 25 spaces
Public parking facilities:	1 space per 10 spaces	2 spaces per 10 spaces	1 space per 30 spaces

# Examples of Project Requirements

Land Use	Total Parking Spaces Required	EV Capable Requirements	EV Ready Requirements	EVSE Installed Requirements
Mixed use residential and office: 100 residential units + 20,000 sq ft office not on peninsula	184 spaces		21 spaces	6 spaces
Affordable housing: 100 residential units + 20,000 sq ft office not on peninsula	109 spaces	28 spaces	9 spaces	3 spaces
Affordable housing: 100 residential units	25 spaces	7 spaces		
Single family home: 1 unit	2 spaces		1 space	

# Examples of Project Requirements

Land Use	Total Parking Spaces Required	EV Capable Requirements	EV Ready Requirements	EVSE Installed Requirements
Public parking facilities: 300 space parking garage	300 spaces	30 spaces	60 spaces	10 spaces
Office: 30,000 sq ft office not on peninsula	125 spaces		13 spaces	4 spaces
Retail: 50,000 sq ft retail not on peninsula	250 spaces		25 spaces	5 spaces
Accommodations: 60 room hotel	40 spaces		3 spaces	2 spaces

# January 27th Meeting at Chamber of Commerce



# Public Comment Period