

**Resiliency and
Sustainability
Advisory
Committee
Meeting**

November 3, 2022

Agenda

1. Welcome, Moment of Silence Mayor John Tecklenburg
2. Status Updates: Dale Morris
 - Comprehensive Integrated Water Plan
 - Rosemont Resilience Plan
 - USACE Peninsula Flood Risk Management Study
 - City Flooding and Sea Level Strategy
 - Recommendations from Working Group on Strategies for Fill / Slab Policy
3. Recommendations from Working Group on Strategies for Electric Vehicle Infrastructure Policy in New Construction Katie McKain
4. Public Comment Period*

Welcome and Moment of Silence

By: Mayor John Tecklenburg, Chairman

Status Updates

By: Dale Morris,
Chief Resilience Officer

Comprehensive, Integrated Water Plan

- Project Underway, Completion +/- Q4 2023.
- Water Plan (not an engineering plan)
- City-wide: Cainhoy, Daniel Island, James Island, Johns Island, West Ashley, Peninsula
- All Water Hazards: surge, tide, rainfall, groundwater, compound
- Assume 18" SLR, 25 yr planning horizon
- Land use, drainage, adaptation, policy, prioritization, strategies
- Zones of inquiry: hydrologic basin / floodplain / neighborhood, edge
- Inform Zoning Ordinance Rewrite

Team Lead & Owner's Agent



Water Plan Lead





Collection

2022 Flooding and Sea Level Rise Strategy Update

City of Charleston

Office of Resilience and Sustainability

[Get started](#)



1 How to Navigate this Site



2 Executive Summary



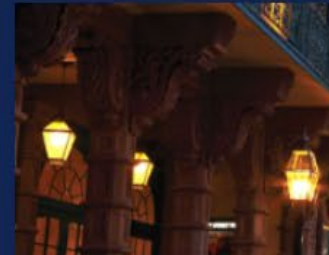
3 Strategic Plan



4 Sea Level Rise and Flooding Introduction



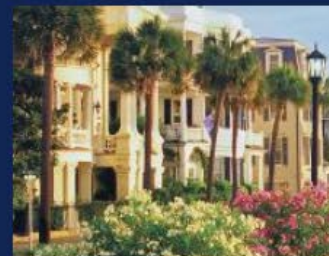
5 Infrastructure Projects



6 Land Use



7 Governance



8 Resources



9 Outreach and Partnerships



USACE 3x3x3 / CSRM. From Feasibility...

April 2018, Feasibility Study kickoff

April 2020, Tentatively Selected Plan (TSP)
Public Comments: EIS, NBS, alignment

Fall 2020: EIS approved, stakeholders fund Discovery
Analysis

Sept 2021: Draft EIS, Optimized TSP

Sept – Dec 2021: SCSPA (Port) realignment,

Dec 2021: Agency Decision Milestone (peer review)

Feb 2022: financial self certification, MOA on Historic and
Cultural Mitigation, Programmatic Agreement on
environmental mitigation

Feb – June 2022: USACE Division and HQ review, signed
“Chief’s Report”

- End of Feasibility phase

...to USACE Recommended (Feasibility) Plan, with EIS...

8 mile storm surge structure @ 12' NAVD 88

Tentative alignment – all on public property -- at edge of peninsula. SCPA facilities now inside protection.

Added nature-based features (more needed)

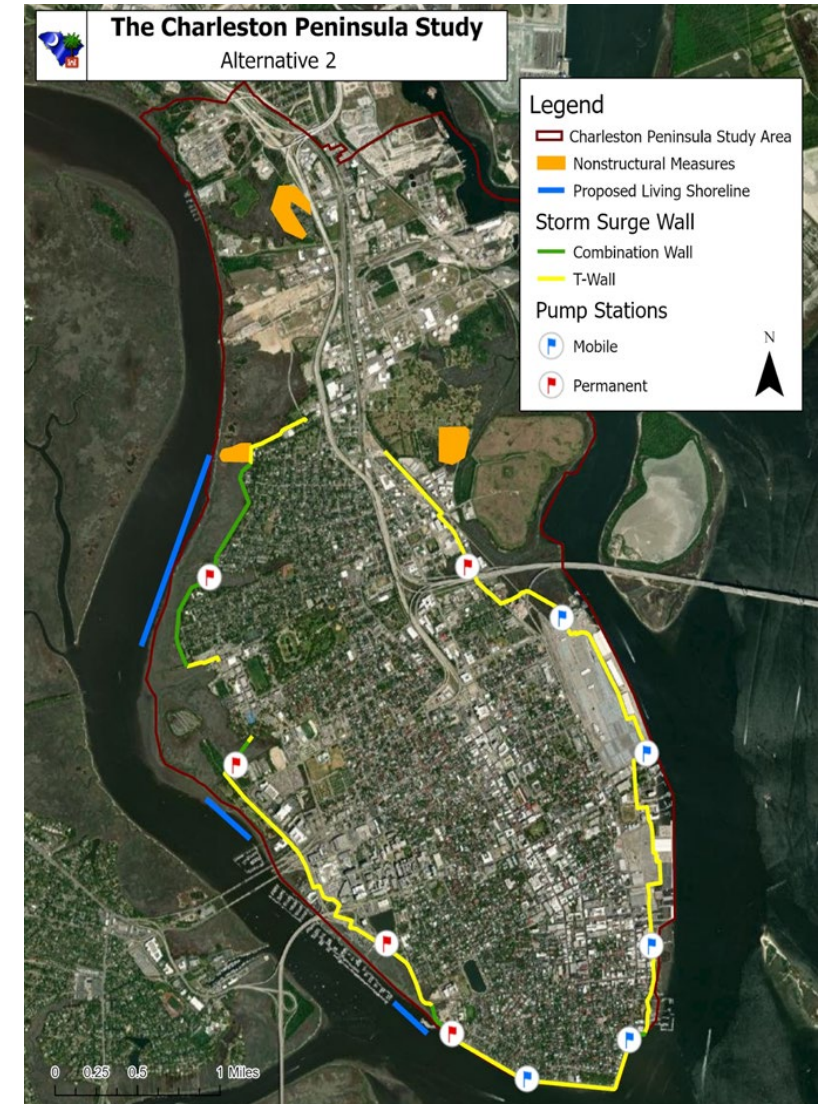
10 pumps (impoundment and overtopping)

\$1.1b, cost shared 65%-35%. City net cost: +/- \$250m

10.8 – 1 benefit-cost ratio

Design goal: to replicate and extend Low Battery around peninsula.

Overall goal: design and eventually construct a structure acceptable to Charleston with Feds paying 65%.



...to PED

June / July 2022: WRDA Authorization

June 2022: PED funding priority

Q-4 2022: WRDA “conference,” NDAA, passage

2023: USACE receives HQ green-light and \$

City-USACE negotiates Design Agreement

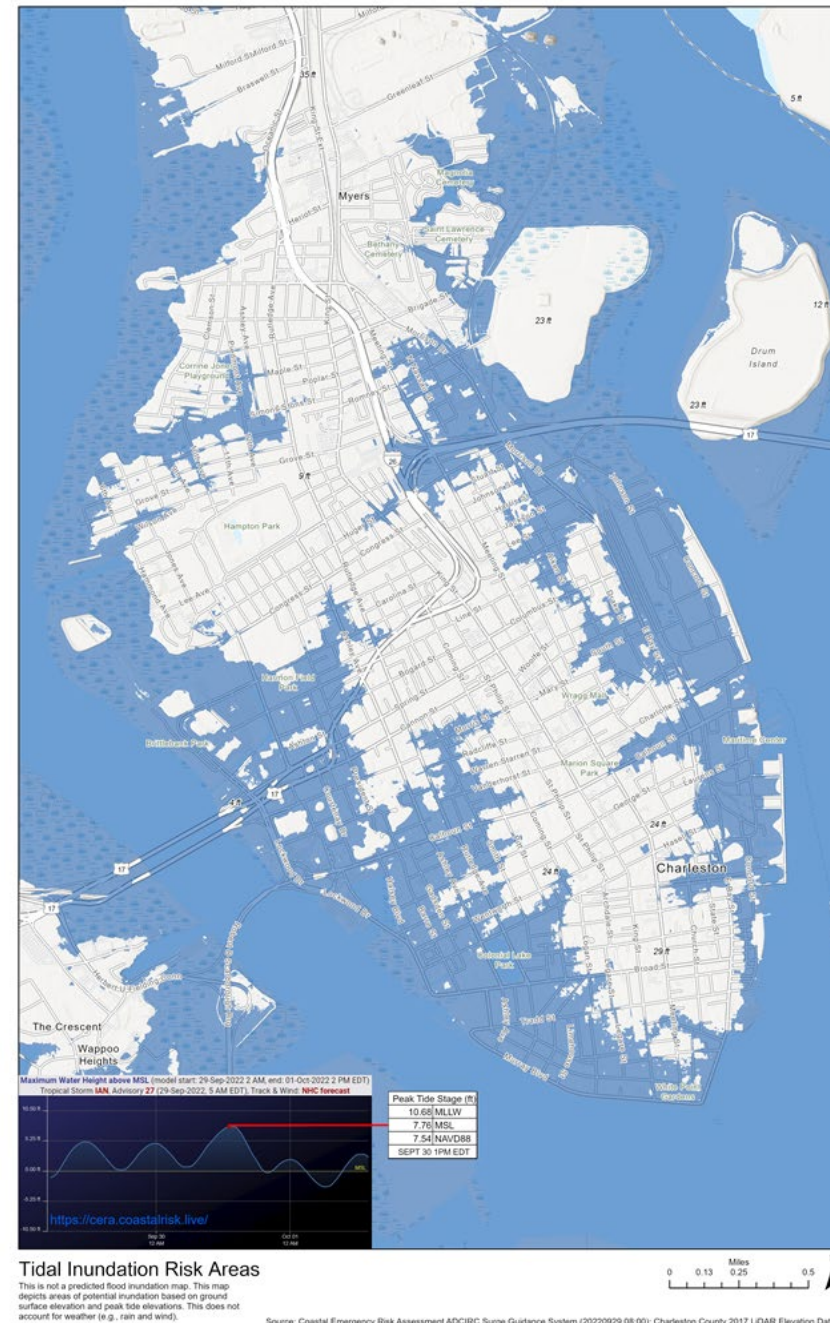
City Council approval of DA and yr. 1 PED funding (+/- \$1-3m)

Mayor’s Design Agreement Letter to USACE

- Alignment: Johnson, Concord, Lockwood
- Gates and Crossings
- Non Structural / (Rosemont / Bridgeview) Resilience Plan (Justice 40)
- Natural and Nature-Based Features (NNBFs)
- Historic and Cultural (PA)
- Impoundment, Overtopping analyses
- Interior Hydrology (stormwater) and pumps
- System-wide risk assessment (components)
- Community Engagement
- Design Mgmt. and Expertise

Ian, ADCIRC, 9/29/2022 AM

- Market St - Beaufain
- Harleston
- Calhoun
- French Quarter
- Medical District
- Gadsden Green
- Wagener Terrace



Rosemont Resilience Plan

- 3x3 Advisory Committee recommendation
- City Council funding
- LAMC NFWF application
- Waiting to start
- Rosemont Community + Water Plan Team + LAMC + City
- Inform Peninsula Plan

Scoping no fill / slab on grade ordinance

- Use of fill: enables preference for slab on grade and displaces water from site
- Dutch Dialogues: reduce fill in low-lying and sensitive areas
- Council discussions 2019/2020
- Informal workgroup: City staff (Stormwater, Planning, Resilience), environmentalists (CCL, SELC), Preservation (HCF) and industry (Homebuilders, Realtors, Chamber.
- Recommend ordinance to eliminate use of fill in 100 yr floodplain for all new SF residential; and only limited fill (under structure) for multifamily. Goal: FEMA approved non-slab foundations for all new.
- Work through SI / SR challenges with Council, including whether 2ft BFE for SI/SR is possible.
- Adopt ordinance with transition period similar to Stormwater Design Standards Manual adoption processes.
- Mandatory look-back 2-3 yrs post adoption for unintended consequences and / or opportunity to extend to 500yr floodplain.

Recommendations from Working Group on Strategies for Electric Vehicle Infrastructure in New Construction

By: Katie McKain,
Director of Sustainability

“EV Make Ready” Codes

Enables new construction to prepare a certain proportion of parking spots to be electrified.



SC EV Investment Booming

- Volvo/Polestar: \$118M
- Mercedes Benz Sprinter: \$59M
- Proterra: \$76M
-
- ABB E-Mobility \$4M
- SC EV Executive Order
- BMW \$1.7B



EV readiness typically **saves around 75%** compared to retrofit costs.

Cost Comparison

Cost per EV Parking Space: New Construction vs Retrofit

Case Study prepared for the City and County of San Francisco (2016)



The case study considers a parking lot with ten total spaces and two EV parking spaces, and compares the EV infrastructure installation costs at the time of new construction versus building retrofit. “EV parking spaces” define spaces that have an EV-ready outlet, and include the electrical panel capacity, raceways, breakers, outlet boxes, and wiring to install an EV charger at any given time in the future.

- Balance of Circuit
- Raceway
- Permitting & Inspection
- Construction Management

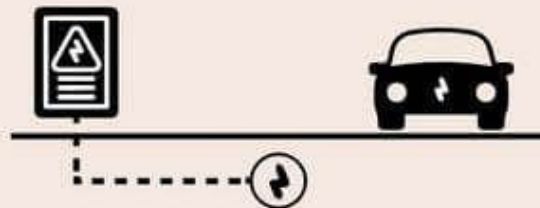
Strategies to Increase EV Readiness

1. EV-Capable

Install electrical panel capacity with a dedicated branch circuit and a continuous raceway from the panel to the future EV parking spot.

[Aspen, CO: 3% of parking is EV-Capable \(IBC\)](#)

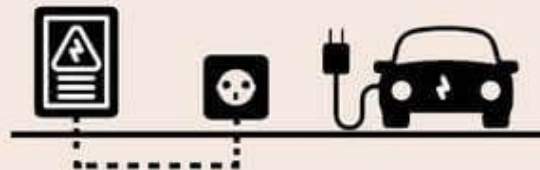
[Atlanta, GA: 20% is EV-Capable \(Ordinance\)](#)



2. EVSE-Ready Outlet

Install electrical panel capacity and raceway with conduit to terminate in a junction box or 240-volt charging outlet (typical clothing dryer outlet).

[Boulder, CO: 10% of parking is EV-Ready Outlet](#)



3. EVSE-Installed

Install a minimum number of Level 2 EV charging stations.

[Palo Alto, CA: 5-10% of parking is EV-Installed](#)



EV Code Examples

| | Single-Family Residential | Commercial/ Multi-Family |
|--------------------|---------------------------|--|
| Hilton Head, SC | n/a | 1 EV Installed space |
| Coral Gables, FL | n/a | 15% EV Capable, 3% EV Ready, 2% EV Installed |
| Atlanta, GA | 1 space EV Ready | 20% EV Ready |
| Orlando, FL | n/a | 20% EV Capable, 2% Installed |
| Miami Beach, FL | 1 EV Ready space | 20% EV Ready |
| Salt Lake City, UT | n/a | 1 EV Installed per 25 spaces |
| Chicago, IL | 20% EV Ready | 20% EV Ready or Installed |

Climate Action Plan item:

Create policy to require charging stations in new large commercial/ multi-family construction and consider EV Ready requirements for smaller projects.

Recommendation

Development community recognizes importance and cost savings to add EV Charging Station infrastructure at time of construction.

Ensure a potential policy isn't cumbersome, keep it flexible, and ensure permitting process is efficient.

Potential Next Step: Draft policy and gather more feedback

Public Comment Period