

Building Regional Resilience to Water-Related Hazards in the Charleston, SC Region: A Charleston Resilience Network Initiative

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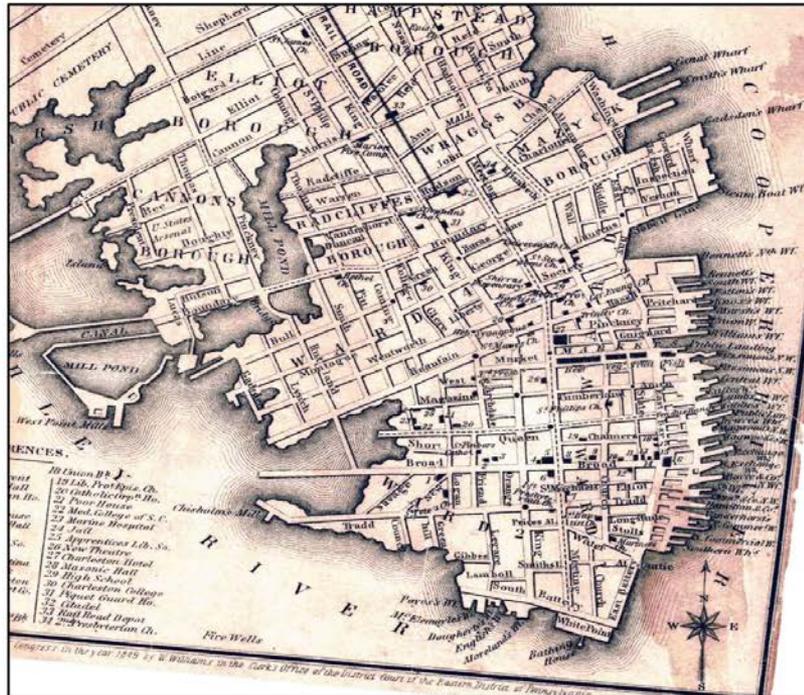


Flooding in Charleston – Not a new problem

Sea Level Rise and Artificial Fill in Charleston, SC



Historic Map (1849)



Potential Impact of Sea Level Rise



Legend

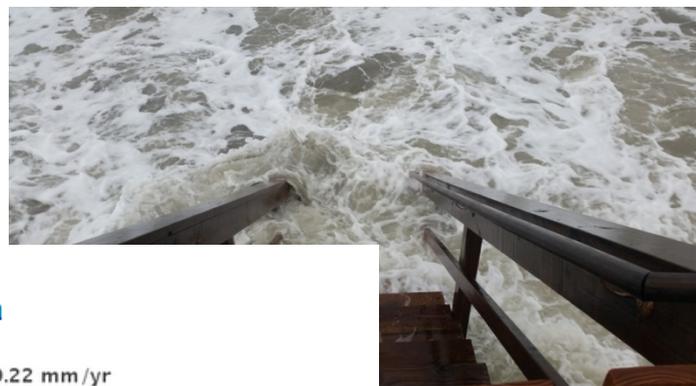
-  High Tide
-  +2 ft.
-  +3 ft.

0 0.325 0.65 1.3 Miles

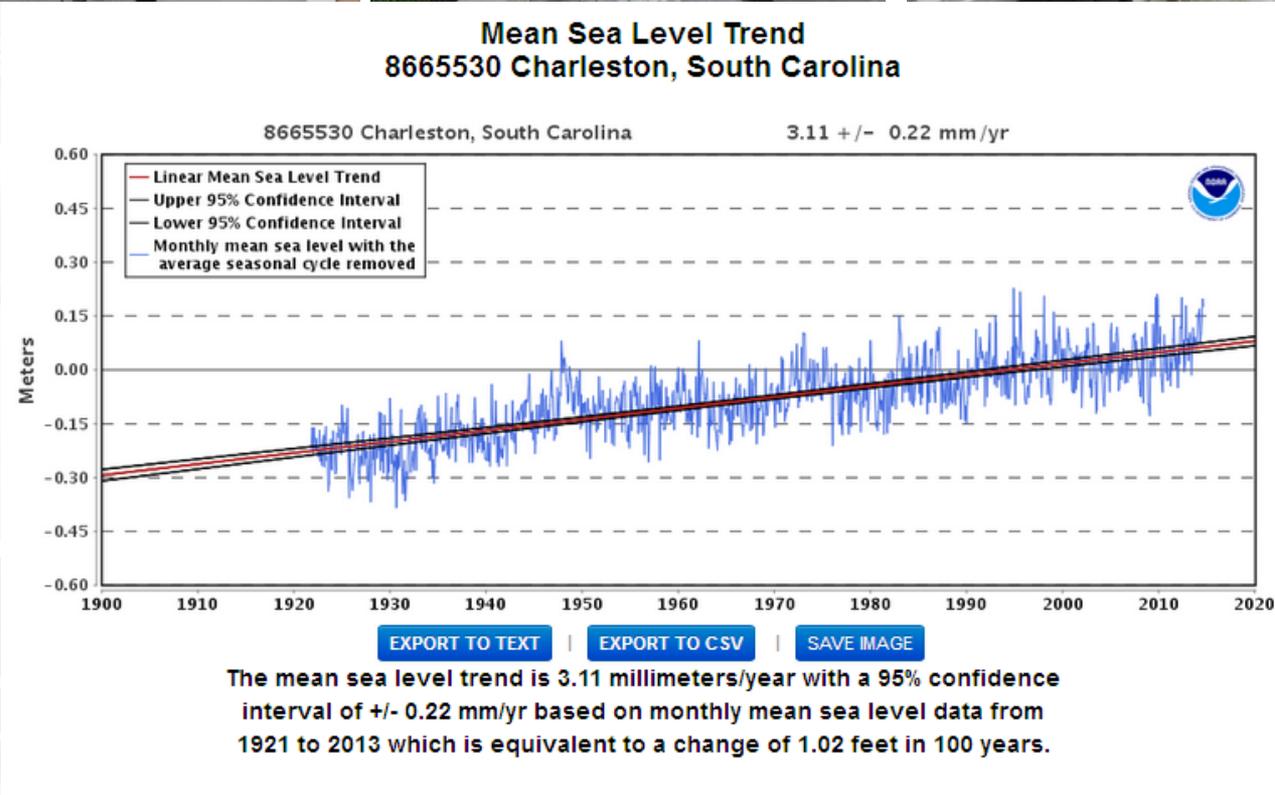
Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



Tracie Mitchum



Nicole Carey



Demetri Spyropolis



S.C. DHEC/MyCoast



S.C. DHEC/MyCoast

Rain bombs

Coastal flooding

Storm surge



Vulnerability to Sea Level Rise

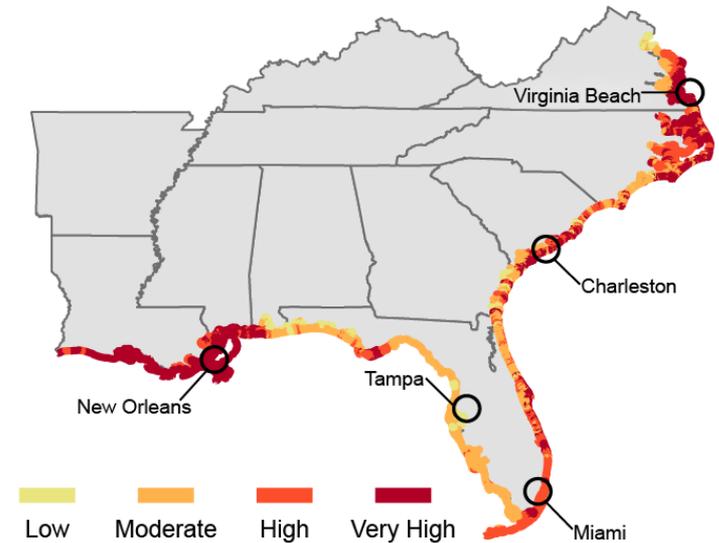


Figure Source: [NCA 2014](#), Data from Hammar-Klose and Thieler 2001¹

Charleston's Floods Illustrate the World's Watery Future – Climate Central, 10/27/2015

"Already, today, in Miami and Charleston, streets now flood at high tide." – President Obama, United States Coast Guard Academy Commencement, 5/20/2015

Many disparate “resilience” efforts in the Charleston region



Charleston Co
CRS (Class 4)



Emergency
management



State coastal
management
regulations
and outreach



Climate extension
and outreach

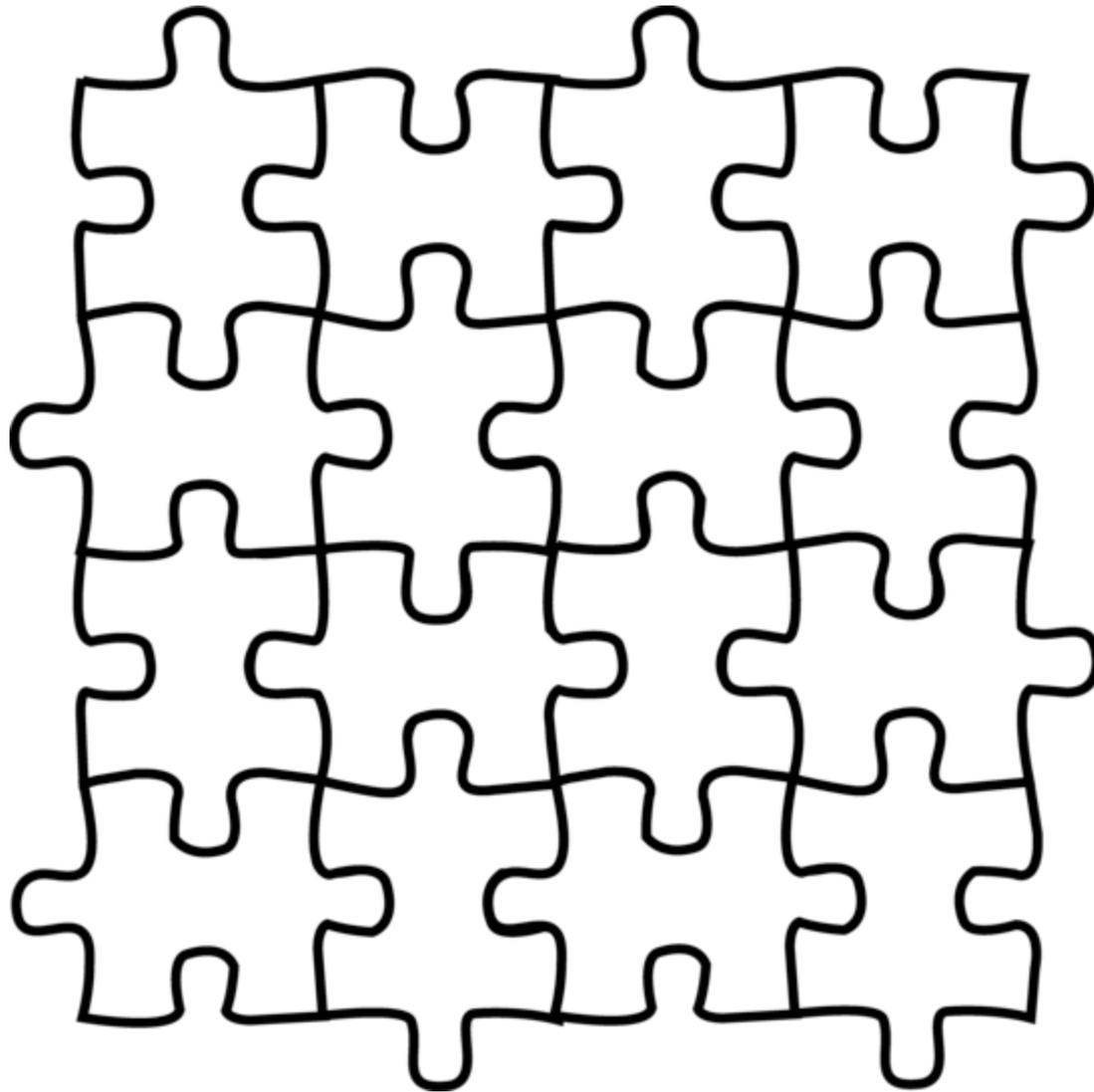


City of
Charleston
drainage
improvements



Local
University-based
research

What does it take to pull the pieces together?



DHS
Office of
Infrastructure
Protection

NOAA

FEMA

Local Planning Team

SCEMD
SCDHEC/OCRM
SCDNR
SC State Ports Authority
USACE
Boeing
SC Sea Grant
Consortium
Wells Fargo
College of Charleston

Climate Adaptation
Exercise

65 stakeholders from
critical infrastructure
community, including:
-Private-sector operators
-Public utilities
-Academia
-Fed/state/local govt
-Emergency
management
-NGOs

Goals:

Develop adaptation strategies
Build decision support planning tools and processes
Coordinate stakeholder planning efforts

Climate Adaptation TTX

After-Action Report
November 7, 2014

Rev. April 2013
HSEEP-IP01

“Climate adaptation planning needs to be driven more consistently at the **local level**, where most of the impacts will occur.”

“Continued **education and outreach efforts** are needed to ensure **uniform knowledge** of how climate hazards impact critical infrastructure over the long term.”

“Continuity of Operations plans should focus on **chronic hazards** as much as episodic hazards.”

ResilientAmerica

The ResilientAmerica Roundtable and its programs aim to help communities and the nation build resilience to extreme events, save lives, and reduce the physical and economic costs of disasters.



Pilot Communities

[Cedar Rapids, IA](#)

Charleston, SC

[Seattle, WA](#)

What We Do

[Community Pilot Program](#)

Charleston, South Carolina

Charleston, a vibrant, historic city, is addressing persistent flooding events, storm surge, and hurricanes and their impacts on critical infrastructure and infrastructure systems.

The **highest priority risks and hazards** faced in Charleston County include:

- Hurricane
- Flooding
- Tornadoes
- Earthquakes
- Wildfires
- Hazardous material incidents
- Terrorism
- Winter storms
- Drought

Charleston Resilience Network

The **Charleston Resilience Network (CRN)** is a volunteer-based effort composed of public and private sector stakeholder organizations within the Charleston, South Carolina, metropolitan area that have a collective interest in the resilience of communities, critical infrastructure and socio-economic continuity to episodic natural disasters and chronic coastal hazards.



The **Charleston Resilience Network** will work to foster a unified strategy and provide a forum to share science-based information, educate stakeholders and enhance long-term planning decisions that result in resilience.

Steering Committee

The City of Charleston • S.C. Dept. of Health and Environmental Control •
S.C. Sea Grant Consortium • College of Charleston • SCANA Corporation •
• Berkeley-Charleston-Dorchester Council of Governments •
Charleston Water System • Charleston County

*Advisory: U.S. Department of Homeland Security, Office of Infrastructure
Protection, National Oceanic and Atmospheric Administration*

Goals

Establish the governance structure, topical area(s) and geographic scope for the Charleston Resilience Network

Promote consistent, coordinated, and comprehensive approach to support resilience planning and action across sectors in the Charleston region

Identify and engage stakeholders to incorporate resilience into planning, design, construction and mitigation efforts

UNDERSTANDING THE 2015 CHARLESTON FLOODS

A Symposium Hosted by the Charleston Resilience Network
in Partnership with the National Academy of Sciences
February 23, 2016

Sectors: Critical Infrastructure, Public Health/Safety, Business/Economics

Questions addressed:

- What worked?
- What didn't work?
- Lessons learned and recommendations?

Moving forward: A panel with local leaders to discuss resilience into the future

CRN

Nascent, volunteer-based organization

Flood symposium: “coming out party”

What is the best way to engage those interested in participating?

How do we sustain the CRN as it continues to grow and gain traction in the community?

How do we measure our progress?

Questions?

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