



Sea Level Rise **STRATEGY**



Charleston
SOUTH CAROLINA

DECEMBER 2015





City of Charleston

Joseph P. Riley Jr.

Mayor

To: City Councilmembers
From: Mayor Joseph P. Riley, Jr.
Re: Sea Level Rise Strategy Plan
Date: December 21, 2015

Flooding and sea level rise are challenges the City of Charleston has taken seriously for centuries. However, this City that we love is experiencing the effects more frequently than ever. In the 1970s Charleston experienced an average of 2 days of tidal flooding per year and it is projected that the City could experience 180 days of tidal flooding in 2045. Identifying initiatives that will improve our ability to withstand these effects is timely. This Sea Level Rise Strategy Plan is that comprehensive inventory of initiatives. World class initiatives by other communities were reviewed by a multi-disciplinary task force of staff representing the City's Public Service, Planning, Preservation and Sustainability, Emergency Management, and GIS Departments to inspire the strategies identified in this plan.

The initiatives were developed to ensure that we anticipate and put into place actions to reinvest, to be ready and to respond rapidly to the challenges of sea level rise. Many of the initiatives identified are already underway and will be accomplished within the next two years. Others need to be evaluated and prioritized over the coming years and funded over the coming decades. There are no quick and cheap solutions, but we must undertake these initiatives and consider adopting a plan that defines strategic and achievable steps.

We live in a beautiful area, blessed by its adjacency to our harbor and rivers. The challenges of sea level rise are at the forefront of the City's agenda. The City will embrace these challenges by being at the cutting edge of best practices and by our shared resolve to preserve this beautiful place for generations to come. I commend this valuable document to you to help guide our strategic planning and actions on sea level rise.



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NOW is the time for the City to solidify the vision and strategy to support specific improvements in infrastructure and processes that will be required to prepare for higher tides.

The **PURPOSE** of this document is to inform and provide an overall strategy and guiding framework to protect lives and property, maintain a thriving economy, and improve quality of life by making the City more resilient to sea level rise and recurrent flooding.



Introduction

The City of Charleston has had a special relationship with water since it's founding in 1670. This relationship has shaped and defined the development of the City. As early as 1837, the City recognized the need for better drainage solutions to alleviate flooding.



The issue was so important to Charleston that Mayor Henry L. Pinckney offered a \$100 gold medal

to anyone who could develop a solution. Unfortunately the problem was never completely solved, and the medal was never awarded.

The City of Charleston continues to adapt to the realities of living near the water, and the relationship is constantly being tested.

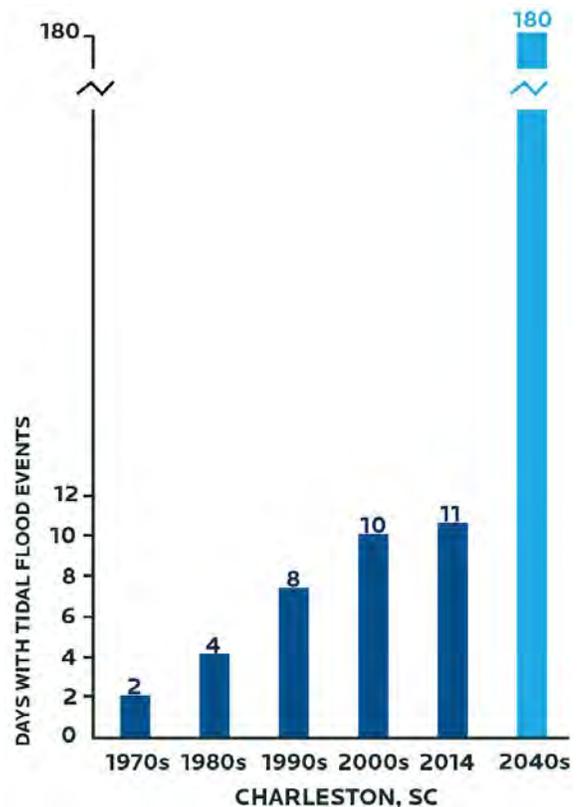
Challenges of a Rising Sea Level

As a coastal city with most elevations near sea level, the City of Charleston has long been vulnerable to flooding. Current flooding consists of tidal flooding of some streets during a King Tide or due to storm surge. Tidal flooding in the 1970s averaged 2 times per year, while in the early 2010s it is up to 11 times per year.

By 2045, the City is projected to face nearly 180 tidal floods a year.

Rising sea levels represent additional challenges now and in the future. The sea level in Charleston has risen slightly more than one foot in the last 100 years. The estimates of how much more sea level will rise in the next 100 years vary, but there is no doubt the rising trend will continue.

The National Oceanic and Atmospheric Administration (NOAA) estimates a sea level rise of 2 to 7 feet in Charleston over the next 100 years. The current data indicates the expected increase in sea level is more gradual initially, but may accelerate over time. The different projections result from different estimates of ice melting due to warming temperatures.



SOURCES: UCS Analysis; Morales and Alsheimer 2014; NOAA Tides and Currents 2013.

- 1670** Settlement of English immigrants at Charles Town on Albemarle Point (west side of Ashley River)
- 1680** Charles Town is officially relocated to the present peninsula (then called Oyster Point)
- 1685** Approximate date of construction of an earthen wall along the east side of East Bay Street to protect the town against storm tides and invading enemies
- 1687** Earliest known complaints about the waterfront on the immediate east side of East Bay Street being undermined by tidal forces
- 1696** Beginning of construction of a brick "wharf wall" along the east side of East Bay Street measuring approximately 2,567 feet

Unaddressed, sea level rise poses a threat to current planning, existing development, and ecological systems. Additional concerns include greater storm surges, loss of infrastructure, destruction of wetlands, and increased risks for public health and safety.

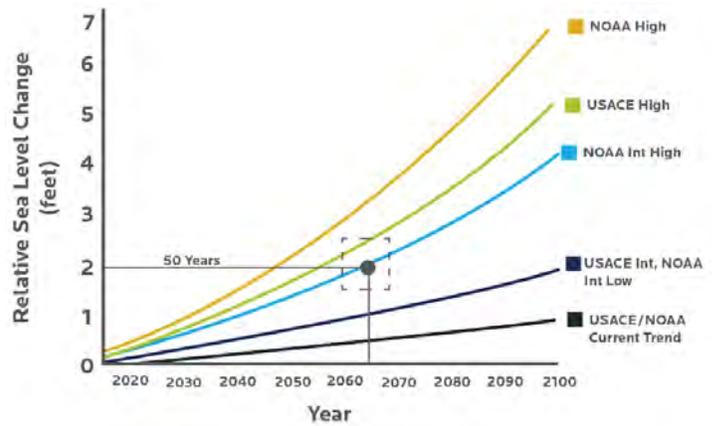
Planning for 50 years from now, Charleston will use a range of 1.5 feet to 2.5 feet above sea level based on today’s best science. A 1.5 foot increase will be used for short-term, less vulnerable investment, such as a parking lot. A 2.5 foot increase will be used for more critical longer term investments, such as emergency routes and public buildings. These assumptions will be reviewed as more expert science based projections become available. Adjustments to the projected numbers may be made to incorporate the newer data.

What would be the impact from an extreme weather event similar to the one that occurred in October

A Record Setting Test

In October of 2015, the City of Charleston was drenched with record setting rain and tides. The month of October began with Hurricane Joaquin, a massive Category 4 hurricane with 135-knot winds, 500 miles off the coast. While Joaquin did not make landfall, it served as a catalyst, pulling moist tropical air into the City. On October 3, Charleston International Airport recorded 11.50 inches in 24 hours, which was the most ever recorded in the site’s 77-year period of collecting weather data. This rain event stalled over Charleston and produced more than 20 inches of rain over 3 days.

The record setting storm produced flooding in many low-lying areas throughout the City and region.

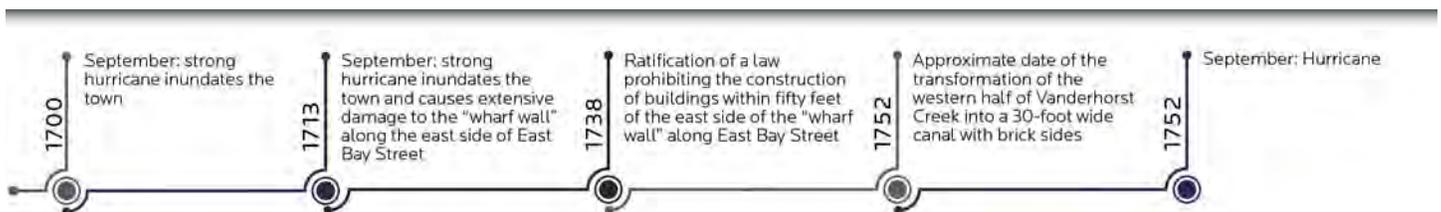


Planning parameters for 50-year outlook, based on sea level change projections by U.S. Army Corps of Engineers and NOAA (Charleston, SC).

2015, if it occurred 25 years from now with an increased sea level? How should the City plan ahead?

FAILURE TO ACT IS NOT AN OPTION.

There was limited access to the Charleston peninsula for most of October 3-4, 2015. The Charleston City Council passed an emergency ordinance reinforcing travel restrictions during this period. Charleston police closed dozens of flooded streets in the city. At the end of the month, record-setting floods occurred again because of a peak astronomical tide during a supermoon. This caused a high tide that peaked at 8.69 feet, which was over 1.5 feet higher than the predicted level. This was the highest crest on record in Charleston since September 21, 1989, when Hurricane Hugo made landfall with its storm surge causing a crest of 12.56 feet.



Record Setting Floods

4 of the 5 highest rainfall totals on record for the entire state of SC were recorded around Charleston. A few include:

- 23.76** inches near Clark Sound on James Island in Charleston (Oct. 1-5, 2015)
- 22.04** inches near the Whitehouse Plantation area of James island in Charleston (Oct. 2-6, 2015)
- 21.57** inches near Wappoo Creek in Charleston (Oct. 2-6, 2015).



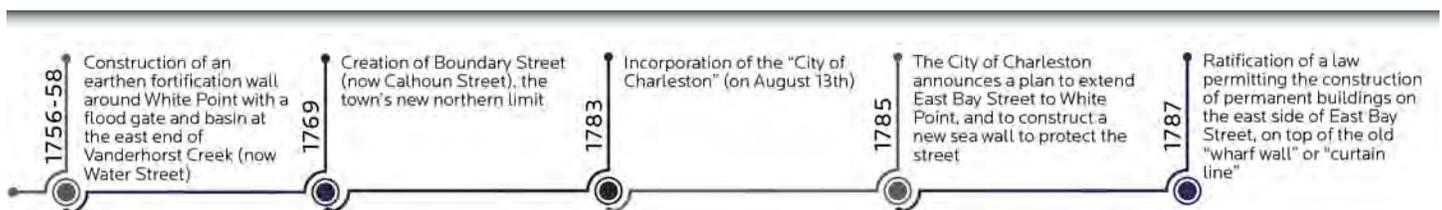
Getting Ready for a Rising Sea

Now is the time for the City to solidify the vision and strategy to support specific improvements in infrastructure and processes that will be required to prepare for higher tides. Actions and investments to address sea level rise now will avoid or reduce expected future costs and provide immediate community benefits through reduced risks to life and property, lower flood insurance premiums and lessened interruption of business during and after a flood event.

Since 2013, City of Charleston staff, representing various areas of expertise, including engineering, planning, sustainability, emergency management and information technology, began the process of analyzing the potential for sea level rise in the

Charleston region and its impact. The staff started by exploring efforts used by other jurisdictions, meeting with other groups concerned about sea level rise in our region and collaborating with City department directors.

The purpose of this document is to inform and provide an overall strategy and guiding framework to protect lives and property, maintain a thriving economy, and improve quality of life by making the City more resilient to sea level rise and recurrent flooding. It is anticipated this strategy will be regularly updated to reflect externalities such as scientific interpretations, extraordinary events such as the October 2015 flood, current City policy, and priorities and analysis that leads to new initiatives.





Foundation

Planning for sea level rise is challenging. Climate science can be technical and complex with projected rates of sea level rise obscured by the language and science of different future climate scenarios. Diverse information is available about sea level rise, its impacts, and potential responses.

As the City of Charleston began the process of analyzing the potential for sea level rise and its impacts in the Charleston region, a resilience framework emerged to help the City meet the

challenge of sea level rise. While there are numerous definitions of resilience, central to all these definitions is one idea: resilience is the capacity of a system to maintain its core purpose and integrity in the face of dramatically changed circumstances. Resilience offers a framework through which investments are coordinated and planning is integrated across agencies, communities and the region. The City of Charleston has identified three essential aspects of resilience:



REINVEST

Resilience extends beyond the ability to recover from an event and return to the previous state, but to one that is more resilient to the threat of future events. Reinvestment actions will provide long-term improvements to public health, safety and quality of life through additional investment in infrastructure and physical modifications.



RESPOND

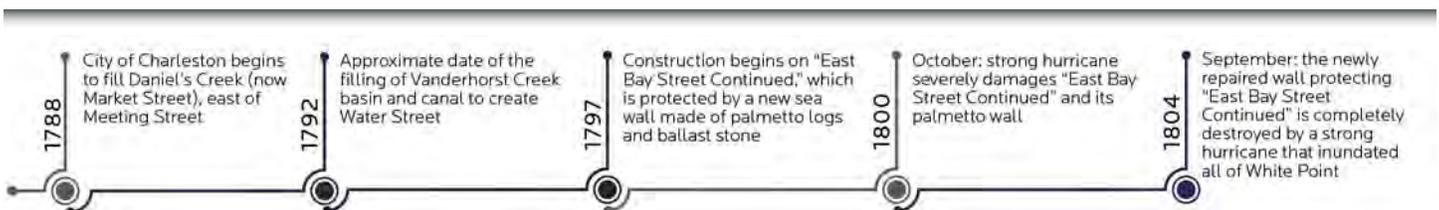
Part of resilience is knowing one can't plan for everything that may occur, but being able to deal with and adapt to unexpected situations. These types of actions will improve our response to, communication during, and management of flooding and related events to minimize service disruptions and to ensure public safety and quality of life.



READY

Resilience is not only about reacting to events but how one can be ready ahead of time. Readiness type actions will enable prevention and preparedness through continued planning, monitoring and identification of changing vulnerabilities and risks.

The City of Charleston is committed to taking action to address each of these aspects of resilience. Featured here are some specific actions the City has taken that serve as the foundation for the Sea Level Rise Strategy.





Reinvest

The City is committed to investigation and adoption of best practices to direct investment in our community that changes the way we address sea level rise and recurrent flooding.

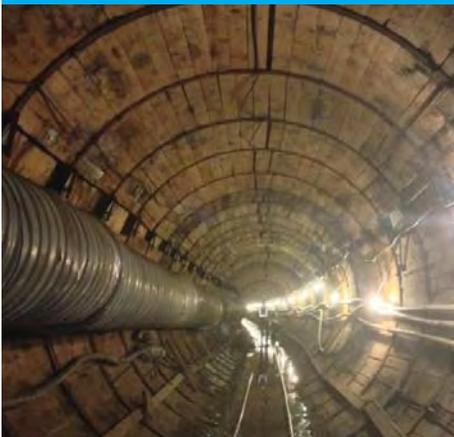
The City recognized that a comprehensive analysis of the challenge was needed and developed a plan for drainage improvements. In 1984, the City adopted its first comprehensive drainage master plan. The plan led to the creation of revenue streams to help fund major drainage projects. Several have been completed and others are in phases of completion or design. **To date, the City has spent or has set aside funding to complete ongoing projects in the amount of approximately \$235 million.**

In addition to taking action on drainage projects, the City of Charleston participates in the National

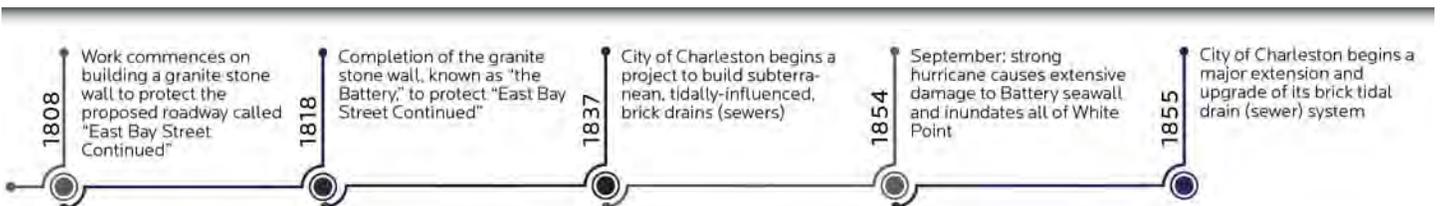
Flood Insurance Program (NFIP). As a result, the City enforces regulations and building codes that require flood resistant construction and requirements for stormwater quality and quantity control. Most recently the City has adopted a new ordinance which requires new structures and those classified as substantial improvements to be built an additional one foot above the designated base flood elevation.

The City also participates in the NFIP Community Rating System (CRS). The CRS program recognizes various practices designed to make the community more flood resistant such as reducing flood damage to insurable structures. Such recognitions result in the lowering of insurance costs for citizens and businesses.

Market Street Tunnel



Undersized brick arches were replaced with 10-foot diameter tunnels beneath the City Market.

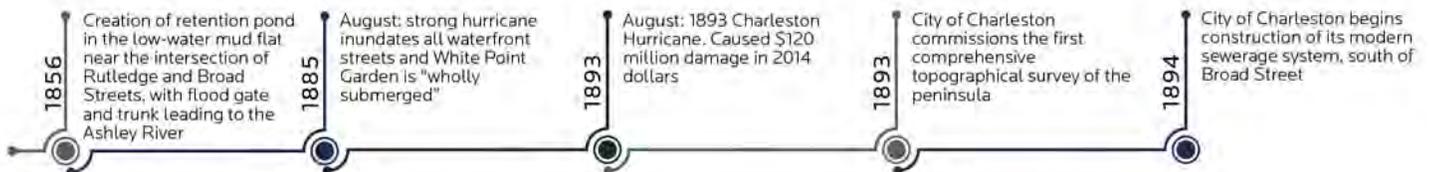


Spring/Fishburne - Drainage Improvements Project

The Spring/Fishburne Drainage Improvement Project is the largest single drainage improvement project undertaken to date. The 500-acre drainage basin is essentially bounded by Congress Street to the north, King Street to the east, Bee Street to the south and the Ashley River to the west. Construction of this five-phase project began in 2011. The cost, ability to maintain traffic flow and diverse types of construction require the project to be completed in steps. All five phases will be completed by 2020 for a total investment of approximately \$154 million.

- The first phase included large pipes and improved surface collection and was completed in 2012 for \$13 million.
- The second phase of surface drainage improvements including 8 drop shafts is currently under construction at a cost of \$25 million.
- In the third phase, starting in February 2016, a system of 12-foot-diameter tunnels will be constructed about 140 feet beneath the Crosstown. Tunnels will extend from Coming Street to the Ashley River and beneath President Street from Fishburne Street to Cannon Street. A small segment will connect the flood-prone section of Bee Street to this new drainage system. The estimated total cost is about \$50 million.
- The final two phases include a pumping station and discharge piping to the Ashley River at a cost of \$66 million.

Major Drainage Improvement Projects





Respond

The greater Charleston area has experienced drainage and flooding problems since its founding. Recent flooding of coastal areas by seasonal high tides produced water levels that were previously associated with hurricanes and other extreme weather. The City is investing in people, processes and tools to improve our response to these tidal conditions, anticipating that as sea level rises, tidal flooding will become more frequent.

Coordinating this information with the region's health care providers, educational facilities and businesses is an additional and critical connection. Some multi-disciplinary response actions already taken include:

- Emergency Management Division leads the effort to coordinate with Charleston Police and Fire Departments to ensure safe access to the City and
- Public safety and GIS staff coordinate to share real time information regarding road closures and

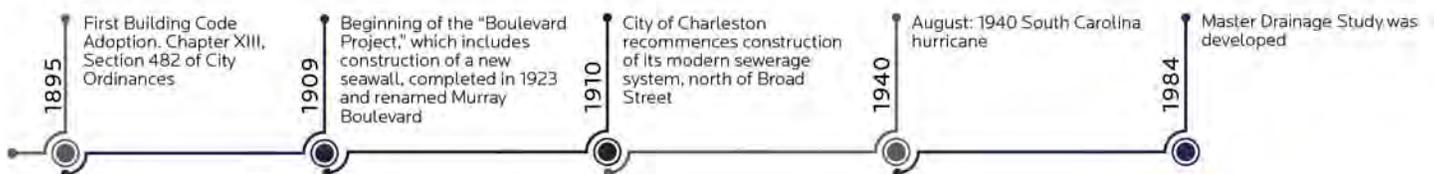
openings to support both safety and a prosperous economy.

The economic impact from flooding is real, and can be difficult to quantify. **As part of the US 17 Septima Clark Parkway grant application it was estimated that each major flooding event cost the community \$12.4 million in 2009 dollars.** Over a 50-year period the resultant gross damage and lost wages totals over \$1.53 billion. Factors considered in this projection include:

- Long-term job creation
- Restricted access to commercial properties and medical centers
- Impacted tourism and business activity, lost productivity spent navigating the flooded areas and
- Extensive police resources focused on damaged and "rescued" vehicles.



City of Charleston's Municipal Emergency Operations Center enables coordinated response.





Ready

The City of Charleston recognizes the value of coordination and collaboration with groups external to Charleston as a cornerstone component of being ready. This allows the City to explore a range of possibilities planned for and implemented by other cities for comparison, contrast and consideration.

Currently, the City of Charleston is working with a regional interagency, multidisciplinary group composed of public and private sector stakeholder organizations within the Charleston 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 environmental hazards. This group, Charleston Resilience Network, will work to foster a unified strategy and provide a forum to share information, educate stakeholders and enhance long-term planning decisions that result in the implementation of effective hazard mitigation strategies and recovery efforts. Coastal hazards and sea level rise are two topics that will be covered by the group.

The City believes in collaboration to solve shared challenges, including these efforts extending beyond the City limits:

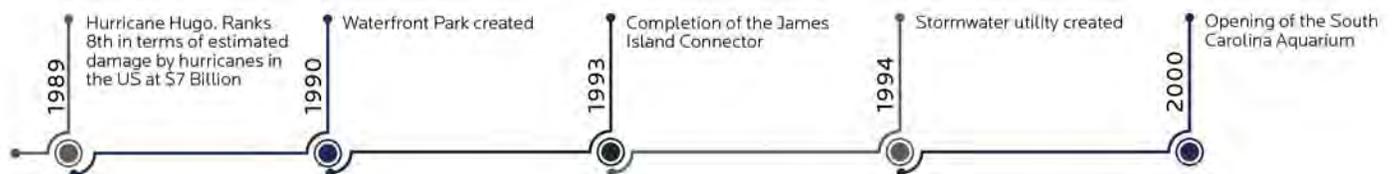
- Worked with others in the Southeastern US to create a Resilience Handbook and
- Participated in regional Department of Homeland Security exercise focusing on resiliency of infrastructure from climate related events and

- Participating in National Academies of Sciences Resilient America Roundtable's Pilot Plan for resilience.

Comprehensive plans can be a useful tool in being ready since they are a vehicle to incorporate recommendations for making land-use decisions associated with sea level rise. The Century V Plan shows the City's commitment to developing and redeveloping a city which is knit together in ways to create alternative transportation options with easy access to homes and jobs and an urban growth boundary which minimizes sprawl. The City will be updating its Comprehensive Plan in 2016 and will consider sea level rise's impact on long range plans.

There is a close and frequent collaboration between the National Weather Service and the City of Charleston's Emergency Management Division.

The Geographic Information Systems (GIS) Division has been engaged with the FEMA Hazus program since 2011. Hazus-MH is a nationally applicable standardized methodology that estimates potential losses from earthquakes, hurricane winds and floods. Output from Hazus provides a solid basis on which to develop policies and plans related to emergency preparedness, response, and recovery. The City currently has one certified Hazus Practitioner on staff and another currently working towards certification.





Meeting the Challenge

How will the City of Charleston continue to adapt to the challenges of living by a rising sea? The City will need to continue to choose from a wide variety of potential resilience initiatives; each with its own costs, benefits, and implementation challenges.

Resilience offers a framework through which investments can be coordinated and planning integrated across agencies, communities and the region. The City of Charleston has identified three essential aspects of resilience: Reinvest, Respond, Ready. The City of Charleston is committed to taking action to address each of these aspects of resilience in the future.

This section contains a series of initiatives that are designed to strengthen the City of Charleston’s resilience to sea level rise. These initiatives were developed by a multi-disciplinary task force of staff representing the City’s Public Service, Planning, Preservation and Sustainability, Emergency Management and Geographic Information System (GIS) departments. As part of the development, this

team reviewed other communities that are taking steps to meet this challenge, such as New York, Norfolk and Copenhagen.

These initiatives involve a blend of traditional structural approaches, such as incorporating more pumping, raising streets and sea walls, along with other initiatives such as:

- Purchasing repetitive loss properties and using these lowlands to absorb future waterways.
- Developing clear and immediate communication initiatives to enhance public safety.
- Recognizing our seas do not respect civic boundaries and our work will require and benefit from regional collaboration.

This section is not intended to be a complete analysis of all potential responses to sea level rise. In deciding how to implement or prioritize different initiatives the City, along with community stakeholders, will need to evaluate the tradeoffs between the strategies and begin to implement those chosen.

Goals and Initiatives

GOALS: Put in place systems that prevent or reduce the impacts of SLR and significant rainfall
 Ensure public safety given flooding potential
 Ensure community and economic viability and recovery given flooding potential

INITIATIVES

Evaluate impact of SLR and prioritize improvements (include compounding impacts such as rain bombs and hurricanes)

- Maintain a relationship with the scientific community, Federal and state agencies and local governments for the free and timely exchange of information related to SLR and its impacts to the City and our region
- Maintain an active leadership role in the newly formed Charleston Resilience Network (CRN) to encourage a regional response to SLR
- Request USACOE study for a comprehensive flood protection study of Charleston Harbor
- Work with the USACOE and FEMA to collaborate more closely on flood protection project standards
- For public land, consider City lands lying in SLR areas for ability to absorb or deflect SLR
- Reevaluate science for appropriate planning levels at least every 5 years

Establish more appropriate standards to protect public and private investments

- Advocate and adopt building codes that support construction which is more resilient to SLR
- Seek out, advocate and adopt stormwater design standards that support stormwater management facilities which take into account and will be resilient to SLR
- Consider additional freeboard for structures that are long term investments or house critical facilities (1.5 to 2.5 ft.)

REINVEST

Establish more appropriate standards to protect public and private investments (continued)

- Consider greater than 2.5 ft SLR for developments with longevities of greater than 50 years
- Seek out and advocate for new road designs that will be resilient to SLR
- Ensure all critical facilities, public and private, have an access plan that accounts for SLR

Establish programs to address specific solutions for repetitive flooding areas

Mitigate Repetitive Flooding Property

- Identify projects that may qualify for assistance from the USACOE, FEMA, HUD, SCDOT and State of SC and seek out other funding sources
- Work with the state to identify eligible communities and properties for buyout of vulnerable properties as well as flood proofing and retrofit projects
- Continue participation in FEMA's CRS and implement new programs that reduce flood risk to the community

Prioritize Capital Projects

- Review flood control projects priority list annually and update the capital project plan to reflect the current assessment of SLR impacts and funding requirements.
- Deliver flood control projects and where SLR is a factor incorporate a strategy for the project to address SLR
- Identify and raise the elevation of primary streets already impacted by flooding such as Lockwood Blvd., Main Road, Central Park Road, Morrison Drive and Murray Blvd
- Identify and raise the elevation of primary streets expected to be impacted by SLR in the future
- Evaluate coastal edges of the City and identify roads and other areas that need to be raised to prevent wash over from rising tides
- Evaluate coastal edges of the City and identify areas where seawalls need to be extended or built to prevent overtopping by higher tides
- Install shoreline protection in areas that may be subject to erosion from rising tides
- Evaluate stormwater outfall pipes and identify locations where backflow prevention devices are needed to prevent tidal inundation
- Design floodwater retention systems to absorb, sustain and release water to meet structural needs while adding to the urban design character of the City

Improve Stormwater Drainage

- Complete Spring/Fishburne Drainage Improvement Project
- Complete Market Street Drainage Improvement Project
- Complete Forest Acres Drainage Improvement Project
- Complete Calhoun West Drainage Improvement Project
- Complete Repair and Reinforcement of Battery Seawall

Use Green Infrastructure Solutions

- Evaluate living shorelines and floating breakwaters for wave attenuation as an alternative method of shore protection for some areas
- Control the alteration of natural flood plains, stream channels and natural protective barriers, which are involved in the accomodation of flood barriers
- Evaluate strategies to fund wetland restoration and explore the feasibility of wetland mitigation banking structures
- Implement green infrastructure strategies on public property and evaluate incentives for private property

Creative Flood Resiliency Solutions

- Pilot new strategies

Protect Buildings

- Evaluate possible incentives to encourage buildings in the 100-year floodplain to undertake flood resiliency measures
- Establish a program in the design center to assist property owners in developing design solutions for reconstruction and retrofitting structures in the 100-year floodplain
- Retrofit public housing units in flood prone areas

Enhance and promote real time flood incident information access using social and traditional media to promote accessibility via car, transit and walking

- Install flood gauge devices in repetitive flood areas for quick and consistent assessments and resource deployments
- Acquire and utilize technology for awareness and management of flooded roadways
- Acquire appropriate response assets for public safety agencies to secure and manage flooded roadways
- Acquire additional and more appropriate rescue assets, equipment, personnel and training, for public safety agencies to rescue personnel from businesses, homes and vehicles
- Develop a formal City flood parking plan to prevent vehicle loss, including appropriate signage
- Incorporate the stormwater response plan to clear inlets and outlets including teams on stand-by before and during events

Engage the community to create awareness about the impact of sea level rise

Flood Awareness PR Campaign- develop and promote

- Promote Best Routes (accessibility via car, transit, bicycle and pedestrian) using social and traditional media
- Promote Parking Plan (provide safe alternatives in garages and wayfinding for private vehicles)
- Promote insurance programs: Participate in the CRS and use the framework to reduce flood insurance premiums and foster a more flood resistant community. Monitor Federal efforts to address affordability issues related to reform of the NFIP including potential impacts to non compliant and historic structures
- Promote real time alert systems for staff and citizens
- Promote FEMA tools for citizens on flood risk, safety, prevention and mitigation
- Develop web and hard copy materials and encourage citizen engagement
- Collaborate with County, State and Federal governments to coordinate on climate change projections as they relate to sea level rise
- Provide an annual report on progress of stormwater drainage plan and next priorities
- Get feedback and constantly improve

Develop tools to monitor and gauge the impact of flood events on the community

- Quantify impact to residents to report flood event impacts (ex. neighborhood flooding, increased commute time, effectiveness of City response)
- Quantify impacts to business owners and managers from flooding events (ex. engage business owners, hours closed, lost productivity)

Evaluate and assess the impact of sea level rise on public assets, City infrastructure and City operations

- Hire a Chief Resiliency Officer (grant funded) to coordinate internal efforts and enhance inter-agency communication and cooperation
- Designate a full time position for floodplain management to include managing CRS activities, education, coordinating with counties and working with citizens on mitigation projects
- Evaluate streets for accessibility for various levels of service given SLR to ensure promoting best routes
- Identify vulnerable natural resources especially wetlands, cultural, and historic resources given SLR
- Establish road design standards to meet needs caused by SLR
- Assess storm drain cleaning plans before and during flood events to ensure optimal function
- Evaluate the City's current green infrastructure (connectivity/corridors) for flooding and SLR
- Collaborate with the Charleston Resilience Network for latest information, grants, regional perspective etc.
- Operationalize a committee to advise on future SLR initiatives

Evaluate and assess the impact of sea level rise on future development

- Update the City's Zoning Code to promote development that negates or minimizes effects of SLR
- Incentivize Low Impact Development BMPs
- Set revised maximum % of impervious surface
- Encourage green/open space connectivity to marshes and creeks
- Evaluate development policies for low lying areas
- Encourage best practices for hard and landscape features that absorb, sustain, cleanse and release water.
- Study and implement zoning changes to encourage retrofits of existing buildings and construction of new resilient buildings in the 100-year floodplain
- Assess the City's stormwater plan for future effectiveness and prioritize and evaluate individual stormwater drainage basins particularly those that are prime for future development
- Update the City's Comprehensive Plan integrating the impacts of SLR in the range of 1.5 to 2.5 feet
- Update the City's Master Road Plan integrating the impacts of SLR in the range of 1.5 to 2.5 feet
- Update the City's Consolidated Plan integrating the impacts of SLR in the range of 1.5 to 2.5 feet

Engage with local, regional and Federal partners to coordinate activities to ensure minimal SLR impact

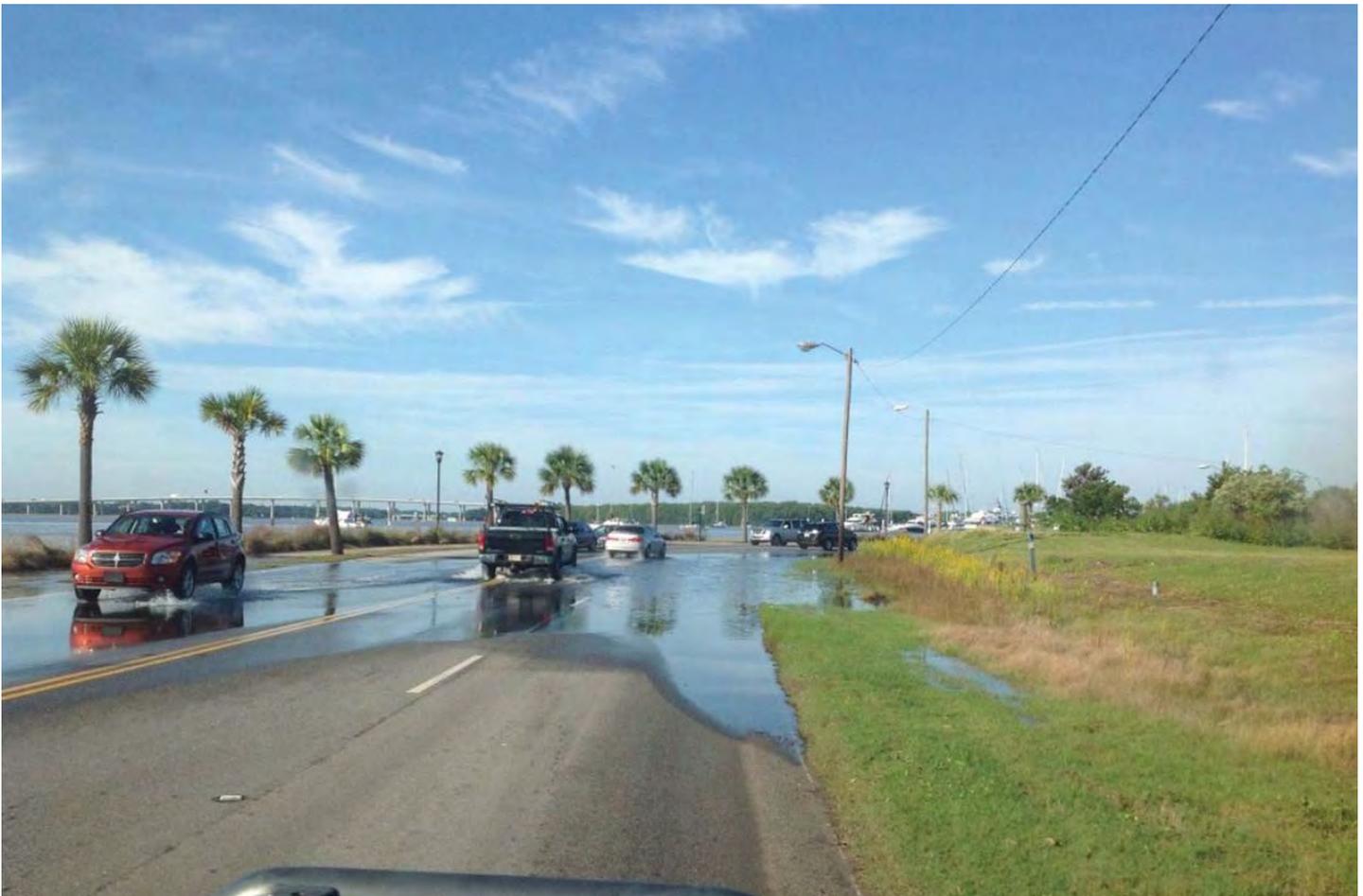
- Work with utilities and regulators to ensure there are no gaps in services: utilities, schools, critical care, emergency facilities, hazardous materials from future flooding
- Enhance partnerships in the County Hazards Mitigation Plan
- Coordinate with neighboring communities on development activities and long range plans related to SLR
- Work with FEMA to evaluate flood zones and adopt revised information

These initiatives achieve several primary goals: to put in place systems that prevent or reduce the impacts of SLR and significant rainfall, to ensure public safety given potential flooding and to ensure community and economic recovery in the event of a flood. Many of the initiatives are underway and will be accomplished in the next two years. Others will need to be evaluated and prioritized over the coming years and funded over the coming decades.

What happens next? In many ways, the hard work begins after this report is done. The City of Charleston is focused on ensuring the initiatives become reality. Only a sustained implementation effort can ensure the overall strategy and initiatives outlined are translated into specific actions that achieve the goal

of increasing the resilience of the City of Charleston to sea level rise. It will not be free, but the payoff is far greater than the costs of inaction.

Now is the time to undertake these initiatives and to consider adopting a plan with strategic, measurable and achievable steps. Why is now the time? Clearly the citywide flooding that occurred in October is evidence of widespread impacts to people and property that may be repeated, possibly more frequently, as the sea level continues to rise over time. Another critical factor is the opportunity presented through Charleston's economic growth -- the sooner new guidelines are in place, the sooner the improvements can be incorporated into the City to benefit current and future generations.



King Tide on a Sunny Day. Credit: S.C. DHEC/MyCoast



Moving Forward Together

The City of Charleston recognizes the challenges of rising sea levels and we are addressing them head-on. We are all in this together. The City of Charleston is ready to lead, but we need everyone's help.

We recognize the more community members and organizations are engaged in participating in planning for the future, the more active they will be in working to implement that vision.

Together we are stronger. Connecting our neighbors will build stronger neighborhoods that are more resilient and deliver a higher quality of life for all residents. The City of Charleston is committed to continually improving methods for citizens to connect with each other and their government. This will ensure we continue to thrive.

Social Media Updates



City of Charleston, SC Government
October 27 at 5:09pm

Flooding from the morning's historic tide levels have now receded and most downtown roads are open. Some side streets may still have minor flooding so use caution as you travel.

The next high tide will be at 8:39 p.m. tonight. The tide is not expected to be as high as the morning. However, potential rain may increase the possibility of flooding.

Wednesday morning's high tide is at 9:03 a.m., and is predicted to be another very high tide. Residents may want to consider coming to work ahead of the high tide.

Stay alert to Twitter and local news reports for information during the periods of high tide.

The City of Charleston is also allowing residents who have any concerns about their neighborhood streets flooding tonight or tomorrow morning, potentially damaging cars parked on the street to park free in any CITY OWNED parking garage. The resident can pull a parking card on entering any city garage. Upon leaving, the resident can submit the card and tell the attendant that they were in for high tides and rain in their residential area. This is effective now through noon on Thursday, October 29. Cars must be out by then for the free parking.

A list of City owned parking garages can be found at www.charleston-sc.gov/index.aspx?nid=1025



Charleston P.D.
@CharInSPT

Follow

As of 3:45, here are the current road closures and openings in the City of Charleston.

gis.charleston-sc.gov/road-closures

Closures:

Cherry St from Bee St to Cannon St
Ashley Ave from Bennett St to Calhoun St
Wentworth St at Barre St
Ashley Ave from Tradd St to Broad St
America St from Lee St to Cooper St
Bennett St from Rutledge Ave to Ashley Ave
Signal Point Rd at Folly Rd
Cool Blow St at N Nassau St
Ashley Ave at Fishburne St
Bennett St from Gadsden St to Barre St

Opened:

Cannon St from Willcott Ct to President St
Beaufain St at Pitt St
Keats Rd from W Oak Forest Dr to Shelley Rd
Johnathan Lucas St from Doughty St to Sabin St
William Ackerman Ln at Windermere Blvd

Our Commitment

- **Developing a network of resilient partners.** While the City of Charleston has and will continue to work with regional municipalities, the County, state and Federal agencies, there are many opportunities to engage with other community organizations. Civic leagues, the faith-based community, and local media outlets represent opportunities for dialogue and mutual assistance in building a resilient future.
- **Improving access to information.** The City of Charleston is engaged with our internal media as well as local media to spread the word, such as sharing flood updates. However, there is always a

need to better communicate and inform citizens about direct local impacts of sea level rise. The City of Charleston is planning to create a website and/or mobile app that will allow people to access information, help with individual disaster planning and to alert citizens to the risks of flooding.

- **Develop opportunities for citizens to participate in the planning process.** This may include developing one or more advisory committees. The use of committees to bring citizens into the planning process will encourage citizen participation and create more awareness of the issues of sea level rise.

