

# MEMORANDUM



**TO:** The Honorable Mayor John Tecklenburg, Mark Wilbert, Amy Wharton, Chief Curia, Chief Reynolds, Keith Benjamin, Matt Fountain, Robert Hauck, Jason Kronsberg, Jacob Lindsey, Geona Shaw-Johnson

**FROM:** Tracy McKee, Chief Innovation Officer; Susan Poteat, Director of Process & Service Improvement

**CC:** Naomi Broughton, Dennis Dowd, Daniel Flessas, Matt Frohlich, Mandi Herring, Andrea Jones, Rick Jerue, Stephen Julka, Jason Krusen, Katie McKain, Christopher Morgan, Shannon Scaff, Chip Searson, Robbie Sommerville

**SUBJECT: DRAFT February 2020 FloodStat Pre-Meeting Report**

February 5, 2020

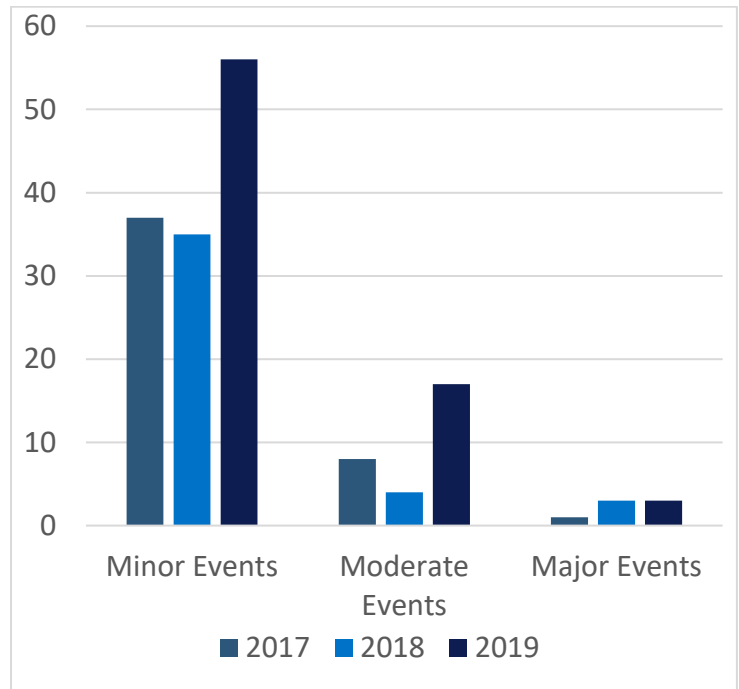
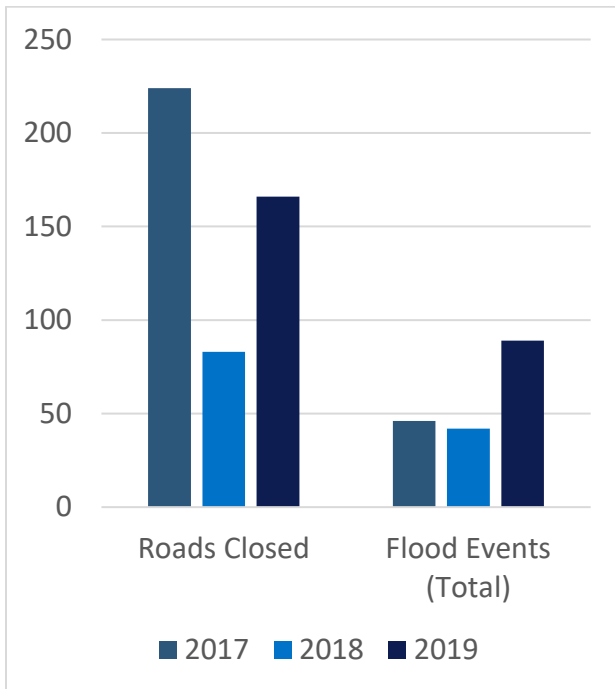
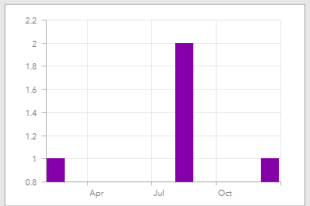
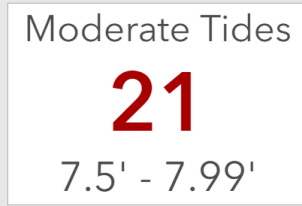
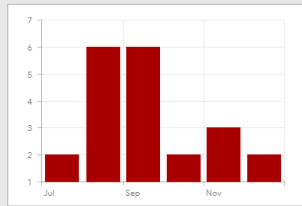
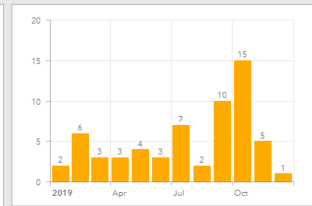
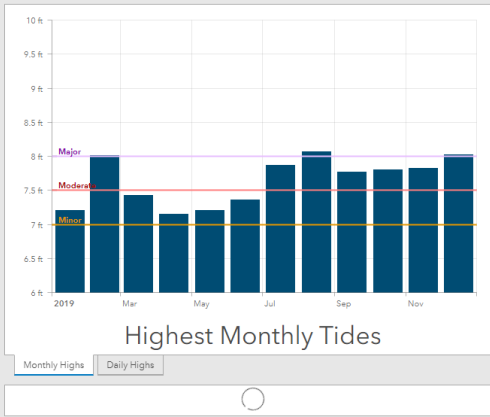
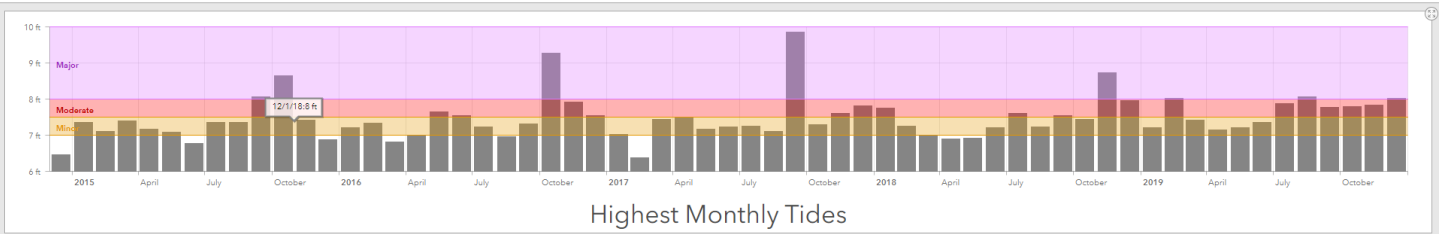
This is a pre-meeting report for the FloodStat meeting scheduled for Thursday, February 6, 2020 at 9:00AM in the Public Meeting Room at 2 George Street. The overall objective of the FloodStat program is to ***Increase the City's Resilience to Flooding, SLR, and Storm Surge.***

## Project Background

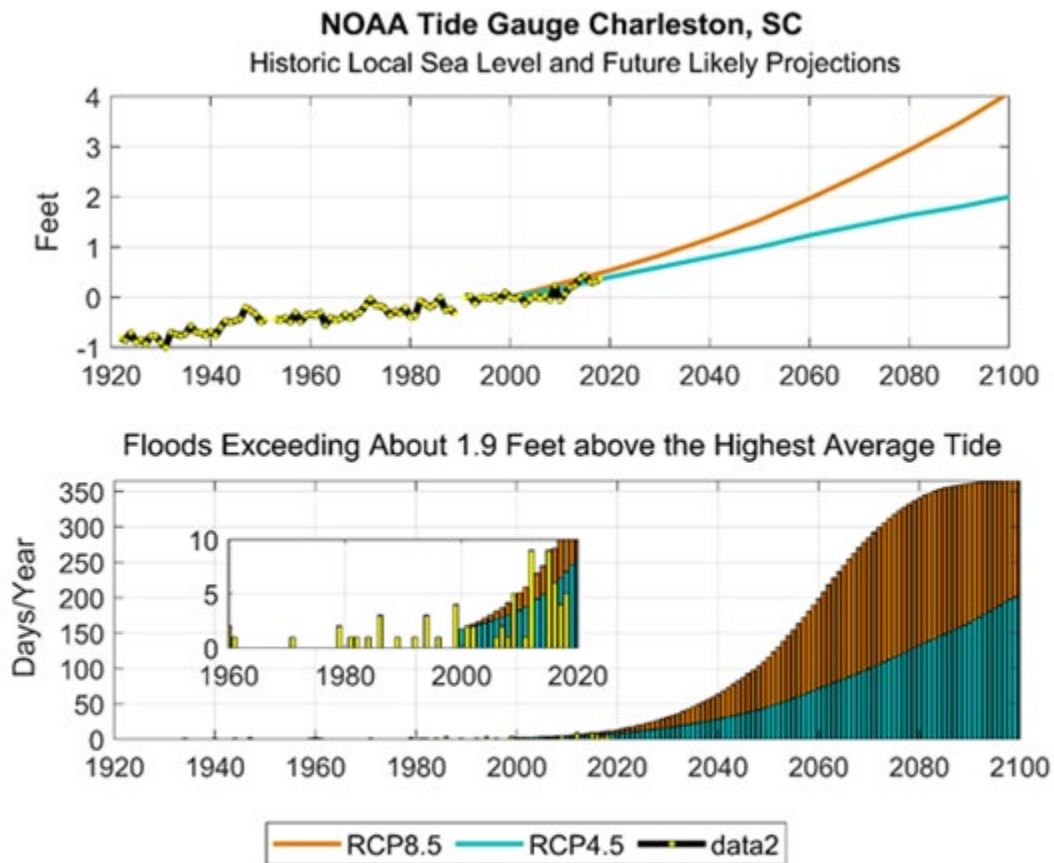
To bring all stakeholders up to speed, we will kick off with the background of the FloodStat program, our KPIs and some basic flood stats from NOAA and our GIS team.

This program is part of a larger PriorityStat initiative intended to foster collaboration and increase accountability around the Mayor's highest priorities. FloodStat is the first to go live. HousingStat and MobilityStat are currently in development.

While we encourage the public to attend these meetings, we are still working on the most effective means for gathering feedback and engaging with stakeholders.



The City recently received updated data from our NOAA partners that consider a comprehensive look at the historic data to include 2019. The key message from the incorporation of recent data is that almost half of the total amount of SLR in the last 100 years has occurred in the last 20 years.



## FloodStat Key Performance Indicators (KPI)

**KPI 1: No preventable loss of life or injuries during a flood event.**



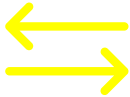
**KPI 2: Reduce flood damage to private property.**

**KPI 3: Reduce the economic impact of SLR and flooding events.**

**KPI 4: Reduce the flood risk to the City.**

**KPI 5: Reduce the flood risk to the City through Community Activism.**

## Staff Reports

Floodplain Manager				
Metric	KPI	Trend	Reporting Frequency	Data Source(s)
Improve the City's CRS Rating to #4 by 2023.	2		Quarterly	CRS point audit
Actively reduce the number of repetitive loss properties.	2		Quarterly	NFIP
Annually increase the percentage of properties in the City that carry flood insurance.	5		Quarterly	NFIP

### Improve the City's CRS Rating to #4 by 2023

The City is currently a Class 6 community and will have its CRS cycle visit in 2020. We are expecting to reach a Class 5 rating, a premium discount of 25% for flood insurance policy holders in the Special Flood Hazard Area. The City will likely have its next cycle visit in 2023, at which point we should reach a Class 4 rating.

<b>Table 110-1. CRS classes, credit points, and premium discounts.</b>			
<b>CRS Class</b>	<b>Credit Points (cT)</b>	<b>Premium Reduction</b>	
		<b>In SFHA</b>	<b>Outside SFHA</b>
1	4,500+	45%	10%
2	4,000–4,499	40%	10%
3	3,500–3,999	35%	10%
4	3,000–3,499	30%	10%
5	2,500–2,999	25%	10%
6	2,000–2,499	20%	10%
7	1,500–1,999	15%	5%
8	1,000–1,499	10%	5%
9	500–999	5%	5%
10	0–499	0	0

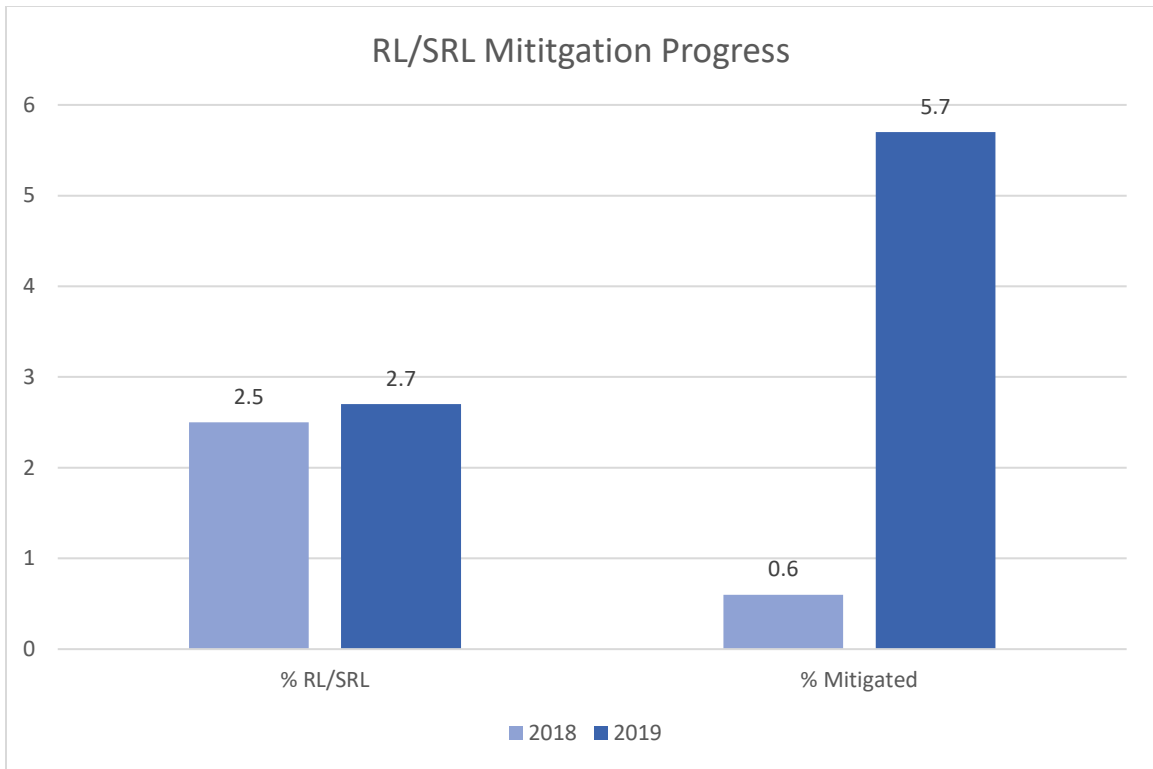
*SFHA: Zones A, AE, A1–A30, V, V1–V30, AO, and AH*  
*Outside the SFHA: Zones X, B, C, A99, AR, and D*

Floodplain Management has completed a simple audit of the points the CRS points the City is currently receiving, the points available in each element, and the actions required to capture the additional points. This audit provides a foundation for further collaboration to complete CRS projects and increase CRS points. Examples from the points audit will be presented at the upcoming FloodStat meeting.

**Actively reduce the number of repetitive loss properties**

The City currently has the highest number and highest ratio of Repetitive Loss (RL) and Severe Repetitive Loss (SRL) properties in the state. While properties may be removed from those lists over time if there are no additional flooding events, the City can also take active steps to mitigate these properties and bring them into compliance with current flood design standards. The most common mitigation projects are demolition and elevation.

As part of the annual CRS recertification process, the City must document the total number of buildings in the SFHA, the total number of RL and SRL properties, and the number of RL and SRL properties that have been mitigated in the last year. Below are the ratios of RL and SRL properties to total SFHA properties as well as the percentages of RL and SRL properties mitigated and removed from the RL and SRL lists, beginning in 2018 when the Floodplain Manager position was created.





Floodplain Management will begin to track these numbers and ratios quarterly.

**Annually increase the percentage of properties in the City that carry flood insurance**

Most property owners in the SFHA are required to carry flood insurance. It is also important for the properties not required to carry insurance and the properties outside of the SFHA to be insured against flood damage. There are currently ----- NFIP policies in force in the City, which represents ----- of total properties in the City.

FEMA has created an Insurance Moonshot program that aims to double the number of properties with flood insurance from about 4 million to about 8 million by 2022. To support this goal, a package of materials for communities to use locally to encourage the purchase of flood insurance has been created. These materials include model press releases and op-eds, sample social media posts, and fact sheets. With adequate staff capacity, the City can begin to publicize these key messages and increase the percentage of insured properties in Charleston.



Parks				
Metric	KPI	Trend	Reporting Frequency	Data Source(s)
100% of new CP are prioritized through accepted, standardized stormwater and sustainability criteria.	4		Quarterly	Vulnerability Assessment, Comprehensive Plan
Reduce the square footage of existing person and equipment occupied that is vulnerable to flooding and SLR.	4		Annual	

All recently constructed buildings are to code and only two existing structures are not compliant with current FEMA/building codes (see table below). Fire Station #8 is a Hazard Mitigation Grant currently underfunded by SCEMD. The grant includes and requires flood proofing the building.

Location	Name	Purpose	New or Existing	Building Square Footage	Flood Zone	First Floor Elevation
5 Cannon Street	Fire Station #6	Public Safety	Existing	4,785	X	12.51
370 Huger Street	Fire Station #8	Public Safety	Existing	3,950	AE13	8.9
1 Cooper Street	St Julian Devine Community Center	Recreation/Cultural	Existing	4,785	X	14.92
1835 Savannah Highway	Fire Station #11	Public Safety	Recent	14500	X	19.5
3005 Memorial Drive	Fire Station #14	Public Safety	Recent	10,011	AE11	14.0
1975 Bees Ferry Road	CPD Forensic Operations	Public Safety	Recent	21,332	X	18.25
2001 Henry Tecklenburg Drive	Waring Sr. Center	Recreation/Cultural	Recent	4,785	X	17.0

1701 Bender Street	Carr-Richardson Park	Recreation/Cultural	Recent	1,658	AE13/AE14	15.0
160 Fairbanks Drive	Daniel Island Recreation Center	Recreation/Cultural	Recent	21,767		
14 Wharfside Street	Int. African American Museum	Recreation/Cultural	Recent	38,709	VE16/VE17	26.33

*DISCUSSION: Is following current code enough to protect our public investments for 50 years or longer? Do we need to consider stricter requirements for our public facilities, especially in light of the most recent reports from NOAA?*

Planning				
Metric	KPI	Trend	Reporting Frequency	Data Source(s)
Decrease the number of high-risk acres that can be developed.	2		Quarterly	Vulnerability Assessment, Comprehensive Plan
Increase the % of historic properties in the BAR district that apply for, receive approval and elevate.	2	 29 to 35 approved	Quarterly	Energov

The Board of Architectural Review continues to receive submittals for the elevation of houses across the City. The division predicts the trend will only increase in the coming years.

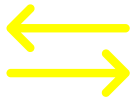
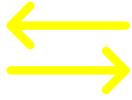
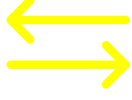
The BAR staff have received a total of 45 applications for elevation, and 35 of those submittals have received final approval. As of today, there are ten houses in the process of BAR approval. These applicants are either navigating pre-construction meetings, in the process of developing conceptual design, or have progressed to final review.



To date, four houses have successfully been elevated and have received a final Certificate of Occupancy, meeting all the regulations set forth by the City Ordinance. Nine more buildings are awaiting their certificates. Seventeen are currently in various stages of construction.

The BAR staff continues to prioritize these reviews to ensure the security and preservation of Charleston’s vulnerable architecture.

*Discussion: Do we have an estimate of the number of historic structures that are vulnerable to SLR and not to current FEMA/building code standards so we can estimate percentages? What is the freeboard height we are currently requiring and are we doing enough to account for SLR estimates? For the first metric, would it be better to consider something like, “decrease the number of properties that are approved for building in areas that are below xxx elevation and/or have challenges with ingress and egress due to elevations of roads”.*

Sustainability				
Metric	KPI	Trend	Reporting Frequency	Data Source(s)
Increase the number of storm drains adopted in the City.	5	 160 (baseline)	Quarterly	Storm drain adoption database
Reduce citywide carbon emissions 80% by 2050	5	 2.17 mm CO <sub>2</sub> e (baseline)	Annually	Greenhouse Gas Audits
Reduce municipal carbon emissions 80% by 2050	5	 38,046 mt CO <sub>2</sub> e (baseline)		Greenhouse Gas Audits

Increase the number of businesses and homeowners that participate in voluntary stormwater detention programs.	5		Quarterly	Rainproof Pilot
Increase the number of gallons of stormwater diverted from the central stormwater system through voluntary detention efforts.	5		Quarterly	Rainproof Pilot

**Increase the number of storm drains adopted in the City.**

Of the 9,068 city storm drains mapped and showcased in the Adopt-a-Drain Program, **160 drains** have been adopted as of 1/31/20. There is a lot of opportunity to perform outreach and get more drains adopted.

*Discussion:*

- *Including SCDOT owned drains or other privately-owned drains in the program to open the program up to more participation*
- *The best way to utilize data from drain field inspection reports*
- *Suggested approaches to reach more people*

**Reduce citywide carbon emissions 80% by 2050**

Citywide Emissions: Captures emissions from buildings, transportation, and waste in City limits. The baseline of 2.17 mmt CO<sub>2</sub>e (million metric tons of CO<sub>2</sub>e) was established in 2002 and our goal is to decrease to 0.48 mmt CO<sub>2</sub>e by 2050.

2018 greenhouse gas emissions data is currently being requested and collected. A new Climate Action Plan will be created based off the data and inspiration from the 2010 Charleston Green Plan which could alter this goal.

*Discussion:*

- *2018 greenhouse gas emissions data is currently being requested and collected.*

**Reduce municipal carbon emissions 80% by 2050**

Municipal Emissions: A subset of citywide emissions, this audit specifically captures emissions from City buildings, streetlights, City fleet, and City employee commute.

Our government goal is the same, 80% reduction by 2050, and our municipal baseline of 38,046 mt CO<sub>2</sub>e (metric tons of CO<sub>2</sub>e) emissions was also established in 2002, and our goal is to decrease emissions to 7,609 mt CO<sub>2</sub>e by 2050.

*Discussion:*

- *2018 greenhouse gas emissions data is currently being requested and collected.*
- *Collaborating with Fleet to add new efficiency and electrification goals*
- *Putting together a team together from Sustainability, Finance, Stormwater, and Capital Projects to evaluate our ability and capacity to reduce emissions*
- *Streetlights*

**Increase the number of businesses and homeowners that participate in voluntary stormwater detention programs.**

There is a current Charleston Rainproof pilot project underway to help develop the data collection and reporting structure. Baseline: 0 ppl (about 15ppl are interested, but nothing installed yet)

*Discussion:*

- *Old Windermere neighborhood pilot project*
- *City considering options to incentivize participation in the program and grow awareness*
- *Collaborating with GIS to map voluntary actions*

**Increase the number of gallons of stormwater diverted from the central stormwater system through voluntary detention efforts.**






Some voluntary efforts exist outside of the Charleston Rainproof pilot project but have not been quantified or located yet.

*Discussion:*

*Consider creating a GIS mapping system to track voluntary efforts and their locations. Coordinate with SW and differentiate mandated efforts vs. voluntary efforts.*

# Appendix

## Trend icon descriptions

	Problem solving and analyzing
	Trending positive
	Trending negative
	No change
	On Target