

CITY OF ST. AUGUSTINE CORRIDOR REVIEW COMMITTEE

A G E N D A

THURSDAY, APRIL 6, 2023 - 2:00 PM

ALCAZAR ROOM

1. Roll Call
2. General Public Comments for Items not on the Agenda
3. Approval of Minutes
 - a) February 2, 2023 CRC meeting minutes
4. Modification and approval of Agenda
5. Other Business
 - a) Election of Board Chair and Vice Chair
 - b) Information related to City initiatives regarding Resiliency and Sustainability, including the Federal Back Bay Study, updates to the Vulnerability Assessment data, Resilient Shoreline concepts and other projects
 - c) Upcoming events and learning opportunities
6. Next Scheduled Meeting Date: Thursday, May 4, 2023 at 2:00 p.m. (If applications are received)
7. Adjournment

Notices: In accordance with Florida Statute 286.0105: "If any person decides to appeal any decision made by the Historic Architectural Review Board with respect to any matter considered at this scheduled meeting or hearing, the person will need a record of the proceedings, and for such purpose the person may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based." In accordance with the Americans with Disabilities Act, persons needing a special accommodation to participate in this proceeding should contact the individual or agency sending notice not later than seven days prior to the proceeding at the address given on the notice. Telephone: (904) 825-1007 or 1-800-955-8771 (TDD).

Please note that one or more members of the City Commission or its appointed boards or committees may attend this meeting and participate, however they may not engage in a discussion or debate amongst themselves on any issue that will likely come before their respective elected or appointed body.

The materials prepared and presented are part of the City's ongoing Florida Public Records and Government in the Sunshine compliance, and are not intended to be relied upon or to reach investors or the trading markets.

CITY OF ST. AUGUSTINE

Corridor Review Committee Meeting February 2, 2023

The Corridor Review Committee met in formal session at 2:00 P.M., Thursday, February 2, 2023, in the Alcazar Room at City Hall, St. Augustine, Florida. Michael Dixon, Chair, called the regular meeting to order, and the following were present:

1. ROLL CALL:

Michael Dixon, Chair
Lorna MacDonald

Absent:

Vaughn Cochran, Vice-Chair

City Staff:

Julie Courtney, Historic Preservation Officer
Candice Seymour, Historic Preservation Planner
Isabelle Lopez, City Attorney
Elyse Wiemann, Recording Secretary

2. General Public Comments for Items not on the Agenda

(None)

3. Approval of Minutes

MOTION

Ms. MacDonald MOVED to APPROVE the January 5, 2023 meeting minutes as presented. The motion was SECONDED by Mr. Dixon and APPROVED BY UNANIMOUS VOICE VOTE.

4. Modification and approval of Agenda

MOTION

Ms. MacDonald MOVED to APPROVE the modifications to the Agenda. The motion was SECONDED by Mr. Dixon and APPROVED BY UNANIMOUS VOICE VOTE.

5. New Business

5. Design Review (a) HP2023-0001– Marquis Latimer + Halback, Inc– Applicant

**XK8 Properties LLC — Owner
100 S Ponce de Leon Boulevard**

For site plan review of proposed commercial development on a vacant lot along the King Street Entry Corridor.

Ms. Seymour read the staff report and said based on a review of the King Street Design Standards for Entry Corridors, and without evidence to the contrary, the CRC may approve the proposed site plan if the CRC can make the following findings under the review criteria in section 3.3.2:

Criteria 1: The proposed project meets the intent of the King Street Design Standards as defined in Section 1;

Criteria 2: Approval of the proposal will not set an unintended precedent; Note: Unique qualities of the application will be identified to substantiate the approval and avoid a perceived assumption of precedence.

Criteria 3: Approval of the request will not be detrimental to the physical characteristics of the neighboring sites or the overlay district as a whole, with respect to the physical characteristics prescribed within the authority of this document.

All findings must be proven by the applicant and accepted by the CRC in order to grant an application approval.

If these findings cannot be made based upon this application and any additional testimony the application can be continued to a future CRC meeting with the expectation of additional material or design changed in response to CRC feedback; or, denied and the applicant may seek an appeal before the City Commission.

Jeremy Marquis reviewed the application.

Ex Parte Communication:

(None)

Board discussion:

- Questioned the use of the building
- Asked if it would be a one- or two-story building
- Should keep in mind this would be a busy pedestrian area
- Wanted to see the architectural styles, colors, and scale of the building
- Asked if there would be an entrance from King Street and US1

Applicant response:

- Would be commercial use but specific use was unknown depending on the tenants
- Anticipated the north portion would be two-story but would transition back to a one-story building
- Would be considering the walkable traffic
- Felt this would be an important intersection with other projects taken place in the area
- Mass of the building was intended to be more towards the West King Street side
- Would not have an entrance from US1 but would from King Street

Public hearing was opened.

BJ Kalaidi was concerned if people would be able to enter and exit from King Street and Everett Street.

Mr. Dixon replied on the site plan there were driveways from both King Street and Everett Street and walkway entrances.

Public hearing was closed.

Mr. Marquis confirmed there was a dual ingress and egress off West King Street and Everett Street.

Mr. Dixon asked if the application would return to the Board

Ms. Seymour replied in the affirmative.

MOTION

Ms. MacDonald MOVED to APPROVE the application as set forth in the plans including the findings with the three criteria. The motion was SECONDED by Mr. Dixon and APPROVED BY UNANIMOUS VOICE VOTE.

6. Other Business

(None)

7. Other Business

7. a) Thursday, March 2, 2023 at 2:00 p.m. (If applications are received)

8. Adjournment

There being no further business, the meeting was adjourned at 2:20 P.M.¹

¹ Transcribed by Elyse Wiemann

CITY OF ST. AUGUSTINE

MEMORANDUM

TO: Corridor Review Committee

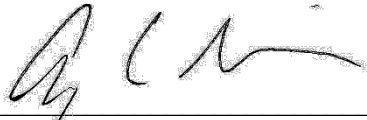
DATE: April 6, 2023

RE: **Information Related to City Initiatives Regarding Resiliency and Sustainability including the Federal Back Bay Study, updates to the Vulnerability Assessment data, Resilient Shoreline concepts and other projects.**

The attached information provides an opportunity for the CRC to review various projects and initiatives that the city is currently working on related to resiliency and sustainability. This information is provided in an effort to keep the CRC informed regarding the status and work descriptions of these projects.

Please find attached summary descriptive sheets regarding these special projects, and a presentation prepared by the city's Chief Resilience Officer.

Thank you for your attention to this matter. If you have any questions, please call me at (904) 209-4320 or email at askinner@citystaug.com, Julie Courtney at (904) 209-4283 or email at jcourtney@citystaug.com, or Jessica Beach, P.E., Chief Resilience Officer at (904) 209-4227 or email at jbeach@citystaug.com.



Amy McClure Skinner, AICP
Director
Planning and Building Department



CITY OF
ST AUGUSTINE
EST. 1565



CITY OF ST. AUGUSTINE

Resilience Initiatives

Planning and Zoning Board February 21, 2023

**Jessica Beach
Chief Resilience Officer
Public Works Department**



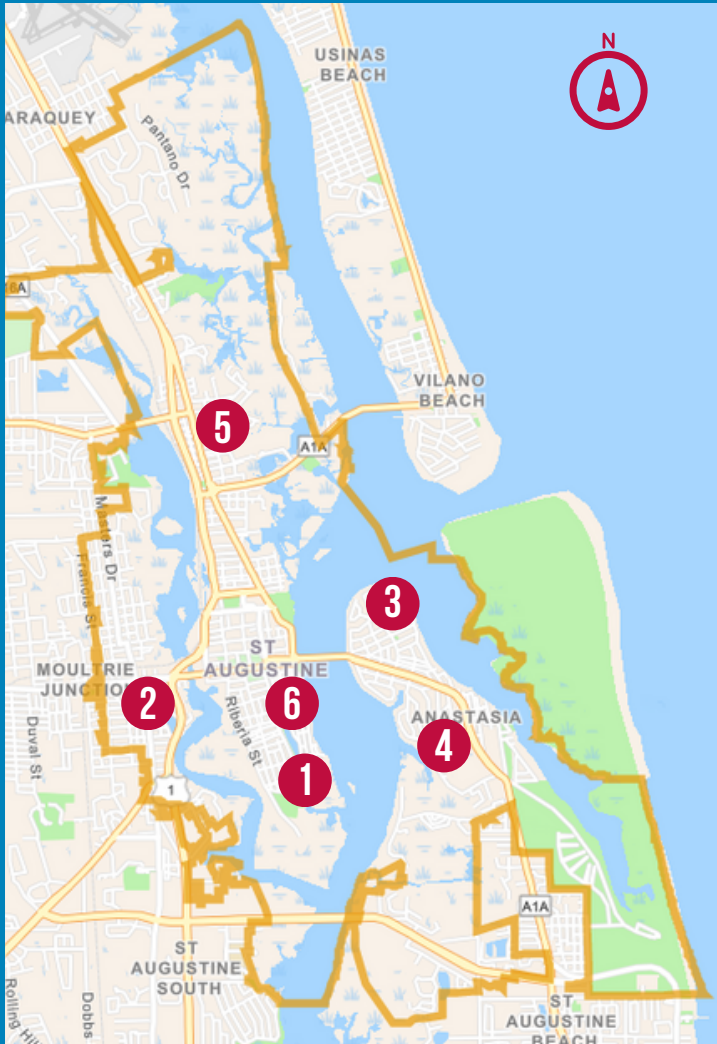


APPENDIX

Resilience Initiatives Overview	3
Resilience Initiatives Timeline	4
Lake Maria Sanchez Flood Mitigation and Drainage Project	5
South Whitney/West King Street Drainage Project	7
Inlet Drive Shoreline Stabilization Project	9
South Davis Shores Drainage Project	11
Court Theophelia Neighborhood Drainage Project	13
Avenida Menendez Seawall Project	15
Tidal Backflow Prevention Program	17
Groundwater Monitoring Network	19
Vulnerability Assessment Update (State)	21
Back Bay Feasibility Study with the Army Corps of Engineers (Federal)	22
Coastal Storm Surge Risk Assessment Official Poster	24
City Planning Studies Breakdown	25
Proposed Resilient Shorelines Ordinance	26
FEMA's Flood Mitigation Assistance (FMA) Program	27



CITY OF ST. AUGUSTINE



Project Map Key

1. Lake Maria Sanchez Flood Mitigation
2. South Whitney/West King Street Drainage
3. Inlet Drive Shoreline Stabilization
4. South Davis Shores Drainage
5. Court Theophelia Neighborhood Drainage
6. Avenida Menendez Seawall

City Wide Projects

- Tidal Backflow Prevention Program
- Groundwater Monitoring Network

City Planning Studies

- Back Bay Feasibility Study (Federal)
- Vulnerability Assessment Update (State)

City Programs

- Flood Mitigation Assistance (FMA) Program

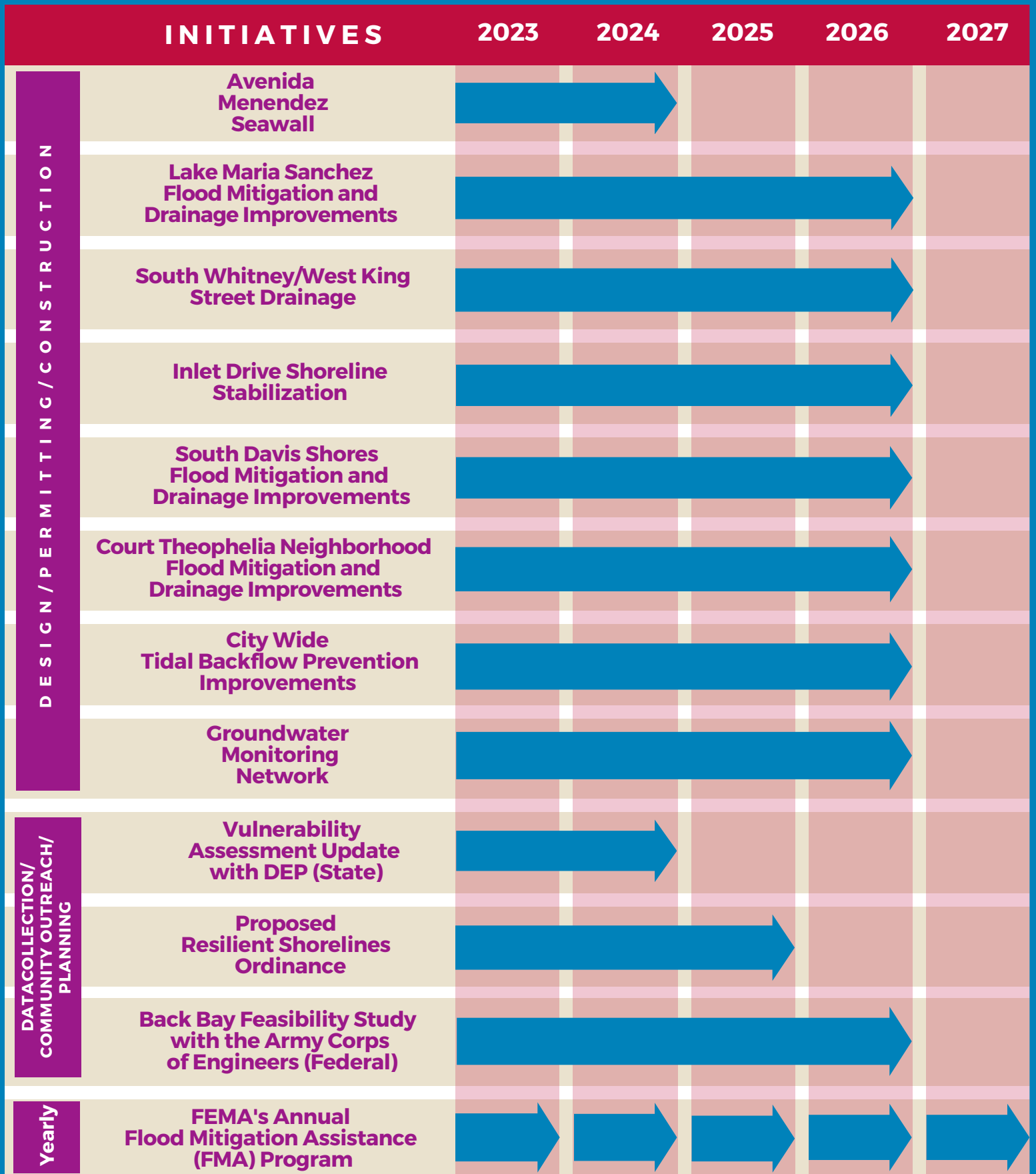
City Ordinances

- Proposed Resilient Shorelines Ordinance

RESILIENCE STRATEGIES



RESILIENCE EFFORTS TIMELINE



www.CityStAug.com/Resiliency | 904-825-1040 | Stormwater@CityStAug.com



LAKE MARIA SANCHEZ

Flood Mitigation & Drainage Improvements

What is this project?

The project will implement a number of resilience strategies to address both rainfall and coastal surge flooding. Strategies include: upgrades to the existing stormwater infrastructure, installation of a stormwater pump station, construction of a flood wall, and installation of tide check valves.

Why is this project needed?

The City has had a long history of enduring flooding, storms, and related events that have adversely impacted its critical infrastructure. Most recently, hurricanes (Matthew, Irma, Hermine, Dorian, Ian and Nicole), other unnamed storms, flash flood events, and nuisance flooding have exacerbated the infrastructure issues specifically related to roadways and drainage. The project will provide an increased level of flood protection from increasing high tide events, storm surge and future sea level rise by incorporating a combination of resilience strategies.

How is this project being funded?

The City of St. Augustine (COSA) has received a grant from the Department of Environmental Protection's (DEP) Resilient Florida Grant Program. The project will be cost-shared between the Resilient Florida Grant and COSA.

How will this project benefit the community?

The project will benefit approximately 200 acres of the historic district in the Nation's Oldest City. The project area includes a number of historic buildings and structures listed on the National Register of Historical Places. By maintaining the integrity of the Nation's Oldest City through the implementation of this project, it will help protect our regionally significant historical and cultural assets benefiting the County and arguably the Northeast Florida region.



**Current
Flooding
without
Project**



**Projected
Flood
Protection
with
Project**



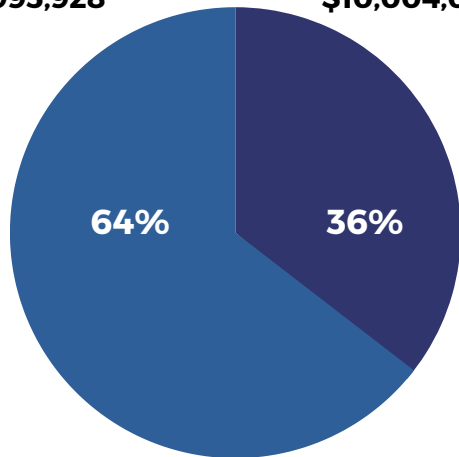
LAKE MARIA SANCHEZ

Flood Mitigation & Drainage Improvements

Estimated Construction Cost:
\$30,000,000

**Resilient
Florida Grant**
\$19,995,928

***City of St. Augustine/
Other Funding Source**
\$10,004,071



* Budget subject to change as other funding sources are explored

Proposed Lake Maria Sanchez Pump Station



PROJECT SCHEDULE 2023-2026

PROJECT PHASE	PROJECT STATUS
PHASE 1	COMPLETE PERMITTING, SECURE EASEMENTS, FINALIZE DESIGN, PREPARE BID DOCUMENTS
PHASE 2	BID PROJECT, SECURE CONSTRUCTION CONTRACT
PHASE 3	CONSTRUCTION

Lake Maria Sanchez on South Street





SOUTH WHITNEY ST. & WEST KING ST.

Roadway & Drainage Improvements

What is this project?

The proposed improvements consist of raising South Whitney Street and West King Street above the FEMA flood elevation of 7.0' NAVD88, replacing the existing box culvert (40-inch by 56 inch) at South Whitney with a single box culvert (48-inch by 96-inch) that doubles the hydraulic capacity. The project also includes reconstruction of the existing storm sewer system and its outfall at the box culvert on South Whitney Street.

Why is this project needed?

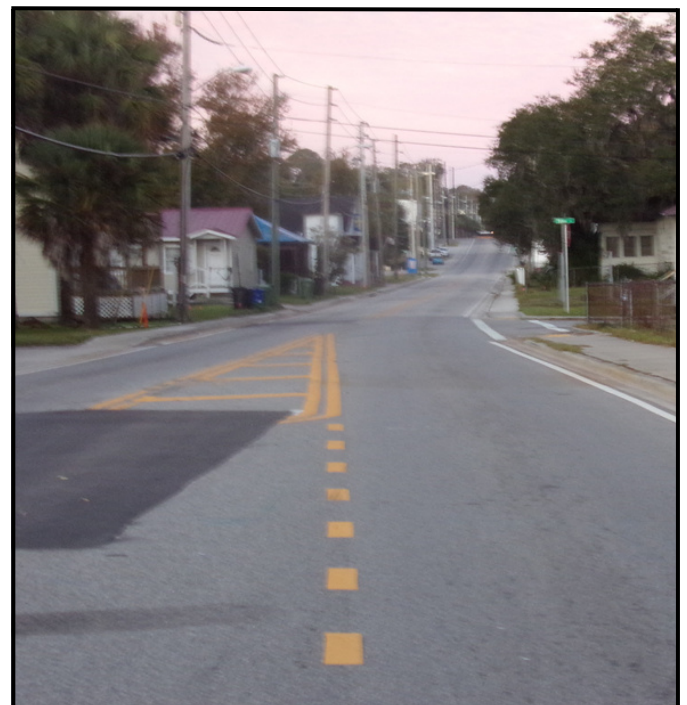
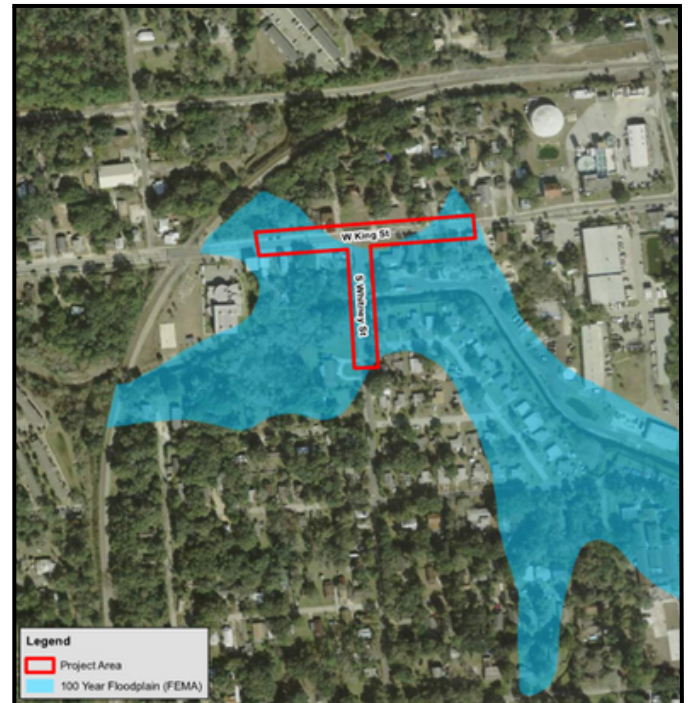
The project goal to eliminate flooding during the 100-year FEMA flood event for West King Street and South Whitney Street by raising both roads at, or above, the 100-year floodplain elevation. In addition to the surge-driven FEMA 100-year flood event, during significant rainfall occurs on South Whitney Street and a portion of West King Street where these streets intersect making these streets impassable.

How is this project being funded?

The City of St. Augustine (COSA) has received a grant from the Federal Emergency Management Agency (FEMA) under the Hazard Mitigation Grant Program (HMGP) in the amount of \$463,198. COSA will cost share the estimated total project amount of \$1,822,600.

How will this project benefit the community?

This is a high traffic area that is used heavily on a daily basis. By completing the drainage improvement project, residents of both the City of St. Augustine and St. Johns County will benefit from the ability to drive through the street during a FEMA 100-Year Floodplain.





SOUTH WHITNEY ST. & WEST KING ST.

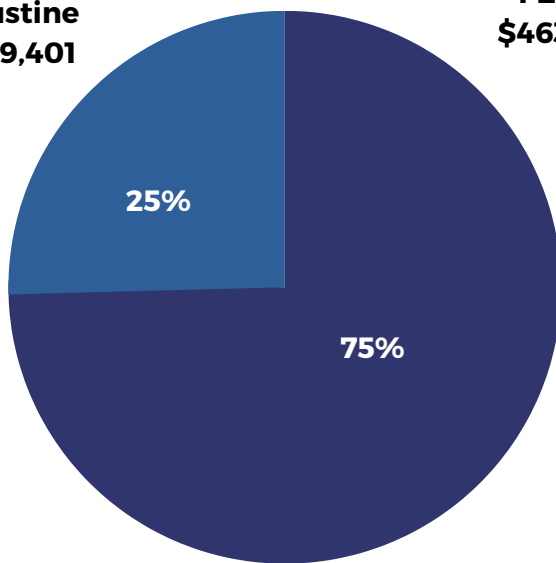
Roadway & Drainage Improvements

Estimated Total Construction

Cost: \$1,822,600

City of St.
Augustine
\$1,359,401

FEMA
\$463,198



*The city will be asking for a budget increase from FEMA, as well as seeking other grant funding to supplement the 75% cost share



PROJECT SCHEDULE 2023-2026

PHASE	PROJECT STATUS
PHASE 1	INTERLOCAL COORDINATION WITH ST. JOHNS COUNTY / FINALIZE PERMITTING
PHASE 2	CONSTRUCTION



INLET DRIVE

Shoreline Stabilization

What is this project?

This project would look to include a combination of structural and non-structural based solutions (living shoreline enhancement, thin layer placement of dredged material, etc.) to elevate and protect a section of shoreline that is subject to coastal erosion that would provide a higher level of flood protection for a critical residential road in the North Davis Shores neighborhood. This would also include upgrading the existing storm infrastructure and installation of a tide check valve.

Why is this project needed?

The existing shoreline has eroded over time, with acceleration of that erosion during Hurricane's Matthew and Irma. It's existing elevation is around 5.0 feet NAVD88, which during the previous hurricanes, the top of bank of the shoreline overtopped, causing flooding throughout this segment of roadway. There are two existing storm inlets and pipe that are in need of replacement and proper sizing to also better collect any rainfall driven flooding. The existing storm outfall pipe is also tidally influenced and can allow for tidal water to back up through the storm pipe, causing road flooding. This project would address the erosion, undersized drainage and tidal flooding issues, taking into account sea level rise with the elevation of the shoreline revetment.

How is this project being funded?

The City of St. Augustine (COSA) has received a grant from the Federal Florida Department of Environmental Protection (DEP) under the Resilient Florida Grant Program for the estimated full project cost of \$711,090



How will this project benefit the community?

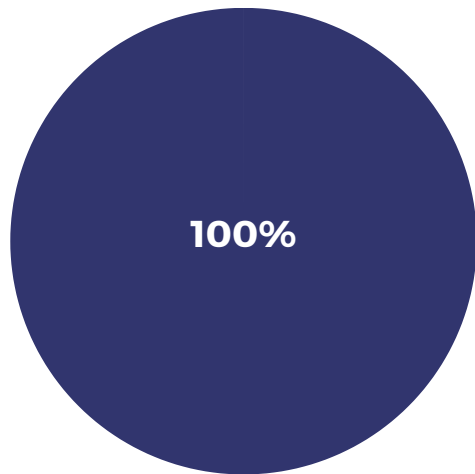
The proposed improvements will help to protect the critical infrastructure for the neighborhood. A vegetated component would be added to the design to enhance the current living shoreline features, this would include supplemental planting of black mangroves and spartina grass. By enhancing the natural features, more critical habitat will be created. Given its existing elevation already being below the current base flood elevation, the vulnerability of this area will continue to increase with sea level rise if no action is taken. The City had an opportunity to evaluate the shoreline for flood mitigation options as a result of the hurricane impacts and also address vulnerable infrastructure that was identified in the Coastal Vulnerability Assessment.



INLET DRIVE

Shoreline Stabilization

**ESTIMATED
CONSTRUCTION COST:
\$711,090**



Resilient Florida Grant



**PROJECT SCHEDULE
2023-2026**

PROJECT PHASE	PROJECT STATUS
PHASE 1	DESIGN AND PERMITTING OF PROJECT
PHASE 2	BIDDING/LOCAL PROCUREMENT
PHASE 3	CONSTRUCTION OF PROJECT



SOUTH DAVIS SHORES

Flood Mitigation & Drainage Improvements

What is this project?

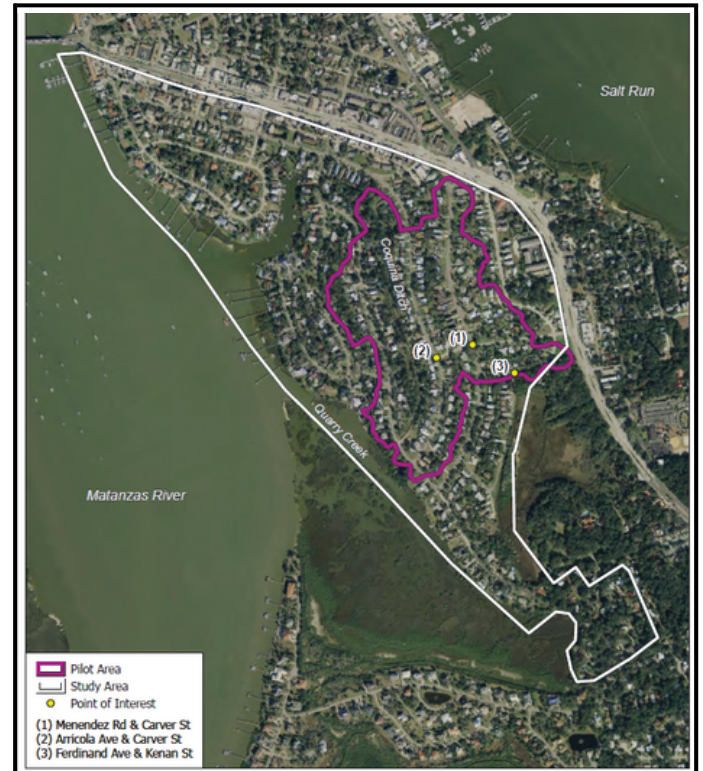
This project will be broken into two phases to include the design, permitting and construction to address the rainfall driven flooding events, with some consideration for tidal surge. This will primarily include major upgrades to the existing undersized and aged drainage infrastructure, reconfiguring a drainage ditch and upsizing an existing culvert. This project would seek to address the rainfall driven flooding through upgrades to existing stormwater infrastructure and installation of smart tide check valves. For the tidal surge, in lieu of the one-way in line tide check valves, a "smart" tide check valve system will be installed into three culverts that are tidally influenced. The smart valves will stay in the open configuration to maintain wetland hydrology of upstream wetland systems, but close temporarily in advance of flooding conditions.

Why is this project needed?

This neighborhood has suffered from repetitive flood impacts and damages from nuisance flooding, rainfall driven flooding and hurricanes. With the implementation of this project, it will help reduce the damages to upland properties and associated costs which primarily includes residential properties. The reconfiguration of the Coquina Ditch, which is tidally influenced, can be better enhanced and restored to provide additional flooding capacity/volume, while better protecting the residential structures that are adjacent to it.

How is this project being funded?

The City of St. Augustine (COSA) has received a grant from the Federal Florida Department of Environmental Protection (DEP) under the Resilient Florida Grant Program for the estimated full project cost of \$2,797,000.



How will this project benefit the community?

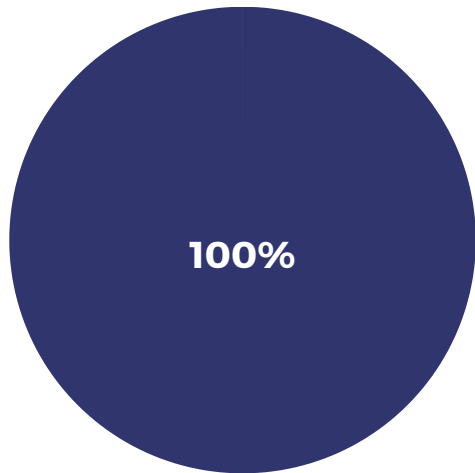
Originally built in the early 1900s by Mr. Davis, South Davis Shores was identified in the 2016 Coastal Vulnerability Assessment as one of the major flood pathways for nuisance flooding and future sea level rise conditions. Over the last five years this neighborhood has suffered from repetitive flood impacts and damages from nuisance flooding, rainfall driven flooding and hurricanes, as it is one of the more lower lying areas within the City. This project would seek to address the rainfall driven flooding through upgrades to existing stormwater infrastructure and installation of smart tide check valves.



SOUTH DAVIS SHORES

Flood Mitigation & Drainage Improvements

**ESTIMATED
CONSTRUCTION COST:
\$2,797,000**



**Resilient Florida Grant
\$2,797,000**



PROJECT SCHEDULE 2023-2026

PROJECT PHASE	PROJECT STATUS
PHASE 1	DESIGN AND PERMITTING OF PROJECT
PHASE 2	BIDDING/LOCAL PROCUREMENT
PHASE 3	CONSTRUCTION OF PROJECT



COURT THEOPHELIA

Neighborhood Flood Mitigation & Drainage Improvements

What is this project?

The project would include design, permitting and construction to replace aged utilities, upgrade existing stormwater infrastructure and evaluate structural and non-structural based resiliency options for the neighborhood. This would also incorporate a mobility component into the project for multiple benefits. The expected project outcomes include reconstruction of flood prone and damaged roads due to high tide flooding, improved drainage to provide a higher level of service during rainfall events, replacement of aged utilities, implementation of green infrastructure and/or low impact development to provide water quality benefit with stormwater management, potential incorporation of greenspace for multi-project benefits to serve as recreational, stormwater, mobility and resiliency uses.



Why is this project needed?

This neighborhood is subject to rainfall driven and coastal surge flooding. The streets are in poor condition due to the inundation of salt water on the roads that has accelerated the deterioration. The utilities are also aged and in need of replacement (water and sewer). This project would include the replacement of aged utilities while the stormwater improvements are conducted. The improvements to the neighborhood will provide a higher level of flood protection for critical infrastructure (City Roads).

How is this project being funded?

The City of St. Augustine (COSA) has received a grant from the Federal Florida Department of Environmental Protection (DEP) under the Resilient Florida Grant Program for the estimated full project cost of \$2,581,600.

How will this project benefit the community?

This is a low-lying neighborhood that is subject to both tidal and rainfall driven flooding. The 2016 Coastal Vulnerability Assessment identified major flood pathways and increased risks for future nuisance flooding and 1% annual chance flooding with sea level rise. By providing a higher level of service for rainfall and coastal surge events, this will protect a large area that has vulnerable critical assets. This project would provide needed stormwater improvements to address both rainfall driven and coastal surge flooding and look to incorporate multiple project benefits that could include mobility components with green infrastructure and/or low impact development into the project design.

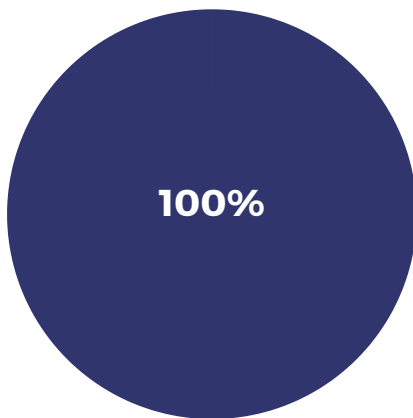


COURT THEOPHELIA

Neighborhood Flood Mitigation & Drainage Improvements

ESTIMATED CONSTRUCTION

COST: \$2,581,600

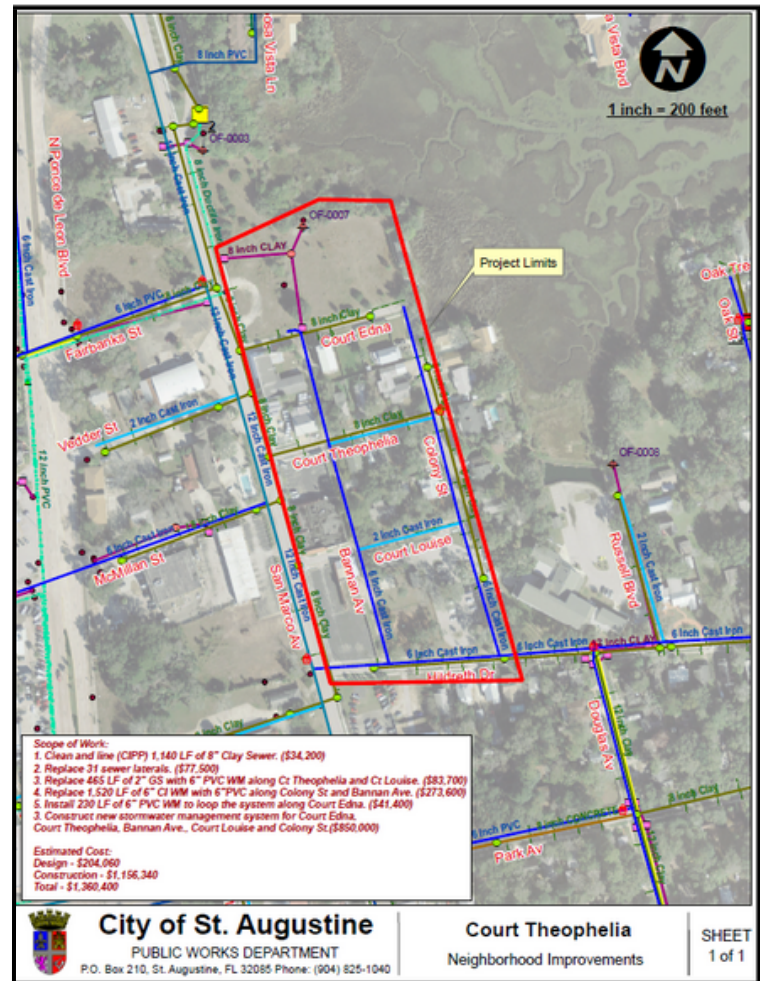


**Resilient Florida Grant
\$2,581,600**

PROJECT SCHEDULE 2023-2026

PROJECT PHASE	PROJECT STATUS
PHASE 1	DESIGN AND PERMITTING OF PROJECT
PHASE 2	BIDDING/LOCAL PROCUREMENT
PHASE 3	CONSTRUCTION OF PROJECT

PROPOSED PROJECT AREA AND SCOPE OF WORK





AVENIDA MENENDEZ SEAWALL

What is this project?

The project will involve repairs of the face and cap of a section of the seawall located along the bayfront in downtown St. Augustine, coupled with design and construction of a two foot wall behind the current seawall. The latter will resemble the parapet wall built adjacent to the promenade constructed in the early 2000's, South of the project area. Specifically, the project area extends from the north end of the "new" seawall on the south end to the Bridge of Lions apron on the north. The project length is approximately 570 feet. The Marina Building is on the western edge of the project area.

Why is this project needed?

The City completed the Avenida Menendez seawall replacement and the current Bayfront Park improvements which have both raised the level of flood in 2013. The area between the City Marina south access pier and the Whites Warf (formerly Santa Maria) restaurant provides a gap in the otherwise elevated flood protection along the Bayfront. This project will "fill the gap" and provide continuity of the City's target flood protection elevation of +7.1' NAVD extending along approximately 1,700 LF of the Bayfront. Failure to repair the existing marina seawall and replace the approx. 85 LF of failing seawall will put critical infrastructure and historic properties at risk.

How is this project being funded?

The City of St. Augustine (COSA) has received a grant from FEMA's HMGP grant program for Hurricane Irma disaster relief, along with funding from the Florida Inland Navigation District (FIND), and will cost-share the remainder of funds needed to complete the project.



How will this project benefit the community?

The primary community need addressed by this project is the enhanced protection from flooding associated with extreme weather events by providing a continuous seawall of equal height. By doing this project, it will provide the protection of the existing pedestrian/recreational path which provides access to the Municipal Marina facilities. Currently, the elevation gap between the two previous projects provides a vulnerable entry point that allows for flooding that can impeded and compromise the existing public access. Completion of the continuous seawall along the City's Southern Bayfront will increase flood protection and minimize the potential property and environmental damage resulting from extreme weather events.



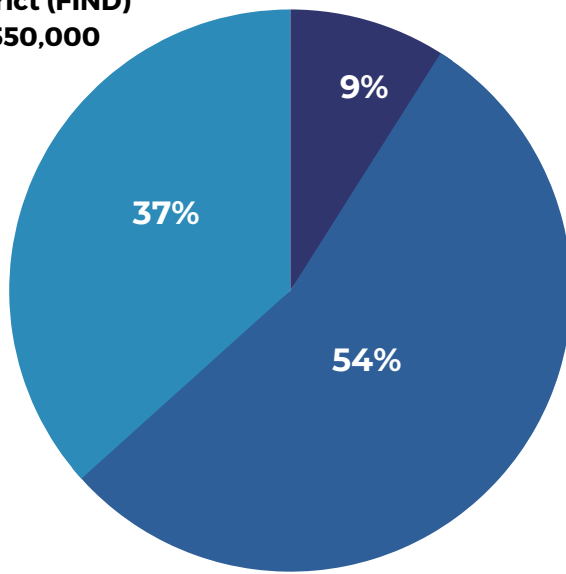
AVENIDA MENENDEZ SEAWALL

ESTIMATED PROJECT COST:
\$1,500,000

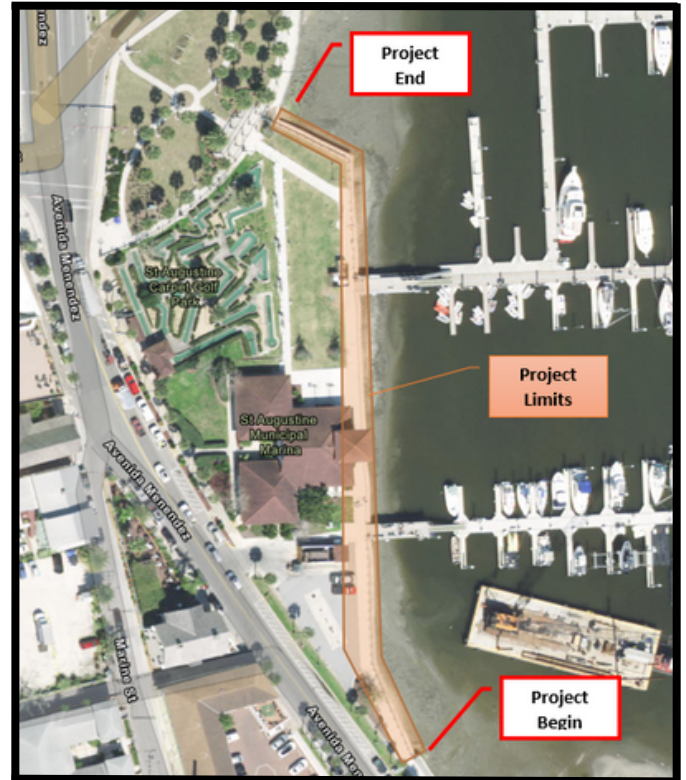
PROJECT LIMITS MAP

Florida Inland
Navigation
District (FIND)
\$550,000

City of St. Augustine
\$134,761.25



HMGP (FEMA)
\$815,238.75



SEAWALL EXAMPLE



PROJECT SCHEDULE 2023-2026

PROJECT PHASE	PROJECT STATUS
PHASE 1	DESIGN AND PERMITTING OF PROJECT
PHASE 2	BIDDING/LOCAL PROCUREMENT
PHASE 3	CONSTRUCTION OF PROJECT



TIDAL BACKFLOW PREVENTION IMPROVEMENTS

City Wide Tide Check Valve Installations

What is this project?

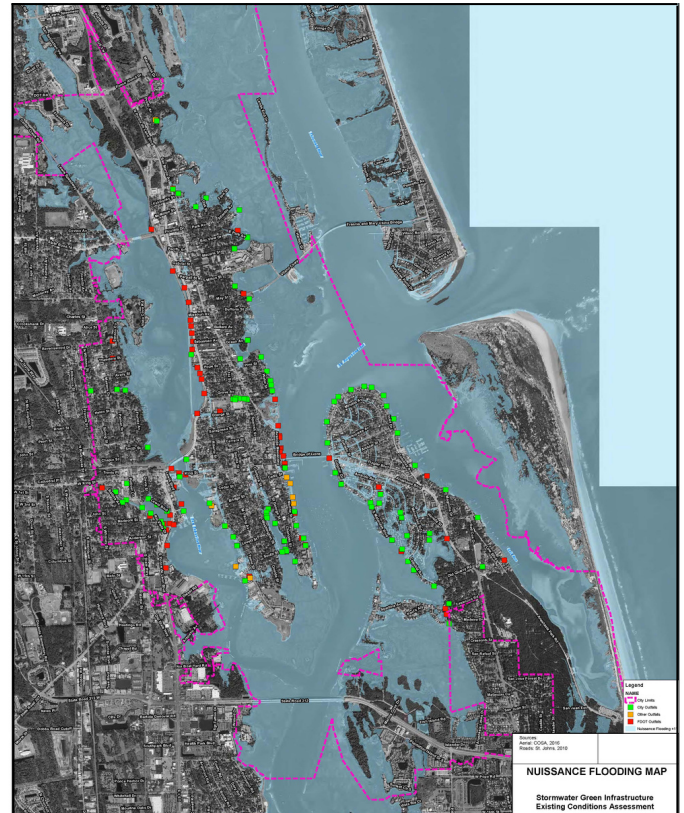
The City has approximately 103 stormwater outfalls that are tidally influenced, resulting in nuisance flooding of the road infrastructure. To date, the City has retrofitted 43 outfalls with tide check valves to eliminate nuisance tidal flooding. The City proposes to retrofit an additional 20 outfalls. Once the locations are identified, the City will contract out for the evaluation of each storm outfall that includes cleaning and closed-circuit television (CCTV). The City will review that evaluation data and determine if any storm pipe repairs or lining needs to occur in preparation for the tide check valve installation.

Why is this project needed?

The City of St. Augustine experiences nuisance tidal flooding between 12-16 times per year during lunar or king tides, with additional flooding during Nor'easter conditions. This frequently inundates the road infrastructure and provides a major flood pathway that can allow for additional flooding of structures. The road conditions have deteriorated due to standing salt water and inundation, reducing the lifespan of the road infrastructure. This project will continue those previous efforts to work towards completion of the outfalls with retrofitting and provide a higher level of flood protection and extend the life of the road infrastructure.

How is this project being funded?

The City of St. Augustine has received a grant from the Federal Florida Department of Environmental Protection (DEP) under the Resilient Florida Grant Program in the amount of \$230,641.00. The City will match that \$230,641.00 using the stormwater operational budget for a total project cost of \$461,282.00.



How will this project benefit the community?

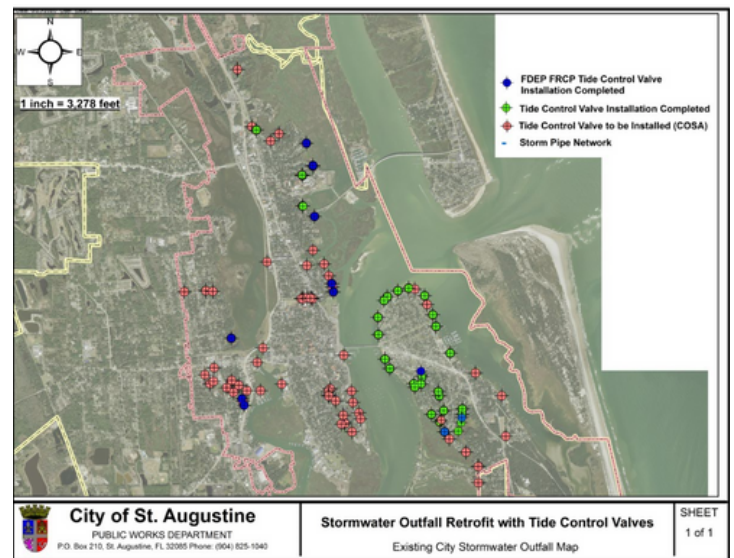
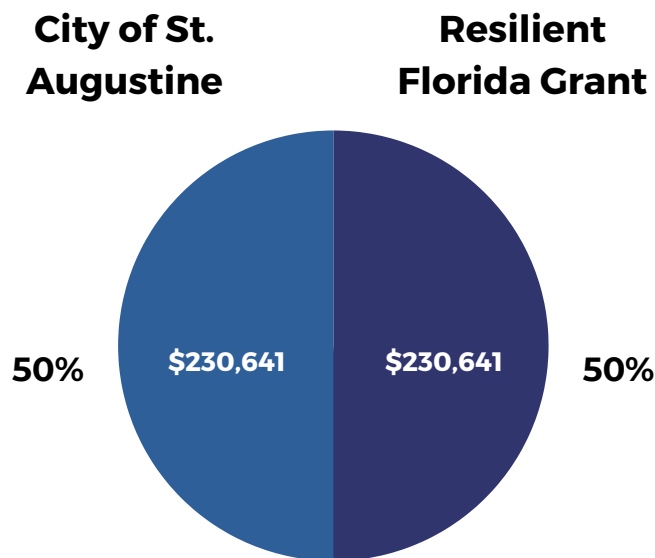
The stormwater outfalls are a major flood pathway that can allow for surge and high tide flooding to inundate the streets and potentially impact structures (residential and commercial). There are many historically significant buildings, structures and other cultural resources that can be impacted from the flooding that are considered regionally significant. Additionally, there are State Highways that are throughout the City. These stormwater outfalls can also have an impact on local and state roads, also considered regionally significant. By implementing this project, we can eliminate that risk that threatens a much larger area that has an overall higher percentage of vulnerable critical assets.



TIDAL BACKFLOW PREVENTION IMPROVEMENTS

City Wide Tide Check Valve Installations

Estimated Construction Cost: \$461,282



PROJECT SCHEDULE 2023-2026

PROJECT PHASE	PROJECT STATUS
PHASE 1	PLANNING AND EVALUATION
PHASE 2	REHABILITATION AND PREPARATION
PHASE 3	CONSTRUCTION / INSTALLATION



GROUNDWATER MONITORING NETWORK

For Sea Level Rise Impacts

What is this project?

In conjunction with the Vulnerability Assessment, this effort will focus on predicting impacts, specifically to critical infrastructure, of sea level rise by installing a monitoring network to accurately measure rates of change in current shallow groundwater elevation and water quality. The monitoring network proposed will contain up to 60 monitoring points. A professional licensed surveyor will survey each point. Monitoring will be scheduled/sequenced to represent the same atmospheric / geologic conditions each monitoring period to attempt to replicate these variables. All data (sea level, groundwater, water quality & creek level) will be compiled and summarized quarterly, building the data set. Daily rainfall along with any severe storm activity will also be summarized.

Why is this project needed?

As sea level rises, so does shallow groundwater. As groundwater approaches closer to land surface, water quality and critical infrastructure may become adversely impacted, such as the stability of foundations, water quality used for irrigation, function of buried utilities (communications, electric transmission, natural gas distribution), storm/water/sanitary sewer functions, and historic structures can become more at risk. Therefore, better prediction of these impacts by monitoring is needed to mitigate for these risks.

How is this project being funded?

The City of St. Augustine (COSA) has received a grant from the Florida Department of Environmental Protection (DEP) under the Resilient Florida Grant Program in the amount of \$201,903.00. The City will contribute \$15,197 for a total project cost of \$217,100.

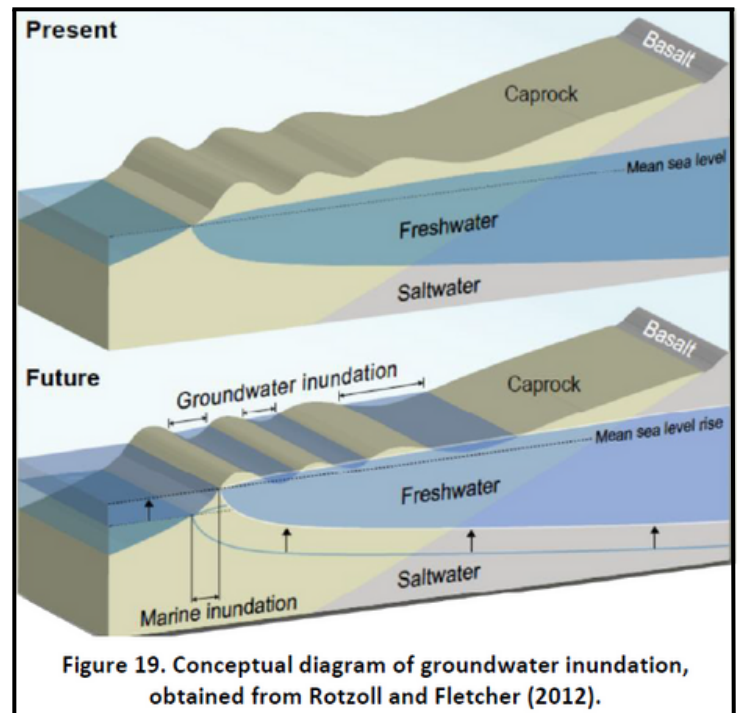


Figure 19. Conceptual diagram of groundwater inundation, obtained from Rotzoll and Fletcher (2012).

How will this project benefit the community?

The data collected from this project will be able to better predict and model groundwater impacts which has a significant impact on critical infrastructure. This includes the threat to the city's existing archaeological and historic buildings which are considered regionally significant assets. Having a better mechanism for predicting those impacts and risks will enable the City to identify mitigation strategies to address those risks. The groundwater monitoring network can be installed and monitoring to begin within the first year of the project. The data collected from that network would occur over the next 15-18 months and then the results from that effort will be summarized into a final report by the end of year three.

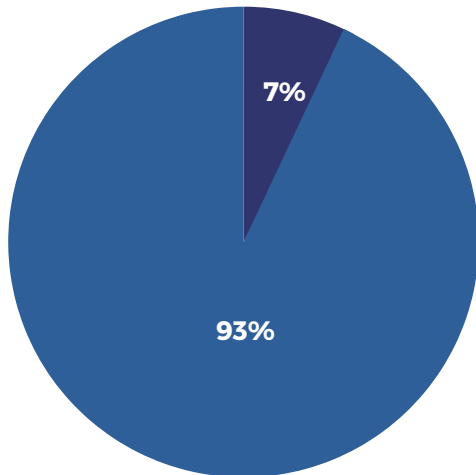


GROUNDWATER MONITORING NETWORK

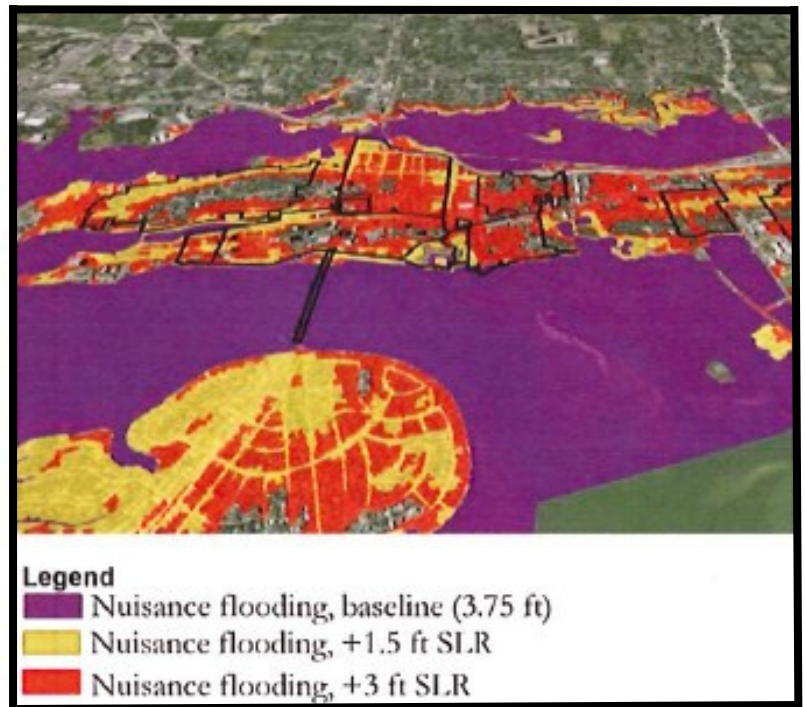
For Sea Level Rise Impacts

**ESTIMATED CONSTRUCTION
COST: \$217,100**

City of St. Augustine
\$15,197



Resilient Florida Grant
\$201,903



PROJECT SCHEDULE 2023-2026

PROJECT PHASE	PROJECT STATUS
PHASE 1	MONITORING NETWORK INSTALLATION
PHASE 2	MONITORING
PHASE 3	MONITORING AND FINAL REPORTING



VULNERABILITY ASSESMENT UPDATE

With The Florida Department of Environmental Protection

What is this study?

Vulnerability Assessments (VA) identify or address risks of flooding and sea level rise and help development of adaptation/resilience plans, projects, and policies that allow for preparation for threats from flooding and sea level rise. The final report does include an adaptation plan with recommendations for identified projects to be implemented.

Why is this study needed?

Previous studies, including a coastal vulnerability assessment, were completed in 2016, which identified major flood pathways in the city. However that previous VA does not meet the current criteria outlined in section 380.093 of Florida statutes. By completing the FDEP VA it qualifies the city for the 50% cost-share for implementation projects and the city is eligible for future funding.

How will this study benefit the community?

A Vulnerability Assessment helps a community determine which structural and social assets are likely to be impacted by future coastal flooding and sea level rise and help create an adaptation plan for future mitigation projects. By integrating scientific methods and developing awareness of different structural and social assets that may be vulnerable to future coastal flooding, the community may ensure that the most useful basis for planning is established.

How is this study being funded?

The City of St. Augustine has been awarded funding from the Resilient Florida Grant Program in the estimated total assessment cost of \$500,000.



ESTIMATED ASSESMENT COST:
\$500,000



STUDY SCHEDULE 2023-2024

PHASE	STATUS
PHASE 1	DATA COLLECTION & ANALYSIS
PHASE 2	COMMUNITY OUTREACH
PHASE 3	REPORTING



BACK BAY COASTAL STORM RISK MANAGEMENT

A City Wide Feasibility Study With The U.S. Army Corps of Engineers

What is this study?

The City of St. Augustine Coastal Storm Risk Management Study is a three-year federal feasibility study that investigates coastal storm impacts on the City of St. Augustine. In partnership with the Army Corps of Engineers, City of St. Augustine and its stakeholders, the study will also explore economically-viable and environmentally-sound solutions to mitigate coastal storm risks.

Why is this study needed?

The reduction of flood-related damages to residential, commercial and historic/culturally significant resources, and critical infrastructure is vital. The study will identify comprehensive Coastal Storm Risk Management strategies to increase resilience and to reduce risk from future storms and compounding impacts of sea level change.

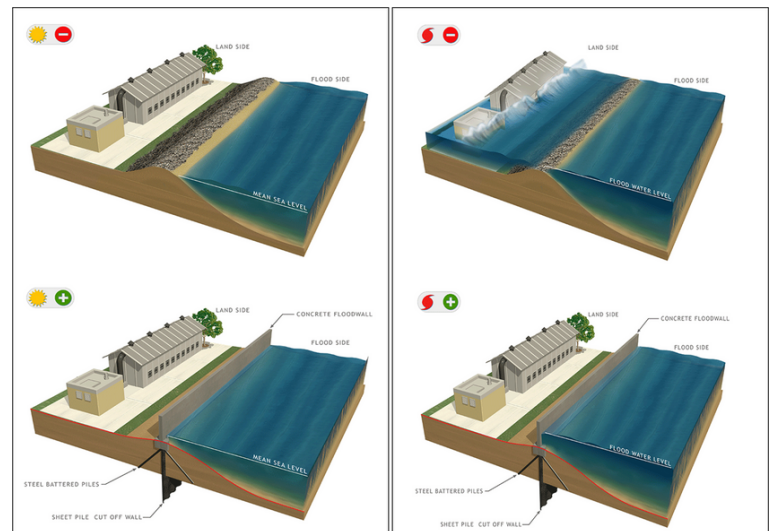
How will this study benefit the community?

The objective of the study is to investigate Coastal Storm Risk Management problems and identify solutions to reduce damages from coastal flooding that affects population, critical infrastructure, historic and culturally significant resources, and ecosystems, which will benefit the community as future projects are designed to mitigate flooding.

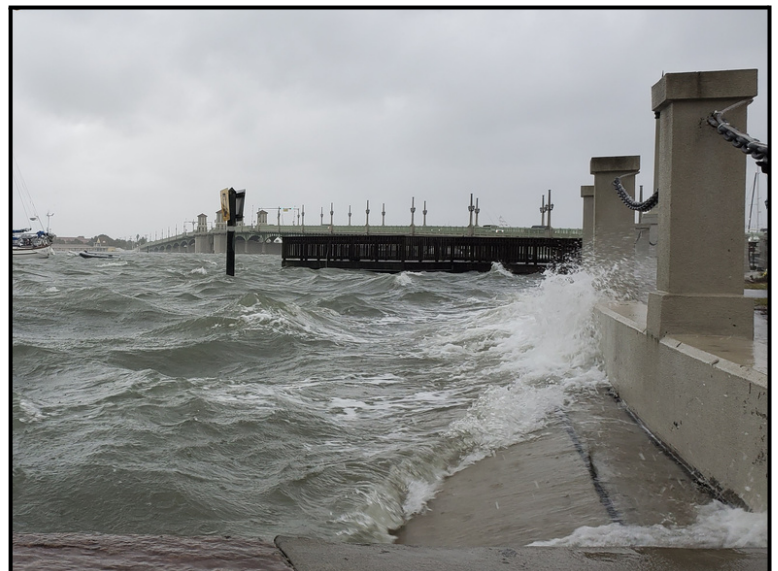
How is this study being funded?

The City of St. Augustine will be utilizing \$1,500,000 in American Rescue Plan Act (ARPA) funds, while the Army Corps of Engineers will fund \$1,500,000 for a total cost of \$3,00,000.

Flood Wall Example



St. Augustine Bay Front During a Storm





BACK BAY COASTAL STORM RISK MANAGEMENT

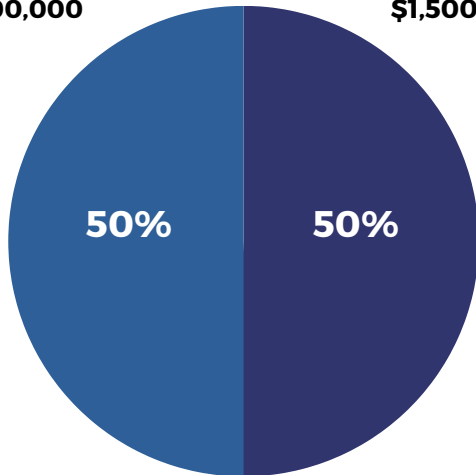
A City Wide Feasibility Study With The U.S. Army Corps of Engineers

**Total Estimated Study
Cost: \$3,000,000**

St. Augustine Bay Front During a Storm

**Army Corps
of Engineers
\$1,500,000**

**City of
St. Augustine
\$1,500,000**



Taken on Nov. 13, 2019 of water crashing over the sea wall and flooding the park lawn.

Photo Credit:

<https://www.nps.gov/casa/learn/historyculture/climatechange.htm>

STUDY SCHEDULE 2023-2026

PHASE	STATUS
PHASE 1	DATA COLLECTION, ANALYSIS AND MODELING / COMMUNITY OUTREACH
PHASE 2	DATA COLLECTION, ANALYSIS AND MODELING / COMMUNITY OUTREACH
PHASE 3	DEVELOPMENT / ADOPTION, FINAL STUDY



BUILDING RESILIENCE

The St. Augustine, Florida Back Bay Coastal Storm Risk Management (CSRM) Feasibility Study will conduct activities and tasks required to identify and evaluate alternatives and produce a decision document that, as appropriate, recommends a coordinated and implementable solution for hurricane protection, storm damage reduction, beach erosion control, and other related purposes at St. Augustine, Florida.

In partnership with the City of St. Augustine and its stakeholders, the study will explore effective, economically-viable and environmentally-sound solutions to mitigate risks and build enduring coastal resiliency - and amidst the potential impacts of sea level rise on the city's character and livability.

A feasibility study is the first step toward a potential federally-cost shared water resources project that could be one piece of the City of St. Augustine's overall, long-range flood resiliency strategy.

* The typical cost of a CSRM study is \$3 million. The cost will be split 50/50 percent between the U.S. Army Corps of Engineers (USACE) and the City of St. Augustine, Florida.




US Army Corps of Engineers

CITY OF ST. AUGUSTINE
EST. 1565

STUDY AREA

Through the planning process, the study will assess the multi-faceted landscape within the city limits of St. Augustine. Maintaining St. Augustine's unique and rich multi-layered sense of place will be a priority of the team as they develop and evaluate alternatives to reduce coastal storm risk.








PHOTO CREDITS (LEFT TO RIGHT): CITY OF ST. AUGUSTINE; CITY OF ST. AUGUSTINE; VISITSTAUGUSTINE.COM; CRAIG SWAIN; T.TAUGHER

TRANSPARENT PLANNING PROCESS

Feasibility studies use a transparent 6-Step Planning Process that pursues alternatives to reduce economic damages from storms over a 50-year project life, consistent with environmental statutes. In addition to economic and environmental conditions, regional economic development and social effects are addressed during the planning process. There are a variety of approaches, both quantitative and qualitative, to assist with multi-criteria decision making and plan selection.

Public input is paramount in the decision process. Multiple public/stakeholder meetings will occur throughout the study.

1
IDENTIFY PROBLEMS AND OPPORTUNITIES

2
INVENTORY AND FORECAST CONDITIONS

3
FORMULATE ALTERNATIVE PLANS

4
EVALUATE ALTERNATIVE PLANS

5
COMPARE ALTERNATIVE PLANS

6
SELECT RECOMMENDED PLAN

MULTI-DISCIPLINARY PROJECT DELIVERY TEAM

The project delivery team (PDT) is the workgroup tasked with conducting the study and consists of varied experts including planners, engineers, biologists, geologists, hydrologists, surveyors, archaeologists, economists, real estate specialists, and more to address problems and opportunities. Each team member is responsible for identifying water resources problems and assisting in formulating solutions to those problems within their area of expertise. This interdisciplinary approach to problem solving is key to a successful feasibility study.





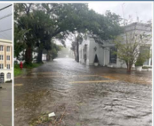



PHOTO CREDITS (LEFT TO RIGHT): CITY OF ST. AUGUSTINE AND WWW.FACEBOOK.COM/CITYSTAUG/PHOTOS.

INTEGRATED FEASIBILITY REPORT AND NATIONAL ENVIRONMENTAL POLICY ACT ANALYSIS

The National Environmental Policy Act (NEPA) is a Federal law enacted in 1969. As required by NEPA, USACE will assess the potential environmental effects of the study alternatives, including a no action alternative. The report also documents coordination with the varied resource agencies that help to shape the final recommendation. Examples of NEPA effects categories include:

AESTHETICS

CULTURAL RESOURCES

RECREATION

SOCIOECONOMICS

THREATENED AND ENDANGERED SPECIES

WILDLIFE RESOURCES

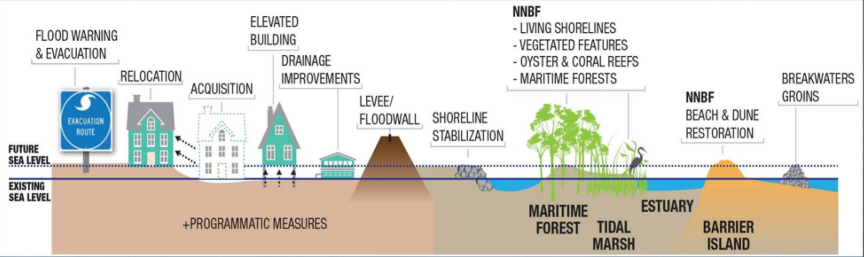







PHOTO CREDITS (LEFT TO RIGHT): T.TAUGHER (FIRST THREE); WWW.FACEBOOK.COM/CITYSTAUG/PHOTOS; U.S. FISH AND WILDLIFE SERVICES.

FULL ARRAY OF MEASURES INCLUDING NATURAL AND NATURE-BASED FEATURES (NNBF) CONSIDERED



TYPICAL SCHEDULE | PLANNING MILESTONES FOR A 3-YEAR STUDY*

STUDY INITIATION AND SCOPING
ALTERNATIVES MILESTONE

Jan 2023 to May 2023

PLAN FORMULATION
ENGINEERING AND ECONOMIC MODELING

May 2023 to May 2024

TENTATIVELY SELECTED PLAN (TSP) MILESTONE

May 2024

DRAFT REPORT AND NEPA
PUBLIC, TECHNICAL, AND POLICY REVIEW

Jul 2024 to Sep 2024

AGENCY DECISION MILESTONE

Nov 2024

FINAL REPORT
WASHINGTON-LEVEL REVIEW

Jul 2025

CHIEF OF ENGINEERS REPORT

Jan 2026

PROJECT ENGINEERING AND DESIGN **
CONSTRUCTION **

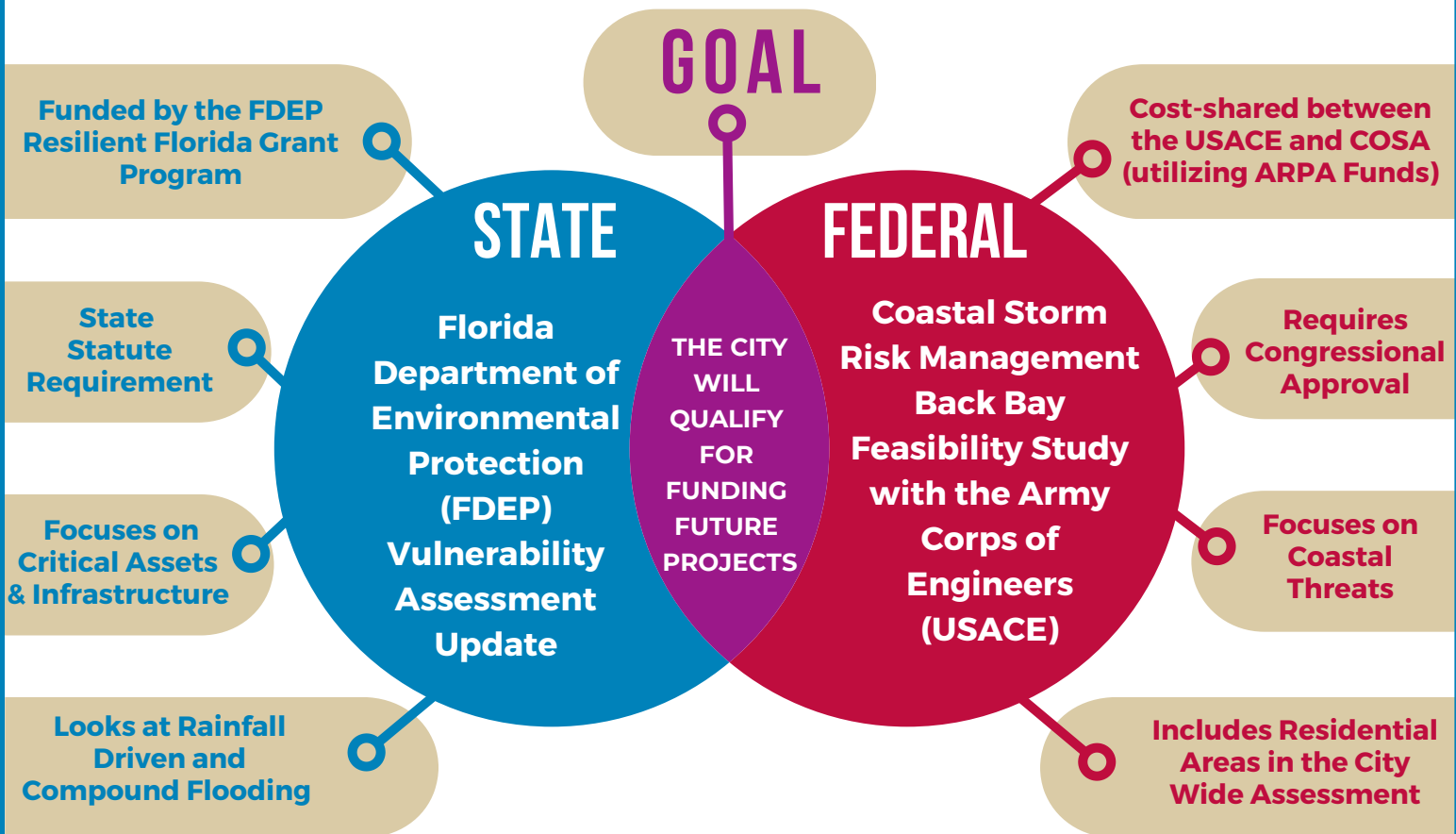
3 YEARS

** Contingent Upon Congressional Authorization and Appropriations

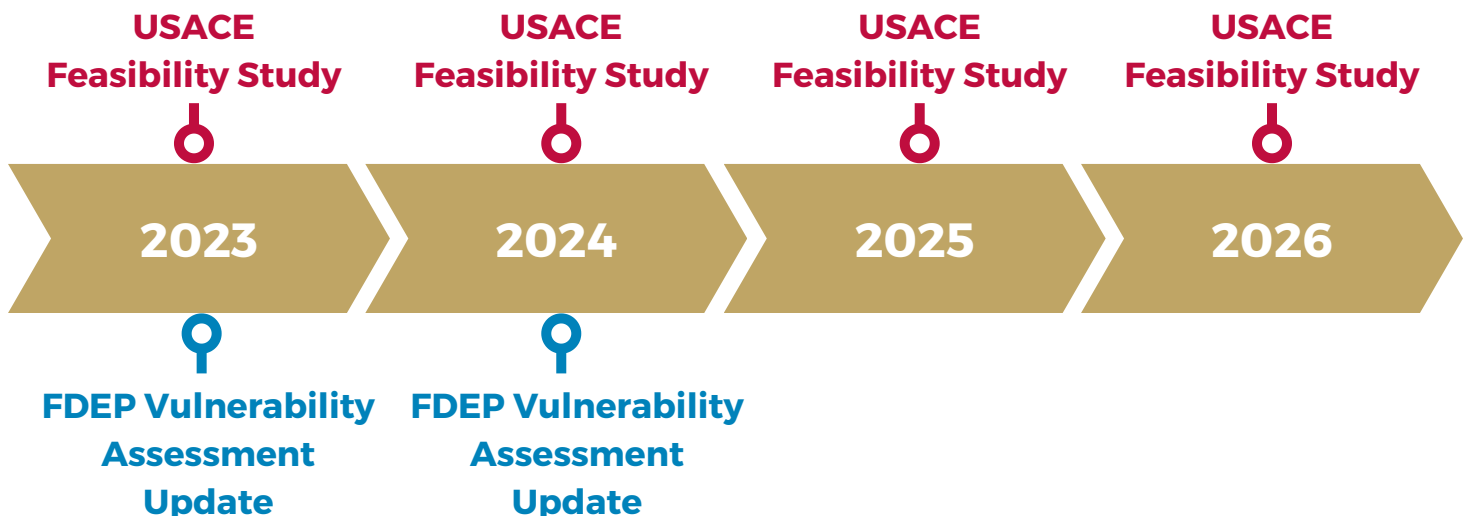
* The study schedule, scope, and budget can vary depending upon the complexity of the study area and corresponding problems identified throughout the study process; changes to the 3-year, \$3 million parameters require documentation and approval of division and Headquarters USACE and concurrence of the local sponsor. A specific schedule and budget for this study will be developed after the Feasibility Cost Sharing Agreement (FCSA) is signed.



CITY OF ST. AUGUSTINE STUDIES BREAKDOWN



STUDIES TIMELINE





PROPOSED RESILIENT SHORELINES ORDINANCE

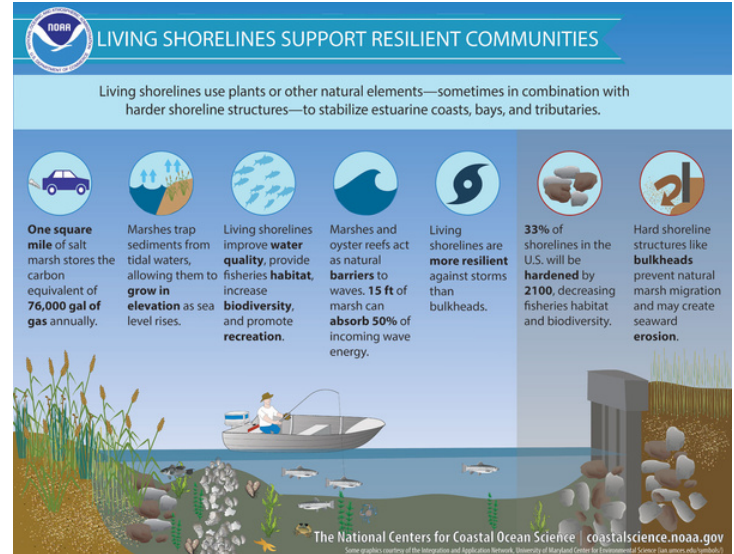
What is this proposed ordinance?

The City of St. Augustine is working on implementing a Resilient Shorelines Ordinance to help combat sea level rise and coastal storm surge threats to the city. A Resilient Shoreline Ordinance will help promote nature-based designs that create/protect habitat & improve water quality.

Why is this proposed ordinance needed?

Sea level rise increasingly threatens both public and private infrastructure. The development of a resilient shoreline ordinance will provide the city and its residents guidance and opportunities for protective infrastructure such as seawalls, living shorelines, and hybrid approaches. The proposed ordinance will allow for a consistent approach to inform both public and private stakeholders on appropriate shoreline policy, infrastructure construction, maintenance and repair, and methodology and account for future flood risk.

SCHEDULE
2023-2025



PHASE	STATUS
PHASE 1	DATA COLLECTION
PHASE 2	DRAFT RESILIENT SHORELINE ORDINANCE
PHASE 3	COMMUNITY OUTREACH & ENGAGEMENT SUPPORT

GREEN - SOFTER TECHNIQUES

GRAY - HARDER TECHNIQUES

Living Shorelines

VEGETATION ONLY - Provides a buffer to upland areas and breaks small waves. Suitable for low wave energy environments.

EDGING - Added structure holds the toe of existing or vegetated slope in place. Suitable for most areas except high wave energy environments.

SILLS - Parallel to vegetated shoreline, reduces wave energy, and prevents erosion. Suitable for most areas except high wave energy environments.

Coastal Structures

BREAKWATER - (vegetation optional) - Offshore structures intended to break waves, reducing the force of wave action, and encourage sediment accretion. Suitable for most areas.

REVETMENT - Lays over the slope of the shoreline and protects it from erosion and waves. Suitable for sites with existing hardened shoreline structures.

BULKHEAD - Vertical wall parallel to the shoreline intended to hold soil in place. Suitable for high energy settings and sites with existing hard shoreline structures.



FLOOD MITIGATION ASSISTANCE (FMA) PROGRAM

What is the FMA Program?

FEMA's Flood Mitigation Assistance (FMA) grant program is a resource provided to the City meant to reduce or eliminate the risk of repetitive flood damage to buildings and structures insured under the National Flood Insurance Program (NFIP).

The FMA Program is a nationally competitive annual FEMA grant program. Prioritization is given to those structures listed as Severe Repetitive Loss and Repetitive Loss.

Cost shares for the homeowner will vary depending on the validation of the structure and are pre-determined by FEMA in most cases.

Who can apply for the FMA program?

Those who currently participate in the National Flood Insurance Program:

- Must be insured with the NFIP at the time of the Cycle 2 application opening period of 9/30/23
- Policy must be effective as of 9/30/23
- Must maintain flood insurance to the structure in perpetuity

More FMA Info: www.citystaug.com/FMA

Before Elevation



What is the FMA Program timeline?

The FMA Program is a yearly resource available to residents of the City of St. Augustine. The application is due annually in late September to the City. However, residents can be working to actively building an application all year and turn in paperwork at any time. Once the application has been turned into the state, the awards will not be announced until late summer the following year. If funding is awarded, the grant must be completed within three years of contract execution.

Documents Needed for Participation Elevation and Reconstruction

- Signed FMA Forms
- NFIP Insurance Declaration Page
- Current Elevation Certificate - contact a local surveyor or check to see if the City has one on file: **904.209.4327 / fma@citystaug.com**
- 3 Elevation Quotes from qualified elevation firms (Quote should indicate who is performing the lift)
 - A sketch of the structure submitted
 - Copy of Contractor License
- Copy of Riggers Insurance (if lift contractor)
- Color photos of all 4 sides of structure

Planning & Building Dept- 904.825.1065

Public Works Dept- 904.825.1040

After Elevation



City of St. Augustine –

Resiliency and Stormwater Program

Planning and Zoning Board – Special Meeting February 21, 2023

Jessica L. Beach, P.E.
Chief Resilience Officer
Public Works Department





CITY OF
ST AUGUSTINE
— EST. 1565 —

Presentation Outline

- ❖ Recap of the Hurricane Season
- ❖ Why do we flood? A look at our challenges...
- ❖ Overview of the Resilience Program and Strategy

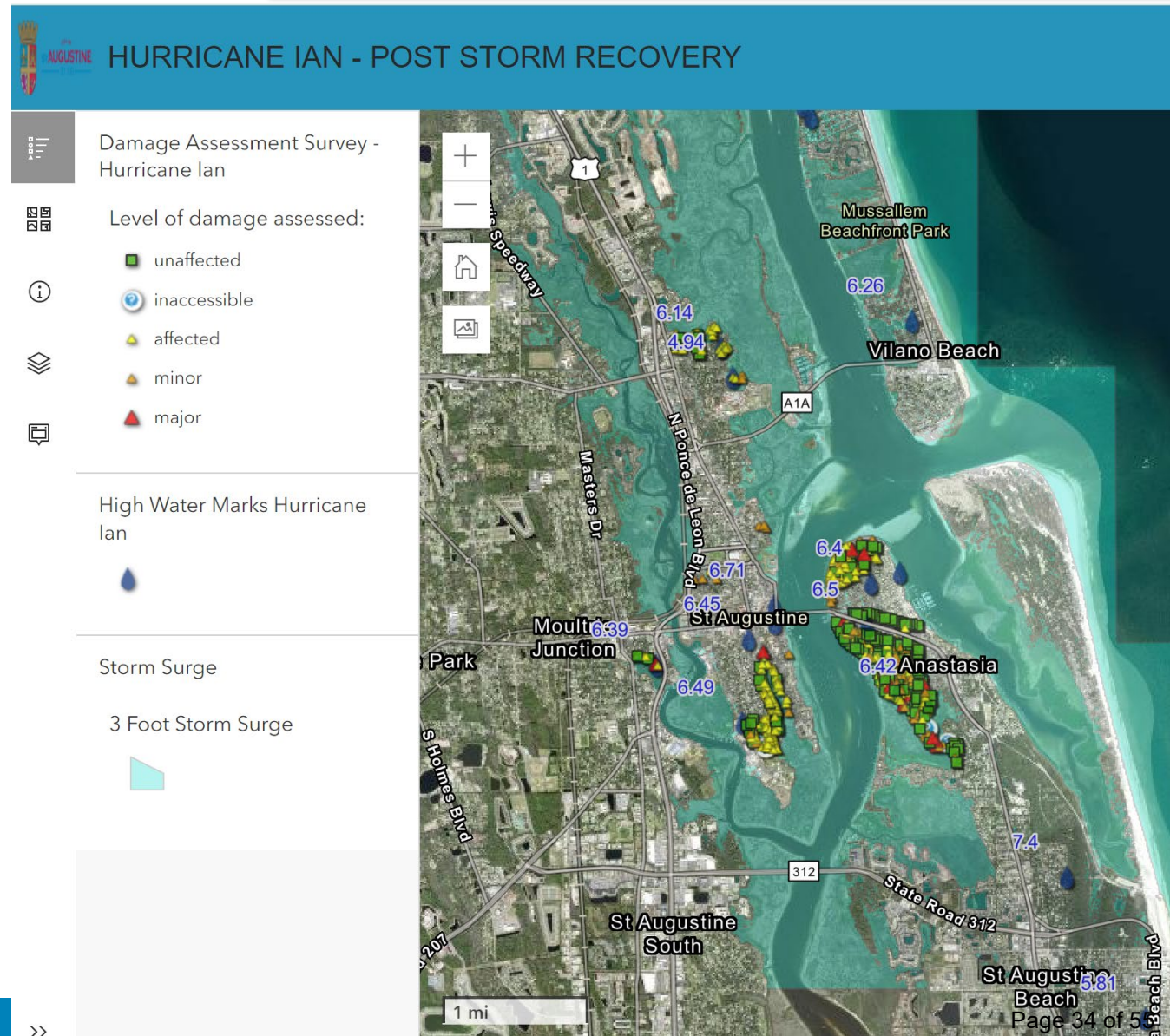




CITY OF
ST. AUGUSTINE
EST. 1565

A Recap of Hurricane Season

- ❖ City wide flooding from Hurricane's Ian and Nicole
- ❖ Map shows high water marks (HWM) – ranged from 4.94 – 7.4
- ❖ Preliminary assessment of impacted homes





CITY OF
ST. AUGUSTINE
EST. 1565

A Recap of Hurricane Season



High Water Marks (HWM) at O'Steens Restaurant – Anastasia Blvd (Island)

Matthew (7.07 NAVD88)



Ian (6.5 NAVD88)



Nicole (6.53 NAVD88)

Irma (4.9 NAVD88)





A Recap of Hurricane Season

- ❖ Affected = water under the house/garage, not in living space
- ❖ Minor = less than 18" in living space
- ❖ Major = more than 18" in living space

Properties Impacted by Hurricane Ian			
Affected	Minor	Major	Subtotal
330	157	19	506
65	31	4	%
Neighborhood			
Fullerwood			10%
Abbott Tract			1%
Flagler Model Land			2%
Lake Maria Sanchez			13%
Lincolnville			12%
Oyster Creek			1%
North Davis Shores			13%
South Davis Shores			48%



CITY OF
ST AUGUSTINE
— EST. 1565 —

Flooding is not new to the City



Why Do We Flood ?

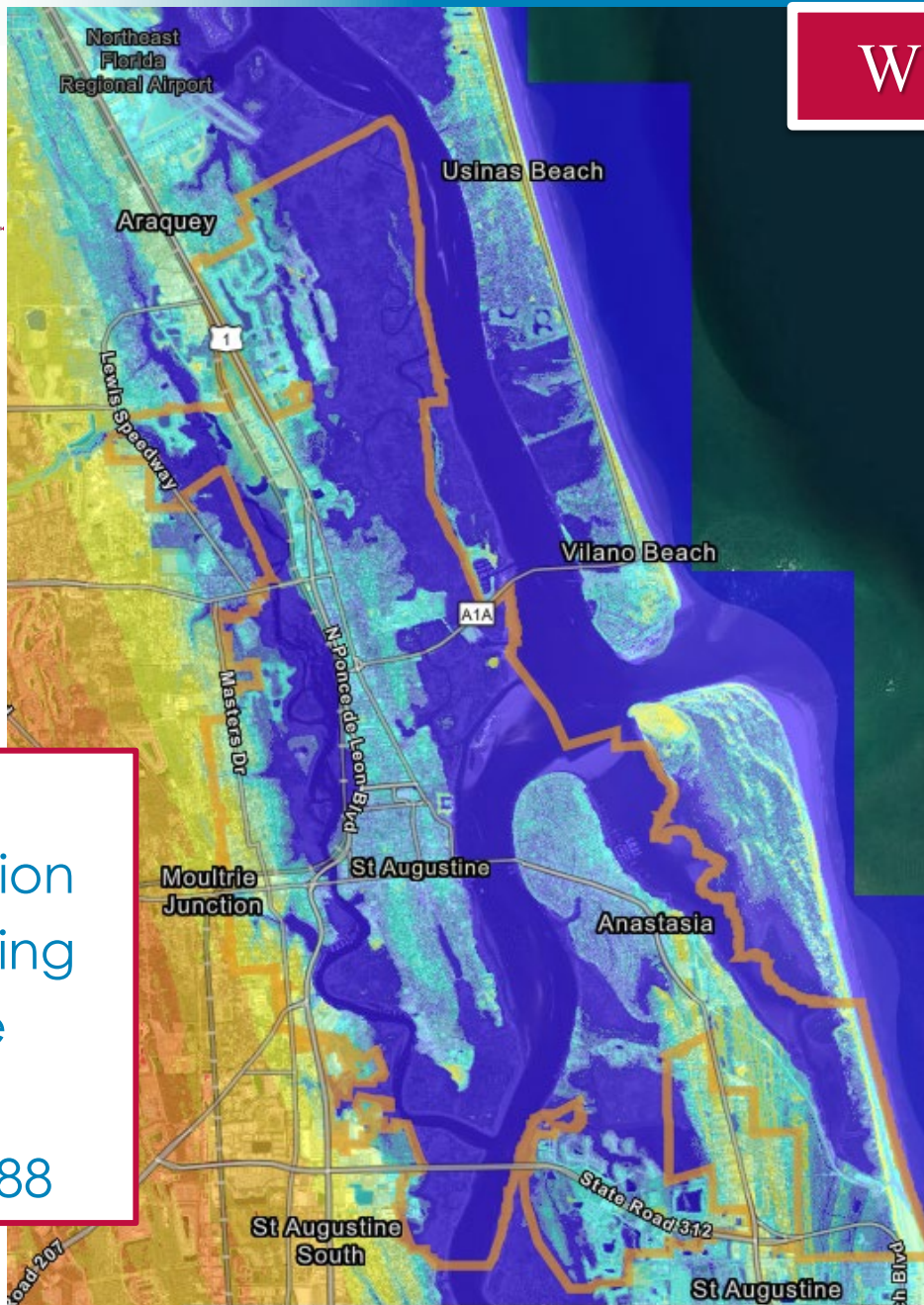


However, the frequency of “sunny day” flooding is on the rise



CITY OF
ST. AUGUSTINE
— EST. 1565 —

❖ Digital
Elevation
Mapping
for the
City in
NAVD88



Why Do We Flood ?

Hurricane's Ian and
Nicole
(HWM ≈ 6.5 NAVD88)

- ☐ Wetlands
- ☐ Zip Codes
- ☐ Zone Codes
- ☐ Elevation Certif
- ☐ Storm Surge De
- ☒ COSA_DEM





CITY OF
ST AUGUSTINE
EST. 1565

Why Do We Flood ?

Current City Challenges (stormwater):

- Aging infrastructure
- Undersized collection system
- Low-lying and coastal location
(90% of the City is within a flood zone)
- Highly developed (high
impervious area)
- **Subject to flooding – both from
rainfall and tidal/coastal
influence (compound flooding)**



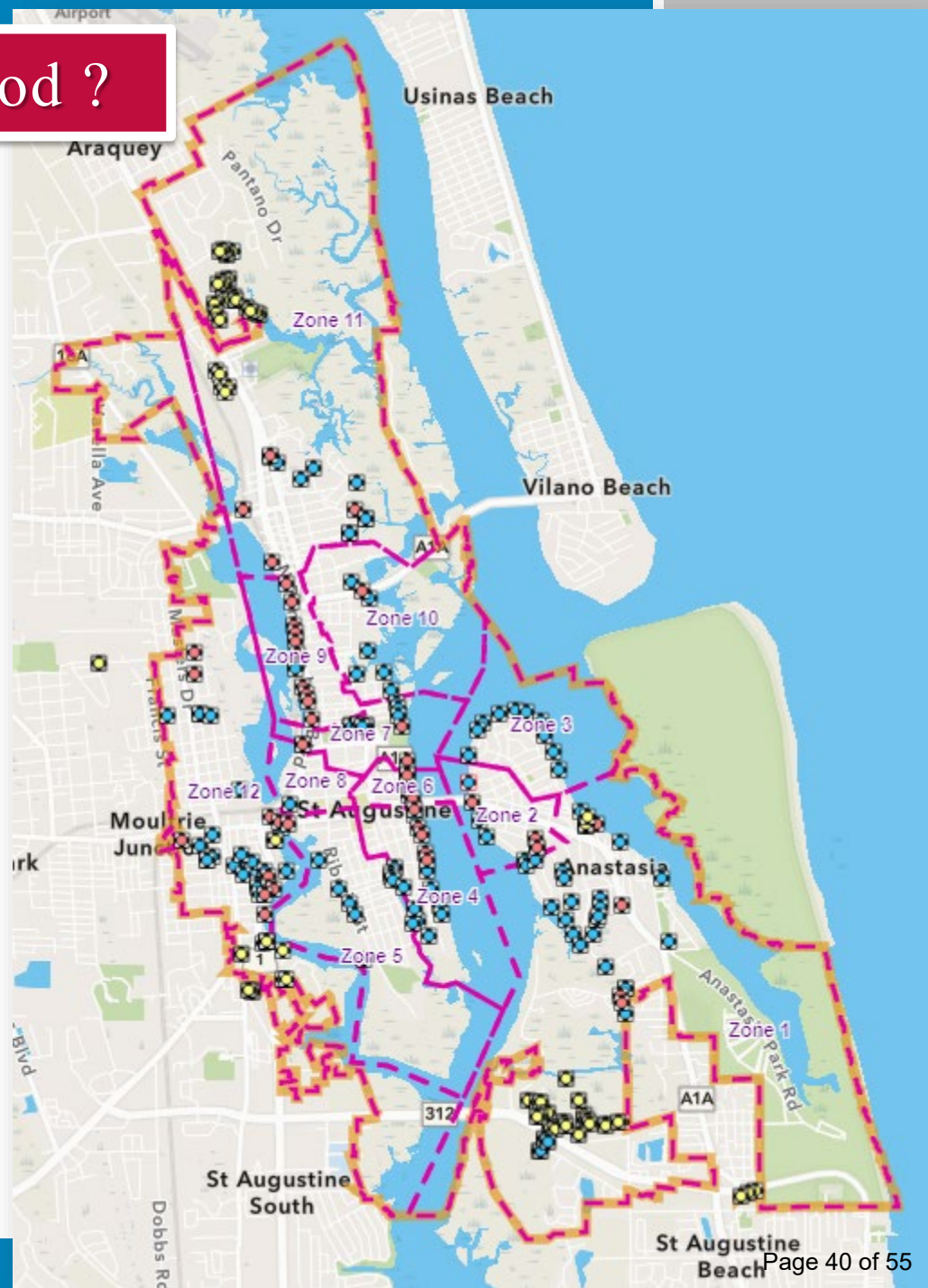


Why Do We Flood ?

CITY OF
ST AUGUSTINE
EST. 1565

Stormwater Infrastructure:

- 103 Outfalls
Tidally Influenced
(not including
FDOT)
- 949 Storm Inlets
- 20 miles of pipe
- Twelve (12)
maintenance
zones





CITY OF
ST AUGUSTINE
— EST. 1565 —

Overview of the Resilience Program and Strategy



www.citystaug.com/resiliency

-10-





CITY OF
ST AUGUSTINE
EST. 1565

Overview of the Resilience Program and Strategy

❖ Outreach and Education

❖ “One Stop Shop”:

- ✓ Programs
- ✓ Projects
- ✓ Planning / Studies
- ✓ Payment / Funding
- ✓ Policy
- ✓ Resources for Residents

www.CityStAug.com/Resiliency

Planning and Studies +

Projects +

Programs +

Policy +

Resources +

Payment/Funding

Home > Government > Resiliency

Flood Resilience

Resilience is the ability of individuals, communities, institutions, businesses, and system within St. Augustine to survive, adapt, and grow no matter what kinds of acute shocks (a sudden, sharp event that can threaten the city) and chronic stresses (stresses weaken the fabric of the city on a day-to-day basis) they experience.

The City of St. Augustine faces many challenges when it comes to both coastal and rain driven flooding, as a majority of the city is located in a flood plain. The City of St. Augustine is proactively identifying areas of risks as it relates to the inevitable effects of sea level rise.

Stormwater Updates

For the latest updates given to commission regarding the resilience program, [click here](#).

Programs

Planning / Studies

Payment / Funding

Projects

Policy

Resources

Contact Us

Jessica Beach, P.E.
Chief Resilience Officer
[Send an email](#)
[More Information](#)

FAQs

- [What is flood resilience?](#)
- [What is the city doing about the flooding?](#)
- [What can I do to protect my home from flooding?](#)

[View All](#)

Quick Links

- [St. John's County Emergency Operations Center](#)
- [St. John's County Flood Facts website](#)
- [St. John's County Evacuation Information](#)

[View All](#)



CITY OF
ST. AUGUSTINE
EST. 1565

Overview of the Resilience Program and Strategy

- ❖ Resources Available for Historic Properties
- ❖ Flood Mitigation Guidance for Historic Properties
- ❖ Resilient Heritage in the Nation's Oldest City

-12-





CITY OF
ST. AUGUSTINE
— EST. 1565 —



www.citystaug.com/FMA
for more info

❖ Flood Mitigation Assistance (FMA) Program

- ✓ Cost share program with FEMA to elevate and/or reconstruct flood prone, at-risk structures
- ✓ FY21 – Application Cycle Completed (25 applications), but not selected
- ✓ FY 22 – Application Cycle:
 - Over 80 properties interested in the program, 62 properties had complete applications that met the program requirements
 - City submitted its applications to the State November 14th and is currently under State review, eligible applications will then be submitted to FEMA
 - Total funding request of \$12,353,474 submitted that would be cost shared with FEMA if selected
 - Late August – estimated timeframe to know if selected



CITY OF
ST. AUGUSTINE
EST. 1565



CITY OF
ST. AUGUSTINE
EST. 1565



CITY OF ST. AUGUSTINE



Project Map Key

1. Lake Maria Sanchez Flood Mitigation
2. South Whitney/West King Street Drainage
3. Inlet Drive Shoreline Stabilization
4. South Davis Shores Drainage
5. Court Theophelia Neighborhood Drainage
6. Avenida Menendez Seawall

City Wide Projects

- Tidal Backflow Prevention Program
- Groundwater Monitoring Network

City Planning Studies

- Back Bay Feasibility Study (Federal)
- Vulnerability Assessment Update (State)

City Programs

- Flood Mitigation Assistance (FMA) Program

City Ordinances

- Proposed Resilient Shorelines Ordinance

RESILIENCE STRATEGIES

PROJECTS

PLANNING/STUDIES

POLICY

PROGRAMS



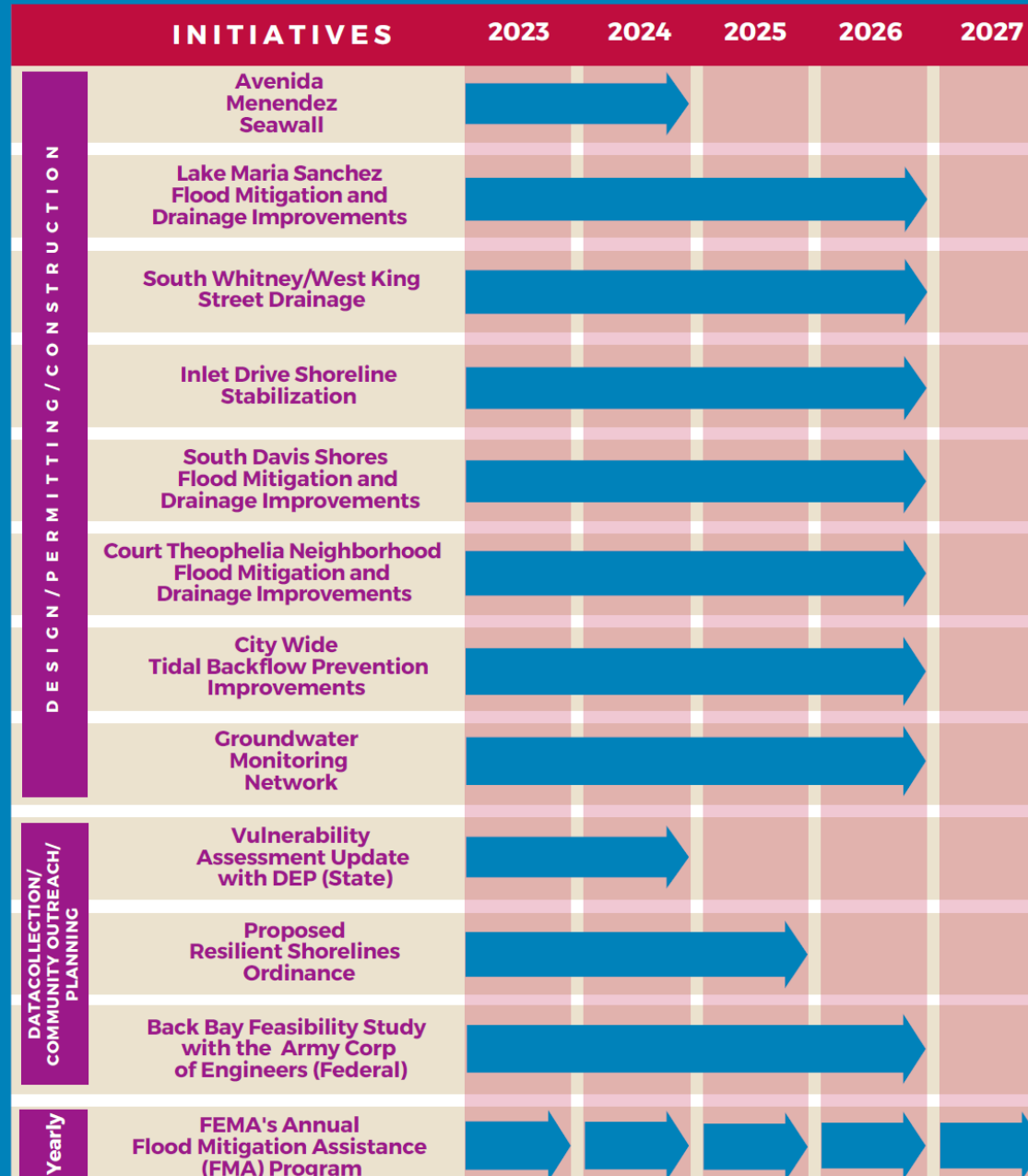
CITY OF

ST. AUGUSTINE

EST. 1565

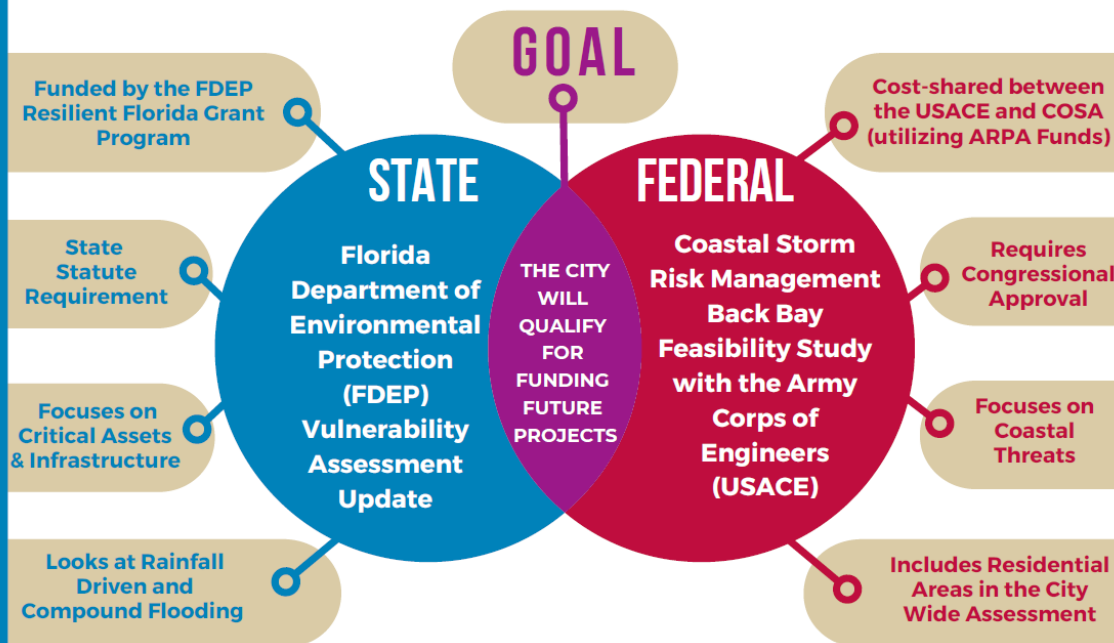


RESILIENCE EFFORTS TIMELINE

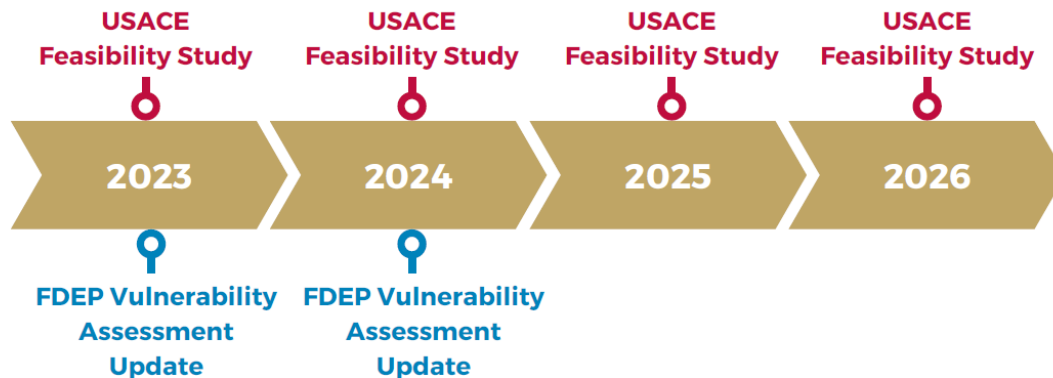




CITY OF ST. AUGUSTINE STUDIES BREAKDOWN



STUDIES TIMELINE





CITY OF
ST AUGUSTINE
EST. 1565



CITY OF
ST AUGUSTINE
EST. 1565



VULNERABILITY ASSESMENT UPDATE

With The Florida Department of Environmental Protection

What is this study?

Vulnerability Assessments (VA) identify or address risks of flooding and sea level rise and help development of adaptation/resilience plans, projects, and policies that allow for preparation for threats from flooding and sea level rise. The final report does include an adaptation plan with recommendations for identified projects to be implemented.

Why is this study needed?

Previous studies, including a coastal vulnerability assessment, were completed in 2016, which identified major flood pathways in the city. However that previous VA does not meet the current criteria outlined in section 380.093 of Florida statutes. By completing the FDEP VA it qualifies the city for the 50% cost-share for implementation projects and the city is eligible for future funding.

How will this study benefit the community?

A Vulnerability Assessment helps a community determine which structural and social assets are likely to be impacted by future coastal flooding and sea level rise and help create an adaptation plan for future mitigation projects. By integrating scientific methods and developing awareness of different structural and social assets that may be vulnerable to future coastal flooding, the community may ensure that the most useful basis for planning is established.

How is this study being funded?

The City of St. Augustine has been awarded funding from the Resilient Florida Grant Program in the estimated total assessment cost of \$500,000.



ESTIMATED ASSESMENT COST:
\$500,000

Resilient
Florida
Grant
100%

STUDY SCHEDULE 2023-2024

PHASE	STATUS
PHASE 1	DATA COLLECTION & ANALYSIS
PHASE 2	COMMUNITY OUTREACH
PHASE 3	REPORTING



CITY OF
ST. AUGUSTINE
EST. 1565



❖ Public input is important !

❖ 1st Public Meeting

Wed. Feb. 22nd @ 6-8 PM, Alcazar Room

- ❑ Poster sessions
- ❑ Presentation
- ❑ Public Comment
- ❑ Live streamed and recorded

www.citystaug.com/BackBay



BUILDING RESILIENCE

The St. Augustine, Florida Back Bay Coastal Storm Risk Management (CSRSM) Feasibility Study will conduct activities and tasks required to identify and evaluate alternatives and produce a decision document that, as appropriate, recommends a coordinated and implementable solution for hurricane protection, storm damage reduction, beach erosion control, and other related purposes at St. Augustine, Florida.

In partnership with the City of St. Augustine and its stakeholders, the study will explore effective, economically-viable and environmentally-sound solutions to mitigate risks and build enduring coastal resiliency - and amidst the potential impacts of sea level rise on the city's character and livability.

A feasibility study is the first step toward a potential federally-cost shared water resources project that could be one piece of the City of St. Augustine's overall, long-range flood resiliency strategy.

*The typical cost of a CSRSM study is \$3 million. The cost will be split 50/50 percent between the U.S. Army Corps of Engineers (USACE) and the City of St. Augustine, Florida.




TYPICAL SCHEDULE | PLANNING MILESTONES FOR A 3-YEAR STUDY*



*The study schedule, scope, and budget can vary depending upon the complexity of the study area and corresponding problems identified throughout the study process; changes to the 3-year, \$3 million parameters require documentation and approval of division and Headquarters USACE and concurrence of the local sponsor. A specific schedule and budget for this study will be developed after the Feasibility Cost Sharing Agreement (FCSA) is signed.

ST. AUGUSTINE, FLORIDA BACK BAY CSRSM FEASIBILITY STUDY

STUDY AREA

Through the planning process, the study will assess the multi-faceted landscape within the city limits of St. Augustine. Maintaining St. Augustine's unique and rich multi-layered sense of place will be a priority of the team as they develop and evaluate alternatives to reduce coastal storm risk.



PHOTO CREDITS (LEFT TO RIGHT): CITY OF ST. AUGUSTINE; CITY OF ST. AUGUSTINE; VISITST. AUGUSTINE.COM; CRAIG SWAIN; T. TAUGHER

TRANSPARENT PLANNING PROCESS

Feasibility studies use a transparent 6-Step Planning Process that pursues alternatives to reduce economic damages from storms over a 50-year project life, consistent with environmental statutes. In addition to economic and environmental conditions, regional economic development and social effects are addressed during the planning process. There are a variety of approaches, both quantitative and qualitative, to assist with multi-criteria decision making and plan selection.

Public input is paramount in the decision process. Multiple public/stakeholder meetings will occur throughout the study.



MULTI-DISCIPLINARY PROJECT DELIVERY TEAM

The project delivery team (PDT) is the workgroup tasked with conducting the study and consists of varied experts including planners, engineers, biologists, geologists, hydrologists, surveyors, archaeologists, economists, real estate specialists, and more to address problems and opportunities. Each team member is responsible for identifying water resources problems and assisting in formulating solutions to those problems within their area of expertise. This interdisciplinary approach to problem solving is key to a successful feasibility study.



PHOTO CREDITS (LEFT TO RIGHT): CITY OF ST. AUGUSTINE AND WWW.FACEBOOK.COM/CITYST. AUGUSTINE/PHOTOS

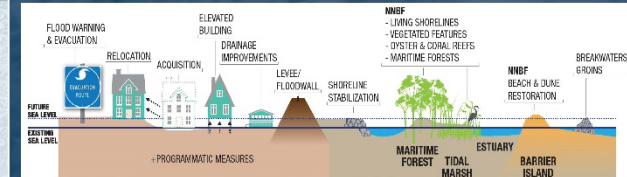
INTEGRATED FEASIBILITY REPORT AND NATIONAL ENVIRONMENTAL POLICY ACT ANALYSIS

The National Environmental Policy Act (NEPA) is a Federal law enacted in 1969. As required by NEPA, USACE will assess the potential environmental effects of the study alternatives, including a no action alternative. The report also documents coordination with the varied resource agencies that help to shape the final recommendation. Examples of NEPA effects categories include:



PHOTO CREDITS (LEFT TO RIGHT): T. TAUGHER; (FIRST THREE), WWW.FACEBOOK.COM/CITYST. AUGUSTINE/PHOTOS; U.S. FISH AND WILDLIFE SERVICES

FULL ARRAY OF MEASURES INCLUDING NATURAL AND NATURE-BASED FEATURES (NMBF) CONSIDERED



PROPOSED RESILIENT SHORELINES ORDINANCE

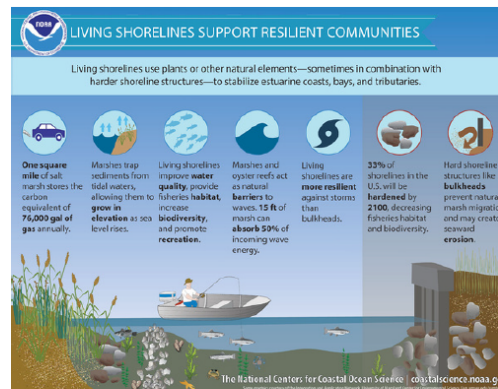
What is this proposed ordinance?

The City of St. Augustine is working on implementing a Resilient Shorelines Ordinance to help combat sea level rise and coastal storm surge threats to the city. A Resilient Shoreline Ordinance will help promote nature-based designs that create/protect habitat & improve water quality.

Why is this proposed ordinance needed?

Sea level rise increasingly threatens both public and private infrastructure. The development of a resilient shoreline ordinance will provide the city and its residents guidance and opportunities for protective infrastructure such as seawalls, living shorelines, and hybrid approaches. The proposed ordinance will allow for a consistent approach to inform both public and private stakeholders on appropriate shoreline policy, infrastructure construction, maintenance and repair, and methodology and account for future flood risk.

SCHEDULE 2023-2025



PHASE	STATUS
PHASE 1	DATA COLLECTION
PHASE 2	DRAFT RESILIENT SHORELINE ORDINANCE
PHASE 3	COMMUNITY OUTREACH & ENGAGEMENT SUPPORT

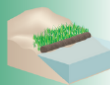
GREEN - SOFTER TECHNIQUES

GRAY - HARDER TECHNIQUES

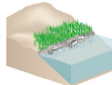
Living Shorelines



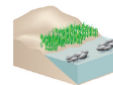
VEGETATION ONLY - Provides a buffer to upland areas and breaks small waves. Suitable for low wave energy environments.



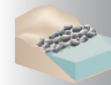
EDGING - Added structure holds the toe of existing or vegetated slope in place. Suitable for most areas except high wave energy environments.



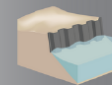
SILLS - Parallel to vegetated shoreline, reduces wave energy, and prevents erosion. Suitable for most areas except high wave energy environments.



BREAKWATER - (vegetation optional) - Offshore structures intended to break waves, reducing the force of wave action, and encourage sediment accretion. Suitable for most areas.



REVETMENT - Lays over the slope of the shoreline and protects it from erosion and waves. Suitable for sites with existing hardened shoreline structures.



BULKHEAD - Vertical wall parallel to the shoreline intended to hold soil in place. Suitable for high energy settings and sites with existing hard shoreline structures.



CITY OF

ST. AUGUSTINE
EST. 1565

In Summary

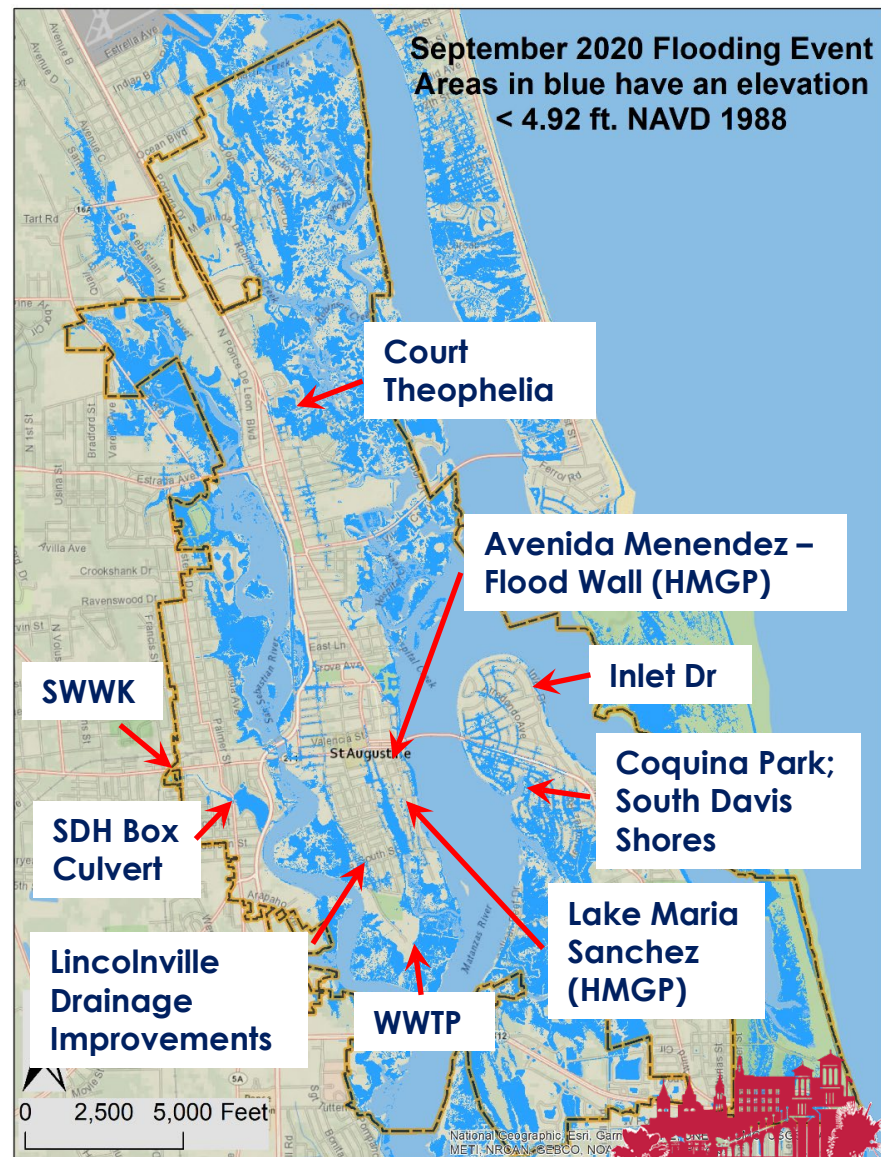
*Denotes Federally Funded Project (FEMA –PA, HMGP; HUD/DEO-CDBG-NR)

**Denotes State Funded Project (SJRWMD, FDEP)

❖ Current Flood Mitigation Investments ≈ \$69,741,833 (\$58,218,292, grant funded, 83%):

- ❑ Lake Maria Sanchez*, **
- ❑ FEMA 13 Lift Station Hardening and Flood Proofing*
- ❑ Wastewater Treatment Plant (WWTP) Flood Proofing
- ❑ South Whitney/West King (SWWK) Flood Mitigation*, **
- ❑ Avenida Menendez Flood Wall*
- ❑ City-wide tide check valves (43 installed, 20 future)**
- ❑ Coquina Park
- ❑ South Dixie Highway Culvert Replacement**
- ❑ Lincolnville Utility and Drainage Improvements*, **
- ❑ South Davis Shores Flood Mitigation and Drainage Improvements *, **
- ❑ Inlet Drive Shoreline Resiliency Improvements *, **
- ❑ Flood Mitigation and Drainage Improvements for the Court Theophelia Neighborhood *, **
- ❑ Updated Vulnerability Assessment (State)**
- ❑ USACE Back Bay Feasibility Study (Federal)**

-20-





CITY OF
ST AUGUSTINE
EST. 1565

Thank you for your time!

www.CityStAug.com/Resiliency



Jessica L. Beach, P.E.
Chief Resilience Officer

E: jbeach@citystaug.com | M: 904.209.4227 | W: www.CityStAug.com



City of St. Augustine
P.O. Box 210
St. Augustine, FL 32085



CITY OF
ST AUGUSTINE
EST. 1565

-21-

St. Augustine History Festival

MARK YOUR CALENDARS for MAY 10-14, 2023!



The **St. Augustine History Festival** was created and conceived by UFHSA (University of Florida Historic St. Augustine, Inc.) for the purpose of generating excitement about the history of America’s oldest city. Our goal is to showcase every era of St. Augustine’s long and storied past through the 30 Special Events and Historic Venues listed below – from our founding in 1565 to the most advanced technology available in 2023 to research and study every year in- between. American history began here, and no one tells our story better than we do – come out and enjoy our city!

UPCOMING SPECIAL EVENTS

May 10, 2023 5:00 pm – 6:00 pm National Shrine of Our Lady of la Leche/Mission Nombre de Dios Discussion on Recent Archaeological Digs with Dr. Kathy Deagan and Dr. Timothy Johnson Read More	May 11, 2023 6:00 pm – 7:00 pm Flagler College/St. Augustine Historical Society Dr. Timothy Johnson and Dr. Aaron Broadwell will Discuss Rare Timucuan Discovery Read More
May 12, 2023 12:00 pm – 1:30 pm Peña-Peck House Mysteries linking the American Revolution, St. Augustine, and this House! Read More	May 12, 2023 2:00 pm – 4:00 pm The Lincolnville Museum & Cultural Center A Rare Study of Race and Currency Read More
May 12, 2023 3:00 pm – 5:00 pm Tolomato Cemetery Scavenger Hunt Tolomato Cemetery will host a scavenger hunt within the cemetery grounds. Read More	May 12, 2023 4:00 pm – 5:00 pm St. Augustine Historical Society Dr. Christine Miller of UF Medical School Discusses Native American Medical Mysteries Read More
May 13, 2023 9:00 am – 1:00 pm City of St. Augustine The Window Workshop & Historic Water Works Open House (see flyer on page 2) Read More	May 13, 2023 2:00 pm – 4:00 pm Fort Mose Historical Society Dr. Jane Landers will Discuss Her Research into Fort Mose’s “Sister City” in Cuba Read More
May 13, 2023 7:00 pm – 9:00 pm Drake’s Raid Reenactment Historic Florida Militia Presents Another Round with the English! Read More	

For more information on each event or a list of participating venues and houses of worship - see: <https://www.staugustinehistoryfestival.com/>



The Window Workshop & Historic Water Works Open House

Saturday, May 13

*You can be
energy-efficient
+ hurricane-ready +
keep your historic windows!*

Workshop: 9:30am - 12:00pm

*Doug Romaine, Historic Preservation Advisor,
Austin Historical*



Welcome Remarks and Introduction

*by Julie Courtney, Historic Preservation Officer,
City of St. Augustine*

Public Open House: 9:00am - 1:00pm

*Take a self-guided tour of the historic St. Augustine
Water Works Building*

The Waterworks | 184 San Marco Avenue
904.209.4326 | harb@CityStAug.com
www.CityStAug.com/PreservationResources



COMING SOON!

Preservation on Main Street 2023 July 19-22 | Ocala, FL



PRESERVATION
on Main Street

An annual conference co-organized by the Florida Main Street and Florida Trust, Preservation on Main Street aims to bring together preservationists and Main Streets and illustrate that historic preservation and economic revitalization are interconnected.

Hosted in a different Main Street each year, Preservation on Main Street is a meeting point for small business owners, community leaders, architects, planners, scholars and the public to connect, exchange ideas, participate in educational sessions and workshops and enjoy special tours.

Preservation on Main Street sessions offer continuing education credits.

Stay tuned for more information regarding sessions, speakers, venues, accommodation options and events.

<https://www.preservationonmainstreet.com/>

PastForward National Preservation Conference

(coordinated by the National Trust for Historic Preservation)

PastForward 2023 will take place November 8-10, 2023, in Washington, DC. Celebrate the power of place and join fellow preservationists and preservation lovers at the nation's premier conference for those who work to save, sustain, and interpret historic places.

Details about registration to come. [Sign up to receive updates](#) on the conference and we'll let you know when more details are confirmed.

<https://savingplaces.org/conference>