CITY OF ST AUGUSTINE EST. 1565

City Commission

Public Works & Utilities Quarterly Update

May 22, 2023

Todd J. Grant, P.G. — Director, Utilities

Reuben C. Franklin, Jr., P.E. — Director, Public Works

PW & Utilities Quarterly Update Agenda

- Resilience Program Updates
- FEMA 13 Lift Station Rehabilitation Project
- Wastewater Treatment Plant Headworks Rehabilitation
- West 3rd St Gravity Sewer and Water Main Improvements
- West Augustine Gravity Sewer Improvements
- Downtown Improvements District Phase 2
- Pavement Management Program
- Capital Projects Overview and Status Summary
- Questions and Discussion
- Appendix – CIP Project Information Sheets & Glossary of Terms
- Exhibit A – Resilience Program Information Packet

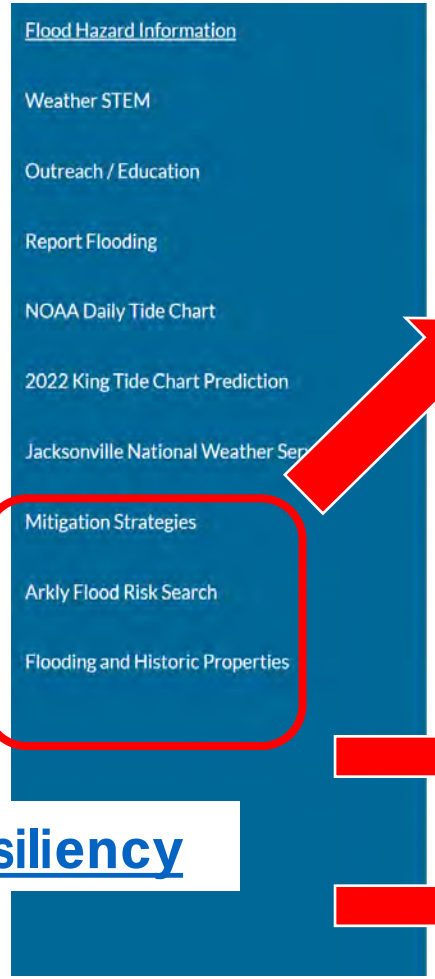
Resilience Program Updates

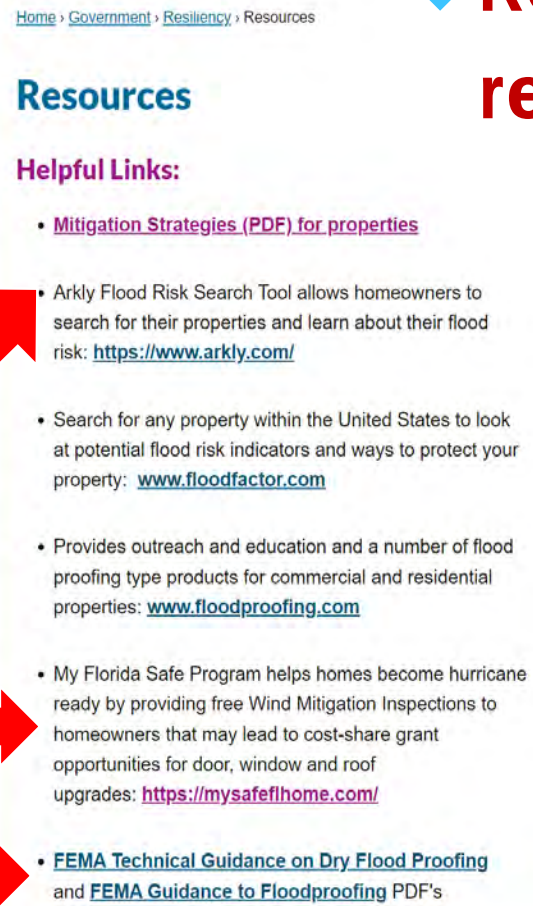
www.citystaug.com/resiliency

Resilience Program Updates

- **"One Stop Shop":**
  - ✓ Programs
  - ✓ Projects
  - ✓ Planning / Studies
  - ✓ Policy
  - ✓ Funding
  - ✓ Resources

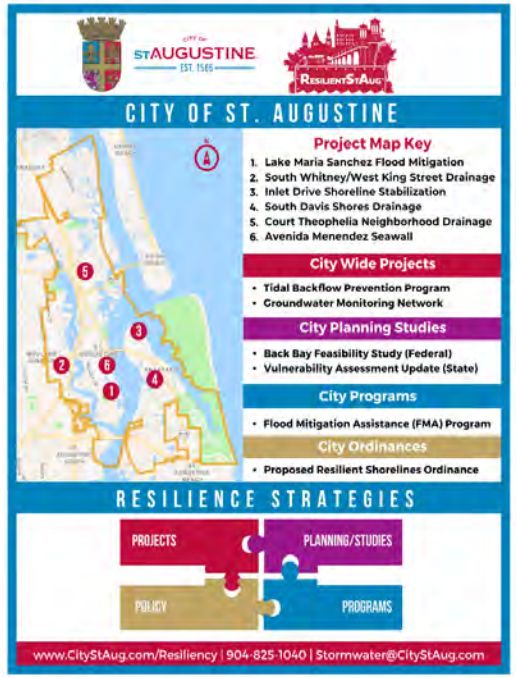
www.CityStAug.com/Resiliency





- **Recently added resources**

Resiliency Updates Packet (PDF)



Resilience Program Updates

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

✓ FY 22 – Application Cycle:

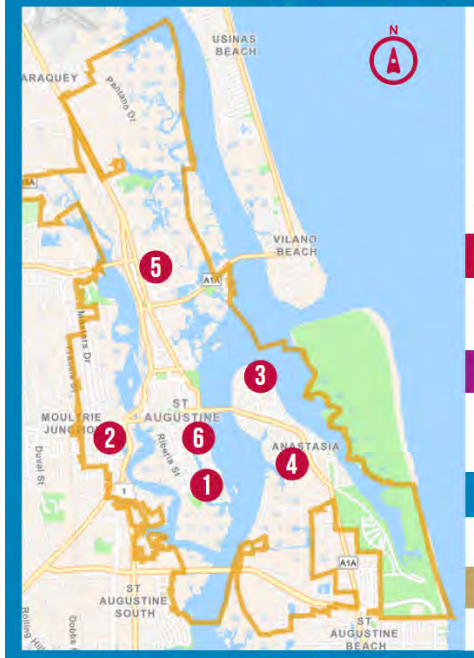
- Over 80 properties interested in the program, 62 properties had complete applications that met the program requirements
- City submitted its applications to the State November 14th , eligible applications have been submitted to FEMA
- Total funding request of $12,353,474 submitted that would be cost shared with FEMA if selected
- Late August – estimated timeframe to know if selected

✓ FY 23 – Application Cycle:

- Workshops held for Homeowners
- May 3rd @ 3 and 6 PM

Resilience Program Updates

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

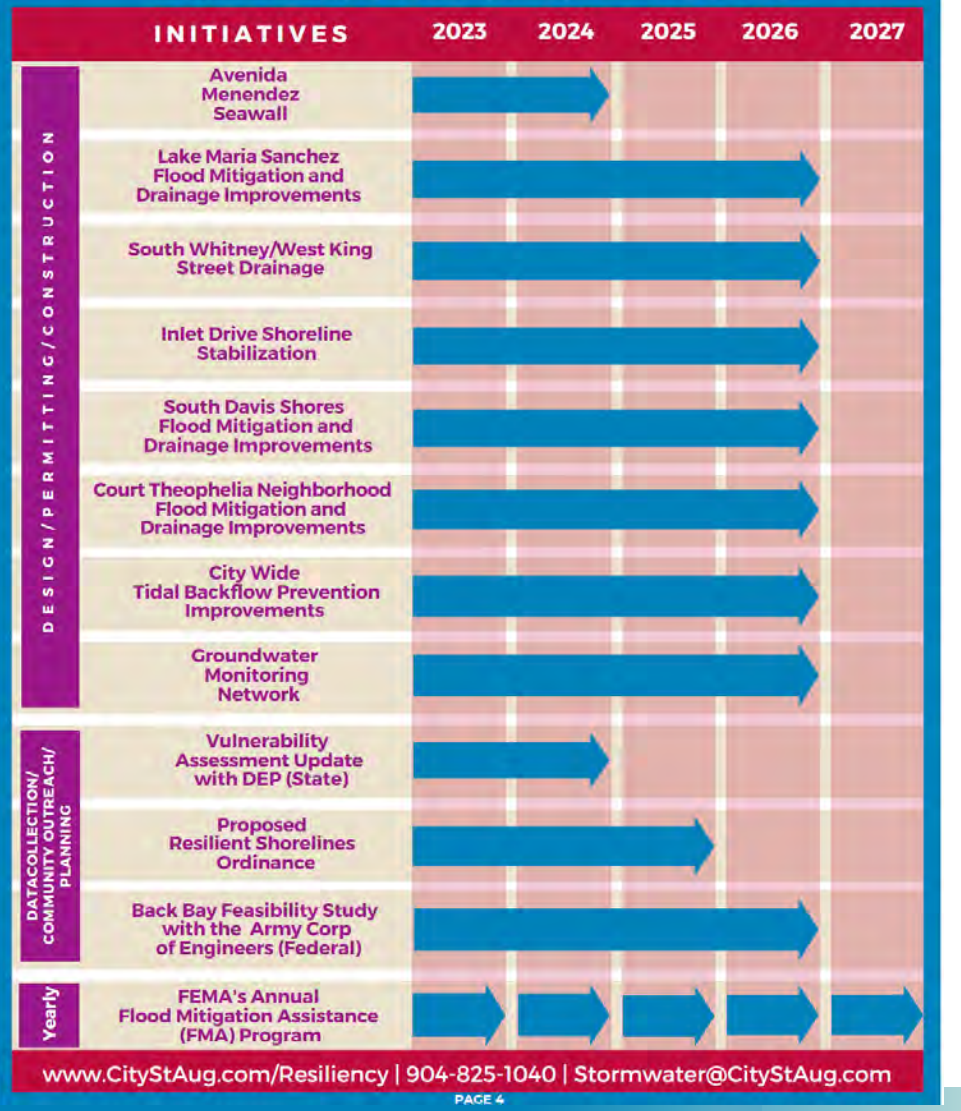
- Flood Mitigation Assistance (FMA) Program

City Ordinances

- Proposed Resilient Shorelines Ordinance

RESILIENCE STRATEGIES

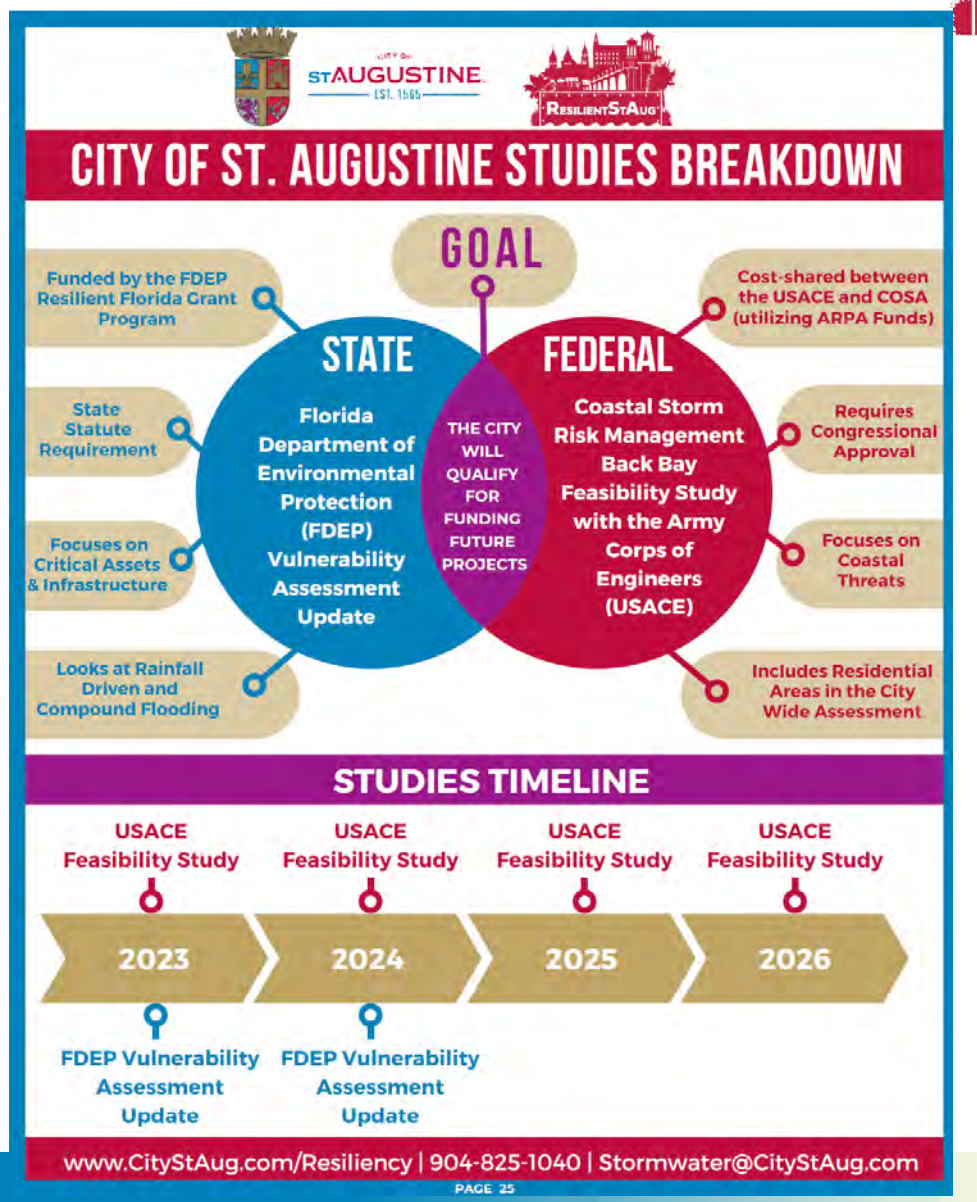
RESILIENCE EFFORTS TIMELINE



- Please refer to Exhibit A for the complete Resilience Program Information Packet

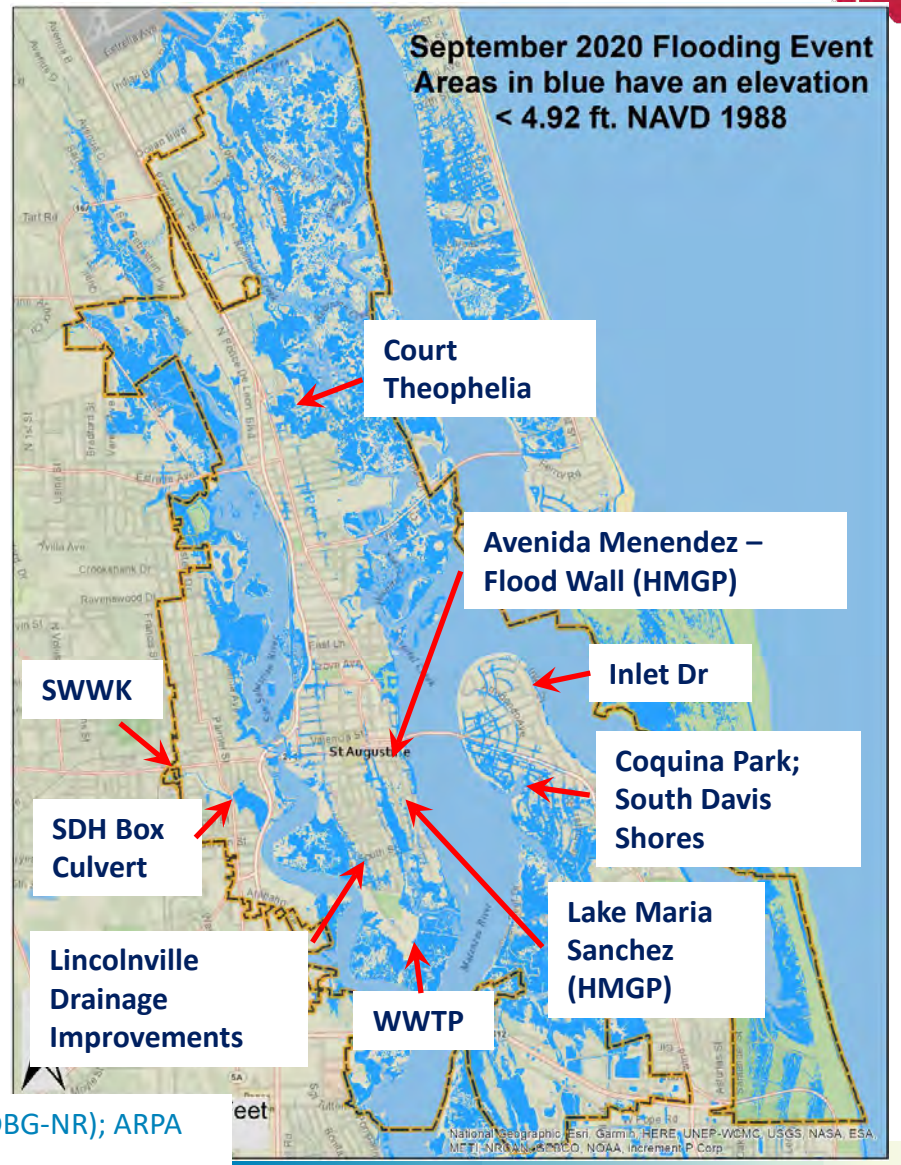
Resilience Program Updates

- Two (2) studies:
  - ✓ State funded updated Coastal Vulnerability Assessment (in coordination with St. Johns County and the City of St. Augustine Beach)
  - ✓ USACE-COSA Back Bay Feasibility Study
    - Charrette Planning 3-day event – February
    - Public meeting/input – February
    - Opening up monthly meetings to the public – April 20th
    - Alternative Milestones Meeting – May 1st



Resilience Program Updates

- **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)***



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

FEMA 13 Lift Stations Rehabilitation

- Major Lift Station Construction Complete
  - Punch list items remain
- Construction Cost $13.8M
- Start Construction Jan 2021
- Arricola Ave. Force Main
  - Complete

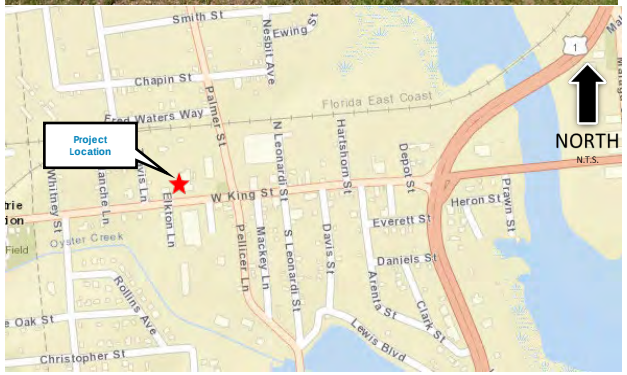
Wastewater Treatment Plant Headworks Rehabilitation

- Construction Cost $4.3 M
- Start Construction July 2022
- Finish Construction Sept 2023
- 60% Construction Complete

WTP HSP MCC and Emergency Generator Replacement

Water Treatment Plant High Service Pump Motor Control Center & Emergency Generator Replacement

- Construction Cost $2.5 M
- Start Construction January 2023
- Finish Construction November 2023
- 36% Construction Complete



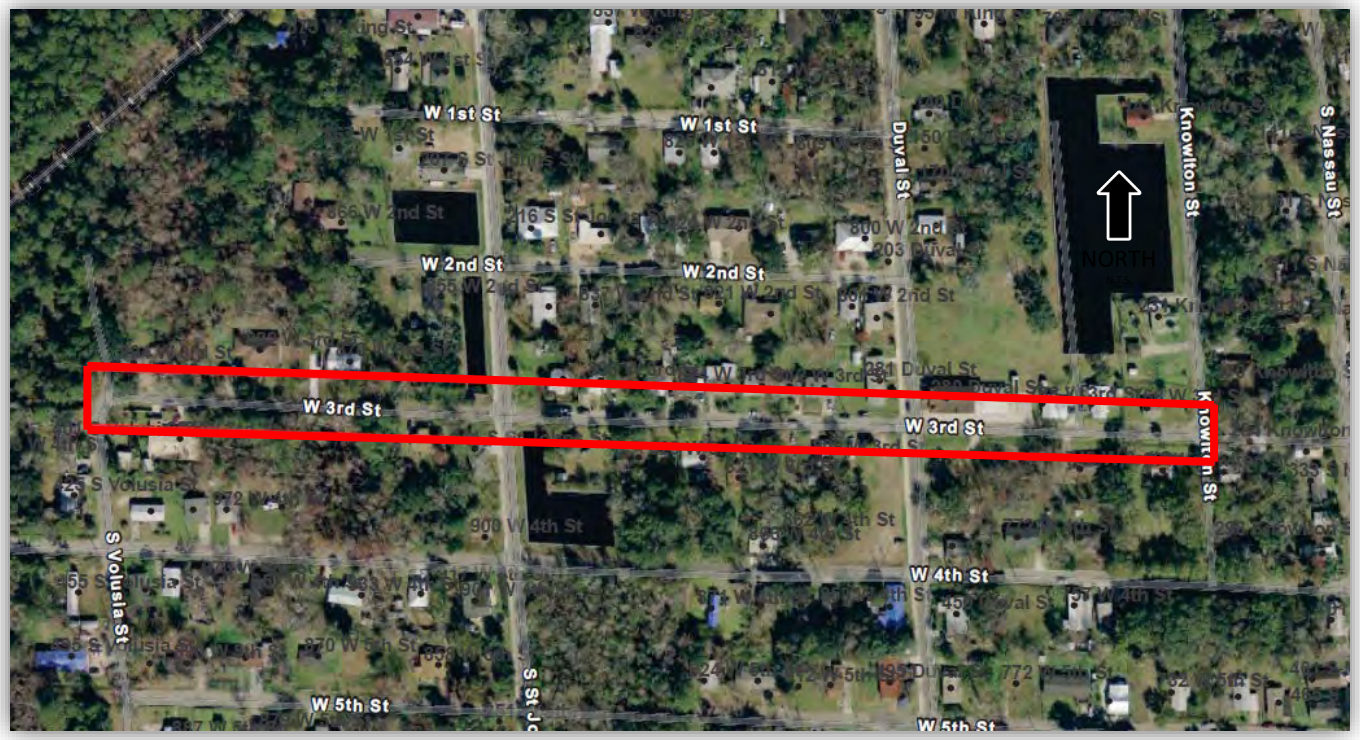
West 3rd Street Sewer Extension – Volusia to Knowlton St

West 3rd Street Sewer Extension

- Construction Cost $1.7 M
- Construction Start May 2023
- Construction Finish Sept 2023
- Approximately 26 homes to be connected
- Construction Time Frame: 6 Months
- Includes water main improvements

Funding Sources

- $300,000 State Grant
- Portion of $2,000,000 State Grant



West Augustine Gravity Sewer Improvements

West Augustine Sewer Master Plan

- In Design

Septic-to-Sewer Program

- Abandoned 57 septic systems to date

Pearl Street Gravity Sewer

- In Design, 90% Complete - Expanding gravity sewer from existing lift station
- Water main improvements part of this project

Downtown Improvements District – Phase 2A

- Project was bid and construction cost came in at $6,106,531.67 for Spanish St, Tolomato Ln & Tolomato Lot
- City reduced scope by removing the Tolomato Lot from the bid and negotiated with the contractor on other items to reduce the construction cost to $3,511,254.88
- Staff proposes to utilize funds from Sevilla St project to fully fund the construction of Spanish St and Tolomato Ln
- Sevilla St will be pushed out in the CIP schedule for construction and Tolomato Lot will become its own CIP project to be funded and bid in the future as its own project

Pavement Management Program

Proposed FY 2023 Mill and Resurface Paving Projects

- N. Whitney St. from Chapin St. to Ravenswood Dr.
- Florida Ave. from Evergreen Ave. to Helen St.
- Carrera St.- from US1 to Cordova St.
- Riberia St.- from Orange St. to Grove Ave.
- Fancher Ct. – from Casanova Rd to Casanova Rd
- Ocean Vista Ave/Lighthouse Boat Ramp- from Red Cox Dr to dead end
- St George St. – from South St to Joiner St
- South Dixie Hwy. – from Pellicer Lane to SR 207
- Cordova St– from King St to Orange St
- Eugene Pl. – from Fancher Ct to dead end
- Cordova St.- from King St. to Orange St.

Construction Cost: $ 854,678.49
Project Status: Under Construction
Construction Duration: Spring 2023

CIP Project Information Schedule

Project Title	Project Status	Schedule				
		2023	2024	2025	2026	2027
Oyster Creek Force Main HDD	Complete					
Automatic Meter Reading Phase 4	Complete					
Min Grant Septic to Sewer Connections W Aug Pkg 5	Complete					
(SJC) South Orange Street Utility Adjustments	Complete					
(SJC) N. Rodriguez Street Utility Adjustments	Complete					
I&I Clean & Inspect Sewer Basins 62, 68, 69, 71	Complete					
I&I Clean & Inspect Sewer Basins 60, 64, 66, 70	Complete					
I&I Manhole Rehab Basins 16, 17, 20, & 52	Complete					
I&I Sanitary Sewer Main & Lat Rehab FY 2022	Complete					
Arricola Avenue Force Main HDD Improvements	Complete					
Water Treatment Plant Optimization	Study-Complete					
King Street Ownership Transfer	Complete					
Sevilla Street Brick Roadway & Utility Improvements	Design-Complete					
Downtown Circulator - Route 1	Complete					
Stormwater Outfall Tide Check-Valve Master Plan	Study-Complete					
FEMA 13 Lift Station Rehab & Replacement	Substantial Complete					
(SJC) The Lakes (S. Holmes) Utility Adj.	Substantial Complete					
I&I Prioritize Sanitary Sewer R&R Projects	Annual					
Paving Management Program	Annual					

CIP Project Information Schedule

Project Title	Project Status	Schedule				
		2023	2024	2025	2026	2027
(SJC) Collier Heights (S. Holmes) Utility Adj.	Construction					
(SJC) Santa Rosa Utility Adjustments	Construction					
(FDOT) SR 312, 207-Holmes Utility Adjustments	Construction					
Lake Maria Sanchez Flood Mitigation & Drainage Improvements	Design					
WWTP Headworks Rehabilitation	Construction					
WTP HSP MCC & Emergency Generator Replacement	Construction					
Water Treatment Plant Concentrate Outfall	CMAR Preconstruction					
Avenida Menendez Seawall (HMGP)	Design					
Pearl Street Gravity Sewer Improvements	Design					
W 3rd Street Gravity Sewer and WM Improvements	Construction					
W Aug Wastewater Master Plan & Hydraulic Model Update	Design					
Inspection Management Software	Design					
Stormwater Master Plan - Phase 2	Study-Postponed					
St. Francis Street Utility Improvements	Design					
King Street and San Sebastian River WM HDD	Design					
Ct Theophelia Neighbrhood Stormwater & Util Improvements	Design					
South Whitney & West King Stormwater Improvements	Design					
South Davis Shores Flood Mitigation & Drainage Improvements	Solicitation-Design					
Inlet Drive Shoreline Stabilization	Solicitation-Design					

CIP Project Information Schedule

Project Title	Project Status	Schedule				
		2023	2024	2025	2026	2027
Downtown Improvement District Phase 2A	Solicitation-Construction					
King St. Complete Streets Project	Design					
Lighthouse Park Gravity Sewer Improvements	Scope					
SCADA for Lift Stations, WTP, and WWTP	Scope					
City-Wide Tide Check Valve Installation	Solicitation-Construction					
Army Corps of Engineers Back Bay Feasibility Study	Study					
Duero & Cerro St. Stormwater and Utility Improvements	Design					
Smart St. Augustine	Solicitation-Design					
(FDOT) King Street Drainage Outfall	Construction					
Groundwater Monitoring	Solicitation-Design					
Parking Pay Station Flood Proofing	Construction					
Lift Station 8 Replacement	Scope					
Lift Station 14 Replacement	Scope					
Lift Station 41 Replacement	Scope					
South Tank Potable Water Fill Line	Scope					
Pearl Street Force Main Improvements	Scope					
Cast Iron Neighborhood Water Main Improvements	Scope					
WWTP Effluent Outfall Repair	Construction-Postponed					
WTP Improvements	Scope					

Additional Questions
and
Commission Discussion

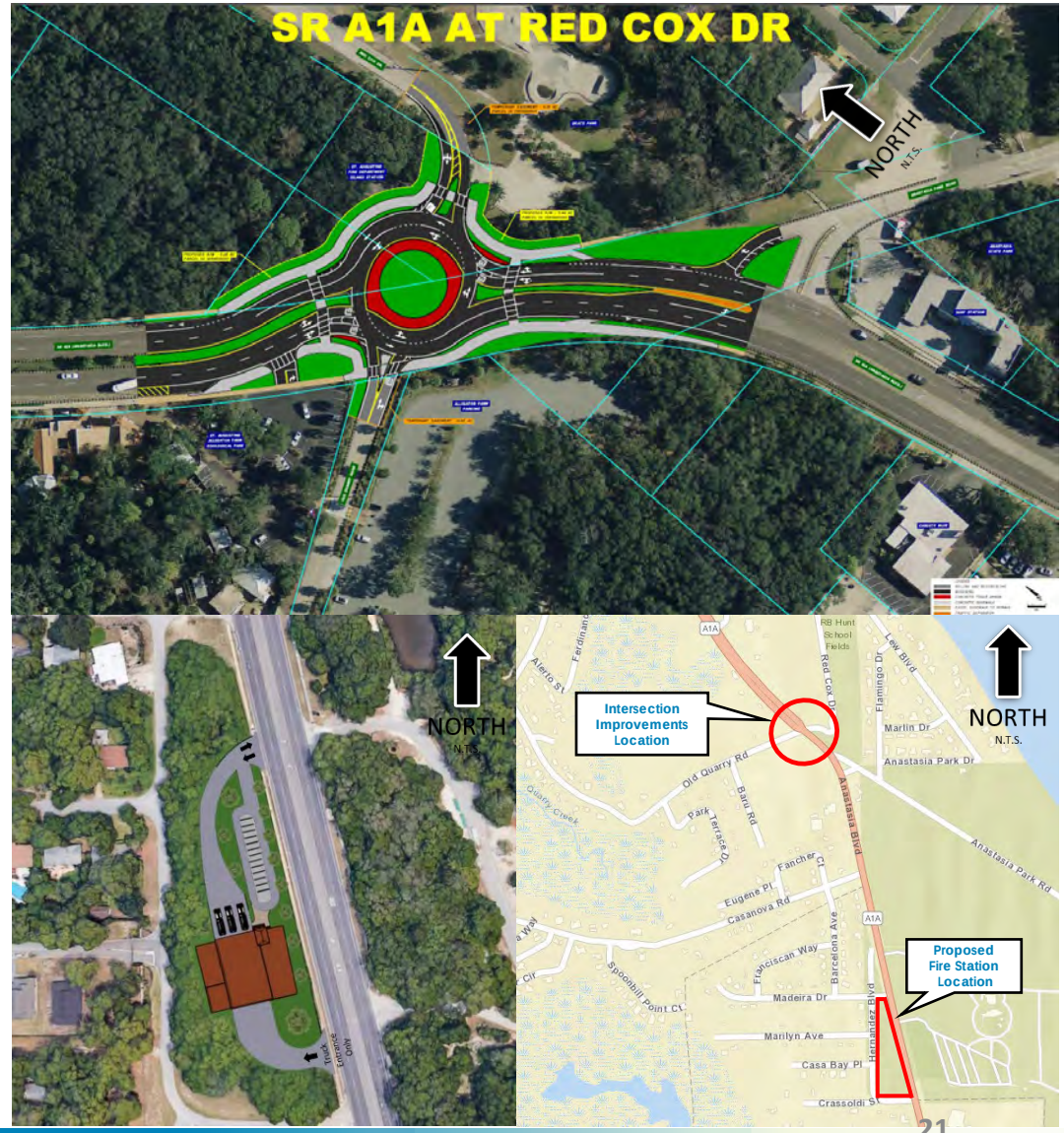
Appendix

CIP Project Information Sheets
and
Glossary of Terms

CIP Project Information Sheet

Anastasia Boulevard Fire Station and Traffic Improvements

The City intends to acquire 5-acres of vacant state land located at Anastasia Park. This land acquisition allows the City to construct a modern fire station in a new location to serve the surrounding area. It will also allow the existing fire station located near the state park entrance to be decommissioned. The City will then work with the FDOT to make intersection improvements at Anastasia Boulevard, Red Cox Road, and Old Quarry Road for safety improvements.

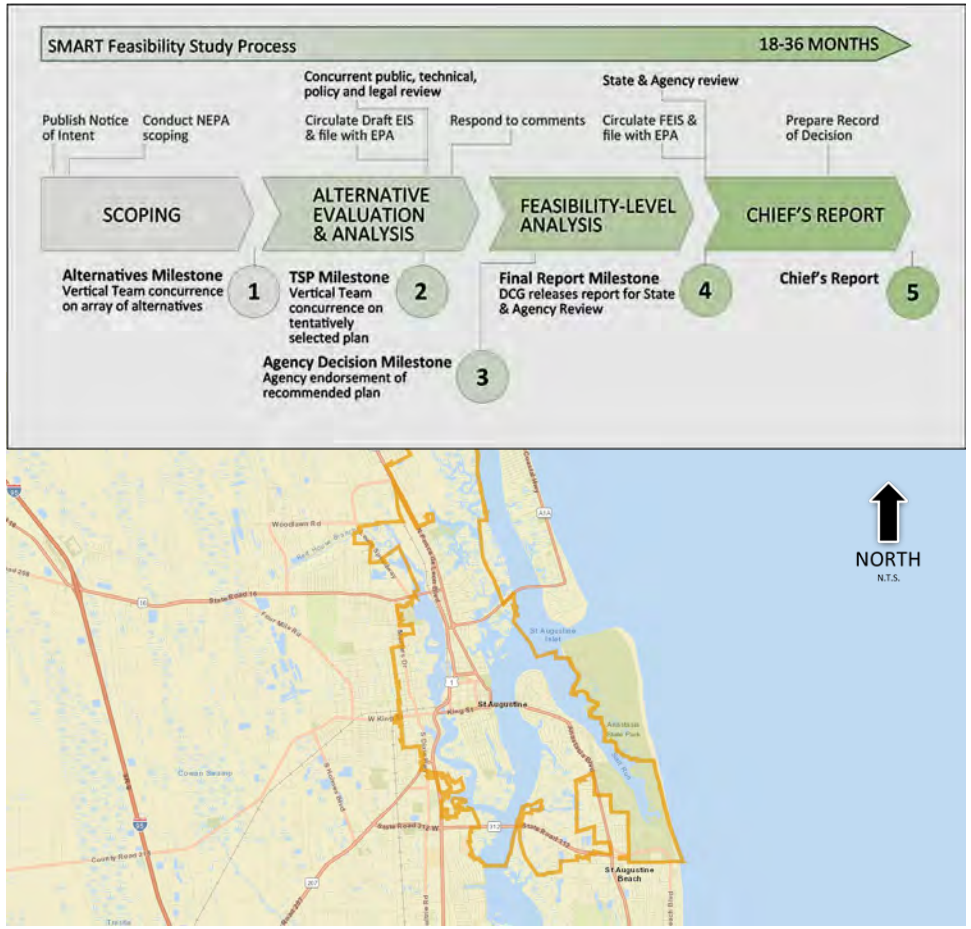


Design Cost:	$ TBD
Construction Cost:	$ TBD
Project Status:	Scope
Construction Duration:	TBD

CIP Project Information Sheet

Army Corps of Engineers Back Bay Feasibility Study

The City of St. Augustine Coastal Storm Risk Management (CSRM) 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. 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. Resilient Florida program is granting $500,000 to this study. US Army Corp will cover 50% of the $3 million.



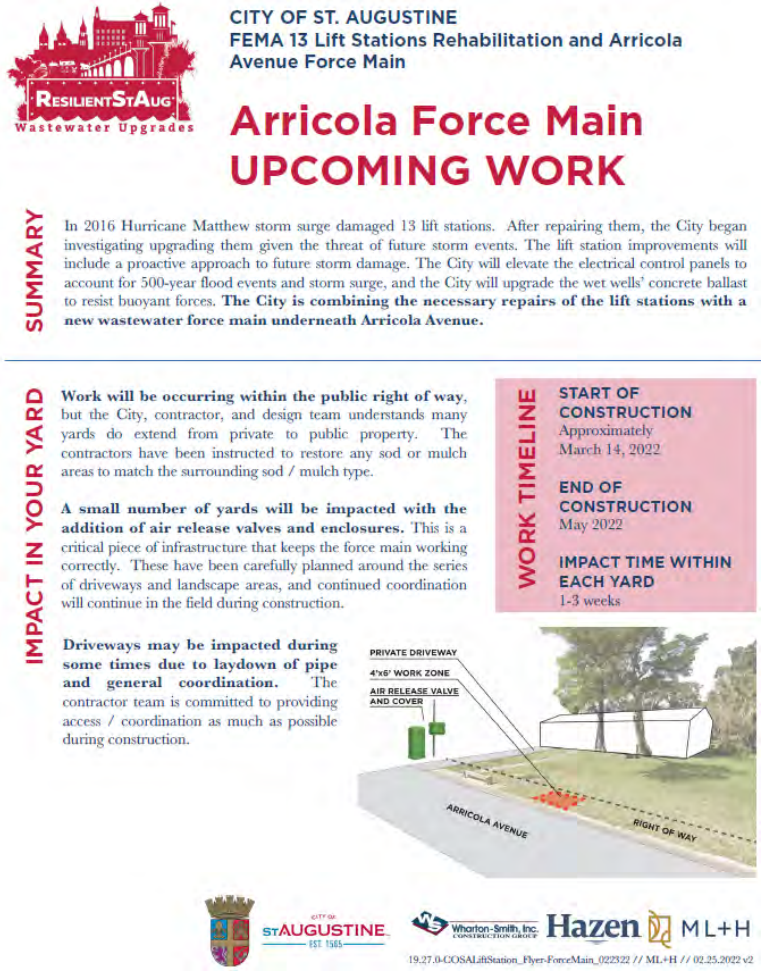
Study Cost:	$ 3.0 M
Construction Cost:	$ TBD
Project Status:	Solicitation – Study
Study Duration:	2022 – 2025

CIP Project Information Sheet

Arricola Ave Force Main HDD

This project will replace and extend the force main between LS-51 and 52 in South Davis Shores. The existing cast iron force main stops short of LS-52 and discharges into a manhole on Solano Ave. This has caused SSOs (sanitary sewer overflows) at the manhole on Solano. This project will improve our utility, harden the collection and transfer of wastewater, and eliminate SSOs. Design and construction of this project is funded by city bond proceeds.

Design Cost:	$ 181,000
Construction Cost:	$ 620,000
Project Status:	Construction
Construction Duration:	April 2022 – May 2022



CIP Project Information Sheet

Avenida Menendez Seawall

The City of St. Augustine has received federal funding through FEMA's Hazard Mitigation Grant Program to design and construct the final segment of seawall near the Marina. This project will essentially close the "elevation" gap between the existing north (Bayfront Park) and south (2013 Avenida Menendez Seawall) segments. The project entails raising the final segment of seawall to match the north and south elevations, installation of two (2) tide check valves, and rehabilitation of the existing seawall to harden it. The combination of this work will provide for a higher level of flood protection up to the 100-year storm event (also referred to as the 1% annual chance event). The City has also recently applied to the Florida Inland Navigation District (FIND) to help with the construction costs that that the City will be responsible for. Decisions on the pending grant application with FIND will be made later this summer or early fall.

Design Cost:	$ 150,000
Construction Cost:	$ 1.5 M estimate
Project Status:	Design
Construction Duration:	2023 – 2024

CIP Project Information Sheet

Court Theophelia Neighborhood
Stormwater and Utility Improvements

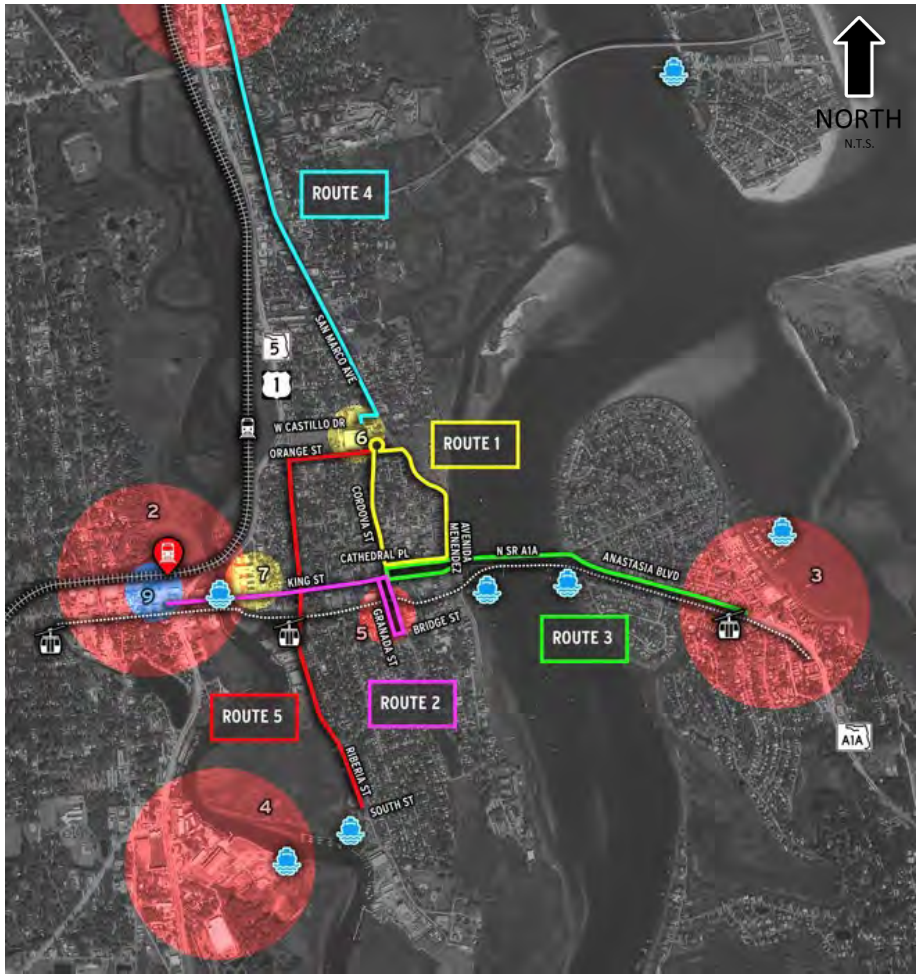
The project includes design, permitting, and construction to replace aged utilities, upgrade existing storm water infrastructure and evaluate structural and non-structural based resiliency options for the neighborhood. A mobility component will also be included. The project outcomes include reconstruction 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 storm water management, potential incorporation of greenspace for multi-project benefits to serve as recreational, storm water mobility and resiliency uses. Resilient Florida program is granting $ 2,581,600 to this project.

Design Cost:	$ 200,000 estimate
Construction Cost:	$ 2,581,600
Project Status:	Solicitation – Design
Construction Duration:	TBD

CIP Project Information Sheet

Downtown Circulator – Route 1

This project will operate a bus circulator throughout the city. Beginning in the red brick cul-de-sac at the City of St. Augustine (CoSA) Visitor Information Center (VIC) located at 10 South Castillo Drive, the Circulator will travel south to the intersection of Cordova Street at Orange Street. Then turn left and travel east along Orange Street to South Castillo Drive. Then turn right onto South Castillo Drive and travel in a southeasterly direction to Avenida Menendez and turn right onto Avenida Menendez. Then right on Cathedral Place and right onto Cordova Street heading north back to the VIC. The total travel distance is 1.12 miles, and travel time is estimated to be 15 minutes during normal traffic conditions and should include normal required time for passengers unloading/loading at the 3 Stops. Frequency of Stops are desired to be in 15-minute intervals. FDOT is providing $1.0 million operational funding for five years.



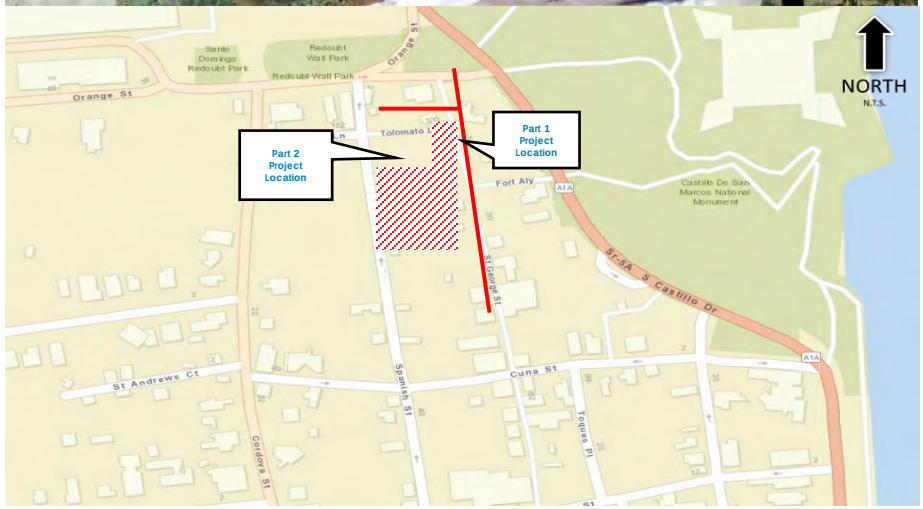
Operation Cost:	$ 1.0 M annually
Construction Cost:	$ NA
Project Status:	Solicitation
Operation Duration:	5 years

CIP Project Information Sheet

Downtown Improvement District Phase 2A

Part 1: Reconstruct Spanish St. (from Cuna St. to Orange St.) and Tolomato Ln (from Spanish St. to Cordova St.) as curb-less streets with coquina sidewalks and brick cart path. Improvements include underground water and sewer upgrades, stormwater pipes, and inlets, road regrading, concrete work, street lighting and landscaping.

Part 2: Reconfigure and reconstruct Tolomato Lot to include parking, commercial loading zones, a trash compactor enclosure and a recycling enclosure. The improvements include concrete pavement, pervious pavers, and loose coquina shell parking surface. Additionally, there is improved lighting, landscaping, bike racks, a perimeter masonry wall and pedestrian connections to Spanish St. Special care is to be taken to protect existing trees that are to remain.

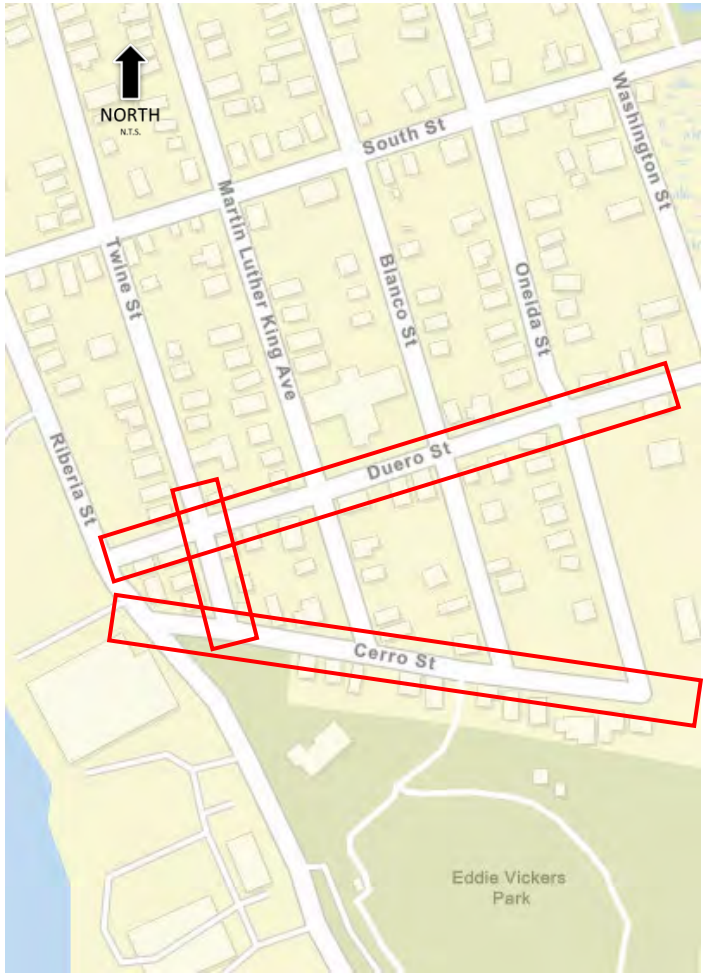


Design Cost:	$ 200,000
Construction Cost:	$ 2.0 M estimate
Project Status:	Solicitation - Construction
Construction Duration:	2022 – 2023

CIP Project Information Sheet

Duero and Cerro St. Stormwater and Utility Improvements

This project will replace and improve utilities along Duero Street, Twine Street, and Cerro Street. Stormwater collection inlets and culverts will be replaced along Duero Street, between MLK Ave. and Blanco Street, and added along Cerro Street. Gravity sewer, water main, and force main improvements will also occur along Duero Street, Cerro Street, and the block of Twine Street between.



Design Cost:	$ 144,000
Construction Cost:	$ TBD
Project Status:	Design
Construction Duration:	TBD

CIP Project Information Sheet

FEMA 13 Lift Station Rehabilitation and Replacement

These 13 lift stations (LS-4, 5, 6, 7, 10, 11, 12, 21, 22, 50, & 52) were identified as being damaged during hurricane Mathew, and again during hurricane Irma. This project will elevate, rehabilitate, replace, and harden the lift stations against future storms and flooding events. This project is funded through FEMA's Public Assistance program with 75% reimbursable, the State reimbursing 12.5%, and the City's share 12.5%.

Design Cost:	$ 1.4 M
Construction Cost:	$ 14.8 M
Project Status:	Construction
Construction Duration:	Sept 2020 – Feb 2023

CIP Project Information Sheet

Groundwater Monitoring

This project 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. Resilient Florida program is granting $ 217,100 for this project.

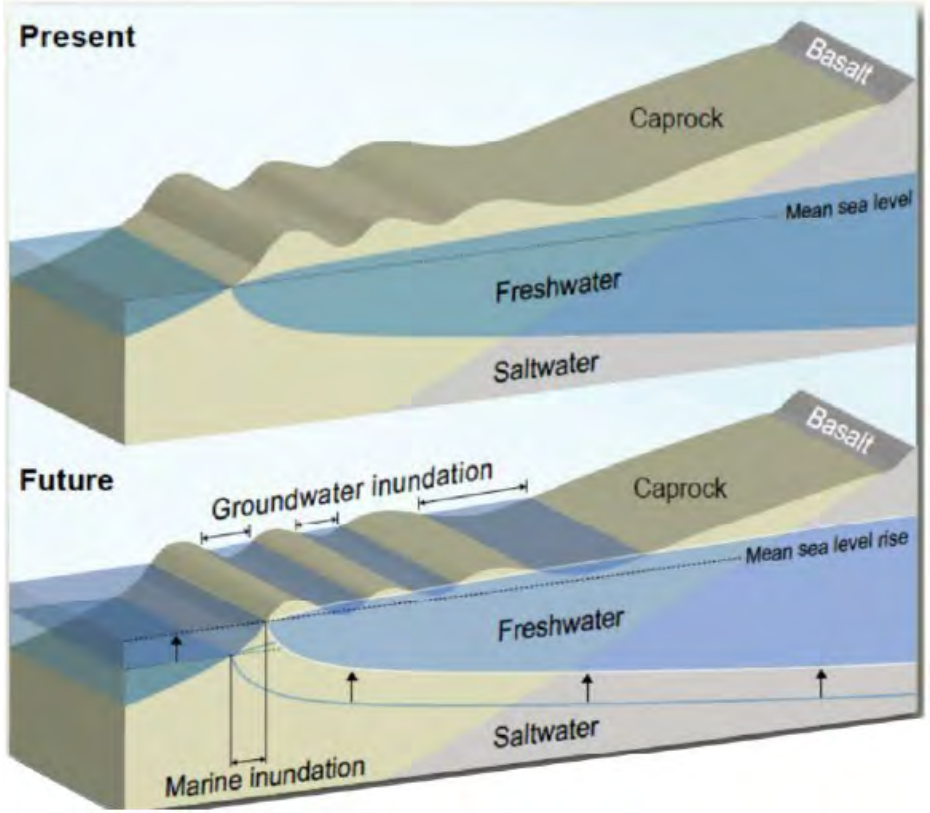


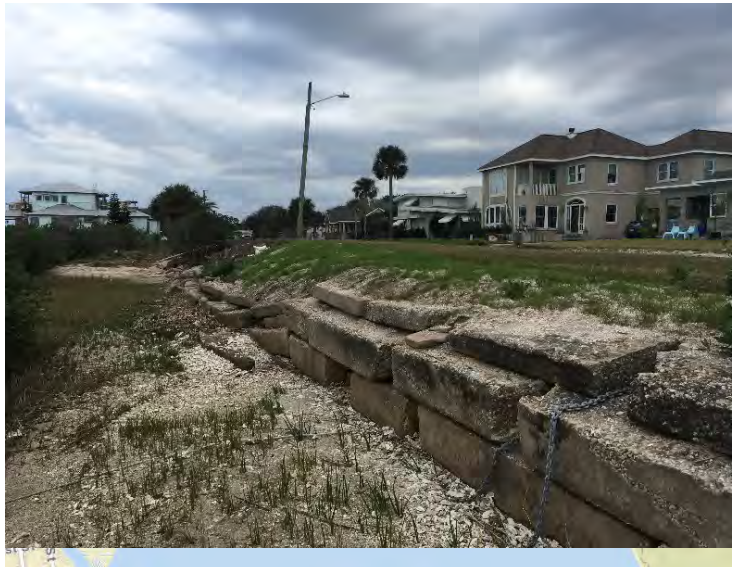
Figure 19. Conceptual diagram of groundwater inundation, obtained from Rotzoll and Fletcher (2012).

Design Cost:	$ 7,000 estimate
Construction Cost:	$ 210,100 estimate
Project Status:	Solicitation – Design
Construction Duration:	TBD

CIP Project Information Sheet

Inlet Drive Shoreline Stabilization

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. Resilient Florida program is granting $711,090 to this project.



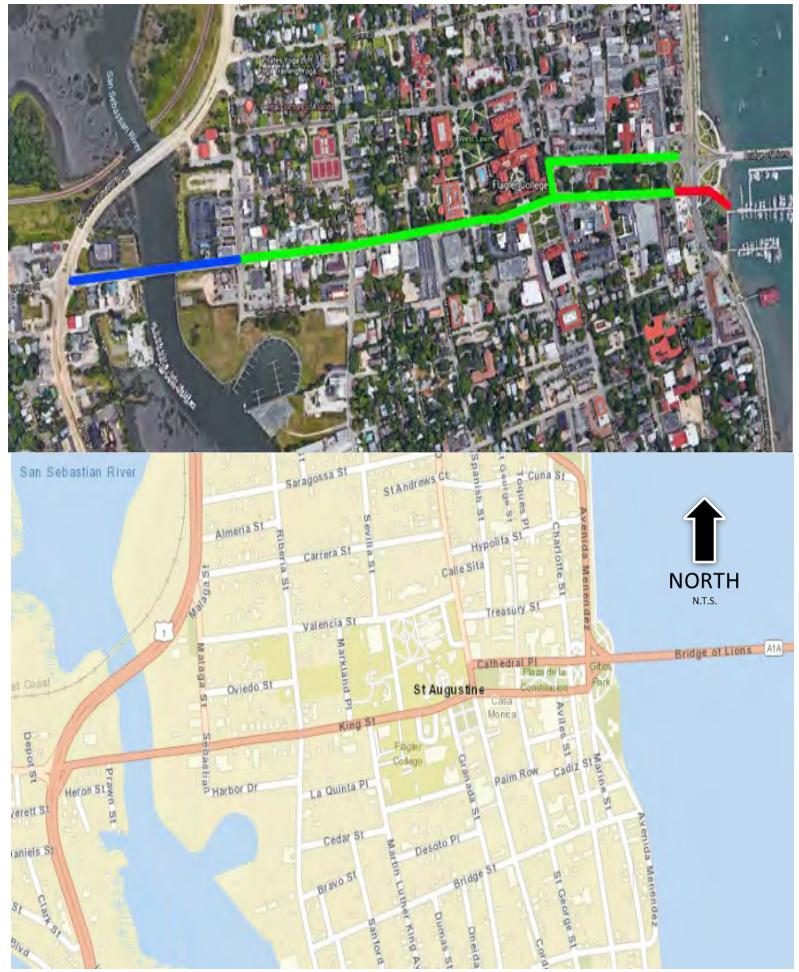
Design Cost:	$ 36,000 estimate
Construction Cost:	$ 620,000 estimate
Project Status:	Solicitation – Design
Construction Duration:	TBD

CIP Project Information Sheet

King Street Ownership Transfer

The Florida Department of Transportation (FDOT) transfers the ownership of right-of-way for King Street, Cathedral Place, Cordova Street and the San Sebastian Bridge located between US 1 and Avenida Menendez to the City of St. Augustine (CoSA). It is in the best interest of the CoSA to control this entry corridor bisecting the City to enact mobility improvements consistent with the CoSA's Mobility Plan. Ownership of the bridge will be transferred to CoSA once the reconstruction is complete. The FDOT commits to a redesign of the intersections located at the western base of the Bridge of Lions including Cathedral Place/Avenida Menendez and King Street/Avenida Menendez. The FDOT also commits to evaluating and if feasible work with the City to design, permit and construct a pedestrian/bicycle bridge crossing US 1 connecting east King Street to west King Street. FDOT is providing up to $18.0 million in reimbursement for this project.

Design Cost:	$ 1.0 M estimate
Construction Cost:	$ 17.0 M estimate
Project Status:	Design
Construction Duration:	TBD



CIP Project Information Sheet

King Street and San Sebastian River WM HDD

This project will replace the existing water main on King Street crossing San Sebastian river. FDOT is replacing the bridge on King Street that crosses the San Sebastian river. The city's existing cast iron water main is an aerial crossing adjacent to the bridge. The new water main will be a horizontally-directionally-drilled (HDD) water main beneath the river. This water main replacement will occur before the FDOT bridge replacement project.

Design Cost:	$ 190,000
Construction Cost:	$ TBD estimate
Project Status:	Design
Construction Duration:	TBD

CIP Project Information Sheet

Lake Maria Sanchez Flood Mitigation & Drainage Improvements

This project will benefit approximately 200 acres of the historic district of the Nation's Oldest City. It 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 which include upgrades to the existing stormwater infrastructure, installation of a stormwater pump station, construction of a flood wall, and installation of tide check valves. The project area includes several historic buildings and structures listed on the National Register of Historical Places. By maintaining the integrity of the Nations Oldest City through implementation of this project, it will help our regionally significant historical and cultural assets benefiting the County and arguably the Northeast Florida region. FEMA Hazard Mitigation program is granting $ 8.6 million and Resilient Florida program is granting $18.8 million for this project.

Design Cost:	$ 1.8 M
Construction Cost:	$ 27.0 M estimate
Project Status:	Design
Construction Duration:	2023 – 2026

CIP Project Information Sheet

Lift Station 8, 14, and 41 Replacement

These projects will replace existing city lift stations located throughout the city. Lift station 8 and 14 are circa 1960's "can" stations utilizing a wet and dry pit. LS-41 is an existing suction-lift wastewater pumping station. The new stations will be modern submersible duplex stations with an emphasis on resiliency and hardening against storm surge and flooding.

Design Cost:	$ 360,000 estimate
Construction Cost:	$ 3.0 M estimate
Project Status:	Design
Construction Duration:	TBD

CIP Project Information Sheet

Lighthouse Park Gravity Sewer Improvements

This project will bring gravity sewer collection systems to the greater Lighthouse Park Neighborhood area. This neighborhood area was identified in the Septic Tank Vulnerability Assessment study as one the top contributors to surface water nitrogen from septic within the city limits. This project will eliminate existing and future onsite septic systems and residential grinder pump connections to force main. The project area is east of Anastasia Blvd between Ocean Way to the north and Anastasia Park Dr to the south. Design for this project is funded by city bond proceeds.

Design Cost:	$ 665,000 estimate
Construction Cost:	$ 6.7 M estimate
Project Status:	Design
Construction Duration:	TBD

CIP Project Information Sheet

Oyster Creek Force Main HDD

This project will replace the existing 8-inch PVC and 6-inch cast iron force mains with a single 12-inch HDPE force main. The new 12-inch force main will be installed via the horizontal directional drill (HDD) method. This work will improve the city's utility and relocate it out the way of future FDOT box culvert work.

Design Cost:	$ 27,000
Construction Cost:	$ 334,800
Project Status:	Construction Complete
Construction Duration:	90 days

CIP Project Information Sheet

Parking Pay Station Flood Proofing

The project will provide flood proofing to the parking pay stations along the bayfront and throughout downtown. The project entails building flood proof cases for the parking pay stations that will be deployed prior to flood events.

Design Cost:	$ NA
Construction Cost:	$ 70,000 estimate
Project Status:	Construction
Construction Duration:	2022 – 2023

CIP Project Information Sheet

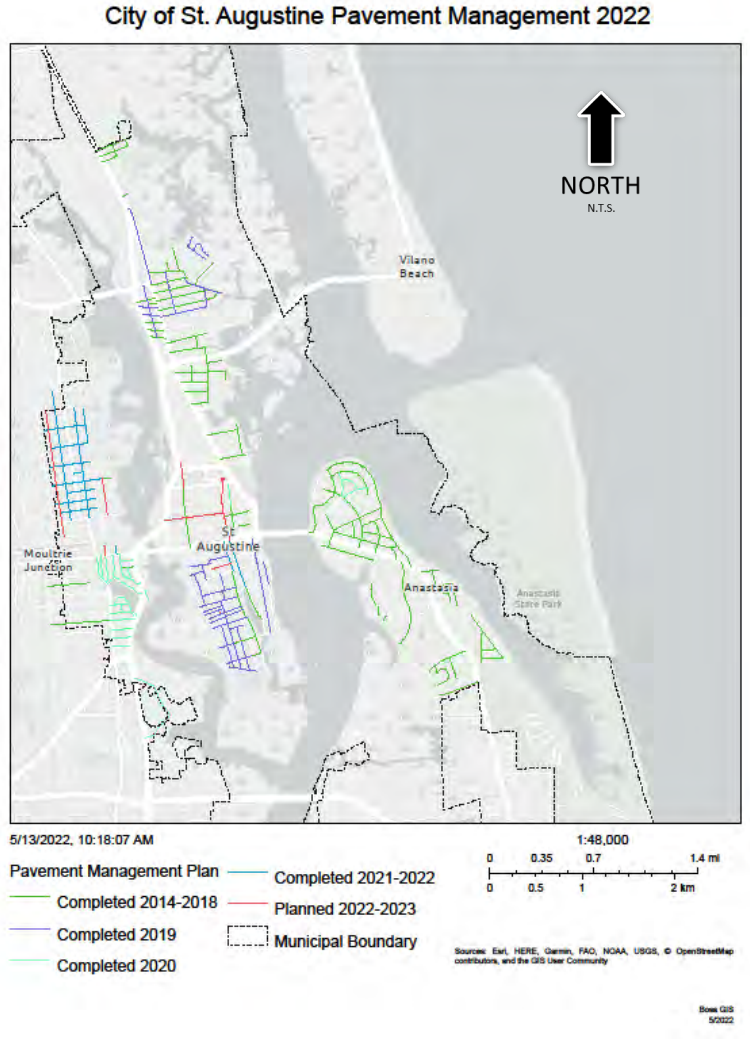
Paving Management Program

To repair damage caused to roadways over time and numerous utility cuts due to repairs, it is necessary to fund a paving management program. These paving projects are funded annually by the City.

The objective of this program is to provide pavement treatments (i.e., mill and resurface) to streets that have been affected by utilities repairs, flooding and/or suffered frequent pothole asphalt repairs due to age.

The City is currently performing a pavement condition assessment by RoadBotics.

Proposed FY 2023 Mill and Resurface Paving on the next page.



Design Cost:	$ NA
Construction Cost:	$ 600,000
Project Status:	Solicitation - Construction
Construction Duration:	2022 – 2023

CIP Project Information Sheet

Proposed FY 2023 Mill and Resurface Paving Projects

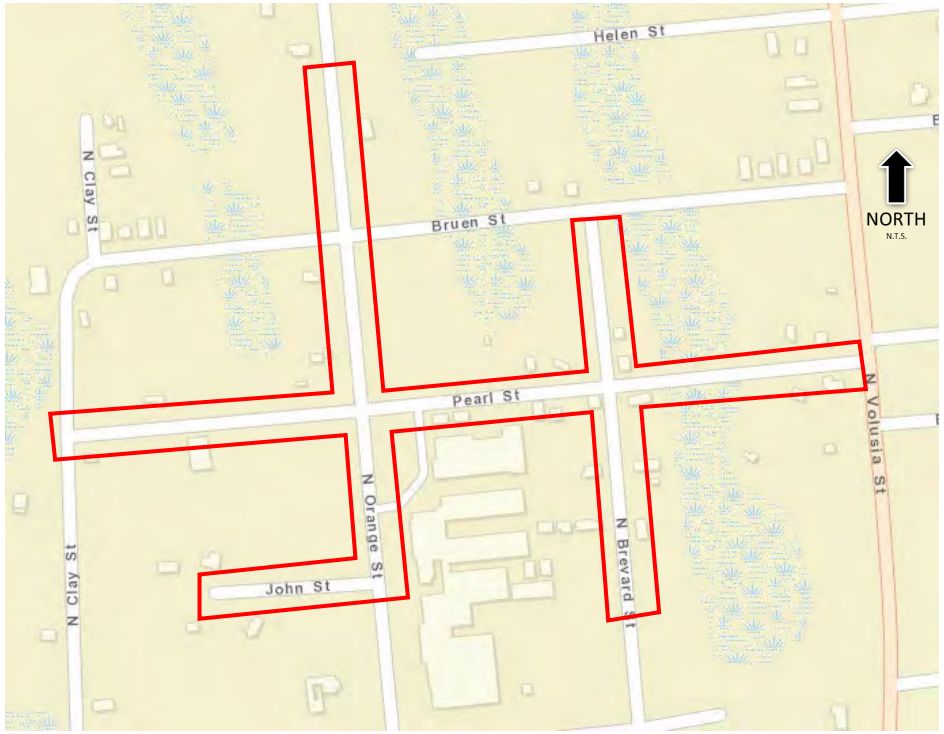
- N. Whitney St. from Chapin St. to Ravenswood Dr.
- Florida Ave. from Evergreen Ave. to Helen St.
- Carrera St.- from US1 to Cordova St.
- Riberia St.- from Orange St. to Grove Ave.
- Fancher Ct. – from Casanova Rd to Casanova Rd
- Ocean Vista Ave/Lighthouse Boat Ramp- from Red Cox Dr to dead end
- St George St. – from South St to Joiner St
- South Dixie Hwy. – from Pellicer Lane to SR 207
- Cordova St– from King St to Orange St
- Eugene Pl. – from Fancher Ct to dead end
- Cordova St.- from King St. to Orange St.

Design Cost:	$ NA
Construction Cost:	$ 854,678.49
Project Status:	Under Construction
Construction Duration:	2022 – 2023

CIP Project Information Sheet

Pearl Street Gravity Sewer Improvements

The City acquired existing sewer infrastructure that includes a pump station and gravity sewer infrastructure around the perimeter of Webster Elementary School. The City has the opportunity to install gravity sewer main extensions off the existing infrastructure and a watermain replacement to serve the residents in the adjacent area. The project is currently in design and will build out the gravity sewer basin to the full extents possible and serve 42 existing residential homes. The proposed 6-inch watermain will replace the existing 2-inch watermain and tie into existing watermains to continue a loop system. Design and construction of this project is funded by city bond proceeds and a portion of the $2.0M state grant.

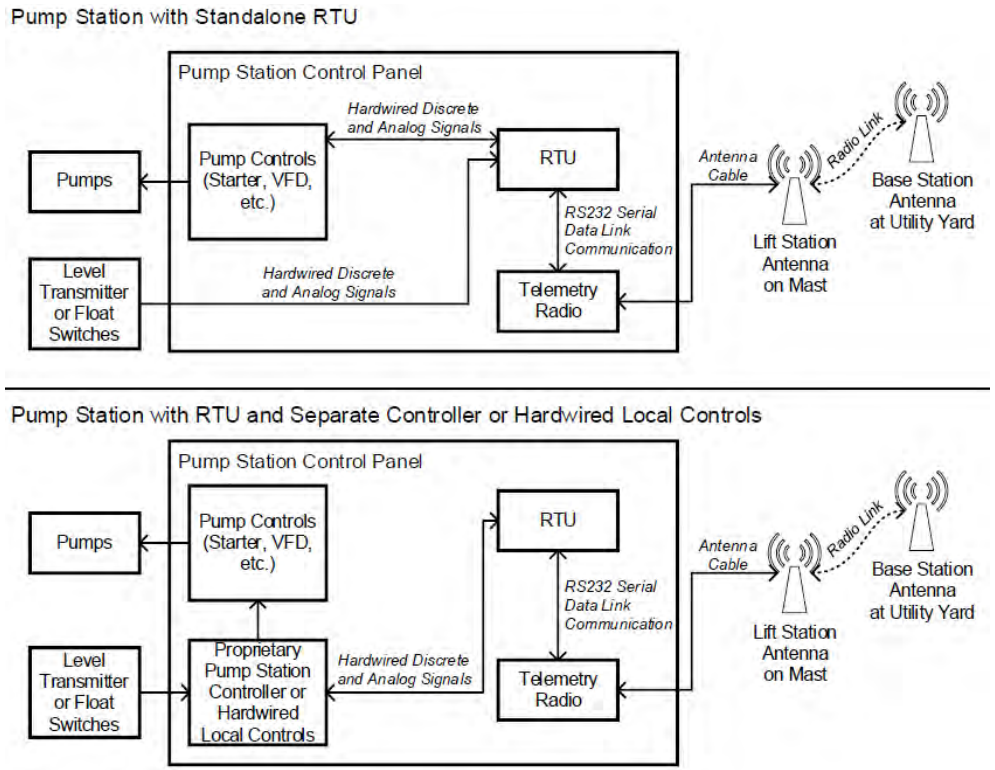


Design Cost:	$ 121,500
Construction Cost:	$ 4.1 M estimate
Project Status:	Design
Construction Duration:	TBD

CIP Project Information Sheet

SCADA for Lift Stations, Water and Wastewater Treatment Plants

SCADA (Supervisory Control and Data Acquisition) is used to collect data and monitor the city's lift stations, water treatment plant, and wastewater treatment plant. Currently, the plants and operations are utilizing different systems and technologies of varying age and obsoleteness. This project will identify current issues and immediate fixes, before identifying and implementing a complete permanent solution. The first phase of this project has: identified and documented the current SCADA system and use; produced updated electrical and control panel standard drawings for city use.



Design Cost:	$ 350,000
Construction Cost:	$ 250,000
Project Status:	Design
Construction Duration:	TBD

CIP Project Information Sheet

Sevilla Street Brick Roadway & Utility Improvements

The Sevilla Street improvements consist of cast iron water main replacement, gravity sewer replacement, stormwater improvements, and brick roadway replacement. Project will also include improvements to existing sidewalks, with elevated crosswalks and intersections.

Design Cost:	$ 110,000
Construction Cost:	$ 1.2M estimate
Project Status:	Design
Construction Duration:	TBD

CIP Project Information Sheet

South Davis Shores Flood Mitigation & Drainage Improvements

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 3 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. Florida Resilient program is granting $ 2.8 M to this project.

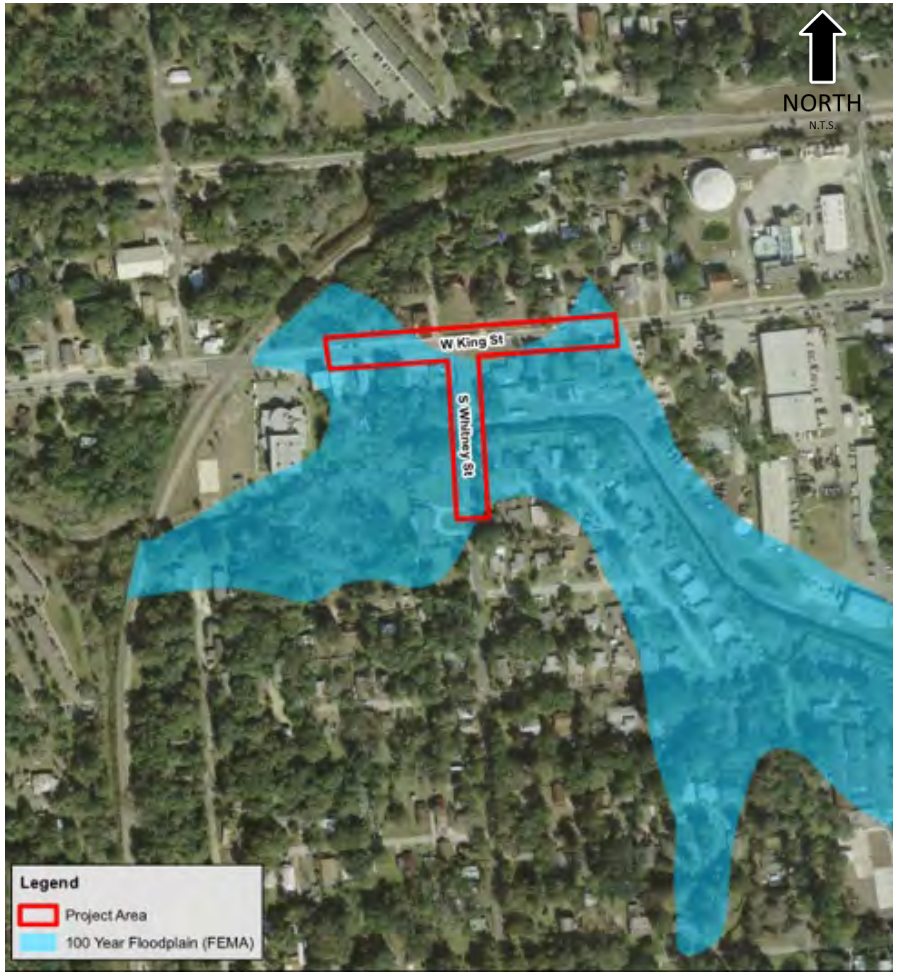
Design Cost:	$ 388,000 estimate
Construction Cost:	$ 2.4M estimate
Project Status:	Solicitation – Design
Construction Duration:	TBD

Figure 1-1: Study Area and Pilot Area Extent
City of St. Augustine, FL

CIP Project Information Sheet

South Whitney & West King Street Stormwater Improvements

The proposed improvements consist of raising South Whitney St. and West King St. 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 St., but close temporarily in advance of flooding conditions. FEMA Hazard Mitigation program is granting $1,310,925 to this project.



Design Cost:	$ 183,091
Construction Cost:	$ 1.8M estimate
Project Status:	Design
Construction Duration:	2023 – 2024

CIP Project Information Sheet

St. Francis Street Utility Improvements

St. Francis Street currently has a vitrified clay pipe (VCP) gravity sewer collection system that is oversized, shallow-sloped, with cementitious material in the invert of the mains. Sanitary sewer overflows and a collapsed main during trenchless repair qualifies for complete replacement. Project will consist of cast iron water main replacement, gravity sewer replacement, roadway (asphalt or brick) replacement, and stormwater improvements. Adjusting the grade and slope of the gravity sewer main will allow city to continue these hydraulic improvements along Cordova Street with the LMS project.

Design Cost:	$ 120,000 estimate
Construction Cost:	$ 1.1M estimate
Project Status:	Design
Construction Duration:	TBD

CIP Project Information Sheet

Stormwater Master Plan – Phase 2

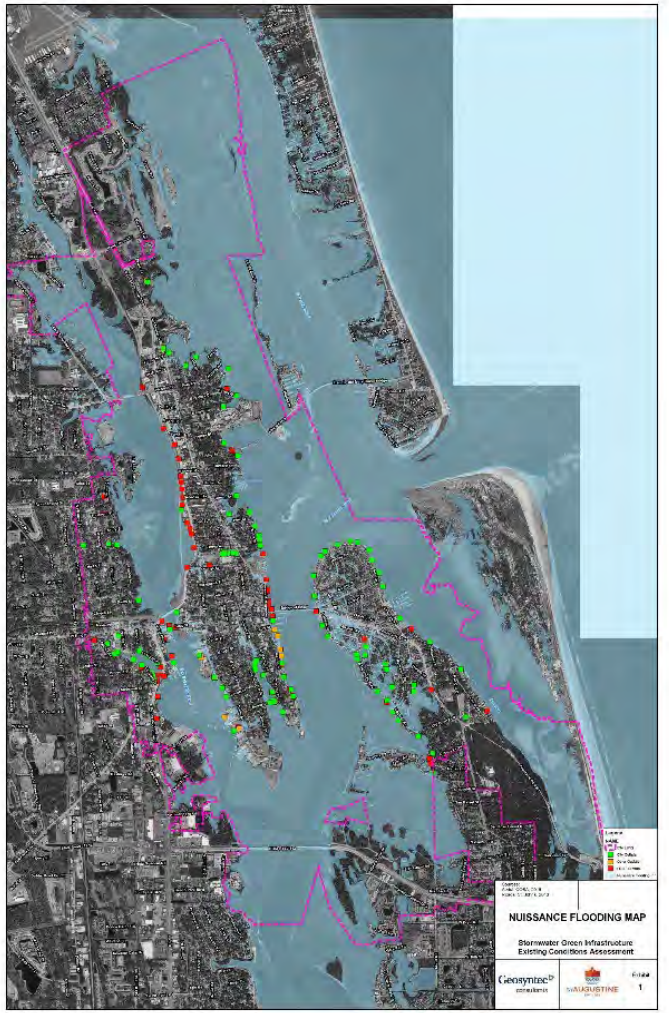
With the last stormwater master plan's data being from 2013, several flood events have taken place due to hurricanes, king tides and heavy rainfall. This proposed City-wide study will update the master plan to incorporate recent vulnerability assessments, resilience studies and a comprehensive plan update to better assess the increase in risk from coastal and rainfall driven flooding. This update will fill in data gaps from the previous coastal vulnerability assessment. The master plan will include an updated comprehensive analysis and risk assessment of critical infrastructure for coastal rainfall and compound flooding; needed stormwater ordinance and development code modifications; prioritization of areas needing stormwater improvements for flooding/water quality; benefit and cost analysis for flooding/water quality improvement projects; a public outreach and education; evaluation of funding options; and development of capital improvement projects to vulnerable areas. American Rescue and Recover Act is providing $2.0 million funding to this project.

Design Cost:	$ 2.0 M estimate
Construction Cost:	$ TBD
Project Status:	Solicitation – Design
Construction Duration:	TBD

CIP Project Information Sheet

City-Wide Tide Check Valve Installation

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 (using an existing competitively procured contract) 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. Resilient Florida program is granting $230,641 for this project.

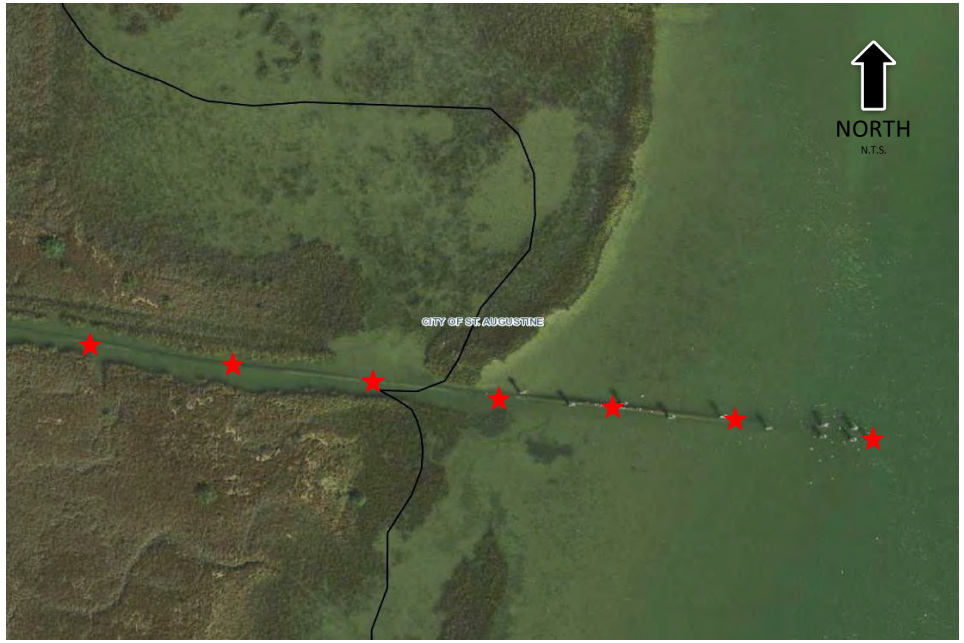


Design Cost:	$ TBD
Construction Cost:	$ 461,282 estimate
Project Status:	Solicitation – Design
Construction Duration:	2023 – 2026

CIP Project Information Sheet

Wastewater Treatment Plant Effluent Outfall Repair

This project will consist of realigning the 1,600 Ft HDPE wastewater treatment plant effluent pipe and diffuser. New precast concrete anchor collars will be installed at design intervals for the length of the pipeline. This will support and secure the pipeline in place for the remainder of the asset's projected life.

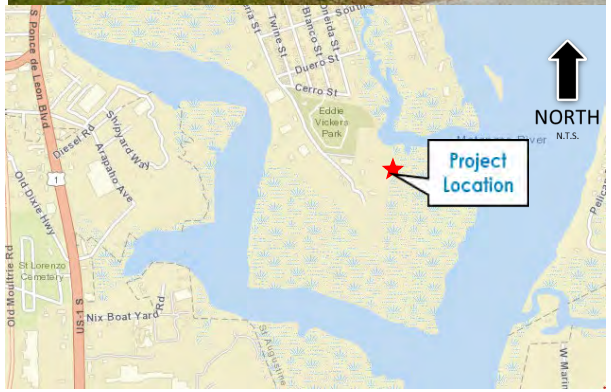


Design Cost:	$ 62,500
Construction Cost:	$ 500,000 estimate
Project Status:	Solicitation – Construction
Construction Duration:	4 months

CIP Project Information Sheet

Wastewater Treatment Plant Headworks Rehabilitation

The Wastewater Treatment Plant (WWTP) is the initial stage of the sanitary sewage treatment process. The headworks screens out trash, rags, and grit before it enters the treatment process, enhancing efficiency of the water treatment process. The headworks is the original 1987 structure. Rehabilitation will consist of replacing the mechanical screen, grit system, control panels, electrical lightening protection and structural concrete improvements. The project will also elevate critical equipment to 12 feet elevation to ensure operational integrity of the headworks in the event of a Category 2 storm surge event. Construction for this project is funded by city bond proceeds.

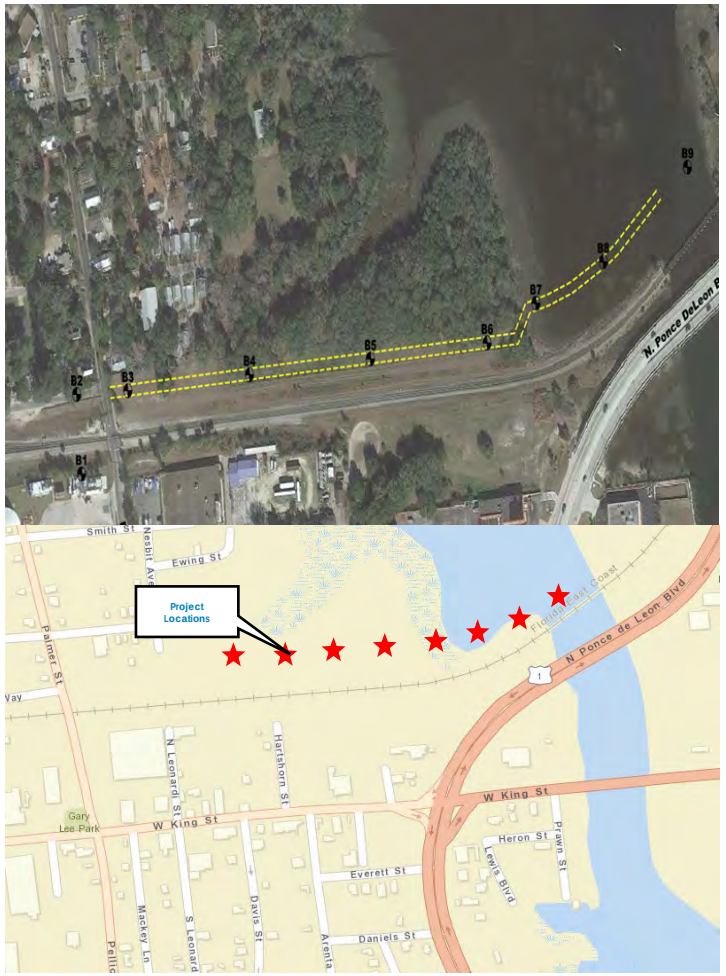


Design Cost:	$ 234,500
Construction Cost:	$ 4.0M estimate
Project Status:	Construction
Construction Duration:	2022 – 2024

CIP Project Information Sheet

Water Treatment Plant Concentrate Outfall

This project will construct a permitted outfall pipe for the Water Treatment Plant's (WTP) low-pressure reverse osmosis (LPRO) concentrate. During production of the city's drinking water, the LPRO system produces approximately 300,000 gallons of brine concentrate per day. The brine is currently discharged to the City's sanitary sewer collection system and pumped to the wastewater treatment plant (WWTP). This concentrate outfall will eliminate 300,000 gallons per day of brine sent through the City's gravity sewers, lift stations, and WWTP. Construction of this project is funded by city bond proceeds.

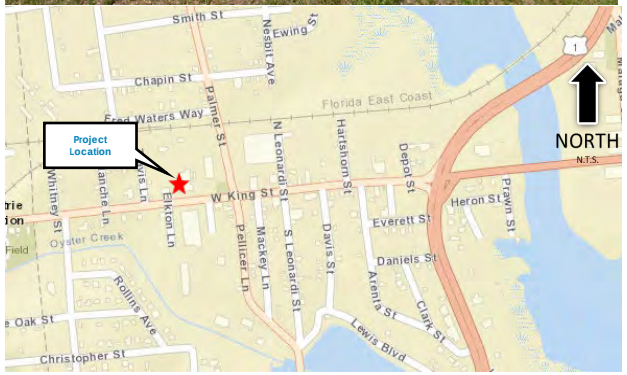


Design Cost:	$ 161,300
Construction Cost:	$ 2.0M estimate
Project Status:	Solicitation
Construction Duration:	TBD

CIP Project Information Sheet

Water Treatment Plant High Service Pump Motor Control Center and Emergency Generator Replacement

The Water Treatment Plant's (WTP) High Service Pump (HSP) Motor Control Center (MCC) is a critical component of delivering potable water to the distribution system. The existing MCC has reached end of life and does not provide fail safe distribution of potable water in the event of a power outage or surge. This project will completely replace the existing MCC and will be housed inside a climate-controlled environment. Variable frequency drives, programmable logic controllers, and human machine interfaces and control panels with annunciators, alarms, cable, and conduit will be installed. Additionally, a new emergency generator will be installed with an automatic transfer switch. Construction of this project is funded by city bond proceeds.

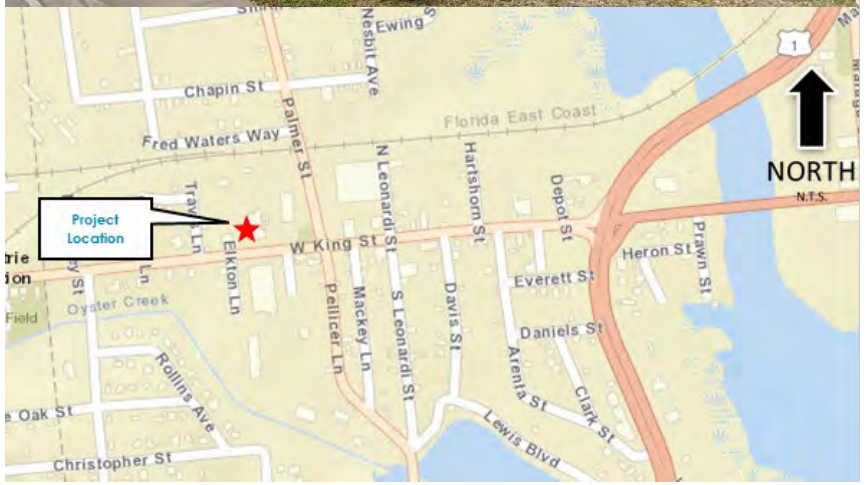


Design Cost:	$ 80,010
Construction Cost:	$ 2.4M estimate
Project Status:	Construction
Construction Duration:	2022 – 2023

CIP Project Information Sheet

Water Treatment Plant Optimization

The City has been in a pilot program to test free chlorine for maintaining residual water distribution system instead of the historically used chloramine. FDEP approved the pilot program and has extended it. Data collected during the pilot program showed promising results with respect to residual chlorine at the end of pipeline while maintaining compliance with disinfection byproduct limits. The City wants to evaluate current operational strategies including those in use prior to the free chlorine pilot program. In addition, the City wishes to develop an Operating Plan moving forward that includes the use of free chlorine disinfection, and to enhance the operating staff's capabilities to understand the operating plan and adjust the plan in response to changing conditions.



Study Cost:	$ 72,220
Construction Cost:	$ TBD
Project Status:	Study
Study Duration:	84 days

CIP Project Information Sheet

West 3rd Street Gravity Sewer and Water Main Improvements

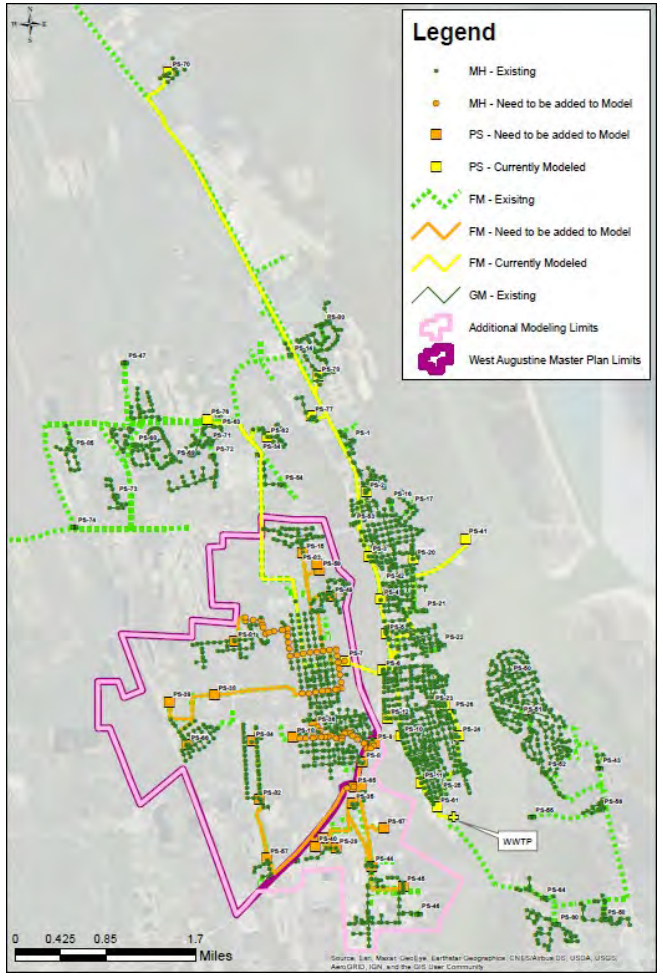
The West 3rd Street gravity sewer improvements will be an extension of the existing gravity sewer main. Improvements to the water main include replacing the existing 2-inch water main with a 6-inch watermain and tie-in existing water mains to continue a looped system. There will be 28 existing residential homes converted from septic to sewer. Construction of this project is funded by a $300,000 state grant and a portion of a $2.0M state grant..

Design Cost:	$ 60,000
Construction Cost:	$ 1.7M estimate
Project Status:	Construction
Construction Duration:	April 2023 - Dec 2023

CIP Project Information Sheet

West Augustine Wastewater Master Plan and Hydraulic Model Update

A Wastewater Master Plan for the West Augustine area is being developed because many of the area residences and businesses are served by on-site septic systems. The primary goal of the Master Plan will be to provide a guide for a planned wastewater collection system that may be constructed in phases with associated costs that can support requests for funding from various loan or grant agencies. The ultimate goal of providing a City wastewater system to the area will be to improve water quality, community health and quality of life.



Design Cost:	$ 68,000
Construction Cost:	$ TBD
Project Status:	Design
Construction Duration:	TBD

Glossary of Terms

ARPA – American Rescue Plan Act

CCTV – Closed Circuit Television

CI – Cast Iron

CIP – Capital Improvement Plan

CoSA – City of St. Augustine

CSRM – Coastal Storm Risk Management

FDOT – Florida Department of Transportation

FEMA – Federal Emergency Management Agency

FIND – Florida Inland Navigation District

HMGP – Hazard Mitigation Grant Program

HSP – High Service Pump

I & I – Infiltration and Inflow

LPRO – Low-pressure Reverse Osmosis

MCC – Motor Control Center

PVC – Polyvinyl Chloride

SCADA – Supervisory Control and Data Acquisition

USACOE – United States Army Corps of Engineers

VCP –Vitrified Clay Pipe

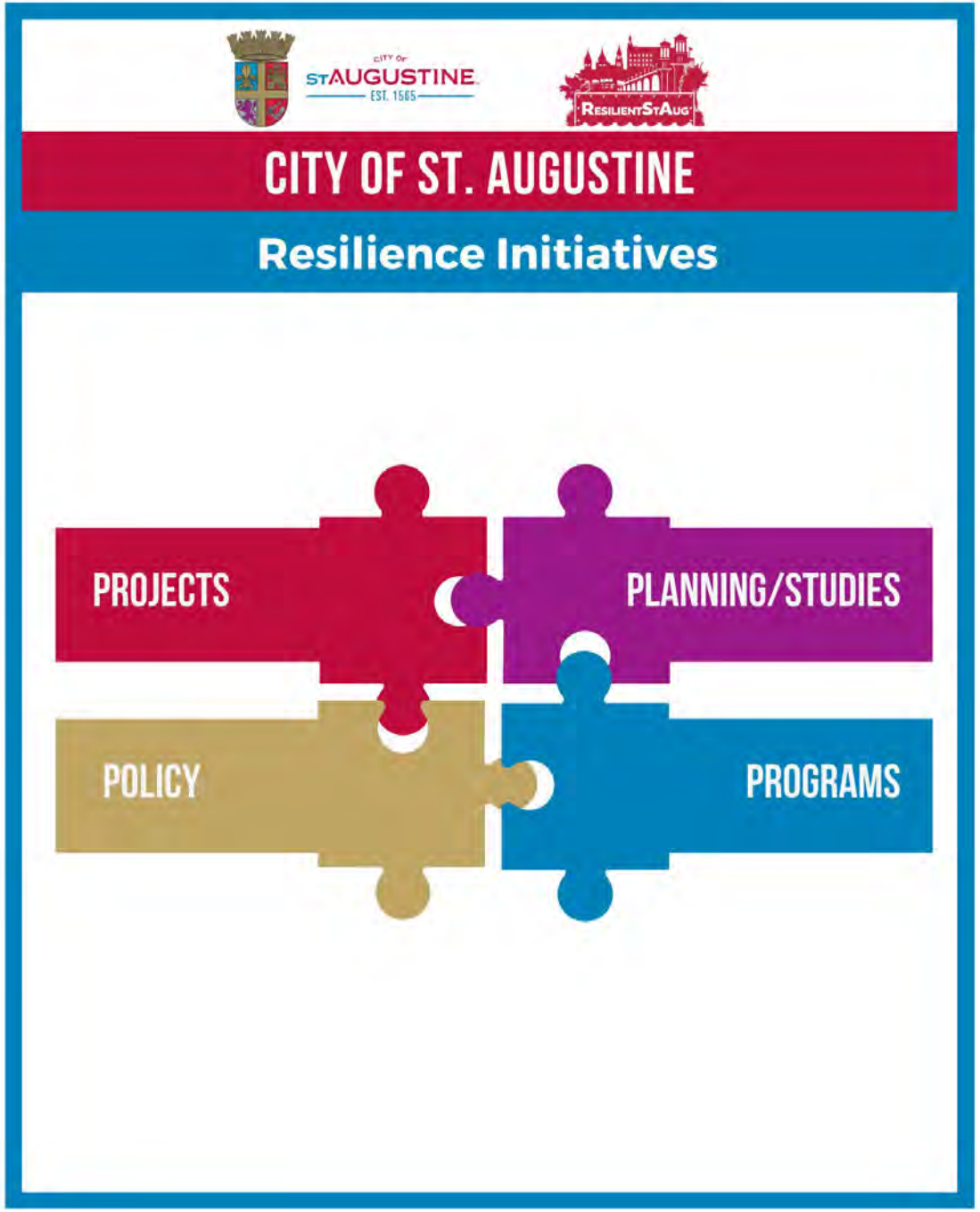
VIC –Visitor's Information Center

WTP – Water Treatment Plant

WWTP –Wastewater Treatment Plant

Exhibit A

Resilience Efforts Packet



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RESILIENTSTAUG

APPENDIX

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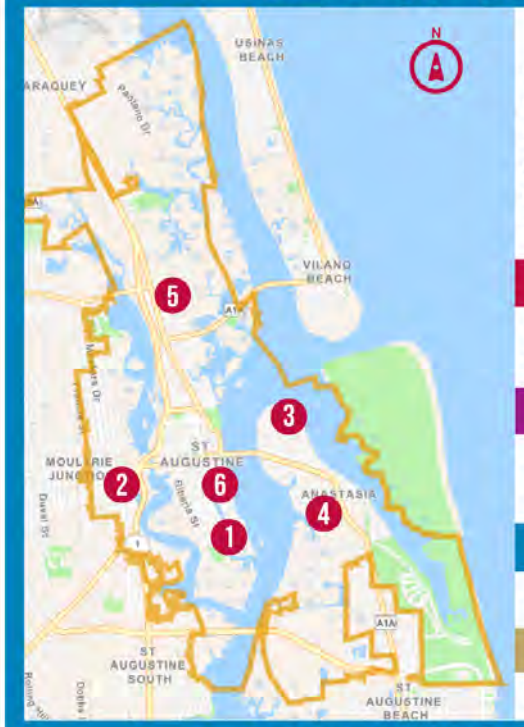
RESILIENT ST AUG

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

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

PAGE 3

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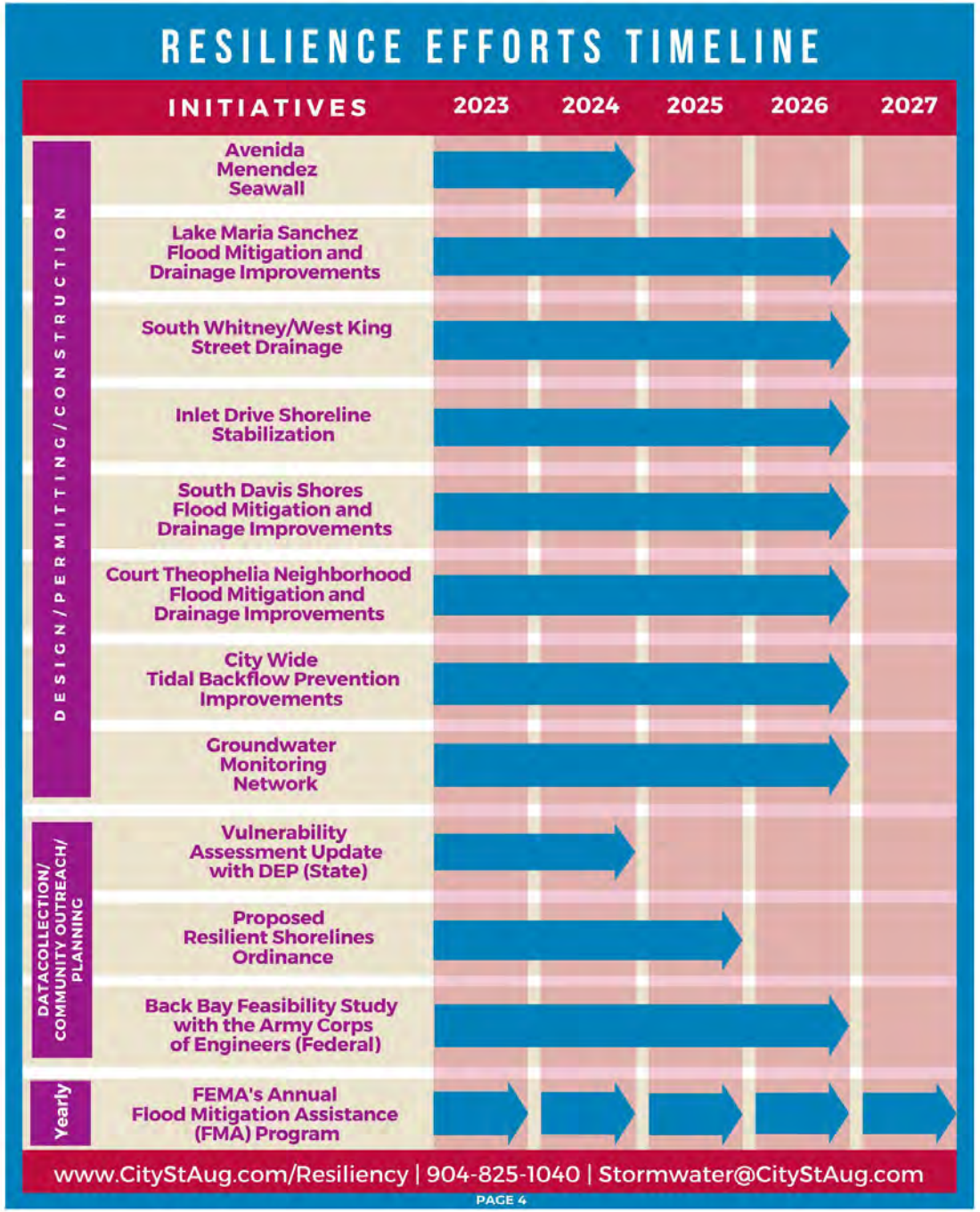


LAKE MARIA SANCHEZ

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

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

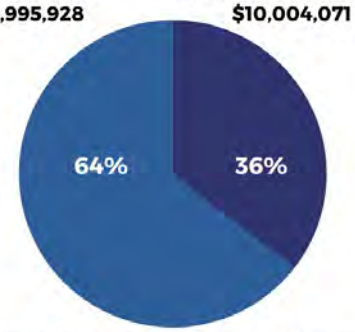
LAKE MARIA SANCHEZ

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

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

SOUTH WHITNEY ST. & WEST KING ST.

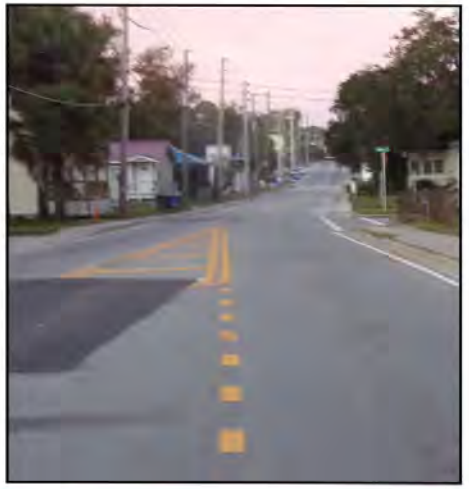
Roadway & Drainage Improvements

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?

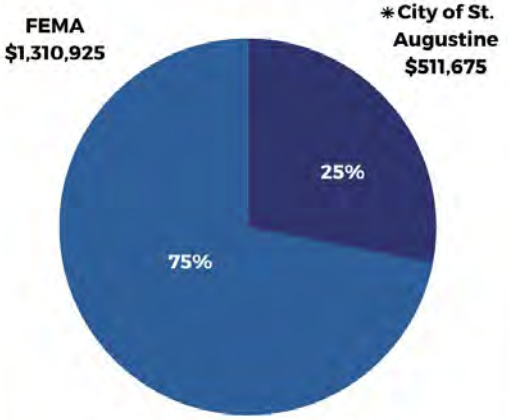
This is a high traffic area that is used heavily on a daily basis. By completing the drainage improvement project, residents of both the City. of St. Augustine and St. Johns County will benefit from the ability to drive through the street during a FEMA 100- Year Floodplain.

City of St. Augustine | Public Works Department | 904.825.1040 | Stormwater@CityStAug.com

SOUTH WHITNEY ST. & WEST KING ST.

Roadway & Drainage Improvements

Estimated Total Construction Cost: $1,822,600



*The city will be seeking other grant funding to supplement the 25% cost share

PROJECT SCHEDULE 2023-2026

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

City of St. Augustine | Public Works Department | 904.825.1040 | Stormwater@CityStAug.com

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

City of St. Augustine | Public Works Department | 904.825.1040 | Stormwater@CityStAug.com

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

City of St. Augustine | Public Works Department | 904.825.1040 | Stormwater@CityStAug.com

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.

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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

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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?

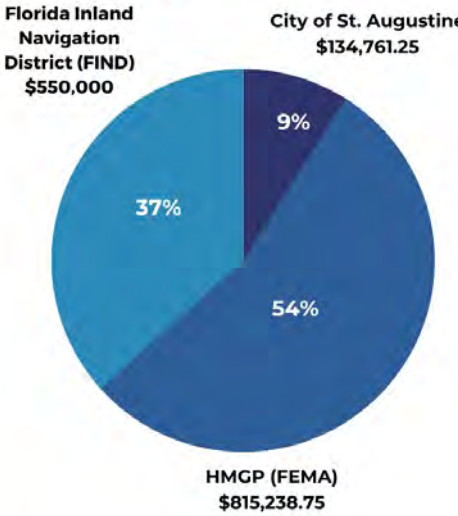
The City of St. Augustine (COSA) has received a grant from FEMA's HMGP grant program for Hurricane Irma disaster relief, along with funding from the Florida Inland Navigation District (FIND), and will cost-share the remainder of funds needed to complete the project.

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

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

SEAWALL EXAMPLE

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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

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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

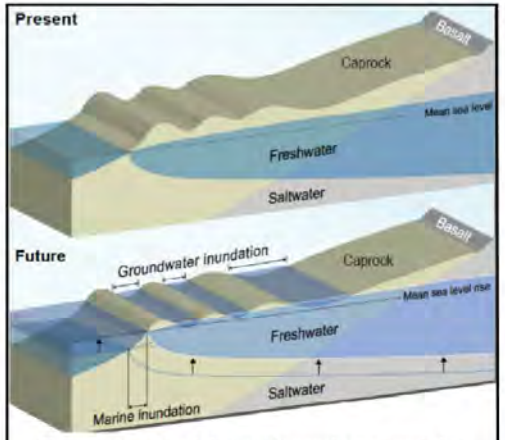


Figure 19. Conceptual diagram of groundwater inundation, obtained from Rotzoll and Fletcher (2012).

How will this project benefit the community?

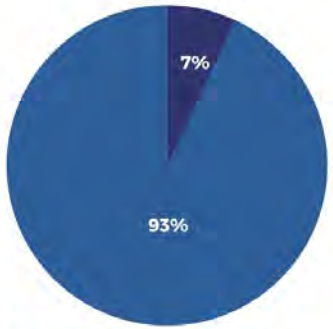
The data collected from this project will be able to better predict and model groundwater impacts which has a significant impact on critical infrastructure. This includes the threat to the city's existing archaeological and historic buildings which are considered regionally significant assets. Having 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

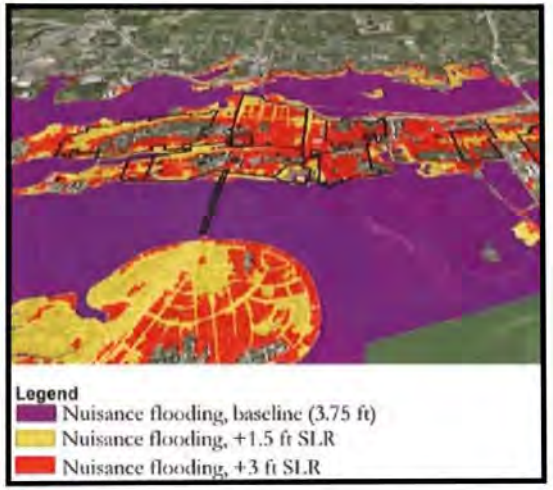
For Sea Level Rise Impacts

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

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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

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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.

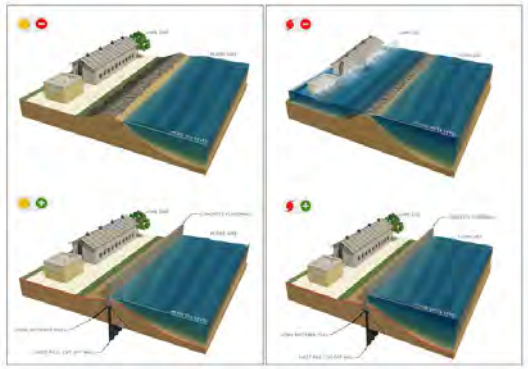
How will this study benefit the community?

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

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

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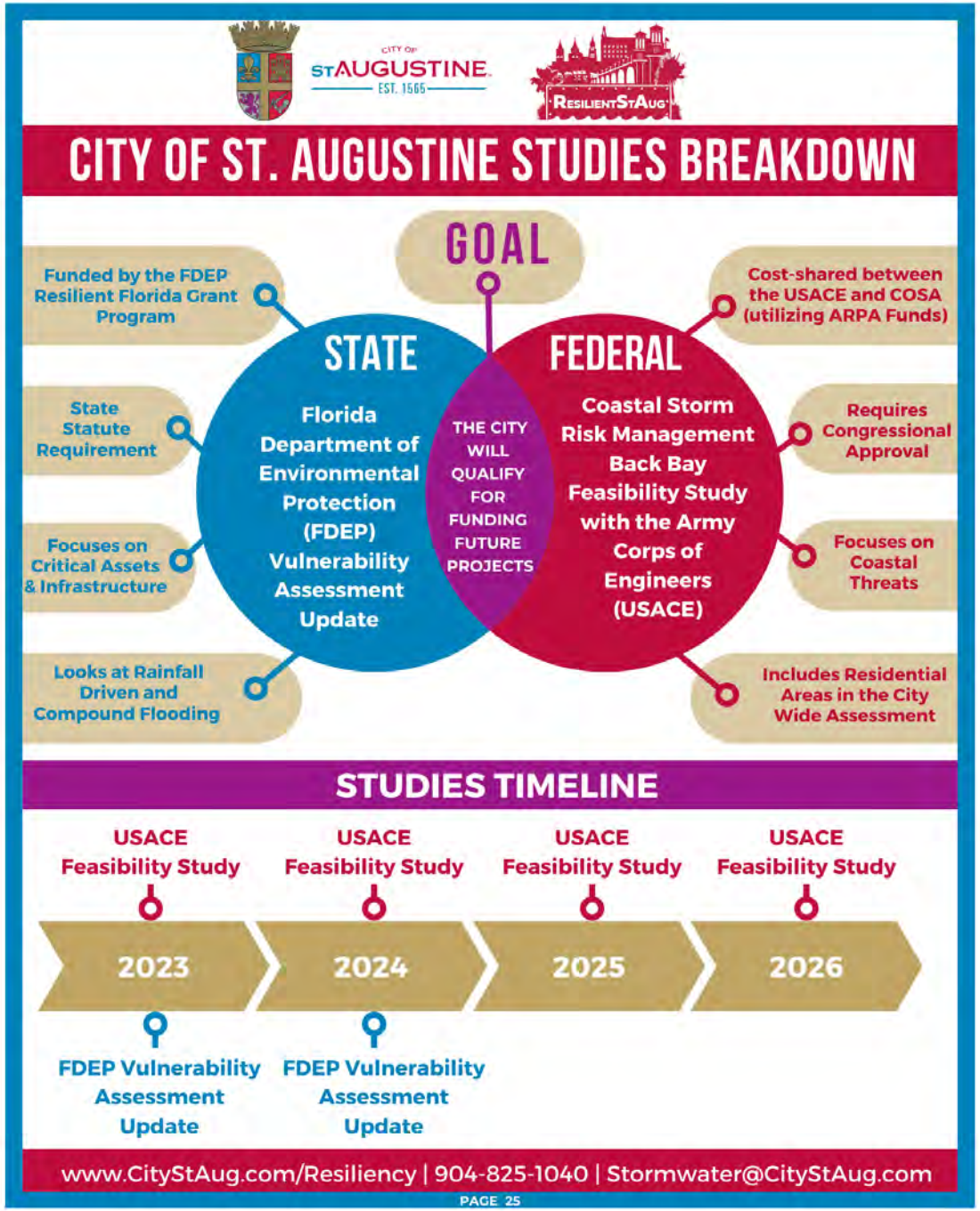

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CITY OF ST AUGUSTINE EST. 1565 | RESILIENT ST AUG

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

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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

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

Before Elevation

After Elevation

City of St. Augustine | FMA@CityStAug.com | www.CityStAug.com/FMA

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