

RESILIENT PORT ST. JOE

VULNERABILITY + SENSITIVITY ANALYSIS

Florida Institute for Built Environment Resilience
Florida Resilient Cities Program

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DEFINITIONS

Adaptive Capacity: The ability of an asset, area, or community to adjust or cope in response to hazards, crucial for mitigating vulnerabilities.

Critical Asset: Critical assets encompass a broad range of features important for the state's resilience, including emergency facilities, infrastructure, and valuable natural, cultural, and historical resources. These assets are integral to community safety, economic stability, and cultural heritage, making their protection and management crucial in resilience planning.

Census Tract: A *Census Tract* is a geographic unit the U.S. Census Bureau uses to gather data on population characteristics, economic status, and living conditions. This data is crucial for assessing community vulnerabilities.

Resilience: Resilience is the ability to adapt to changing conditions and withstand—and rapidly recover from—disruption due to emergencies.¹

Coastal Resilience: Coastal resilience means building the ability of a community to "bounce back" after hazardous events such as hurricanes, coastal storms, and flooding – reducing negative human health, environmental, and economic impacts rather than simply reacting to them.²

Exposure Analysis: In the context of a flood vulnerability assessment, an exposure analysis aims to identify the depth of flood caused by tidal, rainfall, sea level rise, and compound flood scenarios.³

Risk: Risk is the potential for negative impacts as a result of a natural hazard.⁴

Sea Level Rise (SLR): The gradual increase in the average level of the world's oceans, influencing vulnerability assessments by posing long-term risks to coastal communities and infrastructure.

Sensitivity Analysis: In the context of a flood vulnerability assessment, a sensitivity analysis is to measure the impact of flooding (from exposure analysis) on inventoried assets (from background data).⁵

Vulnerability: Vulnerability is the propensity or predisposition of assets to be adversely affected by hazards. Vulnerability encompasses exposure, sensitivity, potential impacts, and adaptive capacity.⁶

¹ National Oceanic and Atmospheric Administration NOAA, "What is coastal resilience?"

<https://oceanservice.noaa.gov/ecosystems/resilience/>

² National Oceanic and Atmospheric Administration NOAA, "What is resilience?"

<https://oceanservice.noaa.gov/facts/resilience.html>

³ Florida Department of Environmental Protection FDEP, "Standardized Vulnerability Assessment: Scope of Work Guidance,"¹², <https://floridadep.gov/rcp/resilient-florida-program/documents/standard-vulnerability-assessment-scope-work-guidance>

⁴ Federal Emergency Management Agency FEMA, National Risk Index, "Determining Risk,"

<https://hazards.fema.gov/nri/determining-risk>

⁵ FDEP, 13.

⁶ U.S. Climate Resilience Toolkit, "Glossary," <https://origin-climate-toolkit.woc.noaa.gov/content/glossary#Vulnerability>

OVERVIEW

THE CITY OF PORT ST. JOE

Lying along the eastern edge of the Florida panhandle," the City of Port St. Joe is in southern Gulf County, which stretches from the sandy shores of the Cape San Blas Peninsula to the pine forests surrounding the Apalachicola River. This city is home to approximately 3,700 people (2022) and hosts hundreds more "snowbird" visitors during winter months⁷. Its adjacency to St. Joseph Bay and the Gulf of Mexico provides access to beaches that support tourism, fishing, scalloping, boating, nature photography, and other outdoor recreation activities. These lesser-developed, natural landscapes attract people seeking the "Forgotten Coast's" laid-back, coastal living.

The city's history had long been intertwined with the St. Joe Paper Company and the port of Port St. Joe, which over the last century spurred growth in the area. The paper company closed in the 1990's but strategically located, the port connects the Gulf to the Intracoastal Waterway via the Gulf County Canal with options for intermodal links through the AN railway and I-10 via SR-71. The port's most recent master plan (2021) projects the continued expansion of the port with long-term international freight contracts.⁸

Tourism is another area of economic growth in Port St. Joe. The city hosts several festivals and events (such as the annual Sea Turtle Festival⁹), reflecting its cultural heritage and community spirit. These gatherings allow residents and visitors to celebrate traditions and enjoy the local arts and cuisine. Beyond their cultural significance, these events also contribute to the local economy by attracting visitors and supporting businesses.

Port St. Joe's economic vitality and community character stem from its blend of industrial, port, and coastal tourism sectors. Evolving from its roots as a port and mill town to its status as a sought-after vacation destination on Florida's Forgotten Coast, the city has fostered a dynamic water-based economy. However, the town has also faced various economic challenges since the closure of the St. Joe Paper Company in 1998, more recently compounded by the Great Recession (2008), Hurricane Michael (2018), and the COVID-19 pandemic (2021).

While a relatively small coastal town, Port St. Joe is expected to grow substantially over the next thirty years. Estimates range from 15%¹⁰ to as much as 100%. The population growth in Port St. Joe presents both new challenges and great opportunities. While it reflects the appeal of the area and potential economic benefits, it also requires thoughtful planning to manage infrastructure, housing, and environmental concerns. Local authorities strive to balance accommodating newcomers and preserving the city's unique identity and environmental assets.

⁷ UF Shimberg Center for Housing Studies, "Population by Age Projections, Permanent Residents, 2010-2050," <http://flhousingdata.shimberg.ufl.edu/population-and-household-projections/results?nid=2206#population-by-age-projections-permanent-residents-2010-2050>

⁸ Port of Port St. Joe, "2021 Port Master Plan," <http://portofportstjoe.com/PORT%20MASTER%20PLAN%202021.pdf>

⁹ Florida Coastal Conservancy, "Forgotten Coast Sea Turtle Festival," <https://floridacc.org/forgotten-coast-sea-turtle-festivals/>

¹⁰ UF Shimberg Center for Housing Studies, "Population by Age Projections, Permanent Residents, 2010-2050," <http://flhousingdata.shimberg.ufl.edu/population-and-household-projections/results?nid=2206#population-by-age-projections-permanent-residents-2010-2050>

PORT ST. JOE AND THE VULNERABILITY ASSESSMENT

Florida's Gulf of Mexico coast is particularly vulnerable to climate-related risks, including rising sea levels and increasingly severe storms. The city faces a moderate to high risk from these climate hazards due to its proximity to the Gulf. In 2018, Hurricane Michael caused catastrophic flooding across the Florida Panhandle, and Port St. Joe was among the hardest hit. The Category 5 hurricane caused catastrophic damage to the nearby coastal community of Mexico Beach (15 miles west of Port St. Joe), where the high-water mark reached 20.6 feet. Port St. Joe, located on the eastern edge of Michael's eye, endured severe flooding with storm surges between 9 and 11 feet and extensive wind damage.

In response, local government leaders and residents have become increasingly concerned about mitigating the impacts of future storms and flood hazards. To address these challenges, the city has partnered with the University of Florida's (UF) Florida Institute for Built Environment Resilience (FIBER) on the "Resilient Port St. Joe" project to understand better the town's vulnerability to current and future flood risks. FIBER engages with local communities to assist them in becoming more resilient to increased risks from sea level rise and storms through the "Florida Resilient Cities" (FRC) program. The FRC program bridges community needs with design research. Projects developed through the program focus on data collection, community engagement, and the reimagining of spaces and places through design.¹¹

Funded through a grant from the Florida Department of Environmental Protection (FDEP) Resilient Florida Program, the "Resilient Port St. Joe" project focuses on 1) conducting a comprehensive vulnerability assessment and 2) developing an adaptation plan. This initiative builds on previously conducted work throughout the region¹² and targets an exposure and sensitivity analysis to the municipality, ensuring compliance with the Resilient Florida Statute 3380.093. These assessments are critical to ensure that projects bolstering resilience against extreme storms and sea-level rise are well-informed and data-driven. A comprehensive vulnerability assessment is essential for communities like Port St. Joe as this process not only helps communities understand their specific risks, but also positions them to successfully compete for resilience-enhancing state infrastructure investment funds.

VULNERABILITY ASSESSMENT IN CONTEXT

The Port St. Joe vulnerability assessment is organized into four main sections: 1) Acquiring Background Data, 2) Conducting Exposure Analysis, 3) Performing Sensitivity Analysis, and 4) Compiling the Final Report. The first section details the process to identify and collect data relevant to critical community assets, topographical details, flood hazards, and other information. The second section, exposure analysis, evaluates how various flood sources (tidal influence, rainfall, storm surge, and compound flooding) could affect these identified assets and quantifies the potential flood depths that assets are exposed to under different scenarios. The third phase, sensitivity analysis, interprets the impact of flooding on these assets using the FEMA STAPLEE method to determine their vulnerability. The final report then summarizes the findings and highlighting areas of priority based on the most critical needs identified through the assessment.

¹¹ UF Florida Institute for Built Environment Resilience's (FIBER), "Florida Resilient Cities" (FRC) Program, <https://dcp.ufl.edu/frc/>

¹² Apalachee Regional Planning Council (ARPC), (2023). "Apalachee Regional Vulnerability Assessment," <https://half.com/project/arpc-nine-county-regional-vulnerability-assessment/>

DATA COLLECTION

ACQUIRE DATA

To conduct the vulnerability analysis, the team first collected GIS data based on the requirements as defined in the Florida Statute (F.S.) Section 380.093, which included:

- Topography
- Flood scenario-related data
- Critical and regionally significant assets
- Miscellaneous data

All analyses were performed using the North American Vertical Datum of 1988 (NAVD88) and NAD 1983 (2011) State Plane Florida North 0903 (US Feet) horizontal datum.

Topography

The team acquired the most current topography data based on a digital elevation model (DEM) from the United States Geological Survey's (USGS) 1-meter National Elevation Dataset, released in October 2022. This model provides elevation values relative to the North American Vertical Datum 1988 (NAVD88). This ensures that the flood depth calculations accurately reflect existing topographic conditions.

Flood Scenarios

We gathered flood data, including 1) tidal flooding, 2) storm surge, and 3) FEMA Special Flood Hazard Area SFHA, to illustrate the projected extent and depth of flooding for the present day (2022) and for the years 2040 and 2070. This totaled 38 scenarios for different timesteps and flood hazard conditions.

	Current scenarios	2040 scenarios	2070 scenarios
Tidal Flooding + SLR	MHHW	MHHW + 2040 SLR int. high	MHHW + 2070 SLR int. high
		MHHW + 2040 SLR int. low	MHHW + 2070 SLR int. low
Special Flood Hazard Area + SLR	100 yr. SFHA	100 yr. SFHA + 2040 SLR int. high	100 yr. SFHA + 2070 SLR int. high
Storm Surge + SLR	Cat. 1 (mean tide)	Cat. 1 (mean tide) + 2040 SLR int. low	Cat. 1 (mean tide) + 2070 SLR int. low
	Cat. 1 (high tide)	Cat. 1 (high tide) + 2040 SLR int. high	Cat. 1 (high tide) + 2070 SLR int. high
	Cat. 2 (mean tide)	Cat. 2 (mean tide) + 2040 SLR int. low	Cat. 2 (mean tide) + 2070 SLR int. low
	Cat. 2 (high tide)	Cat. 2 (high tide) + 2040 SLR int. high	Cat. 2 (high tide) + 2070 SLR int. high
	Cat. 3 (mean tide)	Cat. 3 (mean tide) + 2040 SLR int. low	Cat. 3 (mean tide) + 2070 SLR int. low
	Cat. 3 (high tide)	Cat. 3 (high tide) + 2040 SLR int. high	Cat. 3 (high tide) + 2070 SLR int. high
	Cat. 4 (mean tide)	Cat. 4 (mean tide) + 2040 SLR int. low	Cat. 4 (mean tide) + 2070 SLR int. low

Cat. 4 (high tide)	Cat. 4 (high tide) + 2040 SLR int. high	Cat. 4 (high tide) + 2070 SLR int. high
Cat. 5 (mean tide)	Cat. 5 (mean tide) + 2040 SLR int. low	Cat. 5 (mean tide) + 2070 SLR int. low
Cat. 5 (high tide)	Cat. 5 (high tide) + 2040 SLR int. high	Cat. 5 (high tide) + 2070 SLR int. high

Table 1. Flood hazard scenarios at current-day, 2040, and 2070.

a. Sea Level Rise

Sea level rise (SLR) levels were sourced from the National Oceanic and Atmospheric Administration's (NOAA) "Sea Level Rise Viewer." Regarding the interpolation between the 2 nearest gauges required in the statute, the analysis used only the NOAA 2017 Intermediate Low and Intermediate High projections for 2040 and 2070 for the Apalachicola tide gauge station (8728690). The SLR levels of the mentioned scenarios also align with the ones of the Sea Level Scenario Sketch Planning Tool by Geoplan University of Florida.

To confirm the validity of using the mentioned values, we checked the other closest Tide Gauge at Panama City. The projected SLR values for this station are the same for the Intermediate-Low scenarios and 9 - 10mm lower for the Intermediate-High scenarios; therefore, the interpolation wouldn't make a meaningful difference. For that reason, we considered that the Geoplan (Apalachicola) SLR datums were correct to use.

These projections were added to the other flood hazard data, including tidal flooding, storm surge, and FEMA SFHA, to create future scenarios. The DEM was then subtracted to create the flood surface layers showing the extent and depth of flooding for all scenarios in 2040 and 2070.

b. Tidal Flooding

Tidal flooding predictions are based on the "Inundation Mapping Tidal Surface - Mean Higher High Water" (MHHW) provided by NOAA, referenced to the NAVD88 datum. The DEM data was subtracted from the projected MHHW values to create an accurate surface layer showing the extent and flood depth.

c. Storm Surge

Storm surge data was acquired from (NOAA) National Weather Service, which utilized the "Sea, Lake, and Overland Surges from Hurricanes" (SLOSH) model. This model generates data on a conical grid, providing storm surge heights for hurricane categories 1 to 5 at mean and high tide levels, measured above NAVD88. The grid cells are converted into points, and the values corresponding to each hurricane category are interpolated to create a raster surface. Subsequently, the DEM elevations are subtracted from the interpolated surface, resulting in a raster layer that illustrates the flood extent and depth due to the storm surge in the specified region.

d. FEMA Special Flood Hazard Area

FEMA determines a community's "high risk" or Special Flood Zone Hazard Area (SFHA), which is "defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also

referred to as the base flood or 100-year flood.”¹³ The SFHAs are labeled as Zone A, AE, V, VE, etc. Specific consideration was given to the AE and VE zones due to their identified and mapped base flood elevations. Both are subject to 1-percent annual chance events, and Coastal AE and VE zones are also subject to additional storm-induced waves where Coastal A (1.5-3 feet) and VE (>3 feet wave height). The City of Port St. Joe’s Flood Insurance Rate Map (FIRM) is relatively recent, with an effective date of March 09, 2021.

e. Compound Flooding

The team explored several options to address compound flooding scenarios but found that few reputable compound flooding models and methodologies that capture the full complexity of this issue currently exist. Because of this, the team was limited in the number of ways compound flooding could be represented. We adopted an approach that considered current scenarios compounded by future sea level rise as noted above.

Critical Asset Inventory

The team utilized local and statewide data to create a comprehensive inventory of assets significant to transportation, critical infrastructure, community and emergency facilities, and natural and cultural resources aligned with FDEP guidelines. This inventory includes assets across six zones in Port St. Joe and its influence area: Downtown (Zone 1), North Port St. Joe (Zone 2), South Port St. Joe (Zone 3), East Port St. Joe (Zone 4), West Port St. Joe (Zone 5), and the Beach Communities (Zone 6). These zones, which encompass several neighborhoods, were defined to streamline the analysis and facilitate better communication of results.

Following initial discussions with the project task force and community feedback during outreach meetings, the team expanded the inventory to include housing and other significant economic and tourism assets. Community engagement further refined the categories and helped define the community values associated with each type of asset. This approach aimed to tailor the vulnerability assessment more closely to local needs.

For asset visualization and attribute description, the team employed CAD data for building footprints and several County and state-wide GIS databases, with the assets represented as points, lines, or polygons depending on their type and characteristics. A thorough quality assurance and control (QA/QC) review was conducted to verify the asset data’s accuracy, completeness, and relevance to the study. The critical assets inventory, including data sources, is summarized in the table below.

Port St. Joe Critical Assets: GIS Data			
Category	Type	Source	Date
Housing	Housing	FGDL (Gulf County Parcel dataset)	2021
	Assisted housing inventory	UF Shimberg Center	2022
Transportation	Airports	ARPC (FGDL original source), FDEM	2020
	Bridges	FGDL, FDOT	2021

¹³ Federal Emergency Management Agency (FEMA), “Flood Zones,” <https://www.fema.gov/glossary/flood-zones>

	Major roads	FGDL	2022
	Evacuation routes	FGDL, ARPC (FDEM)	2020
	Rail network	FGDL, ARPC (FDEM)	2021
	Recreational trails	FGDL	2021
Critical Infrastructure	Communication facilities towers, AM towers, cell	ARPC (FGDL original source)	2019-2021
	Drinking water and sewer facilities	ARPC (FDEP original source)	2020
	Wastewater treatment	ARPC (FGDL original source)	2022
	Electric substations	FDEM	2020
	Lift stations	City of Port St. Joe, Public Works Dept.	2022
	Hazardous waste facilities	FGDL	2022
	Solid waste facilities	FGDL	2022
	Stormwater facilities	FDEP	2018
Community and Emergency Facilities	Cemeteries	FGDL	2019
	Community centers	ARPC (FGDL original source)	2013, 2015
	Emergency medical services facilities	FDEM	2022
	Healthcare facilities	FGDL, FDEM	2014, 2022
	Fire stations	FGDL	2018
	Government facilities	FGDL	2013
	Law enforcement facilities	FGDL, ARPC (FDEM original source)	2018
	Logistical staging areas	ARPC (FDEM original source)	2022
	Disaster recovery centers	ARPC (FDEM original source)	2022
	Assisted housing inventory	UF Shimberg Center	2022
	Schools	FGDL	2021
Natural, Cultural, and Historical Resources	Culture centers	FGDL	2015
	Eligible historic structures/areas	FGDL	2022
	Parks/recreational facilities	ARPC (FGDL)	2021
	Religious centers	FGDL	2022
	Conservation lands	FNAI	2022, 2021
	Shoreline	USGS DEM, In-house generated	2022
	Wetlands	FGDL	2022
	Florida wildlife corridor	FEGN	
	Florida Forever BOT Projects	FNAI	2022
Tourism/ Economy	Commerce, services, financial institutions, hospitality, offices, industry	FGDL (statewide parcel database)	2021

Table 2. Asset types by category (with data sources and publication dates) included in the vulnerability assessment.

Complementary Data

Miscellaneous base data was acquired to support data analysis, mapping, and visualization. Building footprints were obtained from the Port St. Joe Stormwater Masterplan in a CAD format file. The building geometries were manually updated based on the FDOT aerial imagery from 2022. City boundary data was obtained from the Florida Geographic Data Library (FGDL).

GAP ANALYSIS FINDINGS

After gathering publicly available online data sources and verifying asset lists with the task force and local government officials, the asset inventory and flood-related data were compared with the requirements set by FDEP to identify any data gaps. If asset types had no data or lacked existing features within the city limits and the influence area, they were categorized as absent. The summarized details for these cases are presented in the following table.

Data gaps		
Asset Category	Asset Type	Rectification
Transportation	Street centerlines	TIGER line dataset was manually adjusted to match the roads
	Road crest elevations	The adjusted TIGER lines were converted into 300 ft. segments? which was considered as the unit of analysis (methodology described in exposure analysis section)
Critical Infrastructure	Lift stations electrical panels elevations	Information not available, calculations for exposure analysis were done in relation to ground elevation
Community and Emergency Facilities	Logistical staging areas	Task Force provided the location of 1 facility
	Community centers	Task Force provided the location of 2 facilities
Natural and Cultural Resources	Historical structures	Task Force provided the location of 2 structures
Miscellaneous	Building footprints	Manual updates of building footprint geometries obtained from the Port St. Joe stormwater masterplan.
	First floor elevations (FFE)	FFE data acquired from survey contracted with True Flood Risk
	Relevant elevation of critical infrastructure	No data available. Ground elevation used as a reference for flood depth calculations
Datasets available with no existing assets within Port St. Joe city perimeter; or rectification process for Influence Area		
Asset Category	Asset Type	Rectification
Transportation	Bus terminals	Task Force confirmed no existing facilities in area of interest
	Rail facilities	Task Force confirmed no existing passenger railway network in the area of interest

	Railroad bridges	Task Force confirmed no existing infrastructure in the area of interest
Critical Infrastructure	Stormwater treatment facilities	Task Force confirmed no existing infrastructure in the area of interest
	Military installations	Task Force confirmed no existing infrastructure in the area of interest
	Disaster debris management sites	Task Force confirmed no existing infrastructure in the area of interest
Community and Emergency Facilities	Logistical staging areas	Task Force provided the location of 1 facility
	Community centers	Task Force provided the location of 2 facilities
	Risk shelters	Task Force confirmed no existing infrastructure in the area of interest
	Community centers	Task Force provided the location of 2 facilities
Natural and Cultural Resources	Historical structures	Task Force provided the location of 2 structures

Table 3. Datasets and sources to fill initial gaps in data collection process.

Rectifying Data Gaps

The team rectified data gaps through meetings with the task force committee, third-party sources, and field surveys. Task force members were asked to provide data or information that could be digitized. Data received through this method included boat ramps, staging areas, community centers, and historic structures. Regarding the new asset categories housing, economy, and tourism, 2021 parcel data from FGDL was used to consolidate the inventory.

First-floor elevation (FFE) estimations for all the building-related assets were acquired from True Flood Risk, a third-party provider.¹⁴ True Flood Risk’s methodology uses machine learning to estimate FFEs for individual properties and entire communities from licensed Google Street View images and digital photos uploaded by users. Based on the True Flood Risk’s evaluation of their methodology, 90% of FFE output falls within +/- 1 foot of verified FFEs, and 95% falls within +/- 2 feet of verified FFEs. When images are unavailable for a specific location, the average for neighboring properties can be referenced if available and requested.

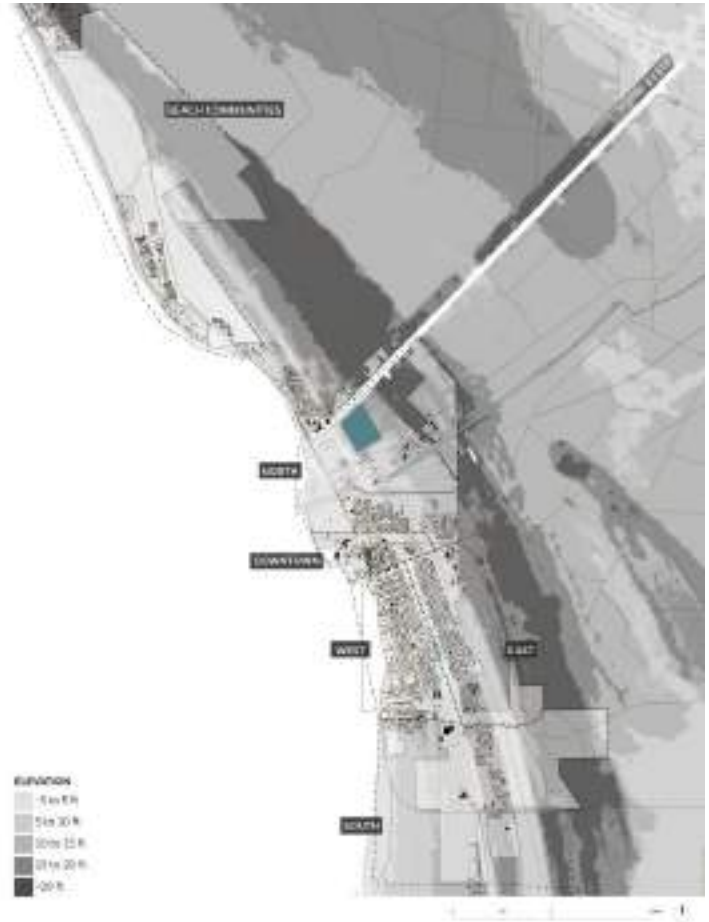
Ground elevation served as the baseline for calculating flood depths when the automated True Flood Risk methodology could not be applied. This was particularly needed in cases that lacked street view imagery and for non-building assets like control rooms or electrical panels associated with potable water, wastewater infrastructure, or hazardous waste sites, so obtaining the first-floor elevation was not feasible.

¹⁴ True Flood Risk, <https://truefloodrisk.com/#/>

ZONES OF ANALYSIS

Port St. Joe features unique natural and city conditions delineating distinct zones based on geography, urban form, land use, density, and elevation. This differentiation is crucial for effectively addressing the specific vulnerabilities and needs of various parts of the city. To facilitate targeted analysis and interventions, the study area has been organized into six zones:

- Zone 1 (Downtown Port St. Joe), downtown and historical area
- Zone 2 (North Port St. Joe), Cemetery Park and the surrounding residential areas of Gulf Boulevard and Hodges Avenue
- Zone 3 (South Port St. Joe), residential area at the end of Hodges Avenue on the west of Zone 2
- Zone 4 (East Port St. Joe), Port St. Joe Airport and its surrounding residential area
- Zone 5 (West Port St. Joe), State Road 24 access from Bridge #4 to the beginning of D Street
- Zone 6 (Beach Communities)
- Influence Area, not a specific zone but includes the surrounding region containing critical assets that influence the functioning of Port St. Joe



PORT ST. JOE ASSET SUMMARY

Transportation

Concerning the road network and ground transportation, Port St. Joe can be accessed via US Highway 98 or via Florida State Road 71. US Highway 98 changes into Monument Avenue, then Constitution Drive, linking the northmost and southmost points within the city limits. The George G. Tapper Bridge traverses the Gulf County Canal, providing access to and from the beach communities in the city. Important secondary roads include Garrison Avenue, Long Avenue, Palm Boulevard, and Industrial Road, which run across multiple neighborhoods, keeping the city connected. Many restaurants, shops, tourist attractions, and government buildings are clustered downtown between First Street and Cecil G. Costin Sr. Boulevard (Florida State Road 71).

Regarding water-related transportation, The Port St. Joe marina is a critical local facility that serves as a recreational and commercial activities hub. Located strategically on the Gulf of Mexico, the marina boasts a range of services, including boat slips, fueling stations, and maintenance facilities. It also provides direct access to fishing and boating opportunities, vital to the local economy. However, its coastal position makes it highly susceptible to climate-related hazards such as storm surges and sea level rise. These conditions require ensuring its resilience against increasingly severe weather events and safeguarding the continuity of maritime and economic activities in the area.

More broadly, the city’s economy, especially St. Joseph Bay, relies heavily on limited disruptions to the transportation system. Other transportation infrastructure includes:

- Highland View boat ramp
- Boat ramp at 5th street
- White City boat ramp
- Bridge on 16th Street over Central Channel
- Bridge FL71, access White City
- George G. Tapper Bridge

The following chart illustrates the distribution of Transportation assets across different city zones:

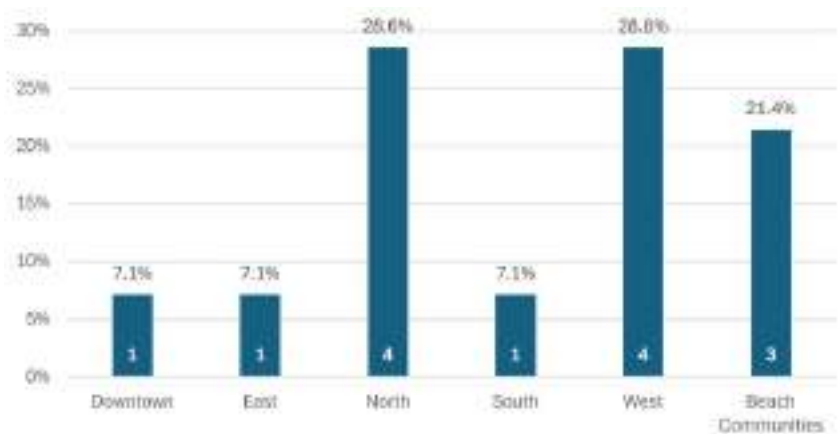


Figure 1. Percentage and count of Transportation assets per zone.

Housing

Port St. Joe is a historic community with a range of housing stock types, ages, and economic values. Port St. Joe’s housing stock has 1,810 total housing units, according to the 2020 U.S. Census database¹⁵. Like many coastal communities in Florida, Port St. Joe has seen property values rise substantially in recent years, making affordable housing a concern for many residents. The homeownership rate within the city is 78.5% (2022) and has remained above 70% since 2010 (based on the ACS 5-year survey). The housing stock is comprised of:

- Single-family homes= 1,619 parcels (88.4%)

¹⁵ 2020 U.S. Census, <https://data.census.gov/profile?q=Port%20St.%20Joe%20city,%20Florida%20Cree>

- Condominiums= 190 parcels (10.4%)
- Mobile homes (individual)= 11 parcels (0.6%).
- Multifamily homes= 8 parcels (0.5%)
- Total residential stock= 1,832 parcels

The following chart illustrates the distribution of Housing assets across different city zones:

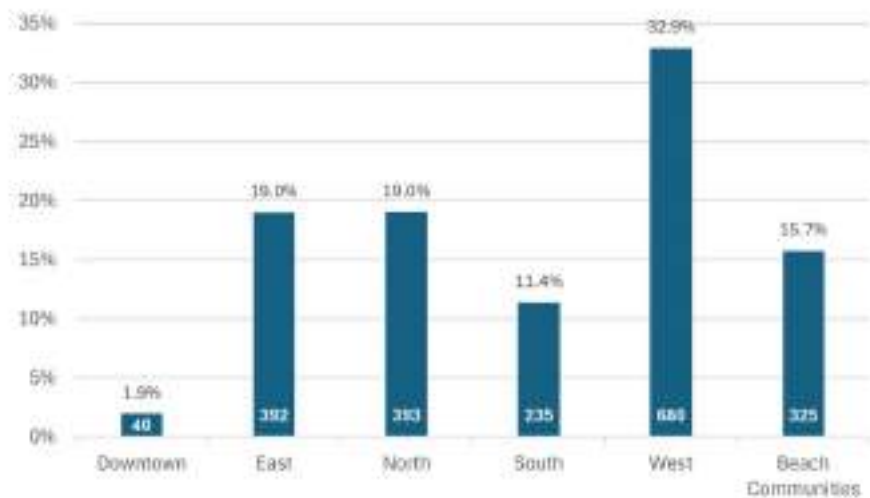


Figure 2. Percentage and count of Housing assets per zone.

Critical Infrastructure

The City of Port St. Joe's Utility Department manages essential utilities within the city limits, including water, sewer, and solid waste services. These services extend to neighboring areas, providing water and wastewater to St. Joe Beach, Windmark Beach, and Highland View, wastewater to parts of Cape San Blas, and water services to Beacon Hill and Overstreet in unincorporated Gulf County.

The city's most critical utility infrastructure includes an electrical substation, a wastewater treatment plant, and a water treatment facility. These facilities are strategically located on elevated areas in the western and northwestern parts of the city. Additionally, the freshwater canal, which draws water from the Chipola River to the St. Joe's Surface Water Treatment Plant, is essential for supplying water to the city.

Within the **city limits**, critical infrastructure includes:

Sewer

- (21) lift stations
- (1) city wastewater treatment plant
- (5) wastewater treatment facilities

Water Supply

- (1) water plant
- (2) water towers

- (9) water supply facilities

Solid Waste

- (1) Landfill
- (23) hazardous waste locations
- (4) communication facilities (cellphone network and cable TV infrastructure)

Electric production and supply

- (1) electric substation (influence area)
- (1) power plant

The following chart illustrates the distribution of Critical Infrastructure assets across different city zones:

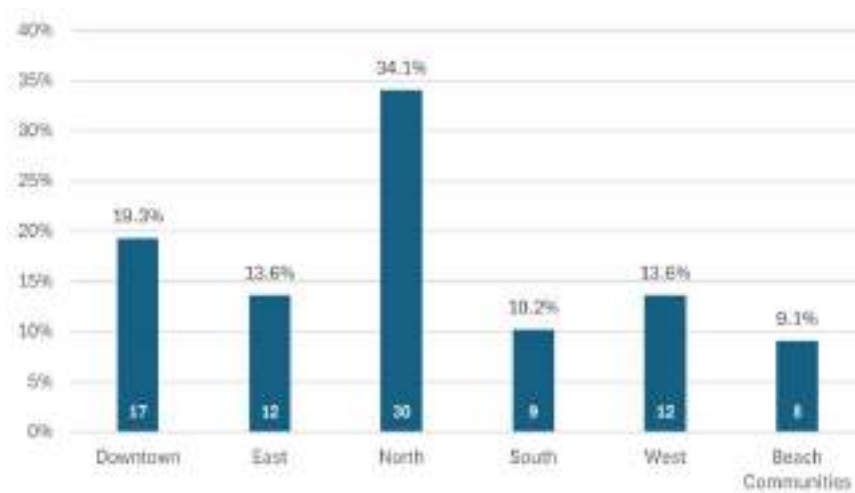


Figure 3. Percentage and count of Critical Infrastructure assets.

Critical Community and Emergency Facilities

Port St. Joe, as the county seat of Gulf County, offers various crucial government services. These include the Port St. Joe Post Office, the Gulf County Tax Collector, and the Gulf County Health Department. The city's major community hubs, the Centennial Building and the Washington Recreation Center, double as disaster recovery centers. Educational facilities are primarily located on the southern stretch of Madison Avenue, including Port St. Joe Elementary and High School and Gulf Coast State College. The city has two fire stations within its limits and three more in nearby areas for emergency services. Additionally, Ascension Sacred Heart Hospital is the most significant health center, strategically located at a higher elevation in the southern part of the city.

- (9) Government services- Port St Joe Post Office, Gulf County Tax Collector, Gulf County Property Appraiser, Gulf County Circuit and Courts, Gulf County Supervisor of Elections, Gulf County Courthouse, Gulf County Health Department, Gulf County Emergency Management, and the City Hall.
- (8) Community services- Centennial Building, Washington Recreation Center, and others

- (4) Educational services- Port St. Joe Elementary School, Faith Christian School, Gulf Coast State College, Port St. Joe High School
- (6) Emergency services- Fire Stations

The following chart illustrates the distribution of Critical Community and Emergency facilities across different city zones:

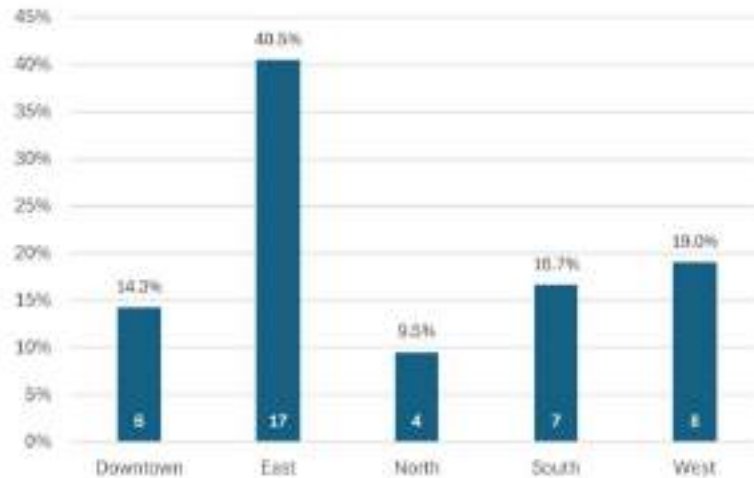


Figure 4. Percentage and count of Critical Community and Emergency facilities per zone.

Natural and Cultural Resources

Port St. Joe offers a variety of natural and cultural attractions within its city limits. Its parks and natural coastline provide opportunities for recreation and connection with Gulf waters. Additionally, cultural attractions such as the Constitution Convention State Museum offer a window into the region's political history. Port St. Joe's maritime heritage is celebrated at local landmarks like the Cape San Blas Lighthouse.

Summary of Natural and Cultural Resources within the city limits:

- (2) Cultural resources- Constitution Convention State Museum and Port St. Joe Library; other historic structures (noted below)
- (25) Religious- various churches
- (21) Parks- Lighthouse Park, Frank Pate Park, Constitution Convention Park, and others
- (7) Historic Structures- Centennial Building, Washington Recreational Center, Port Theater, Cape San Blas Lighthouse, and Garden Club.

The following chart illustrates the distribution of Critical Infrastructure assets across different city zones:

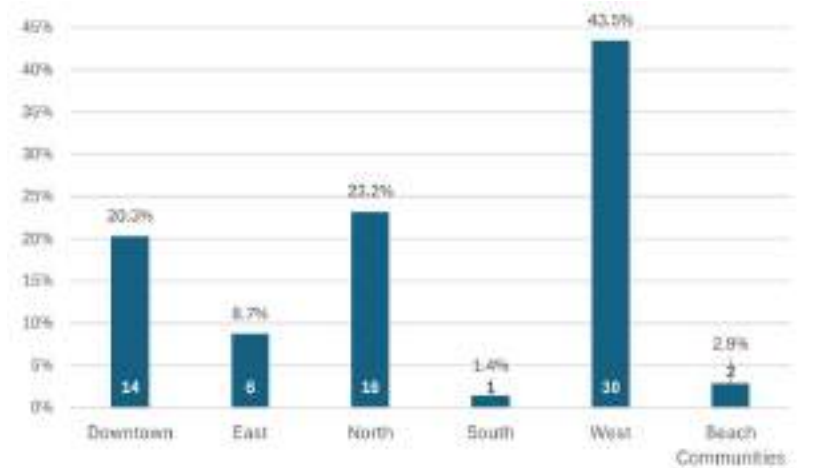


Figure 5. Percentage and count of Natural and Cultural resources per zone.

Local Economy and Tourism

Port St. Joe's economy is intricately linked to its location along the Gulf of Mexico. The city benefits from its coastal resources, which support various economic activities. Tourism significantly contributes to attracting visitors to the region's beaches, aquatic activities, and scenic natural landscapes. Commercial and recreational fishing, bolstered by the Gulf's rich marine life, also plays a vital role in the local economy. Additionally, the city's port serves as crucial infrastructure with its deepwater access to shipping channels and its strategic location near highways and rail links. It has the potential to significantly boost not only the local economy but also the broader regional economy.

The following chart illustrates the distribution of Local Economy and Tourism assets across different city zones:

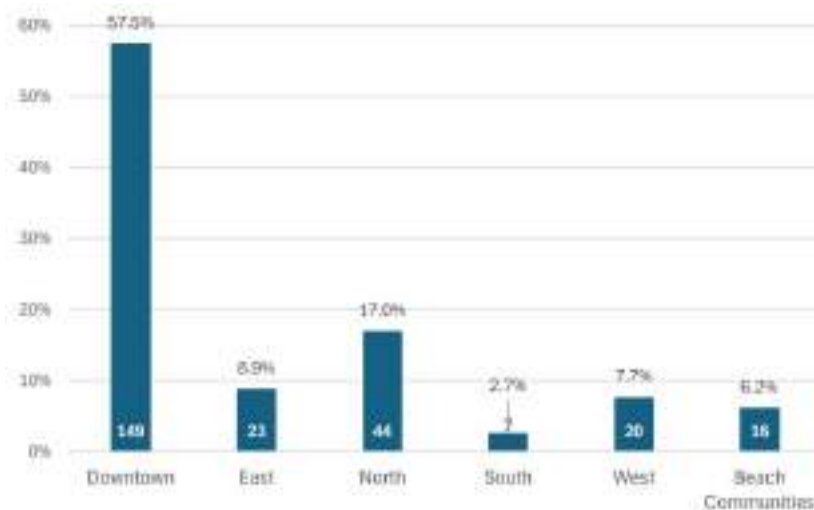


Figure 6. Percentage and count of Economy and Tourism assets per zone within city limits.

EXPOSURE ANALYSIS

EXPOSURE ANALYSIS METHODOLOGY

Flood depths for the scenarios listed in the ‘Data Collection’ section have been calculated using a static flood mapping (modified bathtub) approach¹⁶. This method entails subtracting a region’s elevation values (using a digital elevation model DEM) from a flood elevation surface (given by each scenario). However, in this study, this methodology was slightly modified depending on the three distinct types of flooding calculated (detailed below).

Tidal Flooding

Tidal flooding scenarios were calculated using the NOAA MHHW surface for Florida. The raster grid was reprojected and resized to fit the DEM to perform the flood depth calculations. To determine current-day flood depths, the DEM values were subtracted from the MHHW values using the Raster Calculator tool. Negative results were eliminated with the Null tool. Future flood depths for 2040 and 2070 were calculated by summing the projected SLR values to the MHHW values before subtracting the DEM values. Finally, the resulting surface(s) from the previous steps were intersected with Port St. Joe’s shoreline to remove the hydrologically disconnected areas.

Storm Surge Flooding

Storm surge flooding scenarios were calculated using NOAA’s Sea, Lake, and Overland Surges from Hurricanes SLOSH model. The original SLOSH grid was converted into points and these points were interpolated using the Natural Neighbor tool to have a continuous surface. Once this surface was obtained, it was cropped to match the boundaries of DEM. Current-day flood depths were then calculated by subtracting the DEM values from the SLOSH values using the Raster Calculator tool. Subsequently, negative values were removed using the Null tool. Flood depths for 2040 and 2070 were calculated by summing the projected SLR values to the SLOSH values before subtracting the DEM values. Finally, the resulting surface(s) from the previous steps were intersected with Port St. Joe’s shoreline; hydrologically disconnected areas were removed.

FEMA Special Flood Hazard Area

FEMA’s SFHA was used to identify “high-risk” areas that are subject to a 1% annual chance. In the case of Port St. Joe, AE, VE, and A zones were identified using their base flood elevations when available. Coastal AE and VE flood zones are also subject to storm-induced wave action.

The flood depth calculation process involved first converting AE and VE zones into a flood elevation surface raster using the static base flood elevation values. Current-day flood depths were calculated by subtracting the DEM values from this raster surface using the Raster Calculator tool and removing any negative values with the Null tool. For future scenarios in 2040 and 2070, it was necessary to conduct an additional step that allows the addition of projected SLR values. A zonal statistics analysis was performed

¹⁶ National Oceanic and Atmospheric Administration NOAA, “Detailed Method for Mapping Sea Level Rise Inundation,” <https://coast.noaa.gov/data/digitalcoast/pdf/slr-inundation-methods.pdf>

using the BFE of the surrounding areas to create a raster covering all the areas with flood depth values. This step does not affect the model because the resulting flood extent won't modify the zone boundaries, but it allows adding the SLR values for future scenarios. Finally, the flood depth calculation follows the same methodology used for the current-day flood depths, subtracting the DEM values.

It should be noted that Zone A also represents areas with a 1% annual chance of flooding. However, detailed flood analyses are not conducted for such areas, which means that while the extent of flooding is represented, specific base flood elevations are not provided. Zone A includes key residential sectors in the northern part of the city, where calculating flood depths is necessary. To mitigate this limitation, the step previously described for the future scenarios was performed. Although a necessary thorough analysis is stated, these preliminary results align with the known flood depth extents of Zone A, offering valuable insights into these critical urban areas.

Road Network Exposure Methodology

Port St. Joe and its surrounding area lack street centerline data; therefore, a methodology was developed to treat road segments as individual units to determine their relationship to flood depths. The analysis of road network exposure utilized TIGER/Line data from the US Census Bureau as a basis. The line geometry of the data was adjusted to approximately align with the street centerline, and the roads were segmented into 300-ft sections. This segmentation enabled the creation of comparable analysis units. A 10-foot buffer was then applied to each segment to transform them into polygons that approximate the street’s surface area. Using zonal statistics, mean flood depths for each polygon were then computed across all flood scenarios, and these values were subsequently attributed to their respective line segments.

Asset Exposure Methodology

Flood depth values were derived from the raster surfaces generated for each flood scenario and applied to the corresponding assets in the inventory. For buildings and structures with smaller footprints, flood depth values were assigned based on the centroid of the asset footprint. For assets that involve larger surfaces such as parks, cemeteries, airport runways, and street segments, an average flood depth was calculated for the polygon and attributed to the centroid of the asset. To accurately determine the exposure level of different types of assets, three types of elevation values were considered in the flood depth calculations:

- First Floor Elevation (FFE): Used to calculate flood depths for building-related assets and control rooms
- Electrical panel elevation: Used to calculate flood depths for equipment (i.e., lift stations)
- Ground elevation: Used to calculate flood depths for large areas like parks, cemeteries, airport runways, and assets with no FFE or electrical panel elevation available

The table below specifies the flood depth ranges that define the exposure levels for each asset category.

Asset Exposure Levels (Low, Medium, High) by Flood Depths				
Asset Category	Asset Type	Low	Medium	High
Transportation	Boat ramps			
	Docks			
	Roads	FD below 6"	FD below 12"	FD more than 12"
	Bridges	FD below 6"	FD below 12"	FD more than 12"
	Airport runway			FD exceeds ground elevation
Housing	Assets w/ FFH	FD up to 12" below FFE	FD up to 18" above FFE	FD more than 18" above FFE
Critical Infrastructure	Wastewater facility			FD exceeds control room FFE
	Lift station	Above wet well top slab elevation (ground)		FD exceeds electrical panel elevation
	Water supply infrastructure			FD exceeds control room FFE
	Supply well			FD exceeds control room FFE
	Antenna structures			FD exceeds ground elevation
	Electric substation			FD exceeds ground elevation
Natural, Cultural, and Historical Resources	Assets w/ FFH	FD up to 12" below FFE	FD up to 18" above FFE	FD more than 18" above FFE
	Assets w/ ground elevation			FD exceeds ground elevation
Community and Emergency Facilities	Assets w/ FFH	FD up to 12" below FFE	FD up to 18" above FFE	FD more than 18" above FFE
	Assets w/ ground elevation			FD exceeds ground elevation
Tourism/ Economy	Assets w/ FFH	FD up to 12" below FFE	FD up to 18" above FFE	FD more than 18" above FFE
	Assets w/ ground elevation			FD exceeds ground elevation

Table 4. Estimates of exposure level (low, medium, or high) by asset type and flood depths.

RESULTS

This section of the Port St. Joe flood vulnerability assessment report outlines how flood exposure varies among different asset categories over time and across various flood scenarios. Our analysis has pinpointed specific flood scenarios and planning horizons that mark significant changes in flood exposure.

Tidal flooding alone, influenced by sea level rise (SLR), does not significantly impact most asset categories. However, when SLR is combined with storm scenarios, particularly Categories 1 and 2 hurricanes, it presents a notable increase in vulnerability. For storm surge, hurricanes Category 3 and above represent a greater threat than a 100-year storm flood scenario, leading to a sharp increase in vulnerability with exposure rising above 60% in most asset categories.

This information is crucial as it guides us in determining the relevant scenarios for zone-specific analysis. Such analyses will help us pinpoint vulnerabilities associated with individual sites and determine the flood parameters that will have to be addressed in the adaptation plan to enhance the resilience of as many assets as possible.

Housing

While tidal flooding is not currently a significant threat to residential properties under present and future sea level rise scenarios, the situation changes with storm surge from a Category 2 hurricane. Flood depths currently would inundate about 15% of residential structures; with sea level rise posing a significant

change in flood vulnerability in the future to approximately 29% by 2040 and 49% by 2070. There are two specific areas on the west side of the Central Channel where homes are particularly vulnerable to storm surge of flooding. The first area stretches from 10th to 18th Street, and the second is located south of the channel outlet to St. Joseph Bay, encompassing the houses around Long Avenue, 20th Street, and Dupont Drive.

Note- there is a limitation regarding the 100-year flood event data as some areas in North Port St. Joe do not have base flood elevation data, which makes city-wide comparisons over time impossible.

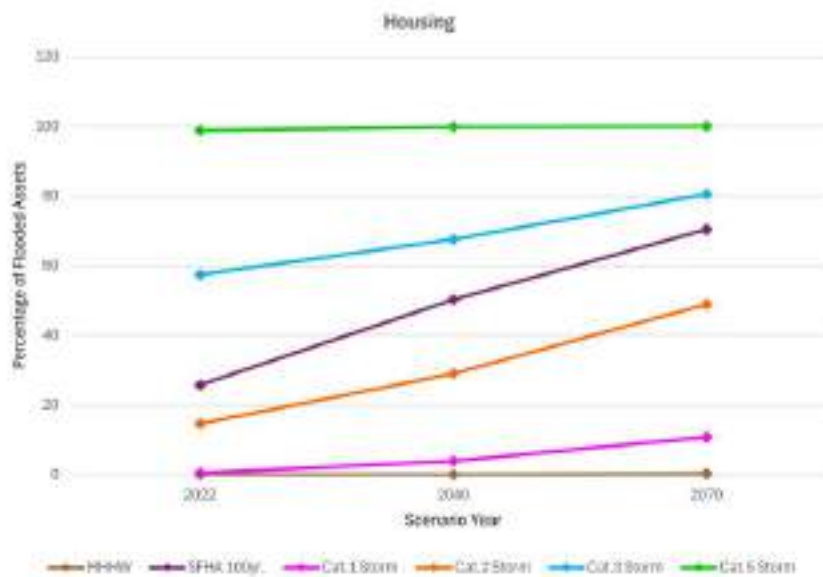


Figure 7. Housing assets flood scenario analysis. Percentage of flooded assets per scenario and year

Transportation

The water-related infrastructure, including boat ramps, the Marina, and the Port, are susceptible to various impacts during any flood conditions. These impacts are based on water force affecting structures, shoreline erosion, and increased sedimentation, particularly at the Port, aspects that are not covered in this study. Regarding flood impact on facilities related to these assets, both the Port and the Marina are vulnerable during a 100-year flood event. In terms of storm surge, the Marina faces significant risks from Category 2 hurricanes and above, while the Port is at risk from Category 3 hurricanes and higher.

Concerning the road network within the city limits, projections for tidal flooding and sea level rise (SLR) for 2040 and 2070 indicate that the street network will remain unaffected, and a similar situation will occur with a Category 1 hurricane. However, the shift is significant in a 100-year flood and a Category 2 hurricane events, which would impact nearly 32% and 23% of the road network, respectively. The vulnerability of the mentioned events would increase significantly in the future, with 54% and 36% of impact in 2040 and 65% and 51% in 2070, respectively.

Constitution Dr. / Monument Ave serves as the primary north-south transportation connection, which would be inundated during hurricanes starting from Category 2 and above. Consequently, maintaining access to Garrison Ave. is crucial for north-south travel in and out of the city. The areas to the east of Long

Avenue face increased flooding risks due to their closeness to the coastline. These vulnerabilities highlight the urgent need for effective stormwater management and the maintenance of city-wide connectivity in emergency situations during extraordinary flooding events.

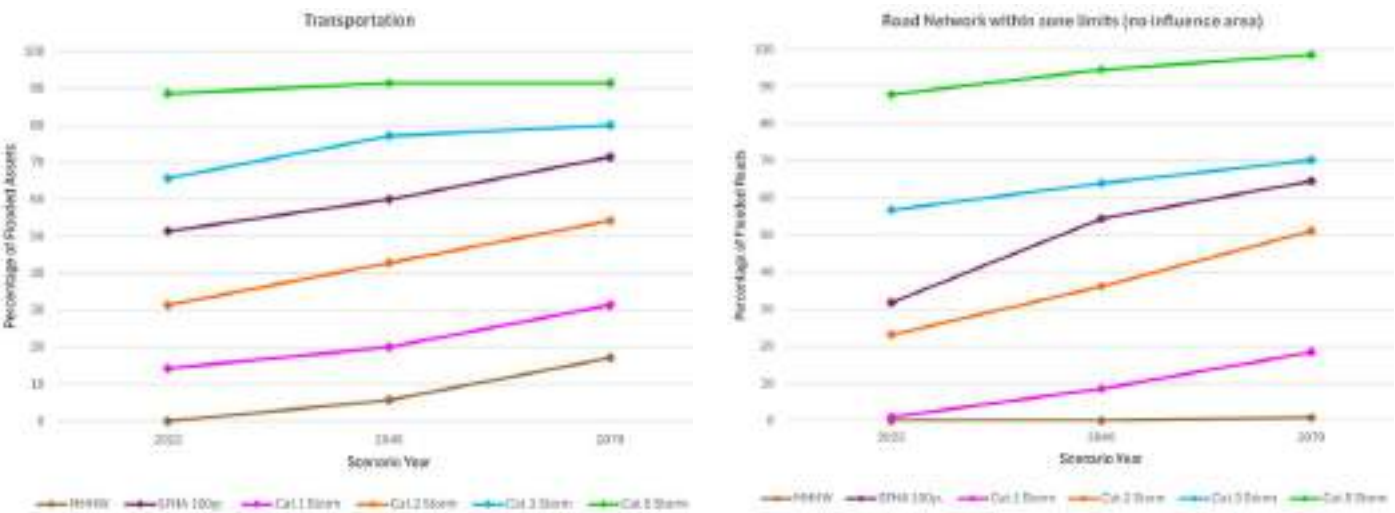


Figure 8, 9. Transportation assets flood scenario analysis. Percentage of flooded assets and road segments per scenario and year.

Critical infrastructure

Certain classes of critical infrastructure are currently at low risk of flood hazards. Essential utility infrastructure like the water plant, electrical substation, and wastewater plant are currently at risk only during extreme flood conditions associated with Category 4 and 5 hurricanes.

Conversely, other types of critical infrastructure, including lift stations, hazardous waste facilities, and communication facilities, are exposed to varying levels of flood risk. Projections show similar effects of a current 100yr. flood event and a category 2 hurricane flooding 31% and 27% of the assets. However, by 2070, the impact is expected to nearly double, affecting approximately 65% and 47% of these assets,

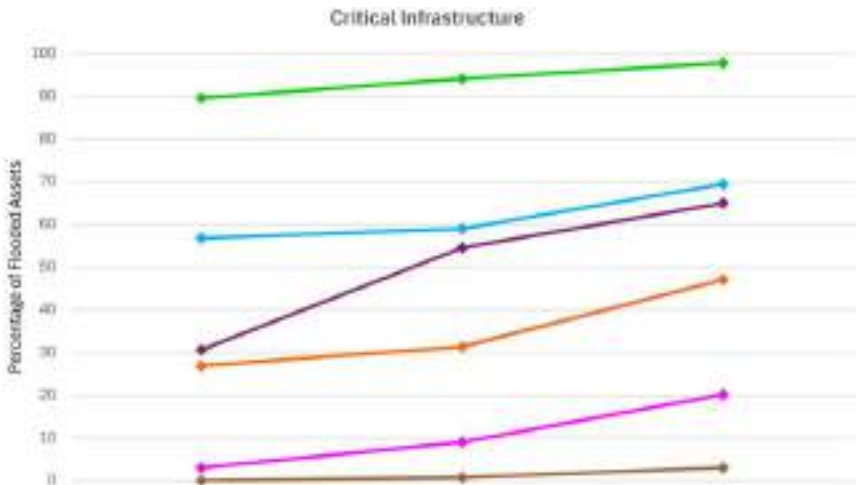


Figure 10. Critical Infrastructure assets flood scenario analysis. Percentage of flooded assets and road segments per scenario and year.

respectively. Critical assets in the West Zone will be the most affected by flood moderate hurricane scenarios (category 2) and 100-year flood events.

Community + Emergency Facilities

Citywide, a current 100-year flood event and a Category 2 hurricane would not have a severe impact on these assets, affecting 8% and 6% of them. This exposure is projected to increase to 36% and 20% by 2070, respectively.

This low exposure is given because relevant regional Critical Community and Emergency Facilities are located in the east (county governmental facilities) and in the south (health facilities such as the hospital and all the educational facilities), which are on a convenient elevation.

In contrast, the downtown area houses more vulnerable emergency facilities, including the City Hall, Fire Station, and Police Department. These facilities are currently not exposed but are projected to experience flooding by 2040 under the mentioned flood scenarios.

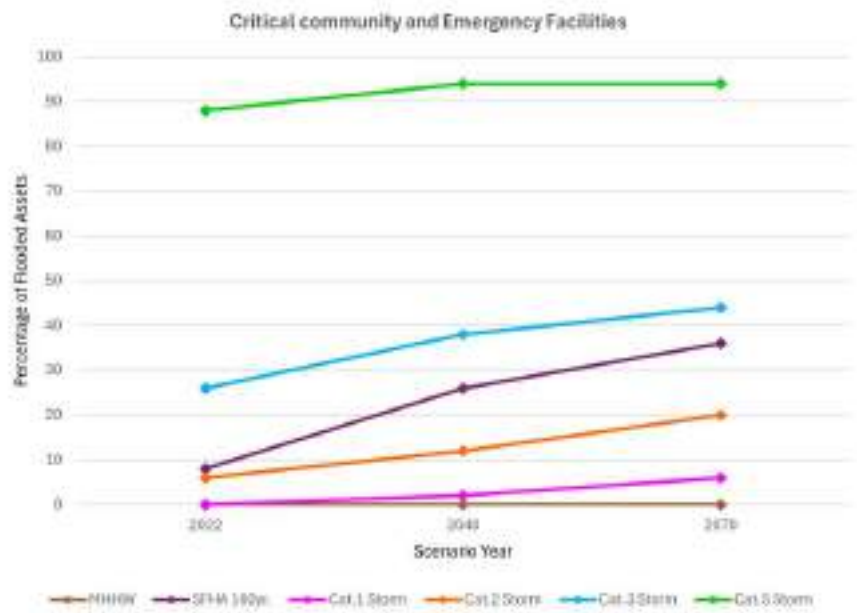


Figure 11. Critical Community and Emergency Facilities flood scenario analysis. Percentage of flooded assets and road segments per scenario and year.

Natural and Cultural Resources

Natural and cultural assets in Port St. Joe will face greater risk than other asset categories. By 2040, tidal flooding will significantly affect shoreline recreational spots such as Sand Hills Pond Park, Shipyard Cove/Maddox Park, and Frank Pate Park, with impacts expected to intensify and expand to the Central Channel area by 2070. Additionally, a 100-year flood event would affect 44% of these assets, including significant flooding of recreational areas, religious facilities near Monument Avenue, and historic structures in downtown. The extent of flooding is projected to rise sharply, affecting 44% of the assets by 2040 and 85% by 2070. Regarding storm surge, similar flooding is expected in the recreational areas in a Category 2 hurricane, though the historic structures in downtown will experience less exposure.

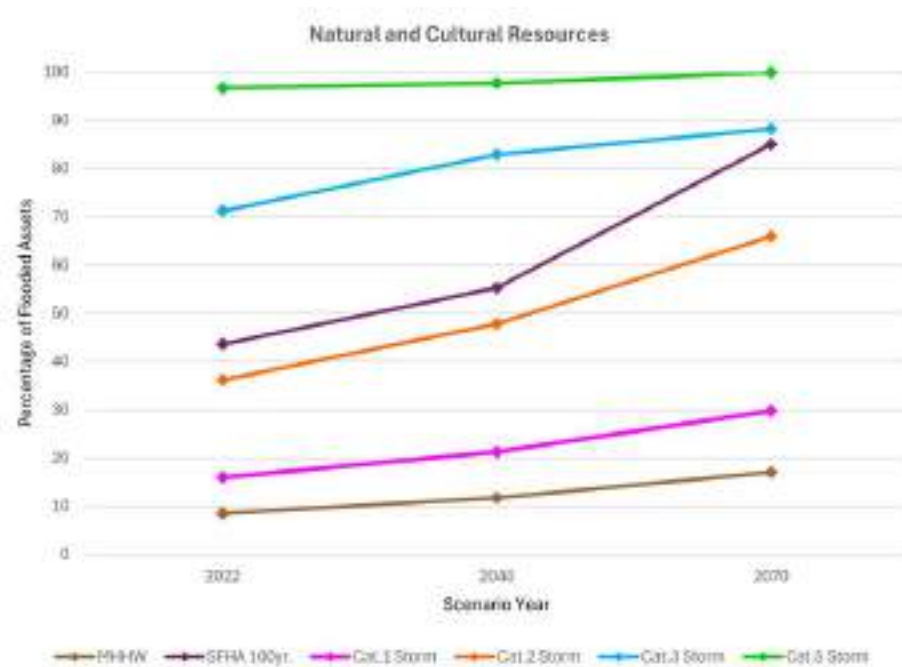


Figure 12. Natural and Cultural Resources flood scenario analysis. Percentage of flooded assets and road segments per scenario and year.

Local Economy and Tourism

Port St. Joe's economic vitality results from the coastal tourism sectors and water-based economy, where most of the assets related to these activities are located in proximity to the shoreline and downtown.

Tidal flooding will not affect the economy and tourism assets. However, a 100-year flood event would impact 18% of them, predominantly around the intersection of Cecil Costin Blvd. and Monument Ave. The vulnerability of these assets would increase significantly, affecting 50% by 2040 and 65% by 2070 due to flooding of the historic core where most assets are concentrated.

Concerning storm surge, currently, a category 2 hurricane would not reach the historic core, impacting only 6.8% of the economic assets. Nevertheless, this exposure is expected to rise to 22% by 2040 and 49% by 2070. In scenarios involving extreme hurricanes of category 3 or higher, more than 50% of the economy and tourism assets would be inundated.

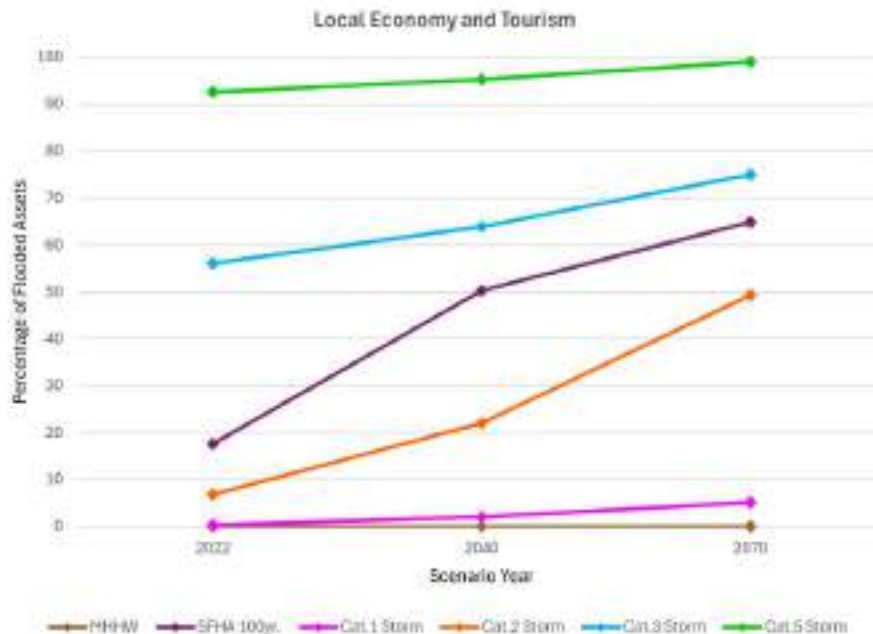


Figure 13. Local Economy and Tourism assets flood scenario analysis.
Percentage of flooded assets and road segments per scenario and year.

Lastly, while beyond this report’s assessment, rising sea levels and increasing intensity of hurricanes will have environmental and human health impacts beyond only flood hazards. Saltwater intrusion into freshwater aquifers threatens water quality and habitats essential for many species. The area's marshes and wetlands, vital for water retention and as natural flood barriers, face rising seas and degradation due to development. Water temperature and chemistry alterations also threaten to disrupt local fisheries, with cascading impacts on the many economic activities connected to water in Port St. Joe.

SYNTHESIS OF RESULTS

ZONE 1, DOWNTOWN PORT ST. JOE

Housing

In downtown Port St. Joe, all buildings identified for housing use are situated on the east side of Long Avenue. These housing units are not expected to be impacted by tidal or precipitation flooding even in a 100-year flood event. However, the flood exposure would be medium during a Category 3 hurricane to 50% of these assets and increases to 93% during a Category 5 hurricane.

Transportation

Tidal flooding is not expected to affect transportation assets and the road network significantly. In the context of a 100-year flood, the analyzed data shows that there will be high exposure levels amounting to 25% of the road network, with the most affected roads being Constitution Drive and Reid Avenue (not drivable between Cecil G. Costin Sr. Boulevard and E 4th Street). Additionally, in the same scenario, the

projections show restricted access due to flooding to the PSJ Marina and Boat Ramp at 5th Street. With respect to storm surge, the data suggests that a Category 1 hurricane will primarily affect the boat ramp at 5th St; whereas a Category 2 event will have a similar impact as a 100-year flood event, and a Category 3 hurricane will have a considerable impact, with 86% of the roads highly exposed to flooding, in addition to all of downtown becoming inaccessible.

Critical Infrastructure

Tidal flooding is not expected to impact critical infrastructure significantly. However, a 100-year flood event will affect all the critical infrastructure on the west side of Monument Avenue, along with the lift station at Marina Drive and several hazardous waste containers.

The impacts of hurricanes on these critical assets are considerable. A Category 2 hurricane will have a similar impact on critical assets as a 100-year flood event, with flooding affecting 29% of the assets. Further, a Category 3 hurricane would increase this impact dramatically, affecting up to 77% of the assets. Critical assets at risk during a Category 3 hurricane include the lift station at 1st Street and both the storm and wastewater infrastructure at the railroad facilities.

Community + Emergency Facilities

Findings from the analysis suggest that tidal flooding is unlikely to impact community and emergency facilities significantly. However, in the event of a 100-year flood, the medical facility on 5th Street is expected to experience substantial flooding. City Hall and the Port St. Joe Police Department could face medium and low flood exposure levels, respectively. Storm Surge, on the other hand, presents differentiated impacts. A Category 2 hurricane would only affect the Medical Facility described. However, a Category 3 hurricane could inundate all community and emergency facilities in the downtown area.

Natural + Cultural Assets

Tidal flooding will significantly affect the shoreline recreation areas such as Sand Hills Pond Park, Shipyard Cove, and Maddox Park. By 2070, these areas are expected to experience around 1 foot of flooding during high tides. In addition, a 100-year flood event would result in more than 3 feet of flooding in all shorefront parks; specifically, PSJ City Hall Park and Dr. Joe Park will experience around 1 foot of water.

Historical structures are also at risk; for example, the Port Theater would face a half foot of water during such an event. The impact of storm surges is also concerning, with all shorefront parks expected to flood by 18 inches in a Category 1 hurricane and more than 5 feet in a Category 2 hurricane. The Port Theater, in particular, would face up to 3 feet of water in the event of a Category 3 hurricane.

Tourism + Economy

Tidal flooding is not expected to impact the economy and tourism facilities significantly. Nevertheless, a 100-year flood event will affect approximately 23% of these assets, the majority situated along Reid Avenue, south of 3rd Street, and west of Monument Avenue.

Regarding storm surge, Category 1 and 2 hurricanes are not expected to impact economic assets substantially. Nevertheless, a Category 3 hurricane poses a significant threat, potentially flooding 85% of these assets. The historic core located between Monument Avenue and Long Avenue will be the most severely affected area, experiencing flood depths exceeding 1 foot.

Zone 1, Downtown

Critical assets inventory, exposure levels

Asset Name	Address	Asset Class	Asset Type	Asset Elevation ft. NGVD83	CURRENT						2040 Scenario						2070 Scenario					
					2040B	2040C	2040D	2040E	2040F	2040G	2040H	2040I	2040J	2040K	2040L	2040M	2040N	2040O	2040P	2040Q	2040R	
PORT ST JOE MARINA	340 Marina Dr	C	HAZARDOUS WASTE FACILITY	0	2.60	0.62	4.34	11.29			2.60	1.95	5.02	12.02			5.72	0.02	3.74	7.46	14.41	
PORT ST JOE MARINA	340 Marina Dr	C	STORMWATER FACILITY	0	2.64	0.66	4.38	11.34			3.02	1.94	5.66	12.62			5.76	0.06	3.78	7.50	14.46	
PORT ST JOE MARINA INC	240 Marina Dr	TRANSR	MARINA	C	2.70		0.71	4.43	11.39		2.60	1.99	5.71	12.07			5.82	0.12	2.83	7.55	14.51	
MASONIC LODGE - PORT SAINT JOE STE P & AM	214 Reid Ave	CC&EP	COMMUNITY CENTER	0-55				1.85	8.64		2.05	-0.03	3.13	10.32			3.88		1.30	4.97	11.86	
PORT ST JOE FIRE DEPARTMENT	404 Williams Ave	CC&EP	FIRE STATION	0-50				2.24	8.22		0.76	-0.11	3.32	10.33			2.90		1.72	5.36	12.37	
CITY OF PORT SAINT JOE CITY HALL	305 Cent G Cookin St Blvd	CC&EP	GOVERNMENT FACILITY	0-52	0.25			3.00	10.32		1.53	0.85	4.28	11.30			1.37		1.49	6.12	13.14	
GULF COUNTY SUPERVISOR OF ELECTIONS	401 Long Ave	CC&EP	GOVERNMENT FACILITY	0-58				0.42	7.44		0.61		1.70	8.72			1.48		-0.13	3.54	10.86	
MILLER AGENCY INC	First Street & Garrison Ave	C	HAZARDOUS WASTE FACILITY	0	0.58				3.79				0.60							-0.21	6.90	
ALVAREZ LAMMAN & ASSOC INC	518 & 4TH ST SW E	C	HAZARDOUS WASTE FACILITY	0-53					2.72				4.00								8.88	
AK RAILWAY LLC	201 E 22nd St	C	HAZARDOUS WASTE FACILITY	0	0.57			0.13	7.10		0.25		1.30	8.38			2.00		-0.43	3.23	10.22	
ST JOE AUTO PARTS CO INC	201 Long Ave	C	HAZARDOUS WASTE FACILITY	0-61				0.26	7.28		0.43		1.54	8.53			3.27		-0.27	3.38	10.37	
CVS PHARMACY #5246	110 W Highway 50	C	HAZARDOUS WASTE FACILITY	8-75				-0.00	-1.02		-7.81		-0.72	0.26			-5.97		-0.54	-4.88	1.10	
GULF COAST CYCLE PERFORMANCE	612 Monument Ave	C	HAZARDOUS WASTE FACILITY	0-55	2.68			0.71	4.36	11.37	3.01	1.99	5.64	12.07			5.75	0.02	3.83	7.46	14.40	
PORT THEATER	354 Reid Ave	NC&HR	HISTORIC STRUCTURE	0-56	0.62	-0.27		3.36	10.36		1.80	1.01	4.06	11.60			1.74		2.85	8.80	13.50	
PORT ST JOE POLICE DEPARTMENT	610 Williams Ave	CC&EP	LAW ENFORCEMENT FACILITY	0-52	-0.62			2.74	9.76		1.26	0.36	4.02	11.04			5.10		3.22	5.88	13.88	
CHURCHES	228 Long Ave	NC&HR	NONHOUSING TRF POINTS	0-58				0.81	7.91				3.16				2.98		0.88	4.03	11.03	
CHURCHES	471 Third St	NC&HR	NONHOUSING TRF POINTS	0-58				0.45	7.40				1.73				2.46		-0.09	3.57	10.57	
CHURCHES	500 & 4TH ST	NC&HR	NONHOUSING TRF POINTS	1-76				-0.14	6.88				0.95				1.88		-0.07	2.79	9.81	
FAMILY LIFE CHURCH	523 Reid Avenue	NC&HR	DELICIOUS FACILITY	0-46	-0.45			2.31	9.32		0.83	-0.05	3.59	10.60			2.07		1.79	5.43	12.44	
SHORELINE MEDICAL GROUP, P.A.	429 Ballard Avenue	CC&EP	HEALTH CARE FACILITY	0	3.89			3.88	13.32	12.32	4.87	2.94	6.09	13.80			6.71	0.98	4.78	8.45	15.83	
CARE SAN BLAS LIGHTHOUSE	200 Miss Zoly S Dr	NC&HR	HISTORIC STRUCTURE	0	3.84			3.88	13.36		3.22	3.18	6.84	13.84			6.98	1.23	3.00	6.68	15.68	
JETTY PARK / PORT ST JOE MARINA	224 Jetty Park Dr	NC&HR	PARKS	0	1.40	3.49	1.88	2.31	12.03	1.57	4.40	2.00	2.79	6.30	13.29	1.81	6.33	2.09	4.47	8.19	23.13	
SAND HILLS POND PARK	110 Harborview Dr	NC&HR	PARKS	0	0.68	3.24	1.57	3.20	6.94	13.62	1.30	6.45	2.27	4.32	7.92	14.90	1.49	6.28	2.88	6.07	9.76	19.78
SHEPARD COVE/ MADDOX PARK	235 Captain Fred's Pl	NC&HR	PARKS	0	0.33	7.53	1.43	3.04	6.73	13.72	0.89	6.79	2.60	6.32	10.01	17.00	1.32	10.63	4.43	6.16	13.85	28.84
BAY WALK PARK AND GULF COUNTY WELCOME CENTER	501 Monument Ave	NC&HR	PARKS	0		4.08	1.32	4.21	7.60	14.98		7.46	2.77	3.49	9.16	20.10	1.28	9.30	5.97	7.11	11.00	18.00
SALTZELL POND PARK	405 Ballard Ave	NC&HR	PARKS	0	0.12	1.74	4.36	9.04	15.04		7.60	2.73	3.66	9.32	16.32	1.88	9.44	3.74	7.50	11.16	18.16	
DR JOE PARK	314 Williams Ave	NC&HR	PARKS	0	1.05			2.79	9.79		1.32	0.83	4.07	11.07			4.58		2.34	6.91	13.91	
PORT ST JOE CITY HALL PARK	305 C G Cookin Blvd	NC&HR	PARKS	0	1.03			0.30	3.70	10.00		2.21	1.42	5.06	12.06		4.15	0.14	3.26	6.90	13.92	
FIRST BAPTIST CHURCH OF PORT SAINT JOE	151 Third Street	NC&HR	RELIGIOUS FACILITY	0	1.07			0.65	4.31	11.31		3.85	3.85	6.88	13.98		6.88		3.77	7.43	14.43	
HHS GULF CO PUBLIC HEALTH UNIT	401 Long Avenue	C	SOLID WASTE FACILITY	0-56				0.52	7.54		0.70		1.80	8.82			2.54		-0.01	3.64	10.60	
APALACHICOLA NORTHERN RAILROAD	190 Railroad Shop Bld	C	STORMWATER FACILITY	0-57				0.16	7.16		0.31		1.46	8.44			2.15		-0.37	3.30	10.30	
AK RAILWAY LLC		C	WASTEWATER TREATMENT FACILITY	0-57				0.22	7.20		0.39		1.50	8.48			2.20		-0.11	3.24	10.22	
EASTERN SHEPHERDSON GROUP INC	382 Howard Rd	C	HAZARDOUS WASTE FACILITY	0	1.90			0.37	4.08	11.03	2.58	3.88	5.98	12.29			4.42		3.49	7.20	14.19	
ST JOSEPH LAND & DEV CO	Garrison Ave & Unithway 75	C	HAZARDOUS WASTE FACILITY	0					4.22				5.62							0.37	7.40	
AMERADA HHS CORP	First Street & Ballard Avenue	C	HAZARDOUS WASTE FACILITY	0	0.85			5.30	10.27		1.89	0.89	4.58	11.95			3.87		2.71	6.42	13.30	
LONG AVE WATER AND SEWER PROJECT		C	STORMWATER FACILITY	0				1.06	6.84		1.23		2.38	9.32			3.07		0.12	4.18	11.18	
PSJD - MARINA DRIVE LIFT STATION	404 Marina Dr	C	LIFT STATION	0	4.10			3.15	13.83		5.39		4.43	6.14	15.09			7.22		6.27	9.86	15.93
PLUM - 1ST STREET MASTER LIFT STATION	110 David Langston Dr	C	LIFT STATION	0				0.82	7.82		0.89		2.10	9.09			2.88		0.29	3.84	10.83	

ASSET CLASS LEGEND

CC&EP - CRITICAL COMMUNITY AND EMERGENCY FACILITIES
 C - CRITICAL INFRASTRUCTURE
 NC&HR - NATURAL, CULTURAL, AND HISTORICAL RESOURCES
 TRANSR - TRANSPORTATION

Transportation Street Network, Housing, and Economy & Tourism assets are displayed only as summary in the critical assets categories table.

Zone 1, Downtown

Critical assets categories, exposure levels

	Current						2040 Scenario						2070 Scenario					
	Mean Higher High Water	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 4 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 4 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 4 Hurricane
Zone 1 - Downtown - Housing																		
No Impact	100.0%	100.0%	100.0%	100.0%	10.0%	0.0%	100.0%	32.5%	100.0%	100.0%	0.0%	25.0%	100.0%	0.0%	100.0%	25.0%	0.0%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	22.5%	0.0%	0.0%	2.5%	0.0%	0.0%	0.0%	0.0%	55.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	55.0%	0.0%	0.0%	37.5%	0.0%	0.0%	30.0%	0.0%	0.0%	20.0%	0.0%	13.5%	2.5%	0.0%
High	0.0%	0.0%	0.0%	0.0%	10.0%	100.0%	0.0%	7.5%	0.0%	0.0%	47.5%	75.0%	0.0%	60.0%	0.0%	7.5%	37.5%	100.0%
Flooded Housing Buildings	0.0%	0.0%	0.0%	0.0%	90.0%	100.0%	0.0%	67.5%	0.0%	0.0%	100.0%	75.0%	0.0%	100.0%	0.0%	75.0%	100.0%	100.0%
Zone 1 - Downtown - Transportation																		
No Impact	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Flooded Transportation Assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Zone 1 - Downtown - Critical Infrastructure																		
No Impact	100.0%	64.7%	100.0%	70.0%	23.5%	5.9%	100.0%	23.5%	100.0%	64.7%	23.5%	0.0%	100.0%	23.5%	82.4%	41.2%	11.8%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.8%	5.9%	0.0%
Medium	0.0%	0.0%	0.0%	5.9%	11.8%	0.0%	0.0%	11.8%	0.0%	0.0%	5.9%	5.9%	0.0%	0.0%	5.9%	0.0%	0.0%	0.0%
High	0.0%	35.3%	0.0%	23.5%	64.7%	94.1%	0.0%	64.7%	0.0%	35.3%	70.6%	94.1%	0.0%	76.5%	11.8%	47.1%	82.4%	100.0%
Flooded Critical Infrastructure Assets	0.0%	35.3%	0.0%	29.4%	76.5%	94.1%	0.0%	76.5%	0.0%	35.3%	76.5%	100.0%	0.0%	76.5%	17.6%	58.8%	88.2%	100.0%
Zone 1 - Downtown - Critical Community and Emergency Facilities																		
No Impact	100.0%	50.0%	100.0%	83.3%	0.0%	0.0%	100.0%	0.0%	100.0%	16.7%	0.0%	0.0%	100.0%	0.0%	83.3%	0.0%	0.0%	0.0%
Low	0.0%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	16.7%	0.0%	0.0%
Medium	0.0%	16.7%	0.0%	0.0%	16.7%	0.0%	0.0%	50.0%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	16.7%	0.0%	0.0%
High	0.0%	16.7%	0.0%	16.7%	83.3%	100.0%	0.0%	50.0%	0.0%	16.7%	100.0%	100.0%	0.0%	100.0%	16.7%	66.7%	100.0%	100.0%
Flooded Critical Community and Emergency Facilities	0.0%	50.0%	0.0%	16.7%	100.0%	100.0%	0.0%	100.0%	0.0%	83.3%	100.0%	100.0%	0.0%	100.0%	16.7%	100.0%	100.0%	100.0%
Zone 1 - Downtown - Natural, Cultural and Historical Resources																		
No Impact	78.6%	21.4%	64.3%	35.7%	0.0%	0.0%	78.6%	21.4%	64.3%	21.4%	0.0%	21.4%	64.3%	0.0%	50.0%	0.0%	0.0%	0.0%
Low	0.0%	7.1%	0.0%	7.1%	7.1%	0.0%	0.0%	0.0%	0.0%	7.1%	0.0%	0.0%	0.0%	0.0%	0.0%	14.3%	0.0%	0.0%
Medium	0.0%	7.1%	0.0%	0.0%	14.3%	0.0%	0.0%	7.1%	0.0%	7.1%	7.1%	0.0%	0.0%	0.0%	0.0%	7.1%	0.0%	0.0%
High	21.4%	64.3%	35.7%	57.1%	78.6%	100.0%	21.4%	71.4%	35.7%	64.3%	32.9%	78.6%	35.7%	100.0%	50.0%	78.6%	100.0%	100.0%
Flooded Natural, Cultural and Historical Resources	21.4%	78.6%	35.7%	64.3%	100.0%	100.0%	21.4%	78.6%	35.7%	78.6%	100.0%	78.6%	35.7%	100.0%	50.0%	100.0%	100.0%	100.0%
Zone 1 - Downtown - Economy																		
No Impact	100.0%	79.2%	100.0%	91.3%	19.5%	0.7%	100.0%	97.3%	100.0%	64.4%	15.4%	91.3%	100.0%	8.1%	98.0%	22.1%	6.0%	0.0%
Low	0.0%	4.7%	0.0%	6.7%	4.0%	0.0%	0.0%	0.0%	0.0%	11.4%	1.9%	0.0%	0.0%	5.4%	1.3%	10.1%	0.7%	0.0%
Medium	0.0%	14.8%	0.0%	2.0%	30.2%	2.0%	0.0%	0.0%	0.0%	22.1%	12.1%	0.0%	0.0%	19.7%	0.7%	32.2%	4.7%	0.7%
High	0.0%	1.3%	0.0%	0.0%	46.3%	97.3%	0.0%	2.7%	0.0%	2.0%	71.1%	8.7%	0.0%	75.8%	0.0%	25.6%	88.6%	99.3%
Flooded Economy Assets	0.0%	20.8%	0.0%	8.7%	80.5%	99.3%	0.0%	2.7%	0.0%	35.6%	84.6%	8.7%	0.0%	91.9%	2.0%	77.9%	94.0%	100.0%

Roads, exposure levels

	Current						2040 Scenario						2070 Scenario					
	Mean Higher High Water	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 4 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 4 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 4 Hurricane
Zone 1 - Downtown																		
No Impact	100.00%	48.31%	97.40%	77.12%	6.78%	0.00%	100.00%	5.93%	95.76%	45.76%	4.24%	0.00%	97.40%	3.39%	84.75%	12.71%	0.00%	0.00%
Low	0.00%	13.96%	0.85%	12.71%	1.69%	0.00%	0.00%	2.54%	1.69%	12.71%	1.69%	0.00%	0.85%	0.85%	10.17%	3.39%	3.39%	0.00%
Medium	0.00%	12.71%	1.69%	4.24%	5.93%	0.00%	0.00%	5.93%	0.85%	10.17%	1.69%	0.00%	1.69%	1.69%	0.85%	5.93%	0.85%	0.00%
High	0.00%	25.42%	0.00%	5.93%	85.58%	100.00%	0.00%	85.59%	1.69%	31.36%	92.32%	100.00%	0.00%	94.07%	4.24%	77.97%	95.76%	100.00%
Flooded Roads	0.00%	51.03%	2.54%	22.88%	93.22%	100.00%	0.00%	94.07%	4.24%	54.24%	95.76%	100.00%	2.54%	96.61%	15.25%	87.29%	100.00%	100.00%



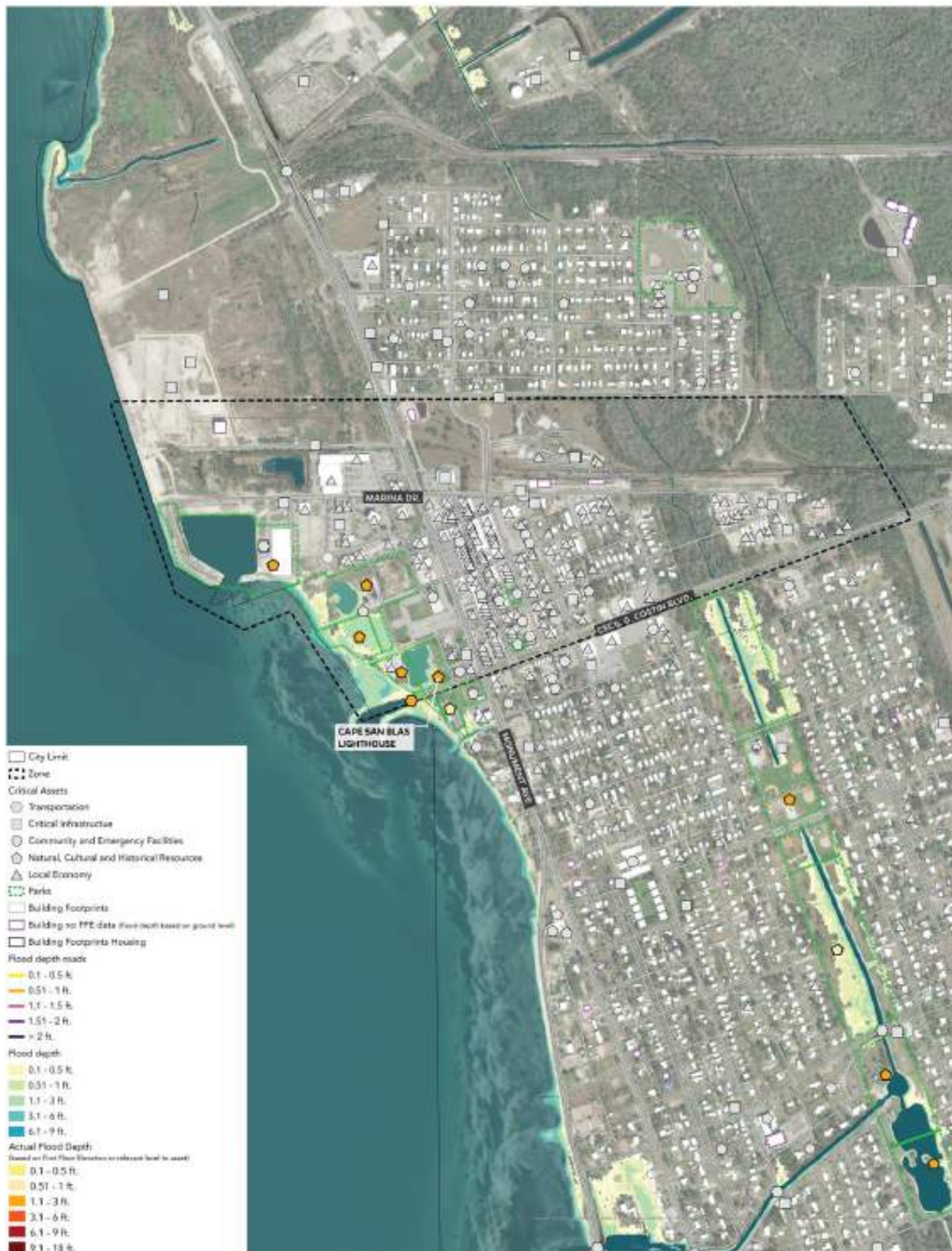
Downtown Port St. Joe, MHHW



Downtown Port St. Joe, Storm Surge Cat. 2 Hurricane



Downtown Port St. Joe, Sea Level Rise Projection for 2040



Downtown Port St. Joe, Sea Level Rise Projection for 2070



ZONE 2, NORTH PORT ST. JOE

Housing

Tidal flooding projections indicate that by 2040 and 2070, sea level rise (SLR) alone will not directly impact any residences. However, it is necessary to complete a detailed study to assess the influence of sea level rise on the water table in the filled section of the Chicken House creek.

Regarding precipitation flooding, a 100-year flood event would affect the surrounding housing areas of Battles Street and North Bay Street. It was not possible to assess the impact level of these since there is no base flood elevation data for those areas.

The risk escalates significantly during extreme weather events. In the event of a Category 3 hurricane, it is estimated that approximately 45% of homes could be affected, and 11% facing inundations of more than 18 inches of water. The situation becomes even more dire with a Category 5 hurricane, where 98% of homes risk devastating impacts.

Transportation

Tidal flooding is not expected to impact transportation assets and the road network significantly. However, a 100-year flood event presents a more severe threat, affecting 38% of the roads. Major roads such as Highway 98, Battles St., and Industrial Rd will become impassable, hindering evacuation efforts to the north and south. The Port and the PSJ material transfer at the northern canal will also experience flooding exceeding 1 foot.

In contrast, transportation assets and the street network are generally resilient to Category 1 and 2 storm surge events. However, a Category 3 hurricane would flood 38% of the road network, particularly affecting road segments in the NPSJ neighborhood. Critical infrastructure will become inaccessible, including the waste and water plant and the industrial and warehouse areas adjacent to the Gulf County Canal.

Critical Infrastructure

Data analysis reveals that essential utilities infrastructure for PSJ is primarily situated in Zone 2, with tidal flooding not anticipated to affect any of these critical assets. However, during a 100-year flood event, the lift stations at W Highway 98 are projected to be flooded, posing potential operational challenges. Additionally, the old paper mill is expected to experience partial flooding, with hazardous waste locations identified in this vicinity, although further data verification is warranted. Storm surge events of category 1 and 2 hurricanes are not forecasted to have a significant impact on critical infrastructure. In contrast, a category 3 hurricane is expected to inundate the lift stations along W Highway 98 with water levels exceeding 4 feet, along with all hazardous waste locations on the west side of Chicken House Creek. Furthermore, the wastewater plant buildings located in the southwest of the parcel are anticipated to be partially flooded.

Critical Community and Emergency Facilities

Tidal and 100-year flood events will not impact any community or emergency facilities in Zone 2.

However, the area does face risks from storm surge. Specifically, a Category 3 hurricane is expected to cause flooding of approximately 6 inches at the Police Substation on Martin Luther King Boulevard. Furthermore, the Washington Recreational Center is at risk, but only in the event of more severe Category 4 and 5 hurricanes.

Natural + Cultural Assets

Tidal flooding events will not have any major impact on Natural and Cultural Resources located within Zone 2. Additionally, both a 100-year flood and storm surge resulting from a category 3 event will only affect churches situated along Battle Street, and Avenue D.

Tourism and Economy

Tidal flooding and 100-year precipitation-related events will not impact economic assets in Zone 2 significantly. However, there is a substantial risk to these assets from storm surges during a Category 3 hurricane. Economy assets along Highway 98 are projected to experience flooding of more than 18 inches deep. Additionally, MLK Boulevard and Avenue A restaurants will face water levels up to approximately 6 inches.

Zone 2, North Port St. Joe

Critical assets inventory, exposure levels

Asset Name	Address	Asset Class	Asset Type	Asset Elevation Ft NGVD83	CURRENT						2040 Scenario						2070 Scenario								
					W&E	SS-10	CR-1	CR-2	CR-3	CR-4	SL	SS-10	CR-1	CR-2	CR-3	CR-4	SL	SS-10	CR-1	CR-2	CR-3	CR-4			
PORT ST JOE PAPER MILL	600 W 1st Hwy 38	CI	HAZARDOUS WASTE FACILITY	0	-9.10							2.95	9.75	1.88	0.45	4.25	12.07	9.22	3.25	6.07	12.91				
TWIN RIVERS ST JOE TERMINAL	432 Howard Road	CI	SOLID WASTE FACILITY	0								2.09	9.67	1.18	0.21	3.97	10.65	3.05	3.05	5.81	12.65				
EASTERN SHIPBUILDING GROUP INC		CI	STORMWATER FACILITY	0								2.15	9.03	0.63		3.40	20.31	2.47	1.51	3.27	12.15				
WASHINGTON REC CENTER	414 Kenny St	CC&EP	COMMUNITY CENTER	0.48									3.07				4.35				6.19				
WASHINGTON RECREATIONAL CENTER	401 Peters St	CC&EP	DISASTER RECOVERY CENTER	0.48									3.19				4.47				6.31				
QJS AUTO REPAIR	7726 W Highway 38	CI	HAZARDOUS WASTE FACILITY	0.49								0.04	7.74	0.95		2.12	9.02	2.79	0.35	3.95	10.66				
5 STAR COLLISION CENTRE	770 1st Hwy 38	CI	HAZARDOUS WASTE FACILITY	0.58								0.42	7.34	0.54		1.70	6.62	2.38	-0.15	3.54	10.40				
DRENBACH CLEANERS	160 Ave C	CI	HAZARDOUS WASTE FACILITY	0.49								0.70	7.64	0.65		1.88	6.93	2.88	0.16	3.93	10.76				
LODGE (CLUB) BUILDING	254 B "In Alley" Ave	NCH&R	HISTORIC STRUCTURE	1.17								0.22	7.18	0.25		1.50	6.44	2.20	-0.31	3.34	20.28				
COMMUNITY CENTER (E.G., RECREATION HALL)	401 Peters St	NCH&R	HISTORIC STRUCTURE	0.48									3.31				4.58				6.43				
GULF COUNTY SHERIFF'S OFFICE - SUBSTATION	312 Martin Luther King Blvd	CC&EP	LAW ENFORCEMENT FACILITY	0.59								0.82	7.17	0.67		1.80	6.75	2.51	-0.01	3.64	10.59				
THE BODY OF CHRIST JESUS	106 Harbor St	NCH&R	RELIGIOUS FACILITY	0.59									4.04				5.03			0.21	7.76				
PHILADELPHIA PRIMITIVE CHURCH	274 Avenue D	NCH&R	RELIGIOUS FACILITY	0.63								0.62	7.13	0.73		1.90	6.93	2.57	0.06	3.74	10.87				
MT CARMEL BAPTIST CHURCH	900 Avenue D	NCH&R	RELIGIOUS FACILITY	0.58								1.42	6.14	1.53		3.70	6.63	3.38	0.86	4.54	11.46				
VICTORY TEMPLE FIRST BORN	315 Martin Luther King Boulevard	NCH&R	RELIGIOUS FACILITY	0.48									6.19	-0.41		0.74	7.07	1.42		2.50	9.31				
NEW BETHEL MISSIONARY BAPTIST	250 N Park Avenue	NCH&R	RELIGIOUS FACILITY	0.91									3.65				4.91			-0.91	6.77				
THOMPSON TEMPLE FIRST BORN CHURCH OF THE LIVING GOD	228 Avenue E	NCH&R	RELIGIOUS FACILITY	1.75								-2.28	5.65	-1.16		0.00	6.93	0.88		3.68	6.97				
AMAZING GRACE APOSTOLIC CHURCH	106 Robbins Ave	NCH&R	RELIGIOUS FACILITY	1.75									2.12				3.50			-1.75	5.34				
JESUS HOUSE OF PRAYER	228 Avenue E	NCH&R	RELIGIOUS FACILITY	0.91									5.54				5.22			-0.21	7.95				
CHURCH OF GOD IN CHRIST	103 Avenue D	NCH&R	RELIGIOUS FACILITY	0.59								1.14	4.08	1.25		1.40	9.36	3.12	0.69	4.26	11.35				
ZION FAIR BAPTIST CHURCH	280 Avenue C	NCH&R	RELIGIOUS FACILITY	2.33								-0.29	6.74	-0.05		1.09	6.02	1.75	-0.78	2.93	9.86				
NEW BETHEL AFRICAN METHODIST EPISCOPAL CHURCH	146 Avenue C	NCH&R	RELIGIOUS FACILITY	2.92								-0.40	6.48	-0.30		0.82	7.75	1.54	-1.01	2.65	9.60				
PETERS PARK / WASHINGTON RECREATION CENTER	505 Peters St	NCH&R	PARKS	0									4.12				5.95			0.79	7.78				
NEW COVENANT MWOC	252 Avenue E East	NCH&R	RELIGIOUS FACILITY	0								0.76	7.70	0.87		2.04	6.98	2.71	0.23	3.88	10.82				
NAPOLION PITTMAN MEMORIALS	252 Avenue E	NCH&R	RELIGIOUS FACILITY	0								0.18	7.12	0.28		1.48	6.49	2.12		3.90	10.24				
PORT ST JOE SURFACE WATER FLT		CI	DRINKING WATER FACILITY	0.62									4.58				6.26	-0.56		0.66	8.10				
READY MIX USA - PORT ST JOE PLANT		CI	WASTEWATER TREATMENT FACILITY	0									2.16				2.44				5.26				
PORT ST JOE		CI	DRINKING WATER FACILITY	0									3.30				4.58				6.42				
PORT ST JOE		CI	DRINKING WATER FACILITY	0									4.10				4.38				6.22				
ARIZONA CHEMICAL COMPANY LLC	345 Kenny Mill Rd	CI	HAZARDOUS WASTE FACILITY	0								1.67	6.16	1.72		2.05	6.66	3.57	1.06	4.79	11.70				
PSJ11 - AVENUE A LIFT STATION	240 Avenue A	CI	LIFT STATION	0								1.24	6.10	1.39		2.52	9.48	3.25	0.71	4.36	11.32				
PSJ12 - BRIDGEPORT LIFT STATION	904 Avenue A	CI	LIFT STATION	0									3.28				4.86				8.20				
PSJ13 - CLIFFORD SIMS LIFT STATION	309 Clifford Sims Dr	CI	LIFT STATION	0									2.69				3.97				5.61				
PSJ14 - HODRICK STREET LIFT STATION	602 Hodrick St	CI	LIFT STATION	0									2.23	9.09	2.28		3.45	10.37	4.12	1.61	5.27	12.21			
PSJ20 - AVE C LIFT STATION	116 Ave C	CI	LIFT STATION	0								1.86	0.60	4.28	11.12	2.74	1.88	9.56	12.49	4.56	3.32	7.45	14.69		
PSJ25 - CAR WASH LIFT STATION	166 Hwy 38	CI	LIFT STATION	0								1.81	-0.99	4.65	11.33	2.12	2.26	10.3	12.07	4.97	4.30	7.77	14.71		
PSJ22 - GATEWAY APTS LIFT STATION	905 Clifford Sims	CI	LIFT STATION	0										0.03				1.37				3.21			
US98 BRIDGE	0.5 Miles West of 5/71	TRANSP	BRIDGE	0																					
PORT OF PORT ST JOE		TRANSP	PORT	0									3.64	10.76	3.81		1.02	4.92	12.04	3.25	3.86	6.76	14.88		
GEORGE G. TAPPED BRIDGE	US98	TRANSP	BRIDGE	0																					
LEE ONE STOP LLC	282 Commerce Blvd	CI	HAZARDOUS WASTE FACILITY	0.91									1.64				3.13				4.96				
GULF DIESEL REPAIR LLC	250 Commerce Blvd	CI	HAZARDOUS WASTE FACILITY	0.62									1.77				3.05				4.90				
GULF COUNTY ARC AND TRANSPORTATION	122 Water Plant Road	CC&EP	SOCIAL SERVICES FACILITY	0.56									3.13				0.63			0.48	5.47				
MATERIAL TRANSHIP. PORT ST JOE DOCK	523 Bremer Drive	TRANSP	PORT	0									2.98	11.12	1.21		0.89	4.34	12.80	5.26	2.49	6.08	14.64		
PORT ST JOE	6051 C. R. 30A	CI	ELECTRIC PROD. & SUPPLY FACILITY	0													0.25				2.19				
UNKNOWN/SLTS		CI	ELECTRIC PROD. & SUPPLY FACILITY	0																	0.97				
PORT ST JOE WWTP, CITY OF		CI	WASTEWATER TREATMENT FACILITY	0.91									0.45	8.13	0.75		1.85	9.31	2.89	0.18	3.77	11.65			
BAVOU CONCRETE - PORT ST JOE BATCH PLANT	1145 Industrial Rd	CI	WASTEWATER TREATMENT FACILITY	0																	0.25				
BIG FISH CONSTRUCTION - OFFICE SITE	346 Commerce Dr	CI	HAZARDOUS WASTE FACILITY	0									3.24				4.52				6.36				
TOWNSEND MARINE	698 Port Townsend Rd	CI	HAZARDOUS WASTE FACILITY	0									3.23				4.40				6.14				
COMBUSTION ENGINEERING INC	St. Road 301 North	CI	HAZARDOUS WASTE FACILITY	0													0.13				1.97				
PORT ST JOE WWTP	Highway 382	CI	HAZARDOUS WASTE FACILITY	0																					
IND. RD - SOLID WASTE STAGING/PROCESSING/DECON SITE	Industrial Road	CI	SOLID WASTE FACILITY	0									2.85	9.84	2.72		3.83	10.92	4.15	1.68	5.47	12.75			
PSJ17 - COMMERCE PARK LIFT STATION	1180 Industrial Rd	CI	LIFT STATION	0													0.56								

ASSET CLASS LEGEND

CC&EP - CRITICAL COMMUNITY AND EMERGENCY FACILITIES
 CI - CRITICAL INFRASTRUCTURE
 NCH&R - NATURAL, CULTURAL, AND HISTORICAL RESOURCES
 TRANSP - TRANSPORTATION

Transportation Street Network, Housing, and Economic & Tourism assets are displayed only as summary in the critical assets category table.

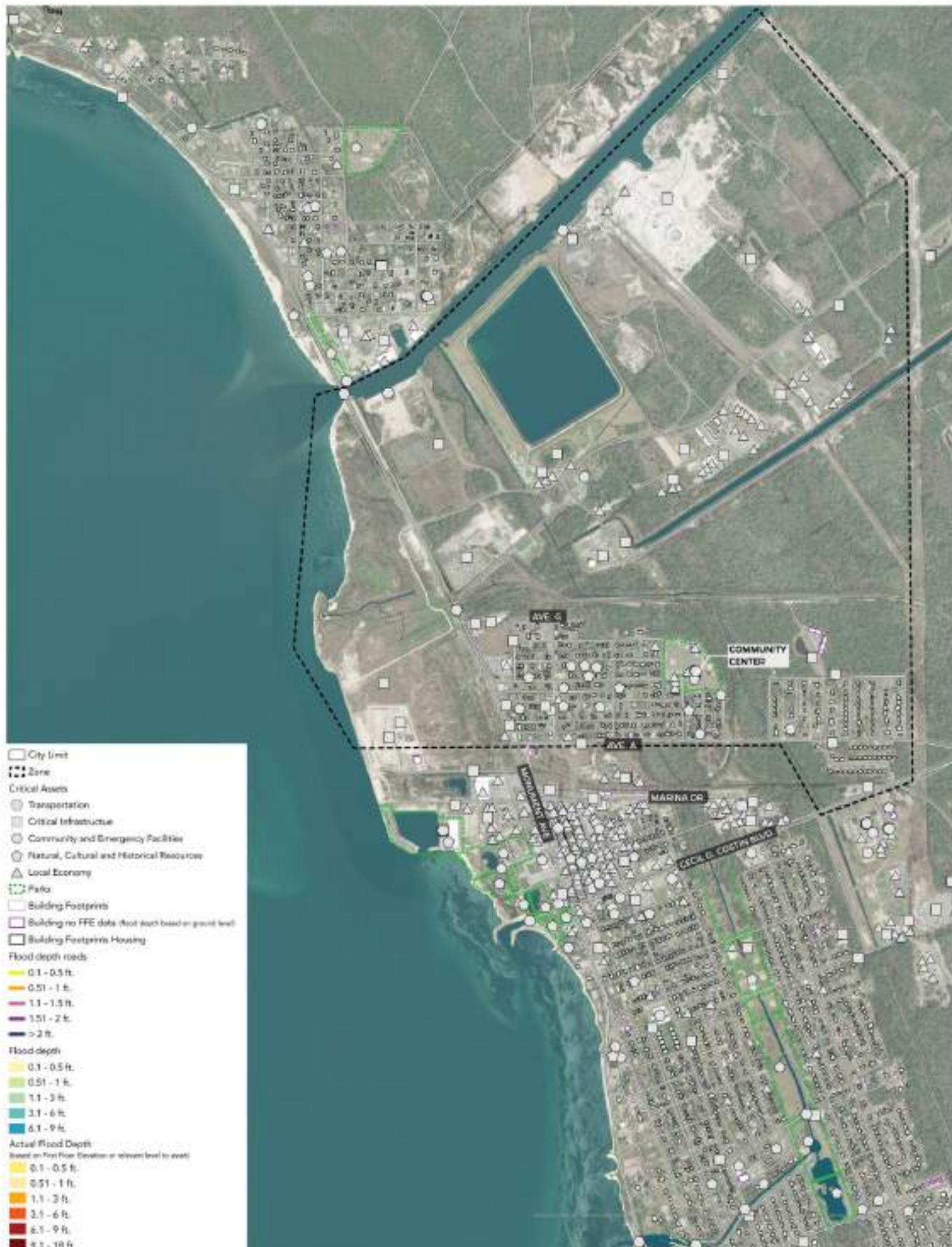
Zone 2, North Port St. Joe

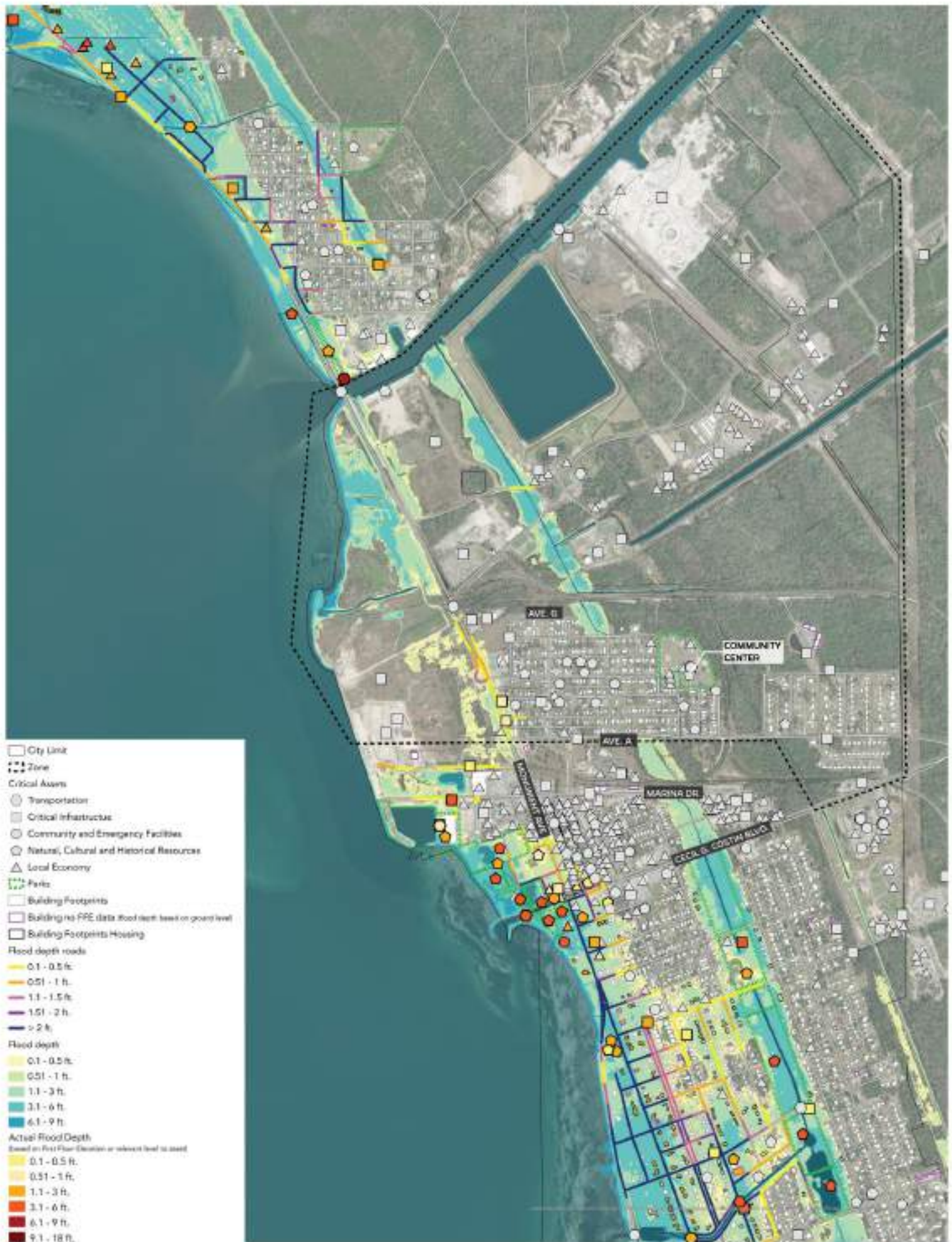
Critical assets categories, exposure levels

	Current						2040 Scenario						2070 Scenario					
	Mean Higher High Water	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane
Zone 2 - North - Housing																		
No Impact	100.0%	100.0%	100.0%	100.0%	54.7%	2.0%	100.0%	57.8%	100.0%	92.0%	47.6%	6.6%	100.0%	44.3%	100.0%	61.1%	36.1%	0.3%
Low	0.0%	0.0%	0.0%	0.0%	5.4%	1.3%	0.0%	7.9%	0.0%	4.9%	4.1%	0.3%	0.0%	2.8%	0.0%	12.0%	5.9%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	24.7%	15.8%	0.0%	22.1%	0.0%	2.5%	36.0%	3.8%	0.0%	11.2%	0.0%	21.1%	6.4%	0.3%
High	0.0%	0.0%	0.0%	0.0%	11.2%	90.9%	0.0%	12.3%	0.0%	0.0%	32.3%	99.3%	0.0%	41.5%	0.0%	5.9%	51.7%	99.5%
Flooded Housing Buildings	0.0%	0.0%	0.0%	0.0%	45.3%	98.0%	0.0%	42.2%	0.0%	7.8%	52.4%	93.4%	0.0%	55.5%	0.0%	38.9%	63.9%	99.7%
Zone 2 - North - Transportation																		
No Impact	100.0%	100.0%	100.0%	100.0%	50.0%	50.0%	100.0%	50.0%	100.0%	50.0%	50.0%	50.0%	100.0%	50.0%	100.0%	50.0%	50.0%	50.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%	50.0%
Flooded Transportation Assets	0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%	50.0%
Zone 2 - North - Critical Infrastructure																		
No Impact	100.0%	50.0%	100.0%	95.3%	56.7%	20.0%	100.0%	56.7%	100.0%	86.7%	56.7%	10.0%	100.0%	56.7%	100.0%	56.7%	53.3%	3.3%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.3%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	10.0%	0.0%	0.0%	10.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.7%	0.0%	0.0%
High	0.0%	10.0%	0.0%	6.7%	33.3%	80.0%	0.0%	33.3%	0.0%	13.3%	43.3%	90.0%	0.0%	43.3%	0.0%	33.3%	46.7%	96.7%
Flooded Critical Infrastructure Assets	0.0%	10.0%	0.0%	6.7%	43.3%	80.0%	0.0%	43.3%	0.0%	13.3%	43.3%	90.0%	0.0%	43.3%	0.0%	43.3%	46.7%	96.7%
Zone 2 - North - Critical Community and Emergency Facilities																		
No Impact	100.0%	100.0%	100.0%	100.0%	75.0%	0.0%	100.0%	75.0%	100.0%	100.0%	75.0%	0.0%	100.0%	75.0%	100.0%	75.0%	50.0%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%
High	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	25.0%	100.0%	0.0%	25.0%	0.0%	0.0%	25.0%	100.0%
Flooded Critical Community and Emergency Facilities	0.0%	0.0%	0.0%	0.0%	25.0%	100.0%	0.0%	25.0%	0.0%	0.0%	25.0%	100.0%	0.0%	25.0%	0.0%	25.0%	50.0%	100.0%
Zone 2 - North - Natural, Cultural and Historical Resources																		
No Impact	100.0%	100.0%	100.0%	100.0%	50.0%	0.0%	100.0%	37.5%	100.0%	100.0%	35.3%	0.0%	100.0%	31.3%	100.0%	42.9%	12.5%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	16.6%	0.0%	0.0%	6.3%	0.0%	0.0%	0.0%	0.0%	12.5%	12.5%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	16.6%	0.0%	0.0%	16.6%	0.0%	0.0%	0.0%	0.0%	18.8%	6.3%	0.0%
High	0.0%	0.0%	0.0%	0.0%	12.5%	100.0%	0.0%	25.0%	0.0%	0.0%	43.8%	100.0%	0.0%	56.3%	0.0%	6.3%	68.8%	100.0%
Flooded Natural, Cultural and Historical Resources	0.0%	0.0%	0.0%	0.0%	50.0%	100.0%	0.0%	62.5%	0.0%	0.0%	66.6%	100.0%	0.0%	66.6%	0.0%	37.5%	87.5%	100.0%
Zone 2 - Economy																		
No Impact	100.0%	97.7%	100.0%	97.7%	89.4%	36.4%	100.0%	76.5%	100.0%	76.5%	60.4%	52.3%	100.0%	64.1%	100.0%	66.6%	66.2%	2.3%
Low	0.0%	0.0%	0.0%	2.3%	2.3%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	4.5%	4.5%
Medium	0.0%	2.3%	0.0%	0.0%	4.3%	0.0%	0.0%	0.0%	0.0%	2.3%	6.8%	9.0%	0.0%	0.0%	0.0%	0.0%	2.3%	0.0%
High	0.0%	0.0%	0.0%	0.0%	6.8%	61.4%	0.0%	4.5%	0.0%	2.3%	6.8%	47.7%	0.0%	15.9%	0.0%	6.8%	25.0%	83.2%
Flooded Economy Assets	0.0%	2.3%	0.0%	2.3%	13.8%	63.6%	0.0%	4.5%	0.0%	4.5%	13.6%	47.7%	0.0%	15.9%	0.0%	11.4%	31.8%	97.7%

Roads, exposure levels

	Current						2040 Scenario						2070 Scenario					
	Mean Higher High Water	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane
Zone 2 - North PSJ																		
No Impact	100.00%	90.94%	100.00%	96.29%	61.96%	19.93%	100.00%	61.96%	100.00%	99.13%	57.97%	5.43%	100.00%	55.07%	99.64%	66.67%	47.10%	2.17%
Low	0.00%	2.17%	0.00%	3.62%	3.99%	5.07%	0.00%	2.54%	0.00%	3.26%	3.26%	11.96%	0.00%	5.07%	0.36%	7.61%	6.52%	0.00%
Medium	0.00%	1.45%	0.00%	0.72%	4.35%	1.90%	0.00%	5.07%	0.00%	1.81%	1.81%	5.07%	0.00%	1.81%	0.00%	6.16%	3.62%	2.54%
High	0.00%	5.43%	0.00%	0.36%	29.71%	72.10%	0.00%	30.43%	0.00%	5.80%	36.96%	77.54%	0.00%	38.04%	0.00%	19.57%	42.75%	95.29%
Flooded Roads	0.00%	9.06%	0.00%	4.71%	38.04%	80.10%	0.00%	38.04%	0.00%	10.80%	42.03%	94.57%	0.00%	44.93%	0.36%	33.33%	52.90%	97.83%





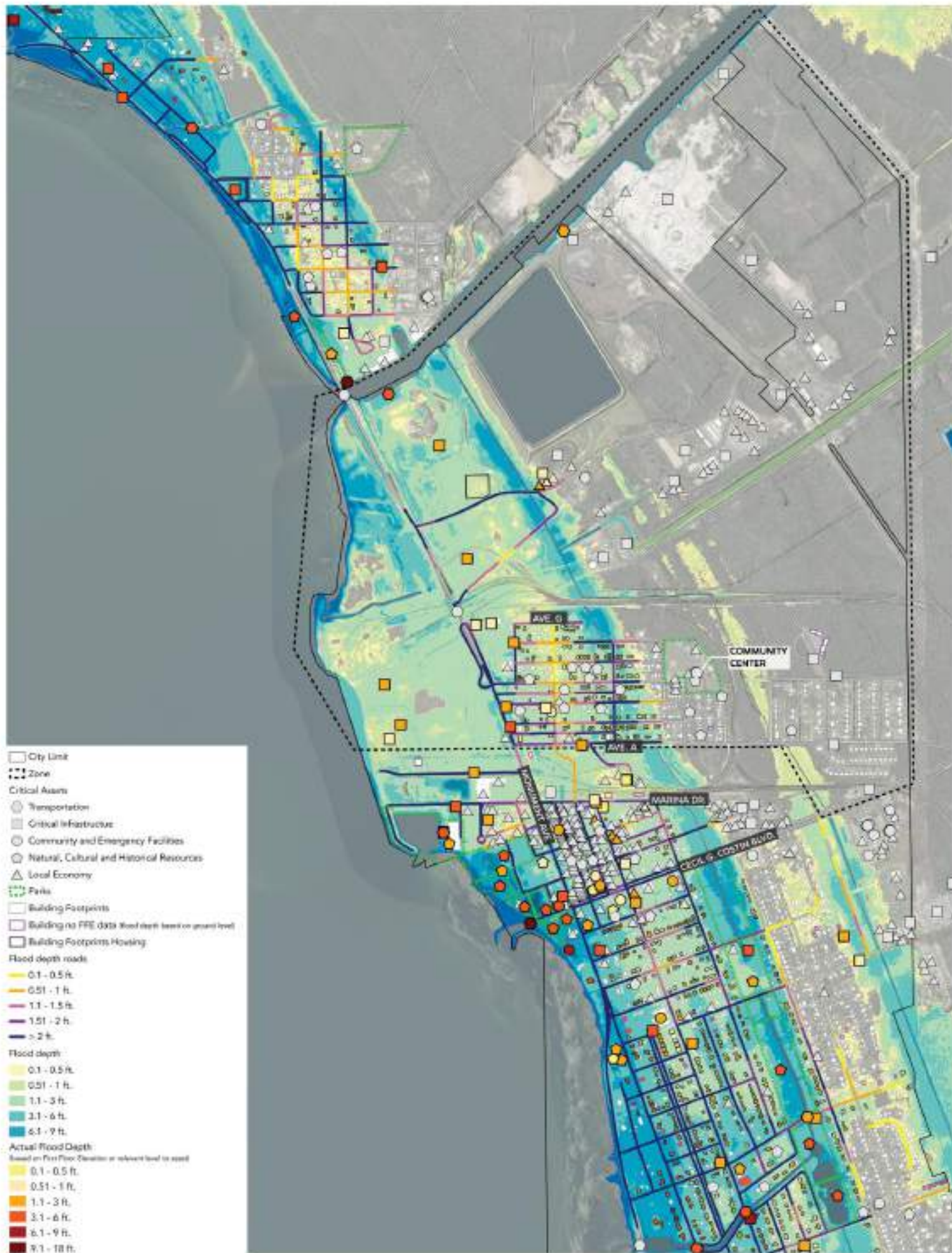
North Port St. Joe, Storm Surge Cat. 2 Hurricane



North Port St. Joe, Sea Level Rise Projection for 2040



North Port St. Joe, Sea Level Rise Projection for 2070



North Port St. Joe, SFHA, 100yr @2040

ZONE 3, SOUTH PORT ST. JOE

Housing

Tidal events are not expected to impact housing in Zone 3 significantly. However, a 100-year flood event is projected to affect 10% of homes, most of which are located in the Oak Grove area, specifically on the south side of Madison Street. Regarding storm surge, homes in this zone will not be affected by a Category 1 hurricane. However, a Category 2 hurricane would have an impact similar to a 100-year flood event. A Category 3 hurricane, on the other hand, would result in substantial flooding throughout the Oak Grove neighborhood, impacting up to 29% of homes in the area.

Transportation

Tidal flooding will not significantly impact transportation assets or the road network in the area. However, a 100-year flood event will affect 22% of the road network in Zone 3, rendering 19% of street segments undrivable. US Highway 98 and State Road 30 will be the most impacted roads under these conditions.

Furthermore, accessibility through Port St. Joe via US Highway 98 and State Road 30 will also be compromised in a Category 2 hurricane scenario. A Category 3 hurricane will extend this impact to Long Avenue, significantly limiting access and evacuation routes, leaving Garrison Avenue as the primary route for this purpose.

Critical Infrastructure

Tidal flooding and 100-year flood events will not pose a significant risk to critical infrastructure in Zone 3. Furthermore, only extreme storm surge events, such as those from Category 4 or 5 hurricanes, will impact these assets.

Critical Community and Emergency Facilities

Education and health facilities located in Zone 3 are characterized by favorable elevation. This advantageous positioning ensures that most facilities are protected from tidal floods, 100-year flood events, and storm surge. However, it is essential to note that the elementary and high school outdoor areas in Zone 3 are susceptible to flooding in the event of a Category 3 hurricane. Nevertheless, these facilities are only vulnerable to the most extreme scenarios, such as Category 4 and 5 hurricanes. Natural + Cultural Assets

There are no vulnerable natural and cultural resources in Zone 3.

Tourism and Economy

The grocery store and a hospitality facility on US Highway 98 are relevant economic assets in Zone 3. These assets would only be susceptible to flooding in extreme conditions associated with Category 4 and 5 hurricanes.

Zone 3, South Port St. Joe

Critical assets inventory, exposure levels

Asset Name	Address	Asset Class	Asset Type	Asset Division R. NAVD88	CURRENT						2040 Scenario						2070 Scenario					
					2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070	2075	2080	2085	2090	2095
MAIN VALVES		CI	WATER UTILITIES CONVEYANCE SYSTEM	0							4.58						5.44			0.86	7.26	
GULF COUNTY DISTRICT OFFICE	150 Middle School Rd	CCSEF	SCHOOL	0.55							5.99	-0.33		6.33	6.99		1.91			3.37	9.60	
SACRED HEART HOSPITAL ON THE GULF	3601 E Hwy 98	CCSEF	HOSPITAL	0							2.25						3.49			5.33		
PORT ST. JOE HIGH SCHOOL	300 Shark Dr	CCSEF	SCHOOL	0							6.21				6.99	7.09		1.91		2.42	8.89	
COMMUNICATION FACILITY	2703 Long Avenue Extension	CI	COMMUNICATION FACILITY	0							5.88				6.02	7.05		1.90		1.66	9.00	
COMMUNICATION FACILITY	2703 Long Avenue Extension	CI	COMMUNICATION FACILITY	0				0.70	3.00		-1.88			1.66	6.28		2.93			1.02	10.12	
SACRED HEART HOSPITAL ON THE GULF	3601 E Highway 98	CI	HAZARDOUS WASTE FACILITY	0							2.24						3.52				5.34	
LAKEVIEW AT PALMETTO BLUFF		CI	STORMWATER FACILITY	0							4.39						5.85	0.22		1.18	7.45	
SACRED HEART HOSPITAL ON THE GULF		TRANSP	AIRPORT	0							2.93						4.11				5.95	
ST PETER ANGLICAN CHURCH	3489 Garrison Ave	NCSHB	RELIGIOUS FACILITY	0.98							-0.24						1.04				2.88	
FOREST HILL CEMETERY	Twine Dr	CCSEF	CEMETERY	0																		
PORT SAINT JOE DIALYSIS	5071 Highway 98 E Ste 101	CCSEF	HEALTH CARE FACILITY	0							2.33						3.65				5.45	
BAY ORTHOPEDICS	5071G Hwy 98, Suite 202	CCSEF	HEALTH CARE FACILITY	0							2.73						4.05				5.85	
GULF COAST STATE COLLEGE - GULF/FRANKLIN CENTER	1800 Garrison Ave	CCSEF	SCHOOL	0							0.50						1.79				3.43	
DAK GROVE DUMP (GULF COUNTY)	1.5M E Oak Grove	CI	SOLID WASTE FACILITY	0							0.93						7.25			1.10	9.05	
CITY OF PORT ST. JOE WARD TRASH TRANSFER STATION	Hwy 98 And Field Of Dreams Ave	CI	SOLID WASTE FACILITY	0							1.17						2.45				4.29	
PLJ2 - BENT CIRCLE LIFT STATION	100 Bent Circle	CI	LIFT STATION	0							5.42						6.70	0.88		1.92	8.54	
PLJ3 - STONE DRIVE LIFT STATION	1653 East 1st Hwy 98	CI	LIFT STATION	0							0.27	7.14		0.57		1.95	6.42		2.41		1.10	10.26

ASSET CLASS LEGEND

CCSEF - CRITICAL COMMUNITY AND EMERGENCY FACILITIES
 CI - CRITICAL INFRASTRUCTURE
 NCSHB - NATURAL, CULTURAL, AND HISTORICAL RESOURCES
 TRANSP - TRANSPORTATION

Transportation Street Network, Housing, and Economy & Tourism assets are displayed only as secondary in the critical assets categories table.

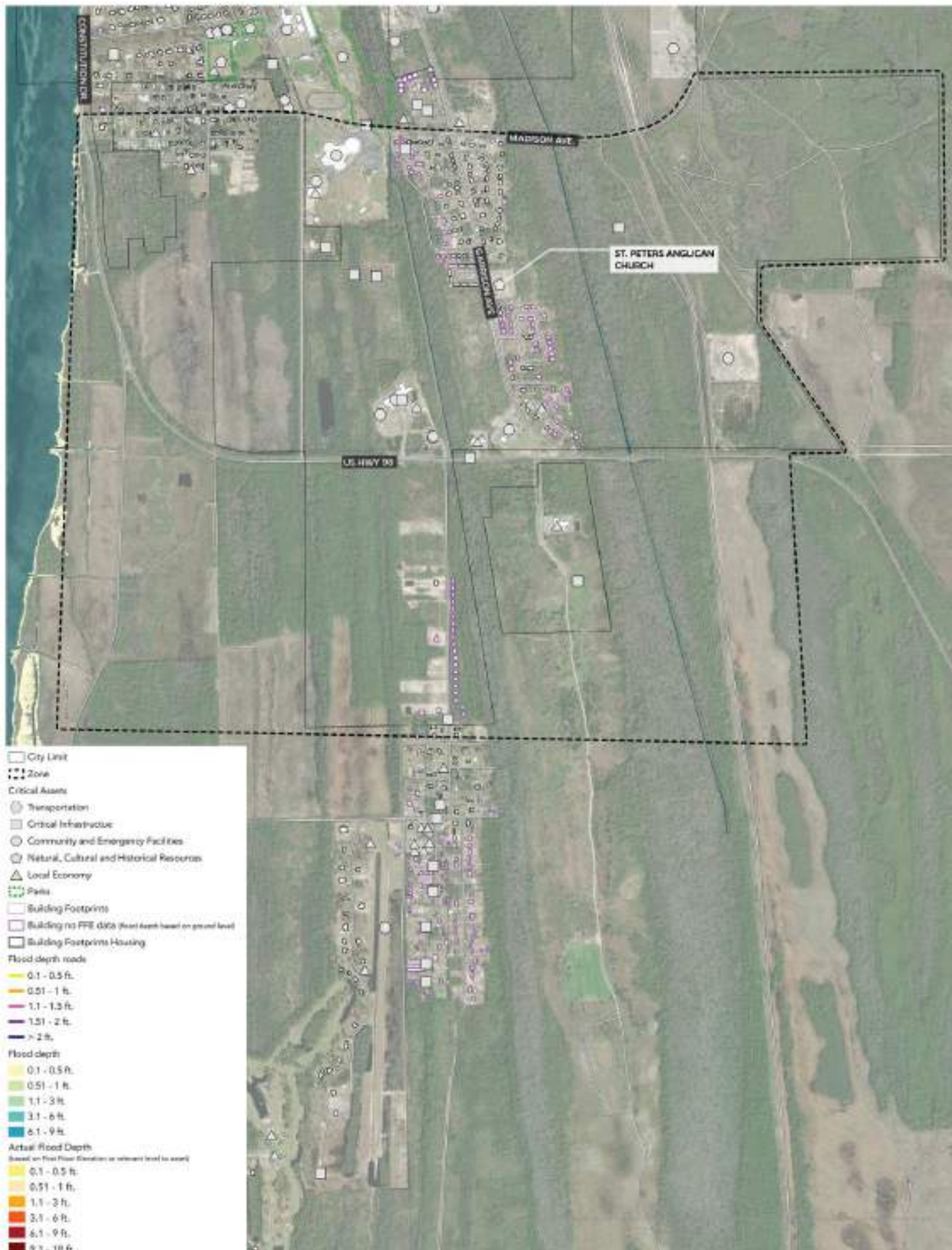
Zone 3, South Port St. Joe

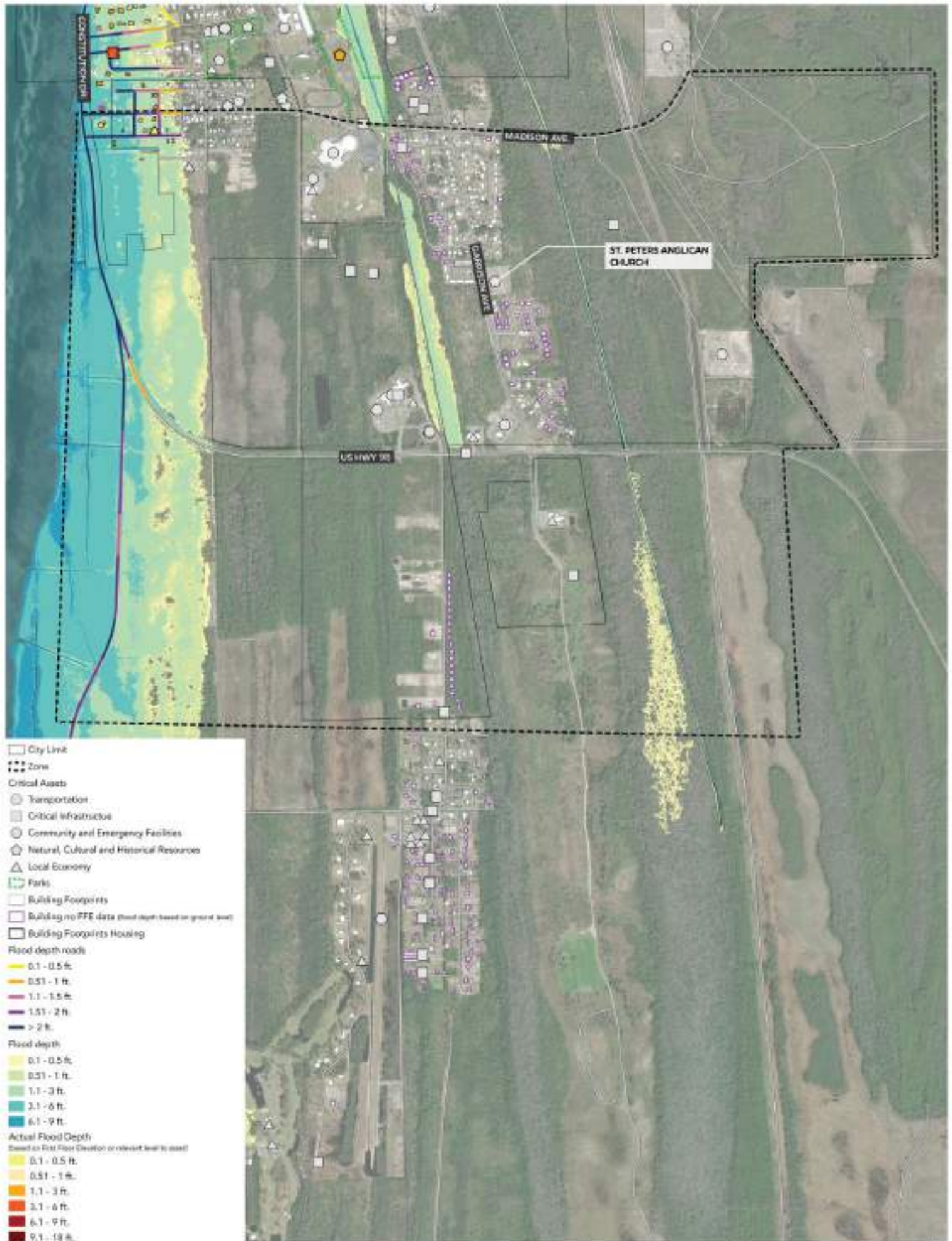
Critical assets categories, exposure levels

	Current						2040 Scenario						2070 Scenario					
	Mean Higher High Water	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane
Zone 3 - South - Housing																		
No Impact	100.0%	52.3%	100.0%	54.9%	77.4%	3.8%	100.0%	83.6%	99.1%	90.2%	74.5%	17.4%	100.0%	69.8%	95.7%	83.7%	62.1%	0.0%
Low	0.0%	1.7%	0.0%	0.9%	4.7%	1.0%	0.0%	2.1%	0.9%	5.4%	0.4%	0.4%	0.0%	1.5%	1.7%	3.4%	1.7%	0.0%
Medium	0.0%	2.6%	0.0%	3.8%	5.3%	16.8%	0.0%	6.4%	0.0%	2.6%	8.1%	7.2%	0.0%	2.1%	2.8%	4.3%	3.0%	0.0%
High	0.0%	3.4%	0.0%	0.4%	12.3%	76.5%	0.0%	7.7%	0.0%	3.6%	17.0%	74.9%	0.0%	26.8%	0.0%	10.6%	31.2%	100.0%
Flooded Housing Buildings	0.0%	7.7%	0.0%	5.1%	22.6%	96.2%	0.0%	36.2%	0.9%	9.6%	25.5%	62.6%	0.0%	30.2%	4.3%	16.3%	37.9%	100.0%
Zone 3 - South - Transportation																		
No Impact	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Flooded Transportation Assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Zone 3 - South - Critical Infrastructure																		
No Impact	100.0%	100.0%	100.0%	100.0%	77.6%	0.0%	100.0%	77.6%	100.0%	100.0%	66.7%	0.0%	100.0%	44.4%	100.0%	100.0%	22.2%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	0.0%	0.0%	0.0%	22.2%	100.0%	0.0%	22.2%	0.0%	0.0%	33.3%	100.0%	0.0%	55.6%	0.0%	0.0%	77.8%	100.0%
Flooded Critical Infrastructure Assets	0.0%	0.0%	0.0%	0.0%	22.2%	100.0%	0.0%	22.2%	0.0%	0.0%	33.3%	100.0%	0.0%	55.6%	0.0%	0.0%	77.8%	100.0%
Zone 3 - South - Critical Community and Emergency Facilities																		
No Impact	100.0%	100.0%	100.0%	100.0%	100.0%	14.3%	100.0%	85.7%	100.0%	100.0%	71.4%	14.3%	100.0%	71.4%	100.0%	100.0%	71.4%	14.3%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	0.0%	0.0%	0.0%	0.0%	85.7%	0.0%	0.0%	0.0%	0.0%	14.3%	85.7%	0.0%	28.6%	0.0%	0.0%	28.6%	85.7%
Flooded Critical Community and Emergency Facilities	0.0%	0.0%	0.0%	0.0%	0.0%	85.7%	0.0%	14.3%	0.0%	0.0%	28.6%	85.7%	0.0%	28.6%	0.0%	0.0%	28.6%	85.7%
Zone 3 - South - Natural, Cultural and Historical Resources																		
No Impact	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Flooded Natural, Cultural and Historical Resources	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Zone 3 - South - Economy																		
No Impact	100.0%	71.4%	100.0%	85.7%	71.4%	14.3%	100.0%	100.0%	100.0%	71.4%	57.1%	100.0%	100.0%	57.1%	85.7%	71.4%	57.1%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14.3%	0.0%	0.0%	0.0%
Medium	0.0%	14.3%	0.0%	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%	14.3%	14.3%	0.0%	0.0%	14.3%	0.0%	0.0%	0.0%	0.0%
High	0.0%	14.3%	0.0%	0.0%	28.6%	85.7%	0.0%	0.0%	0.0%	14.3%	28.6%	0.0%	0.0%	28.6%	0.0%	28.6%	42.9%	100.0%
Flooded Economy Assets	0.0%	28.6%	0.0%	14.3%	28.6%	85.7%	0.0%	0.0%	0.0%	28.6%	42.9%	0.0%	0.0%	42.9%	14.3%	28.6%	42.9%	100.0%

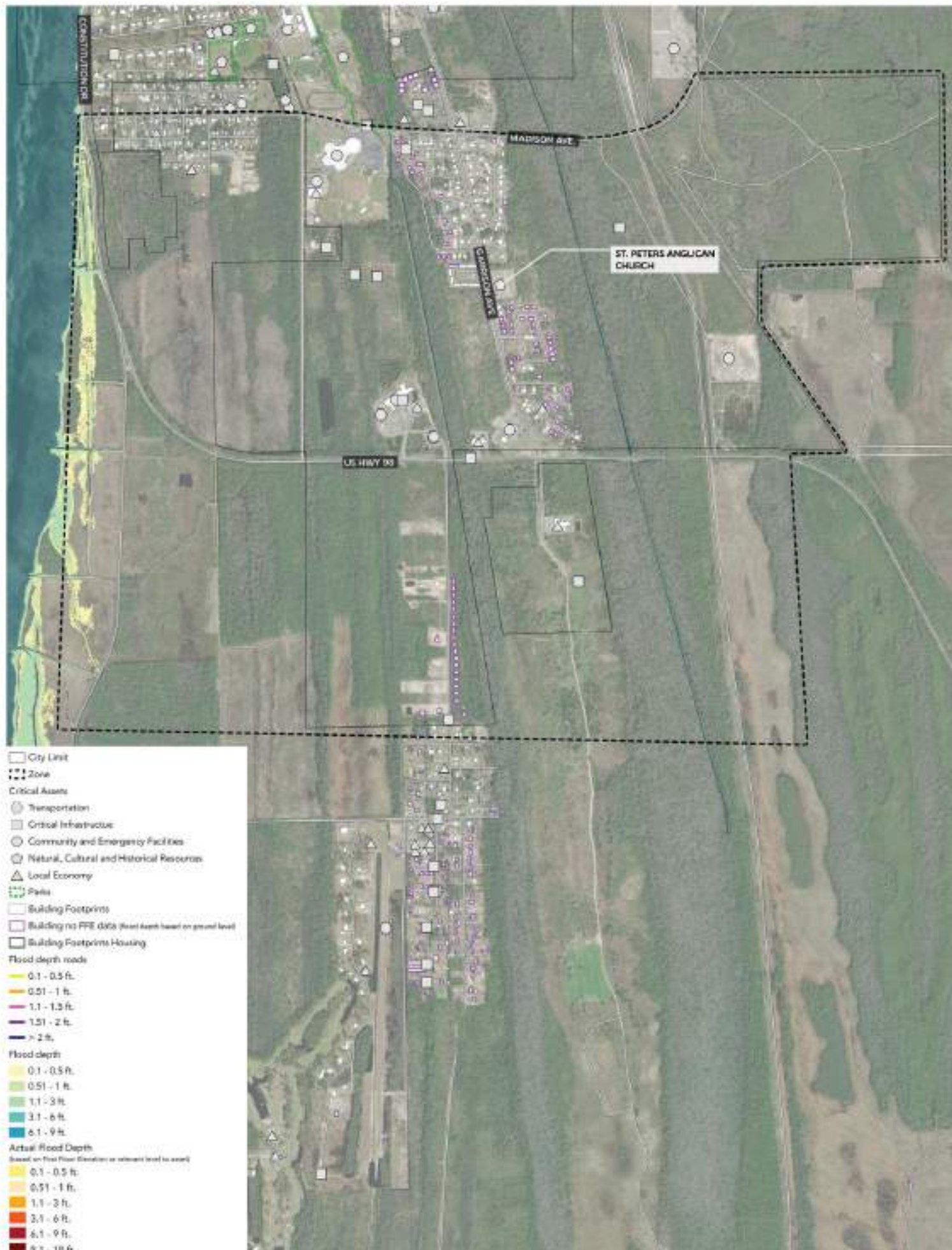
Roads, exposure levels

	Current						2040 Scenario						2070 Scenario					
	Mean Higher High Water	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane
Zone 3 - South PSJ																		
No Impact	100.00%	77.61%	99.23%	82.63%	59.85%	7.34%	100.00%	57.58%	87.26%	78.76%	52.52%	1.16%	99.23%	47.10%	81.08%	74.90%	41.70%	0.00%
Low	0.00%	1.16%	0.77%	0.39%	12.36%	6.18%	0.00%	7.34%	9.65%	0.77%	4.63%	5.02%	0.77%	7.34%	1.93%	1.34%	5.79%	1.16%
Medium	0.00%	2.70%	0.00%	0.77%	3.66%	1.41%	0.00%	8.11%	2.32%	1.93%	4.63%	3.09%	0.00%	1.93%	1.16%	1.54%	4.63%	0.00%
High	0.00%	18.55%	0.00%	16.22%	29.94%	81.08%	0.00%	27.03%	0.77%	18.53%	38.22%	90.73%	0.00%	43.63%	15.83%	22.03%	47.88%	98.84%
Flooded Roads	0.00%	22.39%	0.77%	17.37%	40.15%	92.06%	0.00%	42.47%	12.74%	21.24%	47.49%	90.64%	0.77%	52.90%	18.92%	25.10%	56.30%	100.00%

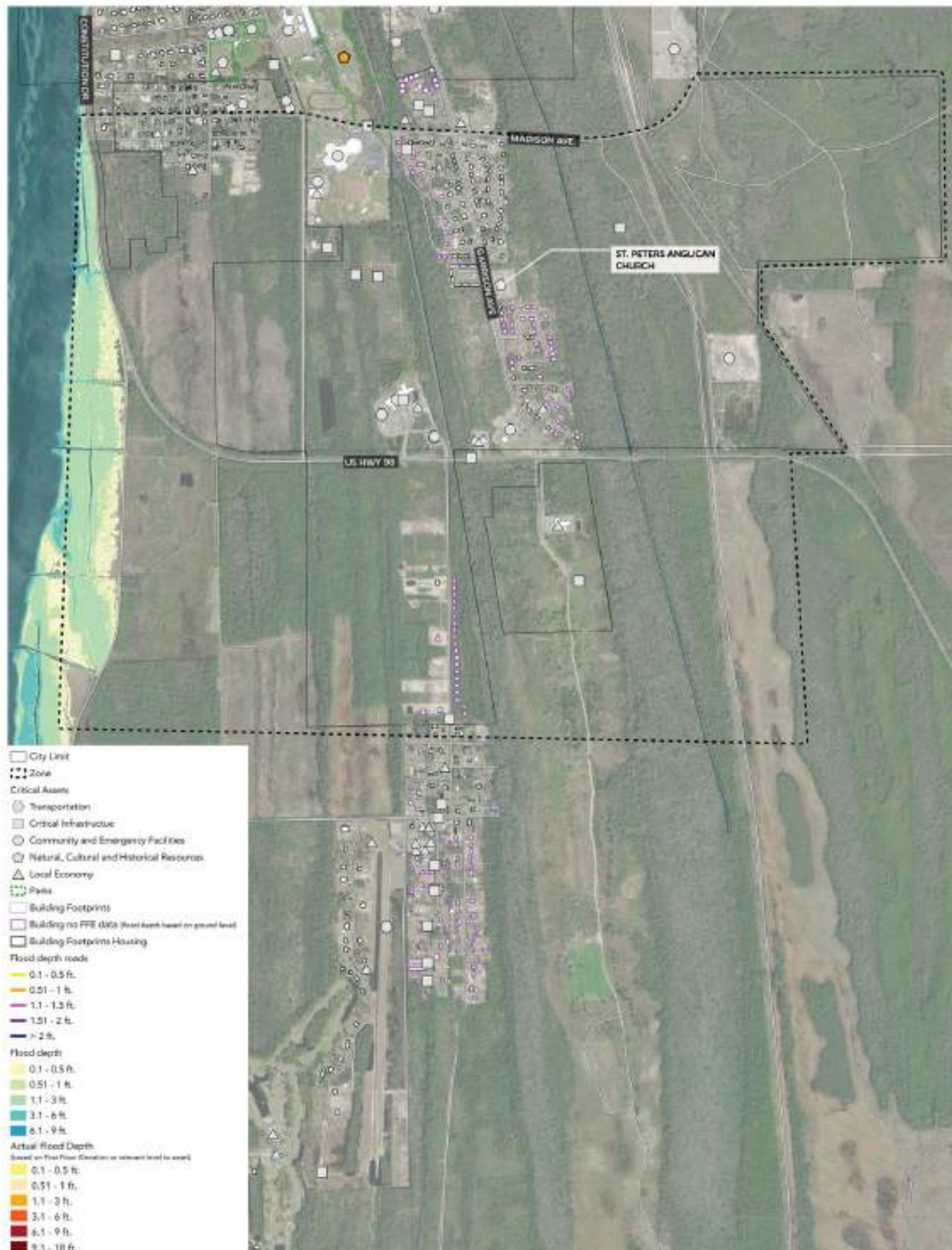




South Port St. Joe, Storm Surge Cat. 2 Hurricane



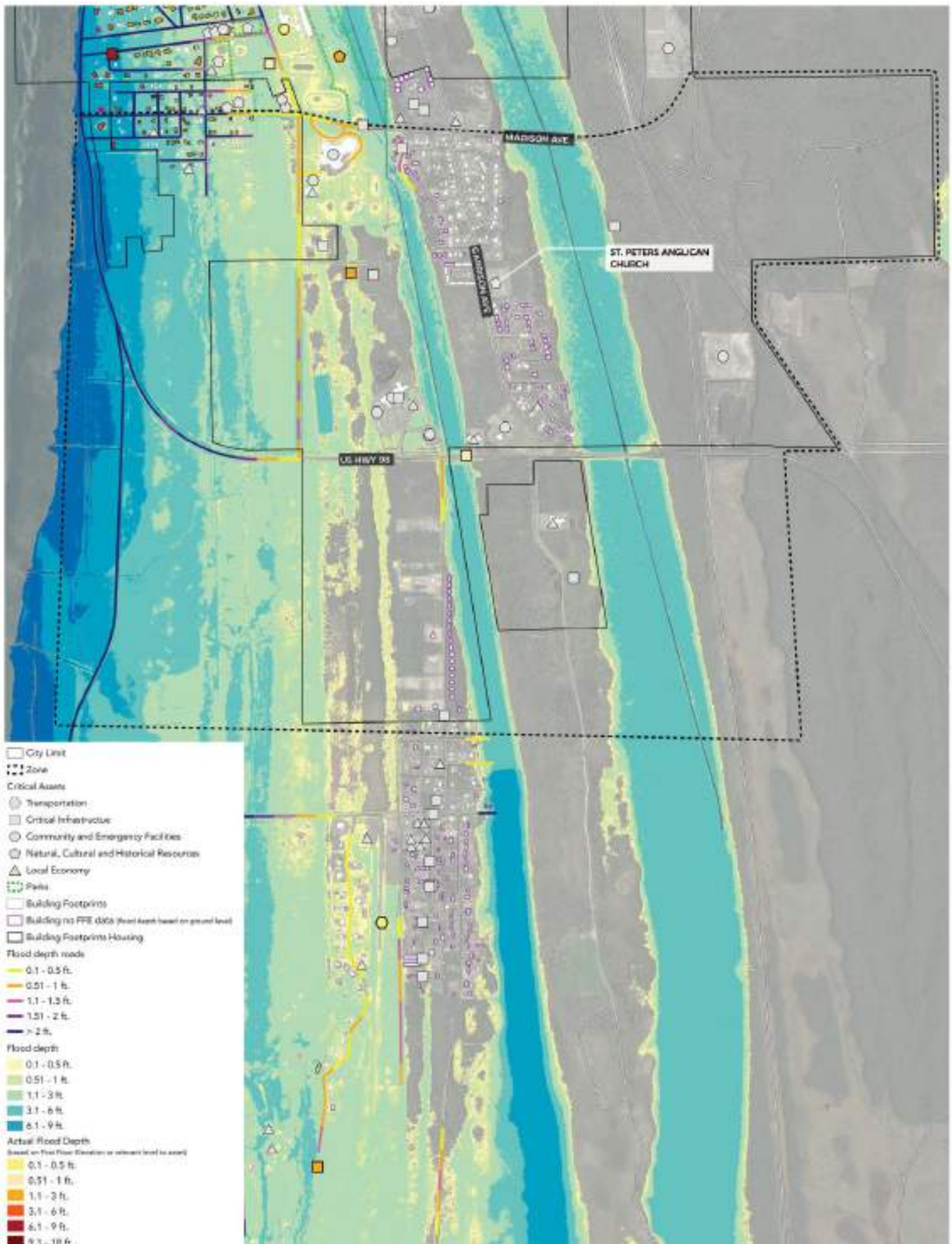
South Port St. Joe, Sea Level Rise Projection for 2040



South Port St. Joe, Sea Level Rise Projection for 2070

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0





ZONE 4, EAST PORT ST. JOE

Housing

Tidal flooding and sea level rise will not affect housing buildings significantly. However, a 100-year flood event will impact 5% of the homes within this zone. Regarding storm surge, a Category 2 hurricane would flood 3% of homes, while a Category 3 hurricane would impact 16%. By 2040, these percentages are expected to rise substantially, with 7% of homes affected in a Category 2 event and 57% in a Category 3 event. The most vulnerable areas identified are the east side of the central channel, specifically between 10th and 16th Streets.

Transportation

Tidal flooding is not expected to impact transportation assets or the road network significantly. However, a 100-year flood event would affect only 3% of road segments, with approximately 4 inches of water expected on the connections crossing the Central Channel. By 2040, the impact would increase substantially, affecting 36% of the road network, with 9% becoming undrivable.

In the scenario of a Category 3 hurricane, storm surge flooding will intensify, exceeding 2 feet on the mentioned cross-connections. Additionally, some sections of Garrison Avenue, which serves as the sole evacuation route to the south, would experience around 4 inches of flooding, affecting evacuation or emergency efforts during major storm events.

Critical Community and Emergency Facilities

Tidal flooding poses no significant threat to critical infrastructure in Zone 4. However, a 100-year flood event will result in flooding at all the lift stations, with less than one foot of water foreseen at the lift station on 16th Street. In contrast, the WDBW-LP Antenna will face significantly higher flooding of approximately 4.6 feet of water.

During a Category 2 hurricane, storm surge would primarily impact assets along the central channel with less than 2 inches of water at the 16th Street lift station and 3.7 feet at the WDBW-LP Antenna. Similarly, a Category 3 hurricane would impact the lift stations to the same extent as a 100-year flood event, highlighting a consistent vulnerability of these assets to significant flooding during severe storm conditions.

Natural + Cultural Assets

Tidal flooding will moderately impact the parks along the Central Channel. However, the east side of the channel would be significantly vulnerable to sea level rise in 2070, a 100-year flood event, and a Category 1 storm surge. Additionally, religious facilities along Garrison Avenue would be affected only under extreme surge conditions, specifically during Category 4 and 5 hurricanes.

Tourism and Economy

No relevant cataloged touristic or economic assets are projected to be affected in Zone 4.

Zone 4, East Port St. Joe

Critical assets inventory, exposure levels

Asset Name	Address	Asset Class	Asset Type	Asset Elevation ft. NAVD83	CURRENT						2040 Scenario						2070 Scenario					
					2030M	2030H	2070L	2070M	2070H	2070V	2040L	2040M	2040H	2070L	2070M	2070H	2070L	2070M	2070H	2070L	2070M	2070H
ST JAMES EPISCOPAL CHURCH	Garrison Ave & 32nd	NC&HR	RELIGIOUS FACILITY	0.58					2.04					4.02					-0.39	6.76		
FAITH BIBLE CHURCH	601 20TH Street	NC&HR	RELIGIOUS FACILITY	0.58					2.94					4.22								4.06
CHURCH OF CHRIST	741 20TH Street	NC&HR	RELIGIOUS FACILITY	0.58				1.74	8.71		2.31			3.43	10.01		9.88		1.18	4.88		11.85
ROSE FAMILY WORSHIP CENTER	2001 Garrison Ave	NC&HR	RELIGIOUS FACILITY	0.62					4.05					5.33								7.17
FAITH CHRISTIAN SCHOOL	601 Tawameth St	CCA EF	SCHOOL	0.58					3.00					4.28								6.12
OLD ST. JOSEPH CEMETERY	Garrison Ave	CCA EF	CEMETERY						2.13					2.42								5.27
BUCK SMITH PARK	3903 Forest Ave	NC&HR	PARKS	0	2.10	4.48	3.39	3.47	7.09	14.01	2.88	5.76	1.89	4.70	6.37	15.34	1.38	7.40	2.94	6.54	10.21	17.18
PS108 - FOREST PARK LIFT STATION	704 16TH St	CI	LIFT STATION		1.00			0.00	8.89	20.78	2.28			1.28	4.97	13.03		4.13		8.13	6.81	13.87
16TH STREET	0.5 MI North of US90/Sr30	TRANSP	BRIDGE	0		0.40			3.09	10.13		1.68		0.69	4.37	11.41		3.52		2.51	6.21	11.25
GULF COUNTY HEALTH DEPARTMENT	2475 Garrison Ave	CCA EF	GOVERNMENT FACILITY	1.17					-0.79					0.49								2.55
GULF COUNTY HEALTH DEPT	2475 Garrison Avenue	CCA EF	HEALTH CARE FACILITY	1.17					-0.76					0.51								2.88
GULF COUNTY DEPARTMENT OF HEALTH WIC	2475 Garrison Ave	CCA EF	SOCIAL SERVICES FACILITY	1.17					-0.76					0.52								2.38
ABRAZZO ON MADISON	1302 Carver Ln	CI	STORMWATER FACILITY	0					1.94					5.22								5.06
ABRAZZO ON MADISON SUBDIVISION	164 Carver Ln	CI	STORMWATER FACILITY	0					1.92					3.20								5.04
GULF COUNTY VETERANS SERVICE OFFICE	3000 Cecil G. Costin Sr Boulevard	CCA EF	COMMUNITY CENTER	0.68					1.29					2.57								4.41
GULF COUNTY SHERIFF DEPARTMENT / GULF COUNTY JAIL	3000 Cecil G. Costin Sr Blvd	CCA EF	CONCRESSIONAL FACILITY	0.5					1.30					2.58								4.43
PORT ST JOE LIBRARY - GULF COUNTY LIBRARY	110 Library Dr	NC&HR	CULTURE CENTER OR LIBRARY	1.75					0.32					1.69								3.44
GULF COUNTY EMS	140 Library Dr	CCA EF	EMERGENCY MEDICAL SERVICE FACILITY	0.62					1.79					9.08								4.90
GULF COUNTY EOC	3000 Cecil G Costin Sr Blvd	CCA EF	EMERGENCY OPERATION CENTER	0.62					2.09					3.00								5.20
PORT ST JOE RESCUE STATION	3000 Cecil G Costin	CCA EF	FIRE STATION	0.62					1.95					3.18								5.03
GULF COUNTY COURTHOUSE	3000 Cecil G Costin Sr Blvd	CCA EF	GOVERNMENT FACILITY	0.68					1.90					2.28								4.12
GULF COUNTY CIRCUIT AND COUNTY COURTS - GULF COUNTY COU	3000 Cecil G Costin Sr Blvd	CCA EF	GOVERNMENT FACILITY	0.63					0.03					2.25								4.09
GULF COUNTY PROPERTY APPRAISER	3000 Cecil G Costin Sr Blvd	CCA EF	GOVERNMENT FACILITY	0.68					0.01					2.28								4.08
GULF COUNTY TAX COLLECTOR	3000 Cecil G Costin Sr Blvd	CCA EF	GOVERNMENT FACILITY	0.63					0.01					2.25								4.08
U S POST OFFICE - PORT SAINT JOE	900 Garrison Ave	CCA EF	GOVERNMENT FACILITY	0.53					4.71					5.99			-0.46		0.78			7.83
GULF COUNTY SATELLITE HWM COLLECTION CENTER	3001 10TH St	CI	HAZARDOUS WASTE FACILITY	3.5					2.73					-3.38	4.01		-2.65		-1.42			5.85
GULF COUNTY EMERGENCY MANAGEMENT	3000 Cecil G Costin Sr Blvd	CCA EF	GOVERNMENT FACILITY	0					2.57					3.85								5.99
WORM-UP		CI	COMMUNICATION FACILITY			-4.83		3.74	-7.43	14.55		5.81	1.09	5.02	8.71	16.81		7.75	2.91	6.88	10.55	17.68
ST. JOSEPH BAY HUMANE SOCIETY	2007 10TH St	CI	HAZARDOUS WASTE FACILITY	0					2.88					-4.14								-3.88
PS17 - 10TH ST LIFT STATION	914 10TH St	CI	LIFT STATION	0				0.63	7.04		3.72			3.91	9.12		2.58			5.75	10.90	
PS18 - 9TH ST LIFT STATION	914 9TH St	CI	LIFT STATION	0				0.95	8.14		1.03			2.23	8.42		2.87		3.27	4.87	11.29	
PUBLIC WORKS YARD		CCA EF	LOGISTICAL STAGING AREA	0					1.04					2.32								4.35
COMMUNICATION FACILITY	Port St Joe Mx Bldg	CI	COMMUNICATION FACILITY	0					0.69					1.97								3.92
PORT ST JOE	3001 10TH St	CI	ELECTRIC PRODUCTION AND SUPPLY FA	0					2.71					3.66								5.63
CHEMTRADE SOLUTIONS LLC - PORT ST. JOE		CI	WASTEWATER TREATMENT FACILITY	0					8.88					1.94								9.78
CHEMTRADE SOLUTIONS LLC - PORT ST. JOE	283 Chemical Dr	CI	HAZARDOUS WASTE FACILITY	0					0.82					2.08								8.82

ASSET CLASS LEGEND

CCA&EF - CRITICAL COMMUNITY AND EMERGENCY FACILITIES
CI - CRITICAL INFRASTRUCTURE
NC&HR - NATURAL, CULTURAL, AND HISTORICAL RESOURCES
TRANSP - TRANSPORTATION

Transportation Street Network, Housing, and Economy & Tourism assets are displayed only as summary in the critical assets categories table.

Zone 4, East Port St. Joe

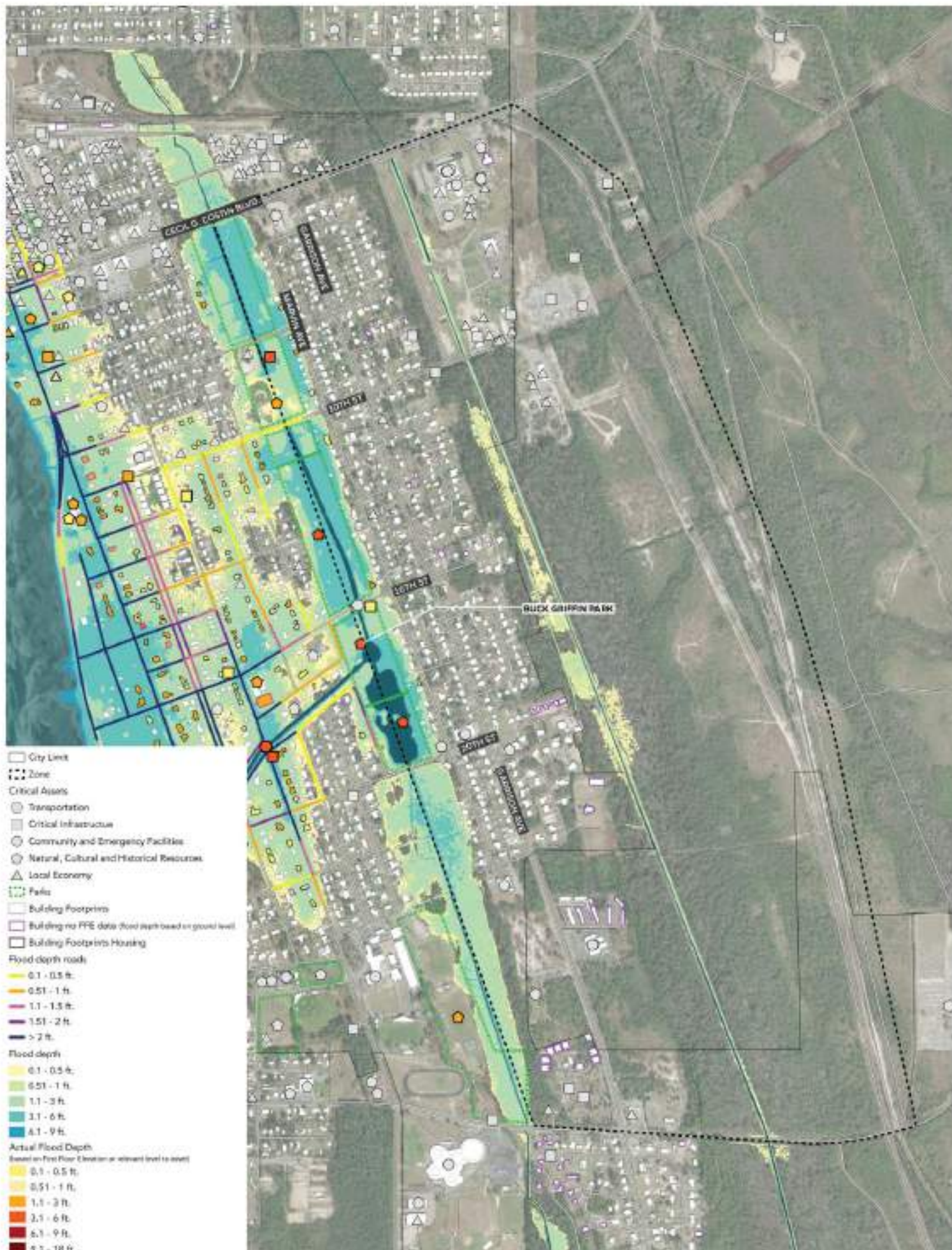
Critical assets categories, exposure levels

	Current						2040 Scenario						2070 Scenario					
	Mean Higher High Water	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane
Zone 4 - East - Housing																		
No Impact	100.0%	54.0%	100.0%	97.2%	83.2%	0.0%	100.0%	79.5%	100.0%	92.0%	43.3%	7.4%	100.0%	23.0%	98.2%	86.0%	12.8%	0.0%
Low	0.0%	2.0%	0.0%	3.0%	2.3%	0.0%	0.0%	7.4%	0.0%	2.0%	19.4%	0.0%	0.0%	20.7%	0.8%	2.0%	5.9%	0.0%
Medium	0.0%	1.8%	0.0%	1.8%	4.6%	0.8%	0.0%	5.9%	0.0%	2.0%	21.7%	0.3%	0.0%	37.8%	1.0%	5.1%	34.2%	0.0%
High	0.0%	1.3%	0.0%	0.0%	9.9%	99.2%	0.0%	8.2%	0.0%	2.3%	25.8%	92.3%	0.0%	18.6%	0.0%	6.9%	47.2%	100.0%
Flooded Housing Buildings	0.0%	5.1%	0.0%	2.8%	15.8%	100.0%	0.0%	21.4%	0.0%	7.4%	56.9%	92.6%	0.0%	77.0%	1.8%	14.6%	87.2%	100.0%
Zone 4 - East - Transportation																		
No Impact	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Flooded Transportation Assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Zone 4 - East - Critical Infrastructure																		
No Impact	100.0%	83.3%	100.0%	83.3%	66.7%	0.0%	100.0%	66.7%	93.7%	83.3%	66.7%	0.0%	100.0%	66.7%	91.7%	75.0%	66.7%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	36.7%	0.0%	16.7%	33.3%	100.0%	0.0%	33.3%	8.3%	16.7%	33.3%	100.0%	0.0%	33.3%	8.3%	25.0%	33.3%	100.0%
Flooded Critical Infrastructure Assets	0.0%	36.7%	0.0%	16.7%	33.3%	100.0%	0.0%	33.3%	8.3%	16.7%	33.3%	100.0%	0.0%	33.3%	8.3%	25.0%	33.3%	100.0%
Zone 4 - East - Critical Community and Emergency Facilities																		
No Impact	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%	94.1%	100.0%	100.0%	94.1%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	17.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.9%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	35.3%	0.0%	0.0%	0.0%	0.0%	0.0%	17.6%	0.0%	0.0%	0.0%	0.0%	5.9%	0.0%
High	0.0%	0.0%	0.0%	0.0%	0.0%	47.3%	0.0%	0.0%	0.0%	0.0%	0.0%	82.4%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Flooded Critical Community and Emergency Facilities	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	5.9%	0.0%	0.0%	5.9%	100.0%
Zone 4 - East - Natural, Cultural and Historical Resources																		
No Impact	83.3%	83.3%	83.3%	83.3%	66.7%	0.0%	83.3%	66.7%	83.3%	83.3%	66.7%	0.0%	83.3%	66.7%	83.3%	66.7%	33.3%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	38.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	38.7%	0.0%	0.0%
High	36.7%	36.7%	36.7%	16.7%	33.3%	83.3%	16.7%	33.3%	16.7%	33.3%	33.3%	100.0%	16.7%	33.3%	16.7%	36.7%	33.3%	100.0%
Flooded Natural, Cultural and Historical Resources	16.7%	36.7%	36.7%	16.7%	33.3%	100.0%	16.7%	33.3%	16.7%	33.3%	33.3%	100.0%	16.7%	33.3%	16.7%	33.3%	66.7%	100.0%
Zone 4 - East - Economy																		
No Impact	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%	100.0%	100.0%	93.3%	78.3%	100.0%	82.6%	100.0%	100.0%	56.5%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.7%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	0.0%	0.0%	4.3%	0.0%	0.0%	21.7%	0.0%
High	0.0%	0.0%	0.0%	0.0%	0.0%	95.7%	0.0%	0.0%	0.0%	0.0%	4.3%	21.7%	0.0%	4.3%	0.0%	0.0%	21.7%	100.0%
Flooded Economy Assets	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	6.7%	21.7%	0.0%	17.4%	0.0%	0.0%	43.5%	100.0%

Roads, exposure levels

	Current						2040 Scenario						2070 Scenario					
	Mean Higher High Water	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane
Zone 4 - East PSJ																		
No Impact	100.00%	96.89%	100.00%	100.00%	70.99%	9.88%	100.00%	62.73%	100.00%	98.45%	60.79%	0.00%	100.00%	46.62%	100.00%	90.67%	39.90%	0.00%
Low	0.00%	2.59%	0.00%	0.00%	16.00%	6.74%	0.00%	39.69%	0.00%	1.04%	9.33%	4.15%	0.00%	5.18%	0.00%	2.59%	5.18%	0.00%
Medium	0.00%	0.52%	0.00%	0.00%	4.60%	7.77%	0.00%	7.77%	0.00%	0.52%	15.09%	4.60%	0.00%	4.60%	0.00%	2.07%	4.60%	0.00%
High	0.00%	0.00%	0.00%	0.00%	8.29%	75.65%	0.00%	8.82%	0.00%	0.00%	24.67%	91.19%	0.00%	43.52%	0.00%	4.66%	59.26%	100.00%
Flooded Roads	0.00%	3.11%	0.00%	0.00%	29.02%	90.16%	0.00%	36.27%	0.00%	1.55%	49.22%	100.60%	0.00%	53.37%	0.00%	9.33%	69.10%	100.00%

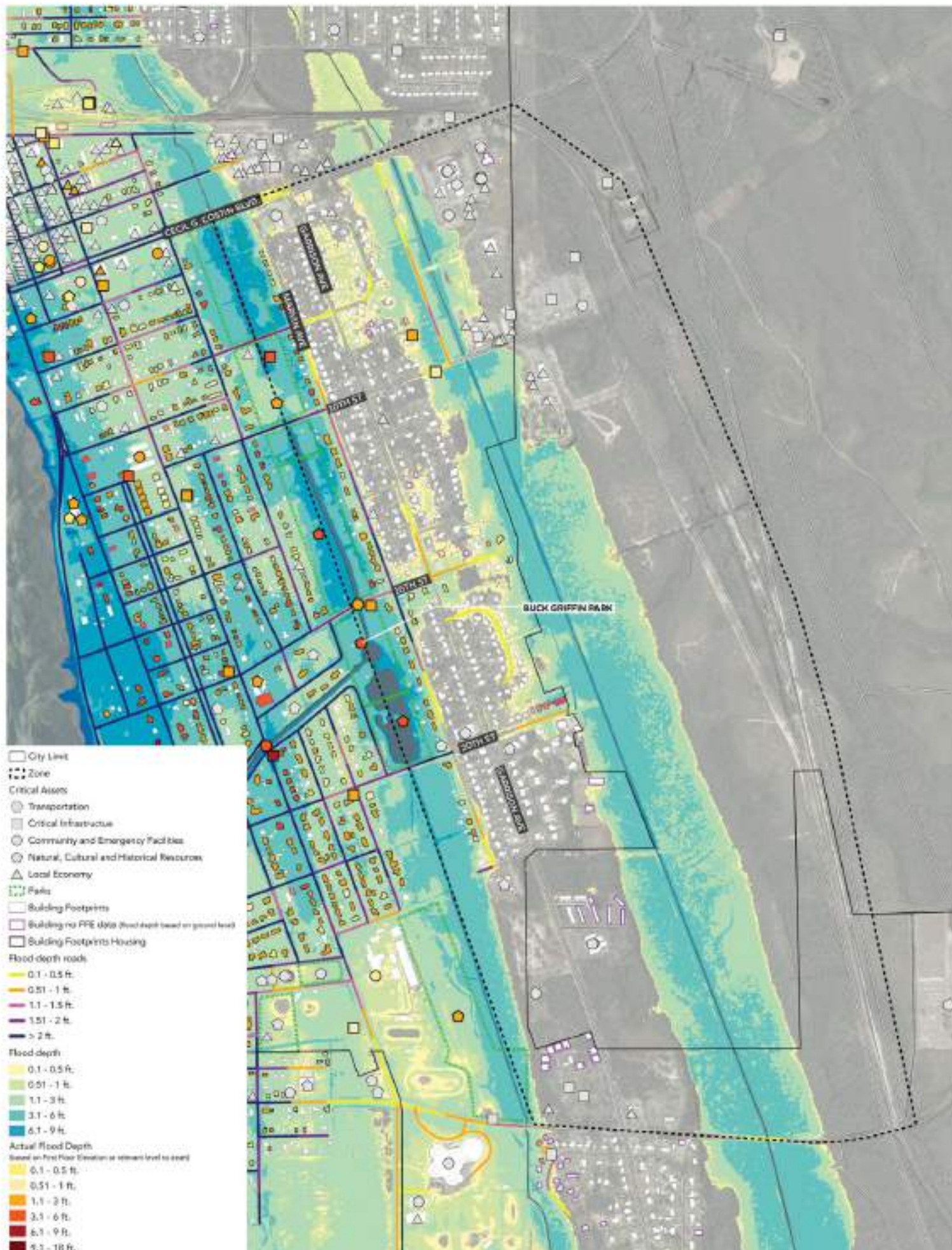




East Port St. Joe, Storm Surge Cat. 2 Hurricane



East Port St. Joe, Sea Level Rise Projection for 2040



ZONE 5, WEST PORT ST. JOE

Housing

Tidal flooding is not expected to impact housing assets. However, a 100-year flood event will significantly affect the area, with 67% of homes experiencing flooding and 19% categorized at high exposure levels. The most vulnerable areas are on Monument Avenue's west side, along Palm Boulevard and Long Avenue between 14th and 22nd Streets. Additionally, in the event of a Category 3 hurricane, storm surge flooding is projected to impact 99% of the assets in this zone, with 80% facing high exposure levels.

Transportation

Tidal flooding will impact 4% of the street network, predominantly on the south side of the central channel at the St. Joseph Bay outlet, and the boat ramp located on 5th Street will be entirely flooded.

A 100-year flood event will flood 85% of the roads, with 67% experiencing more than one foot of water. Major connectivity roads such as Constitution Drive, Monument Avenue, and Long Avenue—key north-south routes—will be highly affected, as well as 16th and 20th Streets, critical east-west connections.

Regarding storm surge, a Category 1 hurricane would not impact the street network severely. However, a Category 2 hurricane will result in similar widespread flooding as a 100-year flood event. In the event of a Category 3 hurricane, nearly the entire network will be compromised, with 96% of street segments becoming undrivable.

Critical Infrastructure

Tidal flooding is not expected to impact critical infrastructure. However, a 100-year flood event would affect 67% of the assets in Zone 5. Specifically, all lift stations from Long Avenue to the west will experience flooding. Additionally, the hazardous waste container at Monument Avenue and 7th Street will be flooded with around three feet of water.

Critical Community and Emergency Facilities

Tidal and 100-year flood events would not significantly impact community and emergency facilities. However, a Category 3 storm surge presents a substantial risk, where 75% of community and emergency facilities would experience flooding. Specifically, the Cross Shores care facility will face approximately 2.5 feet of water. Additionally, outdoor areas of the Port St. Joe Elementary School and the Centennial Building will also be affected by flooding.

Natural + Cultural Assets

Sea level rise projections for 2070 indicate that Frank Pate Park and Forest Park North will be flooded. Additionally, a 100-year flood event will affect all parks along the shoreline and the Central Channel.

Regarding storm surge, a Category 2 hurricane is projected to have an impact similar to a 100-year flood event, severely affecting these areas. Moreover, a Category 3 hurricane will flood most of the religious facilities in Zone 5.

Tourism and Economy

Tidal flooding is not expected to impact economic assets significantly. However, during a 100-year flood event, 37% of these assets will be affected, with 16% facing high exposure levels, particularly those located along Monument Avenue and Constitution Drive.

Furthermore, the impact of a Category 2 storm surge would be comparable to that of a 100-year flood event, affecting a similar proportion of economic assets. A more severe Category 3 hurricane would result in significant flooding, impacting 84% of the economic assets, 47% of which would experience high exposure levels. The areas most affected include Monument Avenue, Constitution Drive, and Cecil G. Costin Sr. Boulevard.

Zone 5, West Port St. Joe

Critical assets inventory, exposure levels

Asset Name	Address	Asset Class	Asset Type	Asset Duration in NAU/000	CURRENT						2040 Scenario						2070 Scenario						
					2010	2020	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2010	2020	2030	2040	2050
CENTENNIAL BUILDING	300 Allen Memorial Way	CC&EP	COMMUNITY CENTER	0.02							0.00	-0.45		0.39	7.08			1.39			2.23	8.82	
CONSTITUTION CONVENTION STATE MUSEUM	200 Allen Memorial Way	NC&HR	CULTURE CENTER OR LIBRARY	0.8				-0.30	4.38			0.33		0.90	7.07			1.99			1.82	9.01	
PORT ST. JOE CENTENNIAL BUILDING	300 Allen Memorial Way	CC&EP	DISASTER RECOVERY CENTER	0.02					5.49					0.07	8.77			1.09			1.91	8.61	
CROSS SHORES CARE CENTER	220 9TH Street	CC&EP	HEALTH CARE FACILITY	0.02	-0.14			2.57	9.58			1.14		9.24	10.86			2.90		2.88	5.09	12.70	
VINCENT HERS. M.D.	305 Twentieth Street	CC&EP	HEALTH CARE FACILITY	0.63	2.00			8.95	4.60	11.38		3.30		2.23	0.90	12.66			5.14	0.34	4.07	7.72	14.50
PSJ CENTENNIAL BUILDING	300 Allen Memorial Way	NC&HR	HISTORIC STRUCTURE	0.02					5.05			-0.40		0.43	7.13			1.44			2.27	8.97	
CHURCHES		NC&HR	NONHOUSING TFR POINTS	1.17	3.74			1.81	8.83	12.37		-0.74	3.00	6.75			6.86	1.52	4.93	6.15	10.86		
CHURCHES	3699 Palm Blvd	NC&HR	NONHOUSING TFR POINTS	1.75	-0.02		-1.04	2.60	9.48			0.24	3.58				3.10	1.79	2.68	5.72	12.60		
CHURCHES	506 12TH St.	NC&HR	NONHOUSING TFR POINTS	0.58	0.13			2.76	8.68			0.38	4.04				3.25		2.32	1.87	13.80		
CHURCHES	304 20TH St	NC&HR	NONHOUSING TFR POINTS	0.51	0.28			2.85	9.64			0.40	4.13				3.40		2.32	5.97	12.76		
CHURCHES	2430 Long Ave.	NC&HR	NONHOUSING TFR POINTS	0.58					8.85			0.29					1.28			2.13	8.87		
CHURCHES		NC&HR	NONHOUSING TFR POINTS	0.48				-0.05	0.52			1.23					2.27			3.07	9.40		
CHURCHES		NC&HR	NONHOUSING TFR POINTS	1.17	1.41			3.46	4.09	11.09			1.74	5.17			5.65	-0.21	3.58	7.21	14.15		
FIRST CHURCH OF THE NAZARENES	2420 Long Ave	NC&HR	RELIGIOUS FACILITY	0.51					6.06			-0.09		0.76	7.34			1.75			1.60	9.18	
LONG AVENUE BAPTIST CHURCH	2691 Long Ave.	NC&HR	RELIGIOUS FACILITY	0.56	1.88			1.87	5.31	11.24		3.96	2.95	6.50	13.52			5.00	0.99	4.76	8.43	15.36	
UNITED PENTECOSTAL CHURCH	308 6TH Street	NC&HR	RELIGIOUS FACILITY	0.57	-0.04				3.88	9.37		1.22	0.21	8.86	10.86			3.05		2.05	9.70	12.86	
FIRST UNITED METHODIST CHURCH	2003 Constitution Drive	NC&HR	RELIGIOUS FACILITY	1.17	4.17			2.23	5.85	13.90		0.40	-0.31	3.31	7.34	14.06			7.29	1.52	5.35	6.98	15.93
ST JOSEPH'S CATHOLIC CHURCH	2001 Monument Ave	NC&HR	RELIGIOUS FACILITY	0.58				-1.80	9.37			1.28		0.23	8.86	10.86			3.23		2.07	9.72	12.46
OAK GROVE ASSEMBLY OF GOD	613 Madison Street	NC&HR	RELIGIOUS FACILITY	1.17					4.35				-0.90	5.01			0.05			0.96	7.45		
PORT ST. JOE ELEMENTARY SCHOOL	2201 Long Ave	CC&EP	SCHOOL	0.68				-0.10	8.38			0.41		0.89	7.07			1.88			2.83	9.93	
FORREST PARK SOUTH	709 17TH St	NC&HR	PARKS	0	1.79	4.04	1.38	1.03	6.70	13.72	2.03	5.32	1.31	4.30	7.90	15.03	1.24	7.16	3.30	6.14	0.62	10.84	
FORREST PARK NORTH	705 10TH St	NC&HR	PARKS	0	1.68	4.88	0.92	3.79	7.42	14.48	1.57	5.93	1.88	5.01	8.70	15.77	0.02	7.77	8.04	8.80	10.54	17.61	
LAMAR PARKIN PARK	805 Madison St	NC&HR	PARKS	0	2.51	0.88	1.86	2.85	8.81			2.00	-0.87	2.21	4.12	10.88	0.81	4.40	1.32	1.88	5.88	12.75	
PATTON PARK	310 Duport Dr	NC&HR	PARKS	0	3.88			2.77	6.42	13.11		5.14	0.45	4.05	7.70	14.30		6.04	3.29	8.60	0.54	18.25	
CENTENNIAL PARK BALLFIELD	Allen Memorial Way	NC&HR	PARKS	0				0.82	7.07			1.12		1.72	8.35			3.78		1.10	6.84	12.18	
CENTENNIAL PARK	2291 Centennial Dr	NC&HR	PARKS	0				0.94	7.63			1.35		2.10	8.85			5.30		0.72	4.02	10.75	
CONSTITUTION CONVENTION MUSEUM STATE PARK	200 Allen Memorial Way	NC&HR	PARKS	0				0.29	8.99			0.75		1.07	8.27			2.89		0.31	1.40	10.11	
WILSON		CI	COMMUNICATION FACILITY	0	1.28			3.40	4.02	11.11		1.07		1.76	8.80	13.38			4.52		3.60	7.22	14.23
PORT ST. JOE		CI	DRINKING WATER FACILITY	0	1.23			0.32	3.94	10.98		2.70		1.80	5.22	12.24			4.35		3.44	7.06	14.08
PORT ST. JOE		CI	DRINKING WATER FACILITY	0				0.28	4.62			0.72		1.56	8.21			2.56			3.40	10.65	
PSJ3 - HIGH SCHOOL UFT STATION	875 Madison St	CI	UFT STATION	0					6.03					0.69	7.31			1.76			2.50	5.15	
PSJ4 - 20TH ST UFT STATION	604 20TH St	CI	UFT STATION	0				2.43	9.30			2.80		0.02	3.09	10.58			4.64		1.88	3.33	12.42
PSJ5 - DUPOIN/HAY 90 UFT STATION	2001 20TH St	CI	UFT STATION	0	0.20			4.13	7.77	14.45		7.49	1.71	5.41	9.85	15.79			9.32	3.55	7.25	10.69	17.57
PSJ6M - 16TH STREET MASTER UFT STATION	308 16TH St	CI	UFT STATION	0	1.31			0.21	8.85	10.76		3.48		1.49	5.13	12.84			4.38		3.33	4.87	13.88
PSJ12 - 10TH ST UFT STATION	305 20TH St	CI	UFT STATION	0	3.25			4.21	7.86	14.74		6.24	2.71	1.40	9.34	10.02			8.30	3.56	7.33	10.08	17.66
PSJ16 - SAUTER UFT STATION	203 Sauter Memorial Lane	CI	UFT STATION	0	6.80			3.18	6.82	13.40		6.38	0.81	4.88	8.10	14.88			6.42	3.65	6.30	8.84	18.52
PSJ19 - PALM BLVD UFT STATION	217 20TH St	CI	UFT STATION	0	2.70			1.80	5.40	12.40		2.98		3.08	6.69	13.68			5.82	1.04	4.92	8.32	15.52
LONG AVENUE	0.14 MI South of 10TH St	TRANS	BRIDGE	0	4.29			5.25	6.90	13.78		5.57	0.75	4.53	8.38	15.08			7.41	2.58	6.37	10.02	16.90
US90 BRG	0.9 Miles East of 10TH St	TRANS	BRIDGE	0					1.00						4.12							5.97	
MONUMENT AVENUE	0.18 MI South of 10TH St	TRANS	BRIDGE	0	5.25			1.20	5.94	12.63		4.53		1.48	7.32	13.91			8.37	1.58	5.52	8.98	15.75
LYONS CLUB - PORT ST. JOE	602 Monument Ave	CC&EP	COMMUNITY CENTER	0.56	4.97			3.03	6.88	13.68		3.25	0.91	4.21	7.96	14.96			8.09	2.35	6.15	8.80	16.80
AMOCO S - S #00453	600 Monument Ave	CI	HAZARDOUS WASTE FACILITY	0.63	3.15			1.24	4.07	11.69		4.43		2.52	6.35	13.15			6.27	0.52	4.36	7.99	15.00
EYE CENTER OF NORTH FLORIDA	528 Cecil Court Boulevard B	CC&EP	HEALTH CARE FACILITY	0.58				0.98	6.02			1.15		2.89	8.82			2.99		0.64	6.10	11.34	
LODGE CLUB BUILDING	210 8TH St	NC&HR	HISTORIC STRUCTURE	2.23	-1.38			-2.18	1.44	8.45		0.00	-0.80	2.72	0.73			1.04		0.94	4.56	11.57	
BBQ & BREAKFAST	505 Monument Ave	NC&HR	HISTORIC STRUCTURE	0.58	8.87			1.76	5.40	12.41		4.88		3.04	6.88	13.88			9.78	1.26	4.88	6.42	18.13
GULF COUNTY SHERIFF'S OFFICE	418 Cecil Court Blvd	CC&EP	LAW ENFORCEMENT FACILITY	0.61				0.56	7.58			0.78		1.94	8.87			2.62		0.95	3.68	10.71	
CHURCHES		NC&HR	NONHOUSING TFR POINTS	0.52	0.07			0.06	3.72	10.74			1.34	5.00			4.09			5.10	6.64	13.66	
CHURCHES	308 6TH St.	NC&HR	NONHOUSING TFR POINTS	1.75	-0.18		-1.08	2.56	9.58				0.20	3.84			2.93		2.04	5.68	11.70		
NEW LIFE CHRISTIAN CENTER	504 6TH Street	NC&HR	RELIGIOUS FACILITY	0.57				3.15	9.28			2.45		-0.12	5.53	10.58			4.23		1.72	5.37	12.40
FRANK PATR PARK	Monument Ave & Cecil Court Blvd	NC&HR	PARKS	0	1.07	0.15	0.40	1.21	6.88	13.88	1.81	6.43	0.80	4.69	8.34	15.14	0.71	8.27	2.94	6.31	9.98	16.88	
JAMES (MR. BENNY) ROBERTS SPORTS PARK	605 Eighth St	NC&HR	PARKS	0	1.05	2.78	1.15	2.26	1.34	12.43	1.40	3.84	1.15	2.95	6.82	13.71	1.16	5.90	1.94	4.76	6.46	15.55	
HISTORIC PORT ST. JOE CITY PARK	Monument Ave & Cecil Court Blvd	NC&HR	PARKS	0	0.37			3.23	0.83	13.90		6.45	0.76	4.83	8.17	15.18			8.29	2.58	9.37	10.92	17.02
COMMUNICATION FACILITY	502 5TH Street	CI	COMMUNICATION FACILITY	0				2.39	9.40			2.58		3.67	10.70			4.49		1.87	5.50	12.54	
		TRANS	BOAT RAMP	0	8.88	1.14	4.90	6.57	15.56			10.14	2.42	6.18	9.85	16.84	1.02	11.90	4.28	8.02	11.69	18.88	

ASSET CLASS LEGEND

CC&EP - CRITICAL COMMUNITY AND EMERGENCY FACILITIES
 CI - CRITICAL INFRASTRUCTURE
 NC&HR - NATURAL, CULTURAL, AND HISTORICAL RESOURCES
 TRANS - TRANSPORTATION

Transportation Street Network, Housing, and Economy & Tourism assets are displayed only as summary in the critical assets category table.

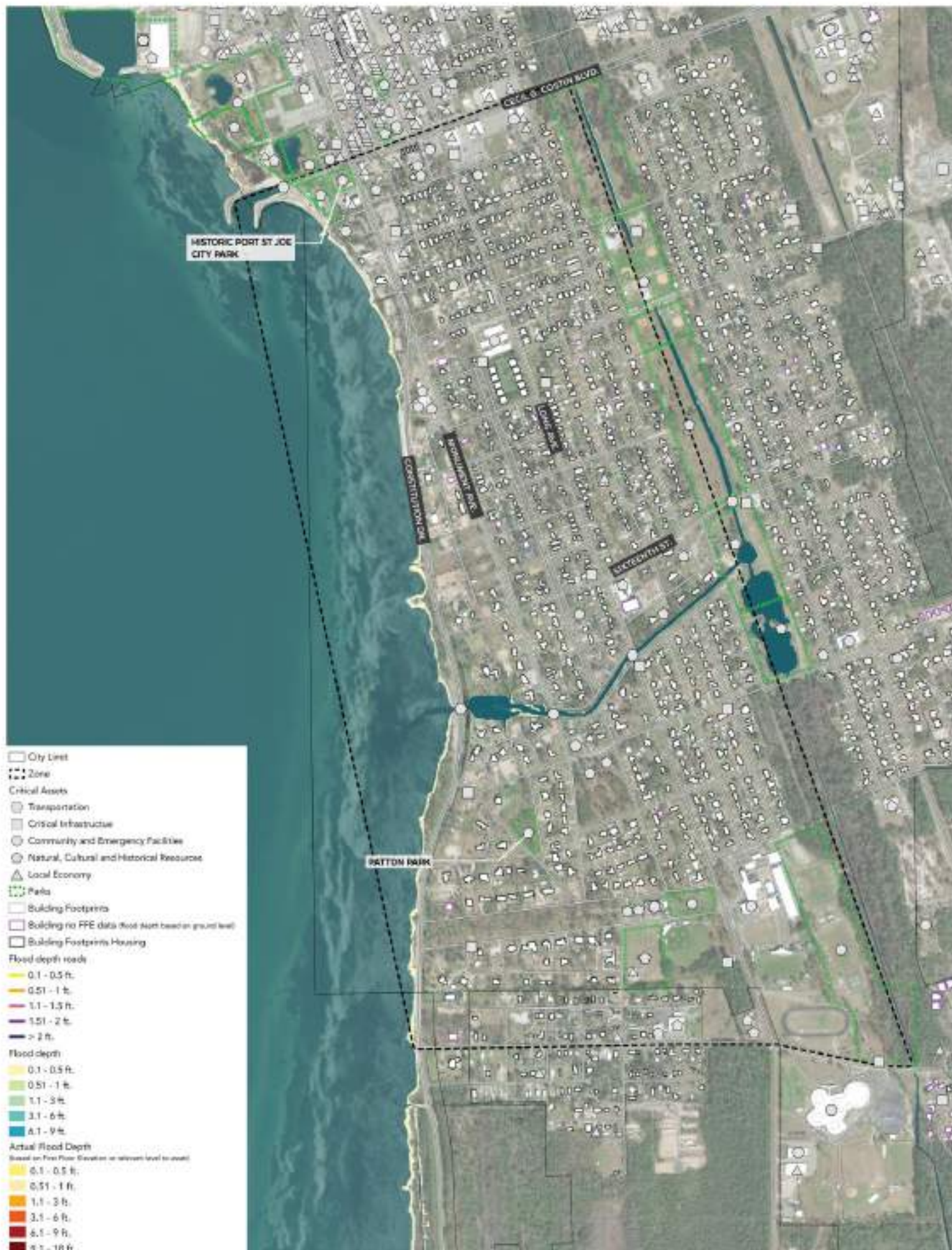
Zone 5, West Port St. Joe

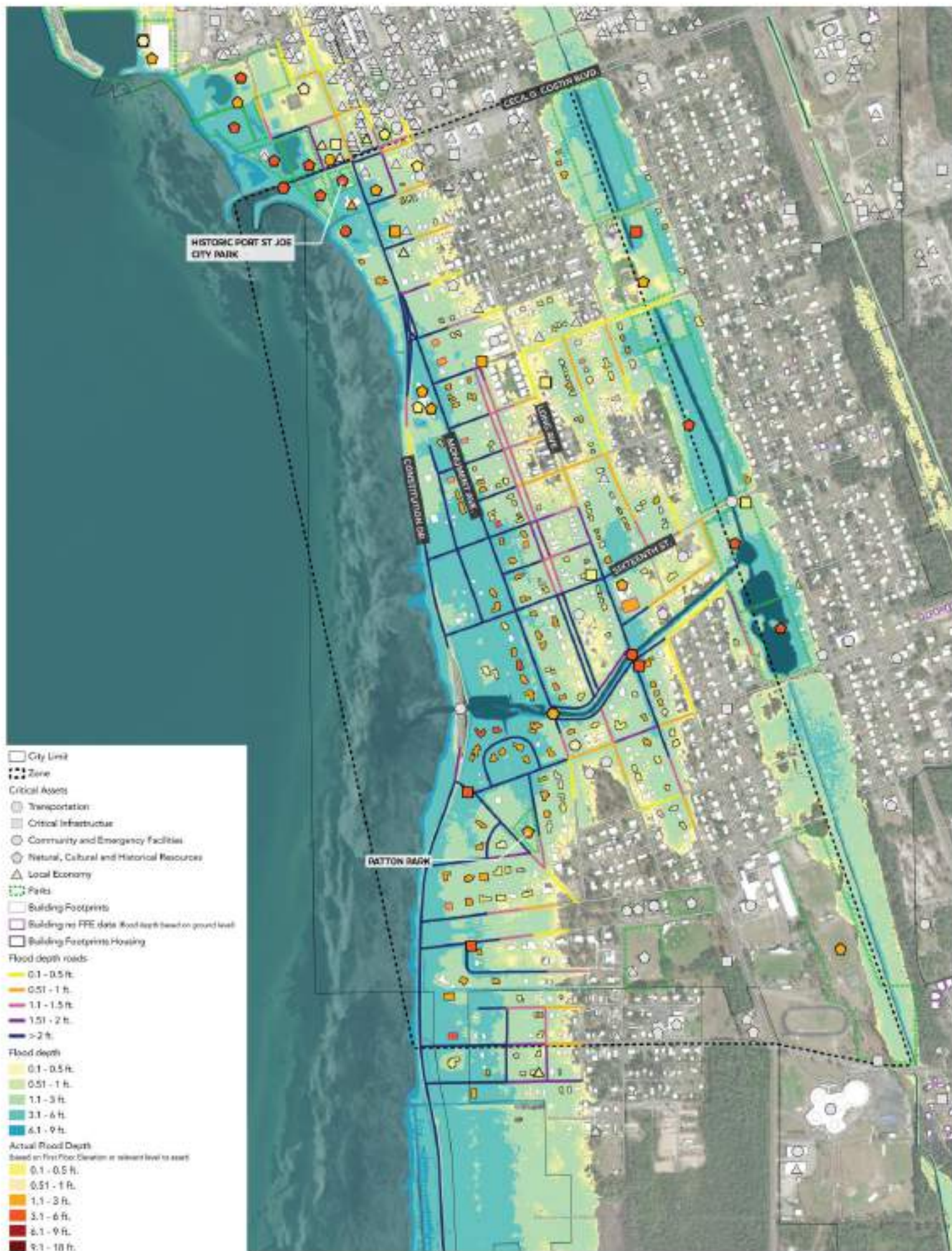
Critical assets categories, exposure levels

	Current						2040 Scenario						2070 Scenario					
	Mean Higher High Water	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane
Zone 5 - West - Housing																		
No Impact	100.0%	32.1%	99.3%	56.0%	1.2%	0.0%	100.0%	18.1%	94.7%	22.3%	0.9%	15.4%	99.7%	0.7%	72.1%	2.1%	0.4%	0.0%
Low	0.0%	16.9%	0.1%	16.3%	1.6%	0.0%	0.0%	4.6%	2.9%	83.3%	0.9%	0.0%	0.1%	0.7%	11.0%	4.3%	0.3%	0.0%
Medium	0.0%	30.9%	0.1%	18.1%	17.1%	0.1%	0.0%	30.0%	1.4%	85.7%	2.4%	0.0%	0.1%	3.8%	12.6%	24.5%	0.1%	0.0%
High	0.0%	39.1%	0.0%	9.6%	90.1%	99.9%	0.0%	47.8%	0.4%	20.9%	95.0%	94.6%	0.0%	94.7%	4.3%	99.6%	99.1%	100.0%
Flooded Housing Buildings	0.0%	67.9%	0.3%	64.0%	98.8%	100.0%	0.0%	81.9%	5.3%	77.9%	99.1%	94.6%	0.3%	99.3%	27.9%	97.9%	99.6%	100.0%
Zone 5 - West - Transportation																		
No Impact	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Flooded Transportation Assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Zone 5 - West - Critical Infrastructure																		
No Impact	100.0%	13.3%	100.0%	35.3%	8.3%	0.0%	100.0%	6.3%	75.0%	25.0%	0.0%	0.0%	100.0%	0.0%	58.3%	10.7%	0.0%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	8.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	0.0%	0.0%	0.0%
High	0.0%	96.7%	0.0%	55.3%	91.7%	100.0%	0.0%	91.7%	25.0%	75.0%	100.0%	100.0%	0.0%	100.0%	33.3%	85.3%	100.0%	100.0%
Flooded Critical Infrastructure Assets	0.0%	66.7%	0.0%	66.7%	91.7%	100.0%	0.0%	91.7%	25.0%	75.0%	100.0%	100.0%	0.0%	100.0%	41.7%	85.3%	100.0%	100.0%
Zone 5 - West - Critical Community and Emergency Facilities																		
No Impact	100.0%	62.0%	100.0%	75.0%	25.0%	0.0%	100.0%	12.0%	87.5%	62.5%	0.0%	0.0%	100.0%	0.0%	75.0%	37.5%	0.0%	0.0%
Low	0.0%	12.5%	0.0%	0.0%	12.5%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	13.3%	25.0%	0.0%	0.0%	96.0%	12.5%	12.5%	37.5%	0.0%	0.0%	25.0%	12.5%	25.0%	0.0%	0.0%
High	0.0%	25.0%	0.0%	12.5%	37.5%	100.0%	0.0%	25.0%	0.0%	25.0%	62.5%	100.0%	0.0%	75.0%	12.5%	37.5%	100.0%	100.0%
Flooded Critical Community and Emergency Facilities	0.0%	37.5%	0.0%	25.0%	75.0%	100.0%	0.0%	87.5%	12.5%	37.5%	100.0%	100.0%	0.0%	100.0%	25.0%	62.5%	100.0%	100.0%
Zone 5 - West - Natural, Cultural and Historical Resources																		
No Impact	66.7%	36.7%	83.3%	56.7%	13.3%	0.0%	66.7%	33.3%	70.0%	30.0%	0.0%	30.0%	83.3%	0.0%	60.0%	20.0%	0.0%	0.0%
Low	0.0%	30.0%	0.0%	3.0%	6.7%	0.0%	0.0%	10.0%	6.7%	6.7%	9.3%	0.0%	0.0%	0.0%	1.9%	0.0%	0.0%	0.0%
Medium	0.0%	13.3%	0.0%	6.7%	3.3%	0.0%	0.0%	10.0%	0.0%	25.3%	16.7%	0.0%	0.0%	10.0%	10.0%	3.3%	3.3%	0.0%
High	13.3%	40.0%	16.7%	36.7%	76.7%	100.0%	13.3%	46.7%	33.3%	40.0%	80.0%	70.0%	16.7%	90.0%	26.7%	76.7%	96.7%	100.0%
Flooded Natural, Cultural and Historical Resources	13.3%	63.3%	16.7%	43.3%	86.7%	100.0%	13.3%	66.7%	30.0%	70.0%	100.0%	70.0%	16.7%	100.0%	40.0%	80.0%	100.0%	100.0%
Zone 5 - West - Economy																		
No Impact	100.0%	65.0%	100.0%	90.0%	15.0%	0.0%	100.0%	95.0%	95.0%	60.0%	15.0%	95.0%	100.0%	35.0%	85.0%	15.0%	0.0%	0.0%
Low	0.0%	30.0%	0.0%	10.0%	5.0%	0.0%	0.0%	0.0%	0.0%	10.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	10.0%	0.0%
Medium	0.0%	30.0%	0.0%	5.0%	30.0%	0.0%	0.0%	0.0%	0.0%	30.0%	5.0%	0.0%	0.0%	0.0%	5.0%	35.0%	0.0%	0.0%
High	0.0%	15.0%	0.0%	5.0%	50.0%	100.0%	0.0%	5.0%	0.0%	10.0%	80.0%	5.0%	0.0%	80.0%	5.0%	45.0%	85.0%	100.0%
Flooded Economy Assets	0.0%	35.0%	0.0%	20.0%	85.0%	100.0%	0.0%	5.0%	5.0%	40.0%	85.0%	5.0%	0.0%	85.0%	15.0%	85.0%	100.0%	100.0%

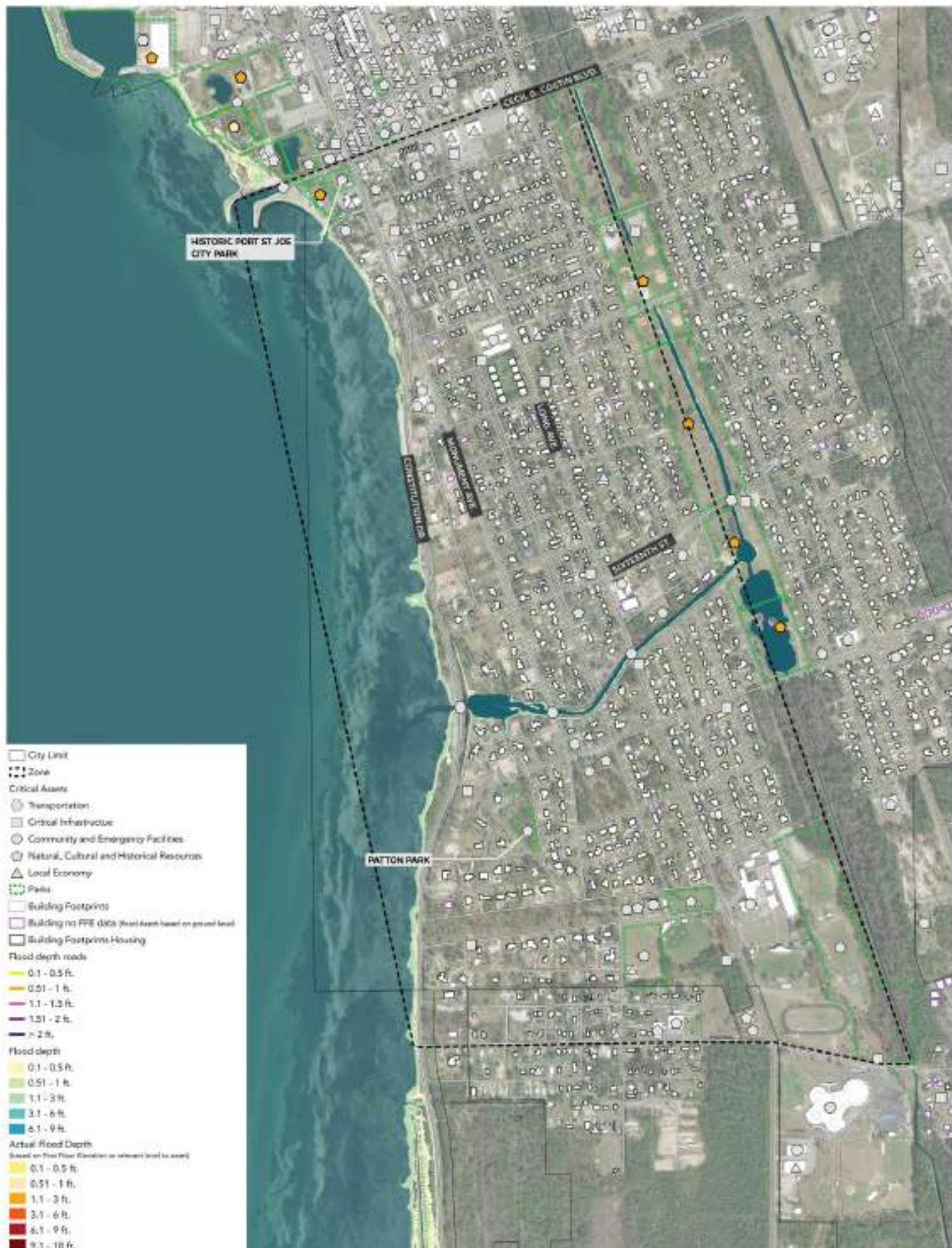
Roads, exposure levels

	Current						2040 Scenario						2070 Scenario					
	Mean Higher High Water	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane
Zone 5 - West PJJ																		
No Impact	100.00%	14.67%	96.00%	34.67%	0.67%	0.33%	100.00%	0.67%	64.33%	14.33%	0.33%	0.33%	96.00%	0.33%	35.00%	3.33%	0.33%	0.33%
Low	0.00%	9.00%	3.67%	7.67%	1.67%	0.00%	0.00%	0.67%	18.00%	7.00%	0.00%	0.00%	3.67%	0.00%	14.33%	1.67%	0.00%	0.00%
Medium	0.00%	9.67%	0.33%	8.00%	1.67%	0.00%	0.00%	1.33%	11.33%	20.00%	0.33%	0.00%	0.33%	0.33%	13.33%	3.33%	0.00%	0.00%
High	0.00%	66.67%	0.00%	49.67%	95.00%	99.67%	0.00%	97.33%	6.33%	68.67%	99.33%	99.67%	0.00%	99.33%	37.33%	91.67%	99.67%	99.67%
Flooded Roads	0.00%	85.33%	4.00%	65.33%	99.33%	99.67%	0.00%	99.33%	35.67%	85.67%	99.67%	99.67%	4.00%	99.67%	65.00%	96.67%	99.67%	99.67%





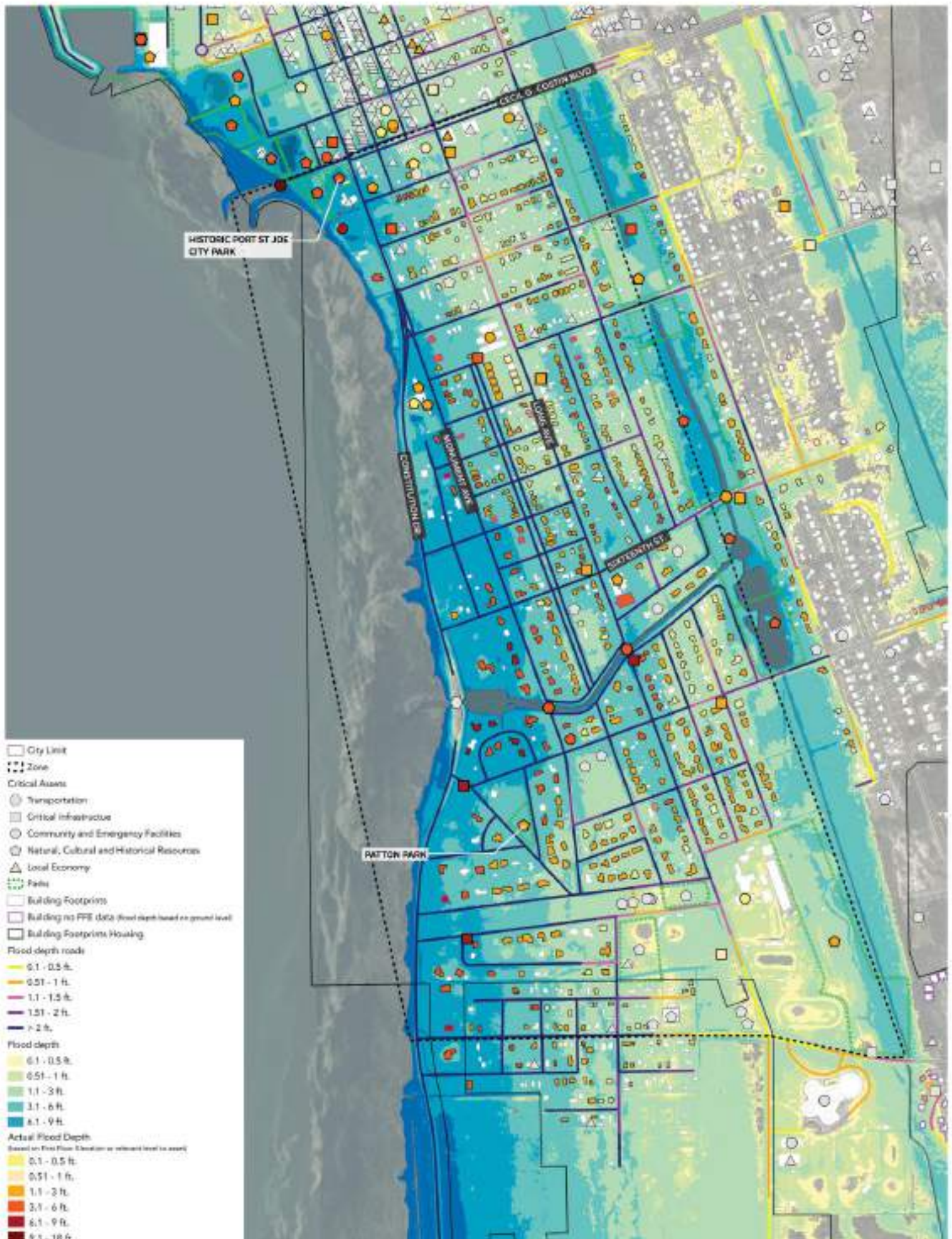
West Port St. Joe, Storm Surge Cat. 2 Hurricane



West Port St. Joe, Sea Level Rise Projection for 2040



West Port St. Joe, Sea Level Rise Projection for 2070



ZONE 6, BEACH COMMUNITIES

Housing

Tidal flooding is not expected to affect housing structures significantly. However, a 100-year flood event would flood 89% of homes, with 63% experiencing more than 18 inches of water. The communities most affected are located on the west side of Flat Water Street W and the east side of W. Highway 98 in the southeast.

Furthermore, a Category 2 hurricane is expected to impact these communities similarly to a 100-year flood event. The severity of flooding escalates significantly with a Category 3 hurricane, projected to affect 93% of homes, with 90% experiencing more than 18 inches of water.

Transportation

Tidal flooding is not expected to impact the street network significantly. However, a 100-year flood event will affect 41% of the street network, rendering 25% undrivable. Specifically, W Highway 98 in the southeast will experience more than 2 feet of flooding, rendering the area inaccessible from the south and significantly impacting roads south of Flat-Water W Road.

Storm surge from a Category 2 hurricane would have a similar impact as a 100-year flood event. In the event of a Category 3 hurricane, 69% of the roads will be flooded, with 59% becoming undrivable. This severe flooding will isolate the whole area, cutting off northern and southern access routes.

Critical Infrastructure

Based on data analysis, tidal flooding is not expected to affect critical infrastructure in Zone 5. However, during a 100-year flood event, water supply tanks located in the southeast between W. Highway 98 and Butler Bay Rd. may be impacted (existence of these tanks should be confirmed). Storm surge resulting from a Category 2 hurricane is projected to have similar impacts as a 100-year event. In contrast, a Category 3 hurricane is forecasted to affect all critical assets, including flooding of the stormwater infrastructure and a hazardous waste container located in the southeast on W Highway 98. It is advisable to conduct surveys on lift stations to assess their vulnerability and potential impacts during severe weather events.

Critical Community and Emergency Facilities

No Critical Community and Emergency Facilities were identified in Zone 6.

Natural + Cultural Assets

The two beach accesses to Windmark Beach, namely the access park and Flat Water St. W, are identified as vulnerable to 100-year flood events and storm surge events from Category 2 hurricanes or higher.

Tourism and Economy

Several commercial and small manufacturing facilities along W Highway 98 in the southeast are at risk of flooding. Specifically, a 100-year flood event is expected to inundate these areas. Additionally, storm surges from Category 2 and 3 hurricanes would similarly impact these establishments.

Zone 6, Beach Communities
Critical assets inventory, exposure levels

Asset Name	Address	Asset Class	Asset Type	Asset Elevation Ft. NAVD83	CURRENT						2040 Scenario						2070 Scenario					
					Mean	100-Yr	CRF 1	CRF 2	CRF 3	CRF 4	SLR	100-Yr	CRF 1	CRF 2	CRF 3	CRF 4	SLR	100-Yr	CRF 1	CRF 2	CRF 3	CRF 4
WINDMILL BEACH - BEACH ACCESS	Rat Water St W	NC&H	PARKS	0	1.88	1.99	3.77	10.33			1.94	0.31	1.10	5.05	11.63		1.88	1.46	2.37	6.89	12.41	
WINDMILL VILLAGE CENTER EAST		CI	STORMWATER FACILITY	0			2.26	6.83			0.05			5.03	10.33		1.89	1.35	5.37	11.93		
GOOD MORNING ST	6.05 MI S OF US98 (S&D)	TRANSP	BRIDGE	0			1.63	0.23						2.91	9.53		1.46	0.58	4.75	11.33		
ST JOE TIRE	2750 W Highway 98	CI	HAZARDOUS WASTE FACILITY	0.0	2.04		0.17	4.38	11.31		3.37		5.48	9.57	12.39		5.31	-0.40	9.39	7.41	34.28	
PORT ST. JOE		CI	DRINKING WATER FACILITY	0	5.88	8.83	7.76	14.52			6.84	1.13	4.90	0.04	15.78		6.88	2.88	6.74	10.88	17.93	
PORT ST. JOE		CI	DRINKING WATER FACILITY	0	8.14	0.44	4.20	8.34	15.00		7.40	1.72	5.44	5.62	16.37	0.23	9.20	3.90	7.32	11.46	18.33	
WINDMILL BEACH		CI	STORMWATER FACILITY	0			2.46	9.19			0.91			3.84	10.47		2.49		1.88	9.78	12.31	
WINDMILL BEACH		CI	STORMWATER FACILITY	0	7.28	2.58	5.43	10.46	17.17	8.47	8.56	3.64	7.63	11.88	16.47	1.38	10.48	5.68	9.53	13.72	20.29	
NEW ALIGNMENT S&D	4.9 Miles East Of Cr 1382	TRANSP	BRIDGE	0											0.98						2.83	
	Sound End Of St Joe Beach, Southwest Of Windy Lane And Cr 30	NC&H	PARKS	0	0.88		0.26	1.43	5.38		1.03			4.44	10.88		3.18	0.87	2.47	6.12	12.70	
WINDMILL BEACH ACCESS PARK		TRANSP	BRIDGE	0					6.38					0.88	7.68						2.82	6.90
NEW ALIGNMENT S&D	3.1 Miles East Of Cr 306	CI	STORMWATER FACILITY	0	0.29			3.72	10.25		1.57			5.00	11.53		3.41		2.57	8.84	13.37	
WINDMILL NORTH PHASE 1		CI	STORMWATER FACILITY	0	1.80		0.60	4.90	11.95		2.76			6.18	12.93		4.63		3.72	8.02	14.75	

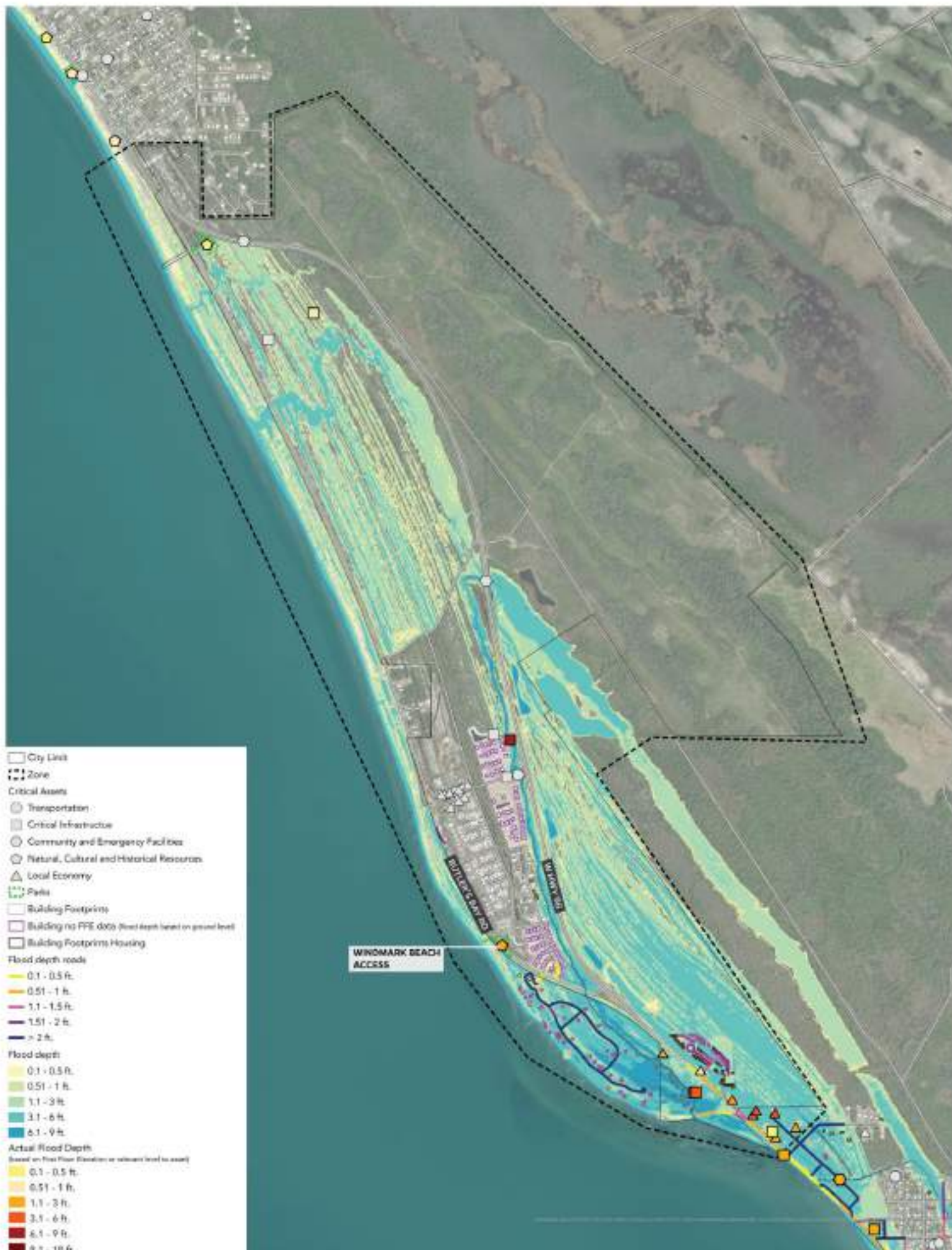
Transportation Street Network, Housing, and Economy 5-Ton Assets are displayed only as summary in the critical assets categories table

Critical assets categories, exposure levels

	Current						2040 Scenario						2070 Scenario					
	Mean Higher High Water	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane
Zone 6 - Beach Communities - Housing																		
No Impact	100.0%	24.3%	96.9%	57.8%	5.2%	0.0%	100.0%	44.0%	71.7%	24.0%	4.3%	31.1%	99.3%	5.2%	60.3%	5.5%	1.5%	0.0%
Low	0.0%	3.3%	0.3%	0.9%	0.0%	0.0%	0.0%	0.3%	6.5%	1.3%	0.9%	0.0%	0.3%	0.3%	1.3%	1.2%	1.5%	0.0%
Medium	0.0%	16.6%	0.0%	4.0%	1.5%	0.3%	0.0%	0.6%	4.6%	10.2%	0.3%	0.0%	0.0%	1.0%	5.0%	1.1%	1.8%	0.0%
High	0.0%	56.9%	2.6%	37.2%	93.2%	99.7%	0.0%	54.5%	17.3%	64.6%	94.5%	60.9%	0.0%	92.9%	32.3%	91.7%	95.1%	100.0%
Flooded Housing Buildings	0.0%	75.7%	3.1%	42.2%	94.8%	100.0%	0.0%	55.8%	18.3%	76.0%	95.7%	60.9%	0.0%	94.8%	30.7%	94.5%	98.5%	100.0%
Zone 6 - Beach Communities - Transportation																		
No Impact	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Flooded Transportation Assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Zone 6 - Beach Communities - Critical Infrastructure																		
No Impact	100.0%	25.0%	75.0%	37.5%	0.0%	0.0%	87.5%	0.0%	62.5%	25.0%	0.0%	0.0%	75.0%	0.0%	90.0%	0.0%	0.0%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	75.0%	25.0%	50.0%	100.0%	100.0%	12.5%	100.0%	37.5%	62.5%	100.0%	100.0%	25.0%	100.0%	37.5%	100.0%	100.0%	100.0%
Flooded Critical Infrastructure Assets	0.0%	75.0%	25.0%	62.5%	100.0%	100.0%	12.5%	100.0%	37.5%	75.0%	100.0%	100.0%	25.0%	100.0%	50.0%	100.0%	100.0%	100.0%
Zone 6 - Beach Communities - Natural, Cultural, and Historical Resources																		
No Impact	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	50.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	100.0%	0.0%	100.0%	100.0%	100.0%	0.0%	100.0%	50.0%	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Flooded Natural, Cultural and Historical Resources	0.0%	100.0%	0.0%	100.0%	100.0%	100.0%	0.0%	100.0%	50.0%	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Zone 6 - Beach Communities - Economy																		
No Impact	100.0%	50.0%	93.8%	50.0%	43.8%	12.5%	100.0%	100.0%	62.5%	50.0%	12.5%	100.0%	100.0%	50.0%	50.0%	50.0%	12.5%	0.0%
Low	0.0%	0.0%	6.3%	0.0%	6.3%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	37.5%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	12.5%
High	0.0%	50.0%	0.0%	37.5%	50.0%	87.5%	0.0%	0.0%	0.0%	30.0%	30.0%	0.0%	0.0%	50.0%	37.5%	50.0%	87.5%	87.5%
Flooded Economy Assets	0.0%	50.0%	6.3%	50.0%	56.3%	87.5%	0.0%	0.0%	37.5%	30.0%	87.5%	0.0%	0.0%	50.0%	50.0%	50.0%	87.5%	100.0%

Roads, exposure levels

	Current						2040 Scenario						2070 Scenario					
	Mean Higher High Water	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane	Sea Level Rise	100-Year	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 5 Hurricane
Zone 6 - Beach Communities																		
No Impact	99.62%	58.94%	93.16%	82.27%	30.90%	13.31%	99.62%	47.53%	60.11%	63.12%	28.14%	5.32%	93.16%	33.46%	92.13%	44.31%	27.70%	2.28%
Low	0.00%	10.65%	2.68%	1.14%	5.32%	6.84%	0.00%	8.37%	2.28%	4.56%	1.90%	4.56%	4.04%	4.04%	4.56%	4.18%	0.00%	1.14%
Medium	0.00%	5.70%	3.42%	2.60%	5.32%	2.60%	0.00%	6.98%	1.34%	6.09%	3.42%	5.70%	1.52%	4.18%	2.28%	9.13%	0.38%	1.90%
High	0.38%	24.71%	0.70%	12.93%	56.50%	77.19%	0.38%	36.02%	6.46%	20.24%	66.54%	84.41%	0.38%	57.41%	11.03%	42.59%	71.86%	94.68%
Flooded Roads	0.38%	41.06%	6.84%	16.73%	69.20%	86.69%	0.38%	52.47%	9.89%	36.88%	71.96%	94.68%	6.84%	66.54%	17.97%	55.89%	72.24%	97.72%



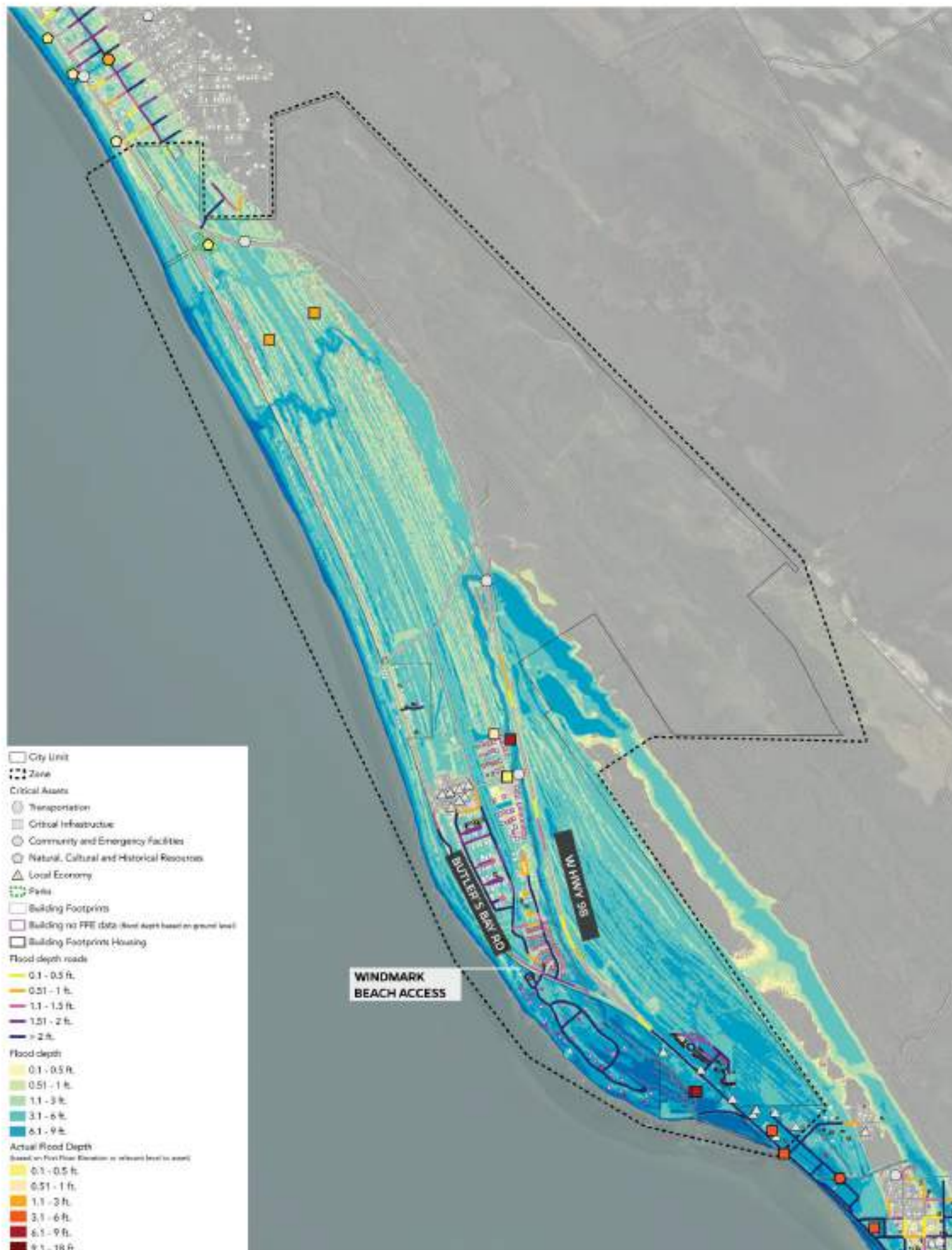
Beach Communities, Port St. Joe, Storm Surge Cat. 2 Hurricane



Beach Communities, Port St. Joe, Sea Level Rise Projection for 2040



Beach Communities, Port St. Joe, Sea Level Rise Projection for 2070



INFLUENCE AREA

Housing

Tidal flooding would not affect housing structures. However, a 100-year flood event could inundate 29% of homes, particularly Highland View and White City. Of these, 11% could see flooding depths greater than 18 inches.

Regarding storm surge, a Category 2 hurricane could affect around 10% of the housing in these communities. The severity escalates strongly in a Category 3 hurricane, with an expected impact on 57% of homes, with 23% experiencing flood depths greater than 18 inches.

Transportation

Several boat ramps within the area of influence will be affected under all the evaluated flood scenarios. Specifically, the Highland View Public Boat Ramp and Presnell's Bayside Marina Boat Ramp are susceptible to surge velocities, requiring additional protective measures for their docks and boarding structures.

Regarding the road network, tidal flooding will have a minimal impact. However, the situation is markedly different for a 100-year flood event in 2040, which could significantly disrupt the network. Approximately 57% of street segments would be affected, with 45% potentially becoming undrivable. While a Category 1 hurricane might not severely impact the road network, a Category 3 hurricane poses a substantial threat, likely affecting 60% of the street segments. Key roads such as US Highway 98 and County Road 30A are especially at risk.

Critical Infrastructure

The area of influence surrounding Port St. Joe contains several critical infrastructure assets, the most influential of which are drinking water boosters and waste collection facilities. These facilities are primarily at risk during extreme flood scenarios.

During the projected 100-year flood event in 2040, the drinking water booster in Highland View will be flooded around 7 feet. Other vital infrastructure in Highland View, such as the satellite staging area and a hazardous waste site, will also be impacted.

Regarding the vulnerability to storm surge, the drinking water booster stations are particularly at risk. Any storm category will impact the booster station mentioned above. The booster station located at Osprey Road, under the bridge on FL-71 (access to White City), will be affected during a Category 3 hurricane.

Furthermore, the solid waste management facilities, including the Five Points Landfill and the Disaster Debris Management site to the east, are highly susceptible to extreme storm surge scenarios, particularly in a Category 5 hurricane.

Critical Community and Emergency Facilities

The resilience of critical infrastructure, particularly fire stations in surrounding communities, is crucial, especially during natural disasters. The fire stations in the surrounding communities are currently vulnerable only to extreme storm conditions. A Category 5 hurricane could severely impact all the fire

stations with more than 6 ft of water. However, the vulnerability of these assets will increase in the future, making them vulnerable to Category 3 hurricanes in 2040 and 2070.

Natural and Cultural Resources

The recreational areas within the influence area, particularly those along the shorelines, such as parks and beach accesses, represent the most common natural and cultural assets. These areas are generally resilient to tidal flooding, which is not expected to have a significant impact.

In a 100-year flood, approximately 52% of these shoreline recreational assets would be affected, including all parks and beach access points. Specifically, recreational areas located at the Highland View and White City boat ramps are projected to face the most severe flooding, with water depths potentially exceeding 4 feet.

Regarding storm surge, a category 2 hurricane would similarly impact these recreational areas to a 100-year flood event. However, the situation worsens significantly under a category 3 hurricane, where up to 84% of the assets, including numerous religious facilities, would be inundated.

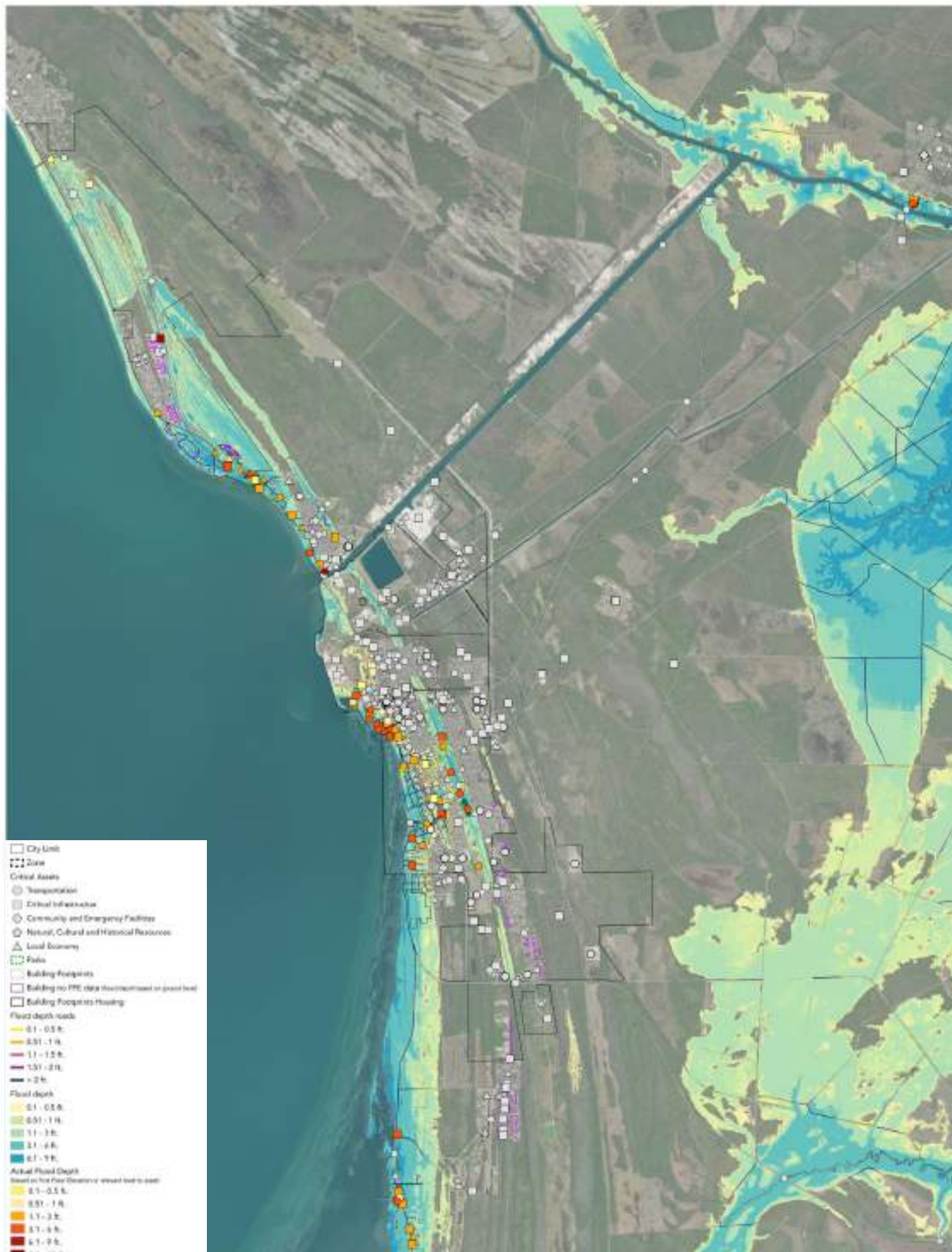
Local Economy and Tourism

The local economy assets in the Highland View area primarily consist of food packing facilities, while the hospitality sector and warehousing characterize the southern region along State Road 30A. Tidal flooding is not considered a significant threat to these areas, so these assets are generally safe from minor coastal inundations.

However, the situation changes significantly in a 100-year flood event, projected to affect 35% of these assets. Specifically, this would result in approximately 1 foot of water inundating assets in Highland View, with assets in the south area experiencing more significant impacts, potentially exceeding 4 feet of water.

Storm surge impacts from hurricanes also pose a threat. A category 2 hurricane would flood 24% of the assets, with flood depths in the southern area surpassing 2 feet. The risk escalates with a category 3 hurricane, which could flood up to 63% of the assets.





Influence Area Port St. Joe, Storm Surge Cat. 2 Hurricane



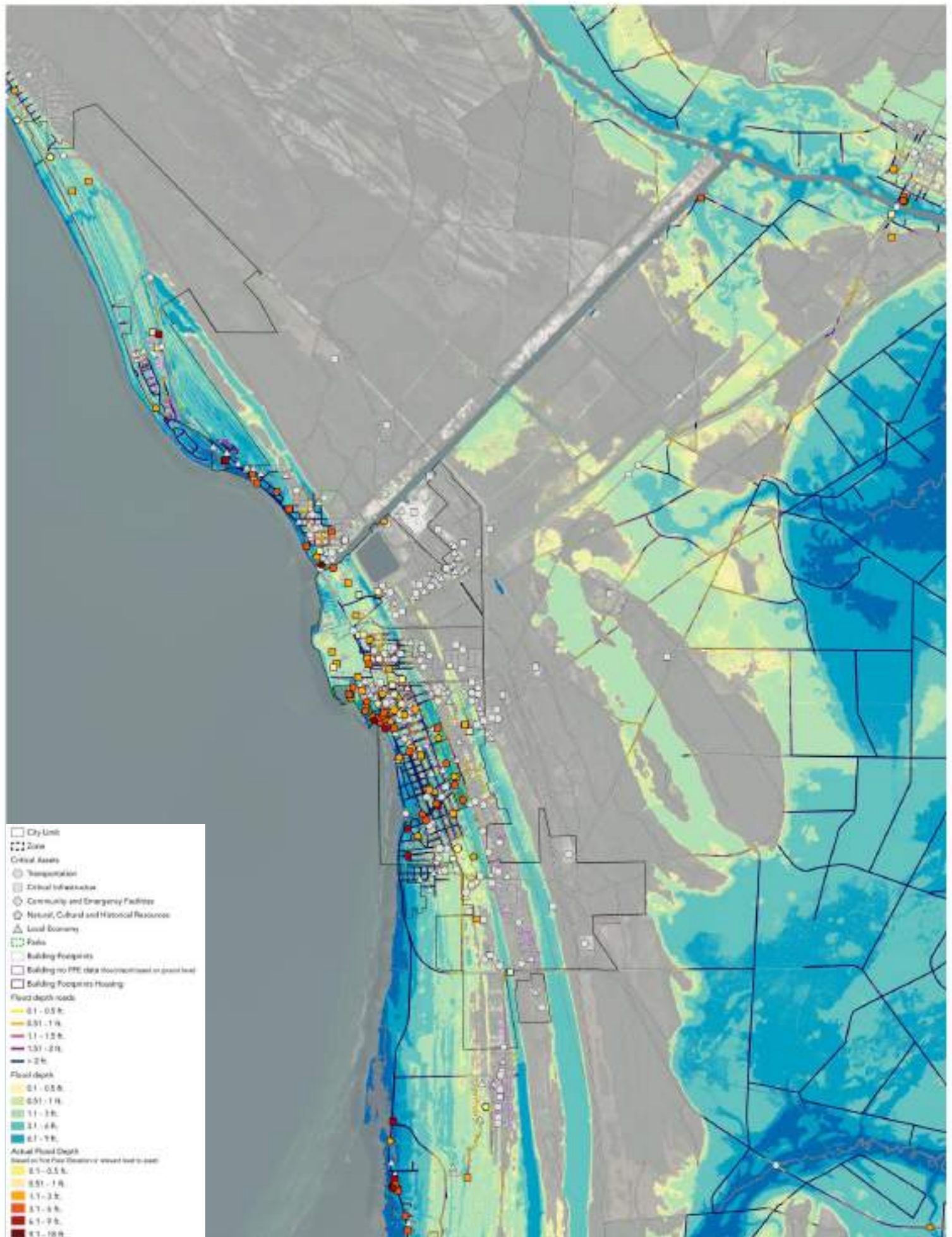
Influence Area Port St. Joe, Sea Level Rise Projection for 2040





Influence Area Port St. Joe, Sea Level Projection for Rise 2070





Influence Area Port St. Joe, SFHA, 100yr @2040



FOCUS AREAS

Our previous analysis identified several key areas where flood vulnerability is concentrated across different asset categories. To better visualize and understand the intersections of these vulnerabilities, we overlaid the results to create a comprehensive map. This compound map highlights the areas where vulnerabilities overlap for each infrastructure category.

From this mapping exercise, we have defined four specific focus areas that exhibit concentrated vulnerability issues requiring targeted interventions. An additional area is proposed due to its favorable conditions for future development.

Additionally, the map has been enriched with insights gathered from community outreach meetings. These discussions provided valuable local perspectives, further refining our understanding of the vulnerabilities and ensuring this synthesis accurately reflects on-the-ground realities.

The following image presents compound vulnerability located per zone and, subsequently a description of the focus areas:



Figure 14. Compound map, vulnerable areas per asset category.

Focus Area 1. Downtown has been identified as a critical vulnerability area across multiple asset categories, except housing. This region is particularly susceptible due to its array of recreational and cultural assets along the shoreline, which are vulnerable to all sources of flooding.

The area also includes vital transportation infrastructure, such as the marina and the boat ramp, which are central to recreational and economic activities in St. Joseph Bay.

Further exacerbating the vulnerability is the historic city core, especially the southwest section around Reid Avenue and Cecil G. Costin Sr. Boulevard. This part of downtown is at a lower elevation compared to other areas, making it particularly prone to flooding. The low-lying nature of this area requires targeted flood management strategies to preserve its cultural identity and functionality after exceptional flood events.

Focus Area 2. North Port St. Joe is a high-elevation area overall. However, housing assets are highly vulnerable in the surrounding area of Battles St. Due to the landfill of Chicken House Creek, this area presents chronic conditions of subsidence, drainage, and water retention.

Focus Area 3. The Central Channel is vital for stormwater management in the surrounding neighborhoods, providing essential drainage and hosting various recreational amenities, including a bike path that links various local areas and educational facilities in the south.

However, the channel's functionality is compromised by its retention capacity, which, in part, is partially influenced by the covered section at the Baseball Fields. This obstruction reduces drainage and retention capabilities, particularly during extreme flood scenarios, thereby challenging the area's effectiveness of flood management.

Additionally, critical infrastructure and numerous residences along both the east and west sides of the channel are highly susceptible to flooding during severe weather events and often contend with stagnant water during regular storms. Finally, several bridges spanning the channel are critical for connecting to Garrison Ave and accessing evacuation routes during emergencies.

Focus Area 4. West Port St. Joe is characterized by its low-lying terrain, which encompasses a substantial residential zone and several critical infrastructure assets supporting local housing. The area also includes major northwest transportation routes, specifically Constitution Drive and Long Avenue.

Most of West Port St. Joe is highly vulnerable to significant flooding, particularly from weather events like a category 2 hurricane. While not considered extreme, these scenarios pose a considerable risk due to the area's low elevation and the essential nature of its infrastructure and transportation links.

Focus Area 5. East Port St. Joe is an area with relatively low vulnerability to extraordinary flood events. Thanks to its favorable elevation, robust infrastructure, and good accessibility, this region holds the potential for future resilient development. This combination of factors makes East Port St. Joe a focus area for strategic planning, aiming to enhance its capacity to withstand future growth of Port St. Joe.