

Phase 1 & 2

Elizabeth City Resilience Strategy

June 28, 2024



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This project would not be possible without the contributions of many dedicated individuals committed to a more resilient future for Elizabeth City. The time, input, and expertise of the following people were integral to the development of an implementable Resilient Strategy.



Community Action Team (CAT)

Javis Gibbs, City Councilor, Second Ward
 Kelly Hoeltzel, Albemarle Regional Council of Government, Regional Project Development Specialist
 Dr. Kevin Kupietz, ECSU Chair and Assistant Professor, Emergency Management
 Michelle Moore, River City Community Development Corporation
 Joseph Peel, City Councilor, First Ward
 Holly White, NC Office of Recovery and Resiliency (NCORR)



Elizabeth City

Dwan Bell, Public Utilities Director
 Randy Lassiter, Public Works Project Manager
 Jonathan Hawley, Grants Administrator



NC DEQ Division of Coastal Management

Tancred Miller, Director
 Mackenzie Todd, Coastal Resilience Specialist
 Kasen Wally, Coastal Resilience Specialist



Weston & Sampson

Chip Hutchens, Principal
 Bella Purdy Tisel, Project Manager and Resilience Planning Lead
 Jeannie Lewis, Technical Lead
 Adria Boynton, Graphic Designer and Communications Lead
 Anna Kimelblatt, Engagement Specialist
 Eliza Jobin-Davis, Climate Resilience Engineer
 Erin Herock, Resilience Planner



Berkley Group

Michael Zehner, Director of Planning and Community Development
 Kate Jones, Principal Planner
 Luke Peters, Environmental Planner

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1 Introduction

1.1 Overview

The North Carolina Resilient Coastal Communities Program (RCCP) is a state-local partnership designed to help overcome barriers in coastal resilience and adaptation planning, boost local government capacity, and support a proactive, sustainable, and equitable approach to coastal resilience planning and project implementation. The RCCP is managed by the Division of Coastal Management and receives funding from the North Carolina General Assembly and National Fish and Wildlife Foundation Coastal Resilience Fund. All counties and municipalities within the CAMA jurisdiction, those subject of the Coastal Area Management Act, are eligible to apply for the RCCP.

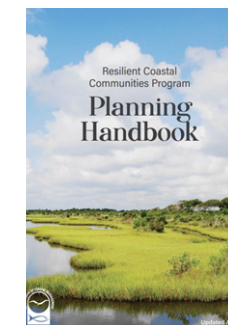
There are four phases of the NC RCCP:

- Phase 1: Community Engagement & Risk/Vulnerability Assessment
- Phase 2: Planning, Project Identification, & Prioritization
- Phase 3: Engineering & Design
- Phase 4: Project Implementation

Phases 1 and 2

This report includes the components required for Phases 1 and 2 of this program for Elizabeth City. The objective of these two phases is to perform a risk and vulnerability assessment and develop a portfolio of solutions to address these climate and flood vulnerability. Once communities complete Phases 1 and 2 for RCCP they are eligible to apply for additional funding via Phase 3 and Phase 4.

About the RCCP Planning Handbook



The RCCP is a step-wise process with a prescriptive handbook. The purpose of the handbook is to guide contractors and local governments in completing Phases 1 and 2 of the RCCP. Within the handbook are existing data, tools, and resources.

Elizabeth City is committed to making the city more resilient to storm and flood events to better protect critical and natural infrastructure, facilities, and public amenities. In addition, the City would like to help residents and property owners better prepare for such events. Therefore, the City pursued funding to participate in the RCCP to plan for a safer future in which development is adapted to climate impacts and supports better stormwater management, a future where parks also help mitigate flooding and where residents are connected to one another and to resources that enhance their overall resilience.

2 Community Action Team

2.1 CAT Selection Process

Selecting and working with the Community Action Team (CAT) is a key component of the RCCP. The CAT is a multi-disciplinary committee that contains members of the community with expertise and knowledge of the city. This committee met several times throughout the year to help guide the development of the resilience strategy. Specifically, the CAT assisted the City in engaging community members, provided input on the risk and vulnerability assessment including which critical assets were included, identified strategies and actions, and reviewed deliverables. A total of three meetings were held with the CAT. Meeting materials for these meetings with the CAT are provided in the Appendix A of this report. City staff recommended the initial roster of CAT members. During the first CAT meeting, the City asked members to recommend additional participants to expand representation and perspectives in the group.

The CAT for this project involved members involved in the local government, emergency management, quality of life and housing, and resiliency. The CAT Champion was Jon Hawley, the Grants Administrator for Elizabeth City. This list of members and their affiliation is provided in Table 1.

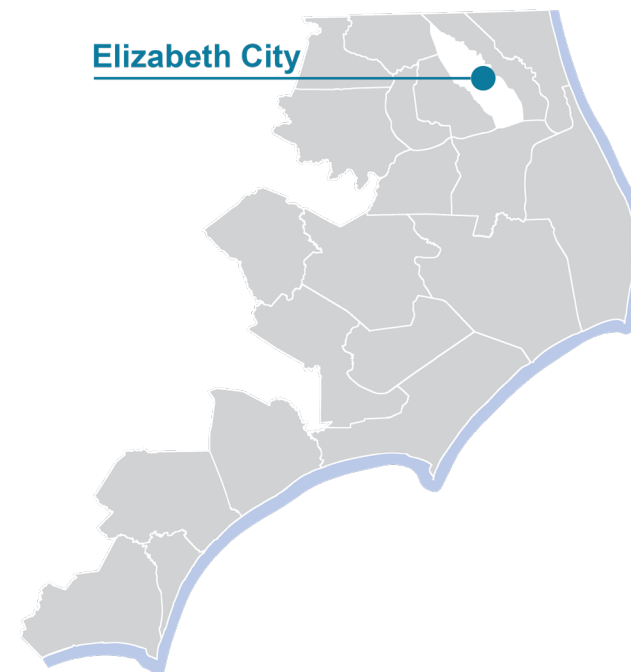
Table 1. CAT Member List

Name	Affiliation	Contact
Holly White	NC Office of Recovery and Resiliency (NCORR)	holly.b.white@ncdps.gov
Michelle Moore	River City Community Development Corporation	mwmooore@rivercitycdc.org
Kelly Hoeltzel	Albemarle Regional Council of Government, Regional Project Development Specialist	khoeltzel@accog.org
Joseph Peel	City Councilor, First Ward	jpeel@elizabethcitync.gov
Javis Gibbs	City Councilor, Second Ward	jjgibbs@elizabethcitync.gov
Brian Parnell	Pasquotank-Camden Emergency Management	parnellb@co.pasquotank.nc.us
Dr. Kevin Kupietz	ECSU Chair and Assistant Professor, Emergency Management	kdkupietz@ecs.edu

1.2 Community Description

Elizabeth City occupies a 11.71 square mile area, situated in the far northeastern corner of North Carolina on the Pasquotank River and Intracoastal Waterway. Elizabeth City is the county seat for Pasquotank County. The City also has a small portion of its extents within Camden County. Pasquotank and Camden County are both within the Albemarle region. A distinctive part of this region is the Albemarle Sound, a large estuary at the confluence of a group of rivers. Just north of the City is the Great Dismal Swamp Canal, the oldest human-made waterway in the region. As of the 2023 ACS Census, Elizabeth City had a population of 18,948.¹

The City has nationally-recognized waterfront with its early history of being a major seaport. In addition, the City prides itself with three institutions of higher education.² Elizabeth City has a rich Black influence and history. As the City grew in population after its incorporation in 1793, this included a large number of free African American people.³ The City is home to Albemarle's only historically Black university, Elizabeth City State University, founded in 1891.⁴ Today almost half of the population of Elizabeth City is Black or African American (according to the 2023 ACS Census).



Elizabeth City is primarily located within Pasquotank County, one of the 20 counties that fall under the CAMA jurisdiction.

¹ QuickFacts: Elizabeth City city, North Carolina. (n.d.) U.S. Census Bureau. Accessed June 13, 2024 from <https://www.census.gov/quickfacts/fact/table/elizabethcitycitynorthcarolina/PST045223>.

² A little history... (n.d.). City of Elizabeth City. Accessed June 13, 2024 from <https://elizabethcitync.gov/?SEC=21829223-17D8-4A10-B16D-94A2D936E140>.

³ Medlin, E. (January 2024). Elizabeth City history traces back to early Colonial days. CoastalReview.org. Accessed June 13, 2024 from <https://coastalreview.org/2024/01/elizabeth-city-history-history-back-to-early-colonial-days/>.

⁴ Catachatoorian, L. (October 2020). Celebrating Elizabeth City's rich Black history. WRAL News. Accessed June 13, 2024 from <https://www.wral.com/story/celebrating-elizabeth-citys-rich-black-history/19317574/>.



3 Vision and Goals

3.1 Review of Existing Vision and Goal Statements

One of the initial steps in the RCCP Planning Handbook is to review and inventory existing plans, ordinances, policies, and programs to identify common vision and goal statements. This exercise is intended to help frame the vision and goal setting process for the Resilience Strategy by creating statements complimentary to related planning efforts. Table 2 includes a compilation of vision or goal statements related to climate resiliency, stormwater management, flood mitigation, storm preparedness, or other similar topics.

Table 2. Review of Existing Vision and Goal Statements

Scale	Title of Plan	Relevant Vision or Goal Statements
City	City of Elizabeth City Waterfront Master Plan 2018	Preserve a verdant, resilient shore that expands and connects natural landscape areas and habitat zones, providing new and strengthened greenways and blue ways, more tourists, cleaner water, better fishing, more jobs, among other advantages, demonstrating a renewed Elizabeth City.
County	Pasquotank County Land Use Plan 2023	<ul style="list-style-type: none"> Enhance and restore natural areas that protect against natural and coastal hazards. Maintain and enhance the water quality of coastal and inland waters and associated natural areas. Direct development away from sensitive environmental areas and future flood prone areas, and toward areas with sustainable infrastructure. Preserve the quiet, rural, agricultural character and respect farming and other rural land uses. Begin planning for and adapting to climate change, including avoiding and becoming more resilient to disruptions from natural hazards. Provide adequate recreational opportunities for residents and visitors, including access to coastal waters with facilities that encourage ecotourism. Respect, embrace, and encourage a diversity of community participation. Pursue infrastructure improvements to meet the needs of the future population.

Scale	Title of Plan	Relevant Vision or Goal Statements
Regional	Albemarle Regional HMP 2015-2020	Goals in the Albemarle Regional HMP: 1. Reduce the risk of loss of life and personal injury from natural hazards. 2. Reduce the risk and impact of future natural disasters by regulating development in known high hazard areas. 3. Maintain critical facilities in functional order. 4. Protect infrastructure from damage. 5. Ensure that hazard mitigation is considered when redevelopment occurs after a natural disaster. 6. Provide education to citizens that empowers them to protect themselves and their families from natural hazards. 7. Fulfill Federal and State requirements for receipt of future disaster recovery and hazard mitigation assistance. 8. Improve interjurisdictional cooperation and coordination, especially regarding the reduction of natural hazard impacts.
State	North Carolina Climate Risk Assessment and Resilience Plan 2020	Guiding Principles of North Carolina Resilience Plan: 1. Act quickly and decisively to reduce the most harmful impacts of climate change – flooding, drought, landslides, and wildfires. 2. Act thoughtfully and collaboratively to develop equitable solutions for the most socially challenging effects of climate change. 3. Invest in safe, affordable, and connected communities. 4. Strengthen regional economies. 5. Support healthy communities, local identity, and recreational access to nature. 6. Implement resilience best practices.

3.2 Selecting Vision and Goal Statements

Vision and Goal Statements were developed for this Resilience Strategy with input from the Community Action Team (CAT).



Vision Statements:

“The vision is an aspirational statement for where the community wants to be in the future (e.g., in the next 10 or more years), particularly in relation to coastal hazards” (RCCP Planning Handbook).



Goal Statements:

“Specific, measurable goals will help the community identify steps that can be taken to achieve the vision. Resilience goals can relate to preparedness, recovery, community engagement, construction, restoration, etc” (RCCP Planning Handbook).

The City gathered input from the CAT on vision and goal statements for the Resilience Strategy. During the first CAT meeting, example vision statements and tips were provided during a presentation with an opportunity to use the online polling platform, Slido, to provide answers. A google form survey was also provided during the meeting for the CAT to fill out after the meeting to provide any additional input. This survey was also open to the public.

3.3 Vision Statements

I envision Elizabeth City as a place...

- ✦ **I envision Elizabeth City as a place** where all people are safe from disasters and can live with a high quality of life.
- ✦ **I envision Elizabeth City as a place** where city assets are celebrated, neglected areas of the city are prioritized, unheard voices are heard, and resilience is practiced as a community.
- ✦ **I envision Elizabeth City as a place** that grows and prospers equitably and where no one suffers lasting harms from climate change and natural disasters.

In the future, our community will be...

- ✦ **In the future, our community will be** a leader in resiliency, serving as a model for other communities.
- ✦ **In the future, our community will be** a place where flooding occurs less often because of the steps we have taken to mitigate hazards, where we invest in infrastructure, and where the public is educated and engaged with issues and collaborative solutions. The community is a place where celebration and education go hand in hand and a sense of community is strengthened.
- ✦ **In the future, our community will be** equitably redeveloped, so both new and established communities thrive in harmony with our changing climate and riverfront.

To reduce the impacts of climate hazards...

- ✦ **To reduce the impacts of climate hazards**, the City will engage the public to find the most efficient ways to promote resiliency.
- ✦ **To reduce the impacts of climate hazards**, the City will encourage higher building standards, invest in wetlands and riparian areas, work to have storm plans in place before the emergency occurs, join the CRS program, have a yearly environmental river fest, and work with unheard voices to find out where the highest risks are.
- ✦ **To reduce the impacts of climate hazards**, the City will strive to eliminate repetitive flooding through new, robust infrastructure; explore very limited, strategic property buyouts and conversion to natural areas; and, through policy and advocacy, encourage more resilient standards for all construction.

3.4 Goal Statements

Top (2) Goals:

1. Adapt city infrastructure such as storm drains, roads, or utility lines to enhance their capacity, or reduce damage during storm events.
2. Prepare our communities through programs, events, and spreading information.

Other Goals:

3. Protect, maintain, or enhance the natural environment.
4. Create resources to make buildings more resilient to climate-related events.



4 Review of Existing Efforts

4.1 Selecting Existing Plans and Reports

The RCCP Planning Handbook suggests reviewing existing plans and reports to better understand ongoing and past planning efforts that could shape the Resilience Plan. The intention of this exercise was to document critical assets for the risk assessment, review past hazard assessments to understand data available, and document relevant actions related to climate resilience. Table 3 includes a brief description of each plan or report that was reviewed. The CAT was given an opportunity to expand this selection and recommended additional resources to fill in gaps.

Table 3. Existing Local and Regional Plans

Scale	Title of Plan	Summary
Regional	Albemarle-Pamlico Comprehensive Conservation and Management Plan (CCMP) 2012-2022	The Pasquotank River Basin is a part of the Albemarle-Pamlico Estuarine System. The Albemarle-Pamlico National Estuary Partnership (APNEP) implemented the plan at the watershed scale to protect and restore the estuarine system. The CCMP presents an adaptive management cycle to identify gaps in knowledge, protect the existing ecosystem, restore the ecosystem, engage the public, and monitor the ecosystem. Some of the proposed objectives and actions related to improving hydrology and ecosystem health are restoring riparian buffer systems, utilizing living shorelines, removing in-stream barriers for fish, and restoring oyster habitats.
	DRAFT Pasquotank River Basin Water Resources Plan 2021	The draft basin plan is the fourth document developed by the DEQ for the Pasquotank River basin that addresses water quality and quantity issues within the basin. The basin plan provides information at the watershed scale, stream assessments, and special studies. Information is also provided on permitted and registered activities, water quality initiative options, and a summary of water usage in the basin.
	Albemarle Regional Hazard Mitigation Plan 2020-2025	The HMP was prepared by members of the Hazard Mitigation Planning Committee (HMPC) to meet federal requirements to reduce losses generated by natural disasters. Pasquotank County has its own community profile, risk assessment, and capability assessment. The risk assessment included an overall number of at-risk critical infrastructure and resources and high potential loss properties.

Scale	Title of Plan	Summary
Pasquotank County	Pasquotank County, North Carolina Stormwater Design Manual 2009	The storm water drainage manual provides guidance to design professionals in the development of residential, commercial, and industrial projects in the county. The contents of this manual include management plan and drainage study requirements, best management practice design criteria, floodplain and floodway management, stormwater management permitting, lot grading, and maintenance of stormwater improvements, and appendices with relevant procedures, checklists, and floodplain maps.
	Pasquotank County Land Use Plan – Coastal Area Management Act (CAMA) 2023	The land use plan guides the growth, development, and natural resources conservation for the county. Through public engagement, a shared community vision and eleven key goals are presented. The top priorities from a public survey involve flooding, drainage, and stormwater. The plan provides recent demographic, economic, housing, and development information. The natural systems chapter highlights several Natural Systems Areas of Environmental Concern (AECs), water quality, existing land use, natural hazards, and community facilities. The future land use chapter highlights character, focal/enhancement, and natural hazard areas.
	DRAFT Hurricane Matthew Resilient Redevelopment Plan – Pasquotank County 2017	The redevelopment plan provides a rebuilding and revitalization strategy for communities impacted by Hurricane Matthew in 2016. As a part of the assessment for this plan, at-risk housing developments, infrastructure, road/bridge flooding areas, and environmental impacts were identified. A section on resilience and revitalization strategies for housing, economic development, infrastructure, and environment provided a list of priority actions based on public engagement. The results include high priority strategies such as acquisitions, building elevations, and drainage improvements.
	Pasquotank Comprehensive Transportation Plan 2016	The Comprehensive Transportation Plan provides analysis and recommendations regarding the existing and future transportation system of Pasquotank County.

Scale	Title of Plan	Summary
Pasquotank County/ Elizabeth City	Pasquotank County/ Elizabeth City Advanced Core Land Use (CAMA) Plan 2004	The CAMA land use plan provides a framework to guide local governmental officials on decisions that affect land development. The content of this plan included identifying and analyzing significant existing and emerging conditions, key planning issues, and planning for the future of land use and development goals.
	Pasquotank County/ Elizabeth City CAMA Advanced Core Land Use Plan Status Report 2022	The status report provides updates on specific strategies proposed in the 2004 Advanced Core Land Use Plan.
Elizabeth City	Tiber Creek Drainage Basin Stormwater Master Plan 2019	Through a watershed assessment, public outreach and involvement, and hydrologic and hydraulic analyses, the stormwater master plan provides flood-improvement capital projects to reduce the flooding in priority areas of The City. Some of the identified project opportunities include upgraded a pump station, pipe system upgrades, and better controlling stormwater through constructed wetlands and rain garden.
	City of Elizabeth City Waterfront Master Plan 2018	The waterfront master plan looks to improve the parcels adjacent to the waterfront in the city. The plan looks at the history of the city and provides opportunities and visioning to improve four distinct districts of the existing waterfront. The plan proposes projects such as streetscape and infrastructure updates and conservation efforts for Machelhe Island.
	City of Elizabeth City Charles Creek Flood Mitigation Plan 2018	The flood mitigation plan for the Charles Creek watershed aimed to mitigate flooding and increase flooding resiliency for City of Elizabeth City. This plan contains the existing watershed conditions, hydrologic/hydraulic modeling of existing conditions, and flood mitigation options to improve resilience. Proposed flood mitigation options included multifunction protective berms, green infrastructure, elevating, relocation, or buying out structures, and stormwater and floodplain ordinance revisions.

Scale	Title of Plan	Summary
Elizabeth City	Elizabeth City Unified Development Ordinance 1999	The purpose of the Unified Development Ordinance (UDO) is to “promote the health, safety and general welfare of the residents of the City of Elizabeth City through the regulation of zoning, subdivisions and land use.” This language includes flood hazard area designations, flood hazard overlay districts, and additional stormwater management requirements.
	Elizabeth City Economic Development Strategic Plan 2019	The Economic Development Strategic Plan sponsored by ElectriCities of N.C., Inc. guides the City on strategic investments they can make to support their economy. This plan outlines strategies to attract and grow jobs.

4.2 Identified Gaps

From the review of existing local and regional plans, gaps in the types of reports available were identified. Gaps in plans were identified as the following:

- Capital Improvement Plans
- Asset Management Plans
- Emergency Operations Plan
- Resiliency Plan

The gaps identified in this process were considered when selecting the CAT and conducting the risk and vulnerability analysis. The Pasquotank-Camden Emergency Operations plan is expected to be released in 2024 and will address some of the gaps around emergency management. Brian Parnell of the Pasquotank-Camden Emergency Management Department was included on the CAT and provided input related to this document. Although flood mitigation and water management issues were addressed in some of the existing plans, there was little information regarding resiliency focused efforts made within Pasquotank County. Resiliency is considered in the risk and vulnerability assessment stage of this project. Strategies that related to resiliency are addressed in the project portfolio.

5 Community Engagement Strategy

5.1 Engagement Approach

Engagement with community members, including residents and stakeholders, is an integral element of the RCCP planning process. The Planning Handbook recommends developing an engagement plan that considers a variety of stakeholders and methods to gather meaningful feedback successfully and inclusively. The Planning Handbook emphasizes elevating the voices of historically underrepresented communities, environmental justice populations, and socially vulnerable residents.

5.2 Strategies and Methods of Outreach

Elizabeth City understands that many residents experience planning related fatigue, and developed an engagement approach that would reduce barriers to participation by using both in-person and virtual events.

The City issued an online survey to gain feedback on the Vision and Goal setting and hosted an interactive open house to gather input on the vulnerability assessment and action development.



Community engagement event held at the ECPC Senior Center to gather input for action development.



The City also deployed “equitable engagement modifiers” to expand the reach of engagement. These modifiers included having activities for children such as climate-related colorings sheets and stickers, providing food and beverages at events, and hosting an “open house” so that residents could drop in at their convenience, rather than having a set start time. The City also chose to host its event at a location convenient to many residents, the Elizabeth City/Pasquotank County Senior Center, in downtown Elizabeth City.

Equitable Community Engagement

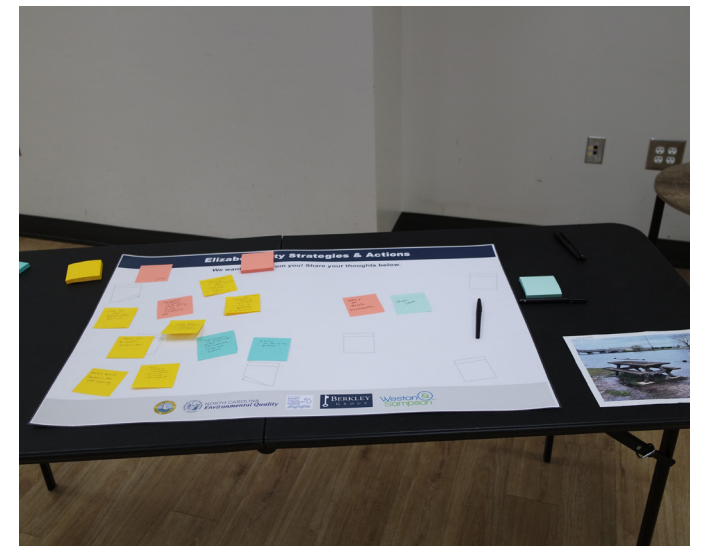
Equitable community engagement requires inclusivity and accessibility for all community members. Methods for equitable engagement include compensating community members for participation, providing food or childcare at engagement events, using accessible language to convey technical information, using standards for accessibility for online and print content, conducting engagement at pre-existing events, and using community liaisons to build trust and bridge gaps.

5.3 Community Involvement Results

During the open house event, on May 16, 2024, the City gathered feedback on the following:

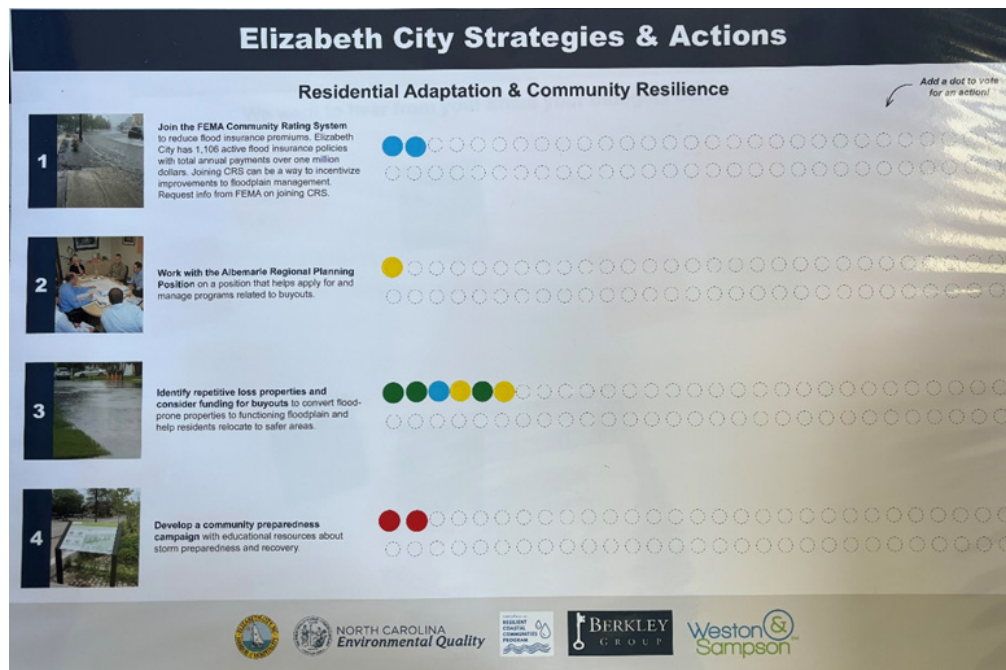
- Areas of frequent flooding
- The vulnerability assessment results
- Resident and stakeholder priorities for action development
- Resident and stakeholder ideas for new actions

The open house was set up in a series of stations where participants could talk with a city staff member, a resilience planner from Weston & Sampson, or a CAT member. Comment cards were used to collect feedback on frequently flooded areas; a dot-voting exercise was used to prioritize actions that were developed by the City, Weston & Sampson, and the CAT, and a free-form sticky-notes poster was used for all other ideas or concerns, including new actions.



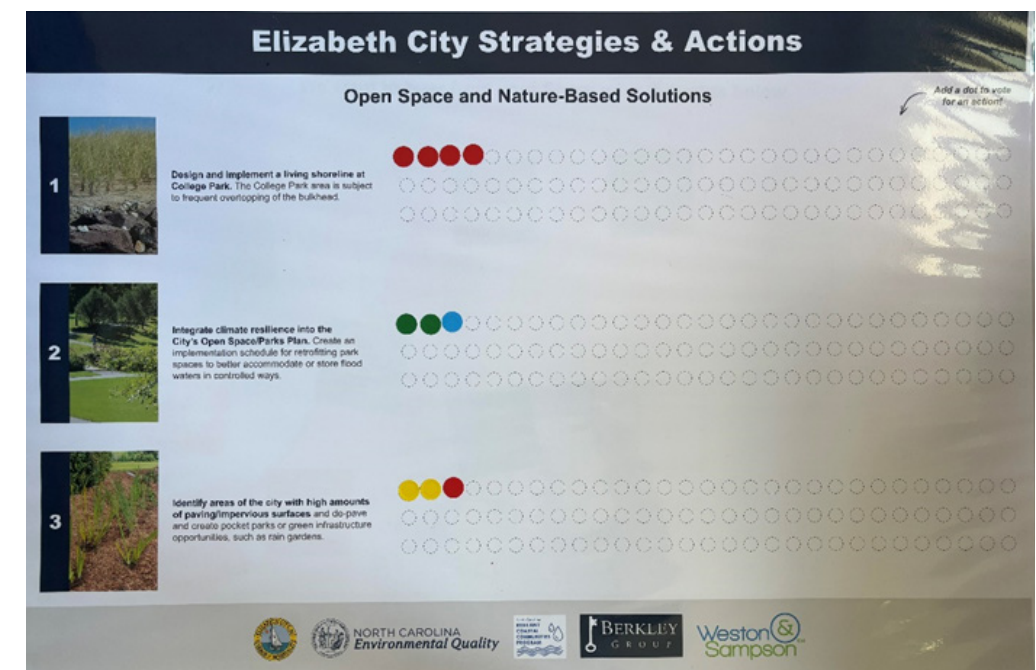
Community members shared personal stories and actively engaged with posters.

Overview board detailing the NC RCCP and vulnerability assessment results that was displayed during the May open house.



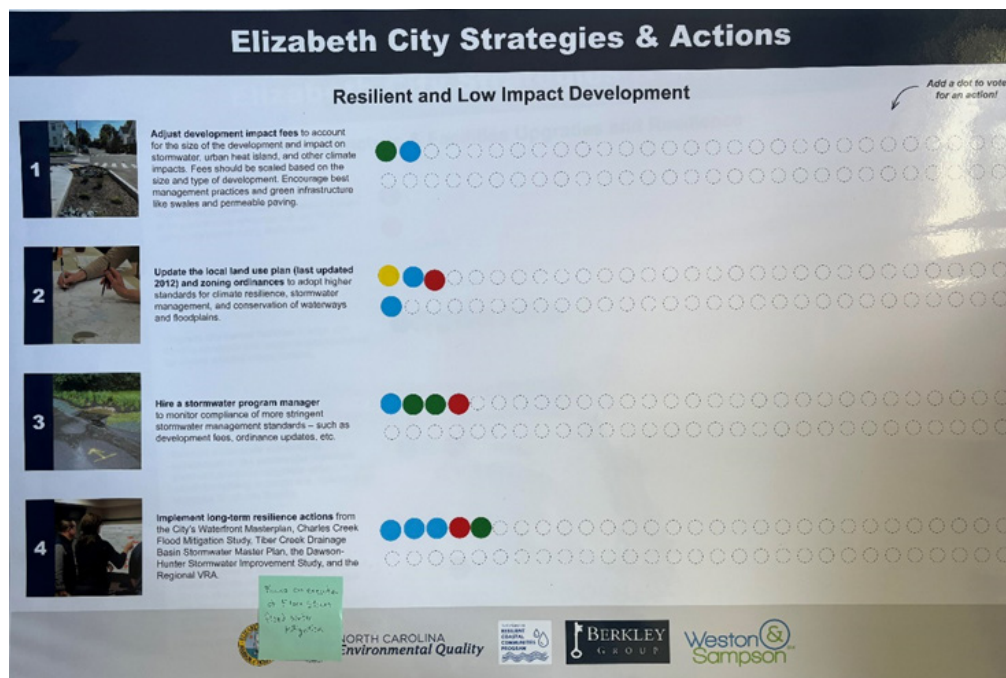
Residential Adaptation Actions

Highest ranked action: Identify repetitive loss properties and consider funding for buyouts to convert flood-prone properties to functioning floodplain and help residents relocate to safer areas.



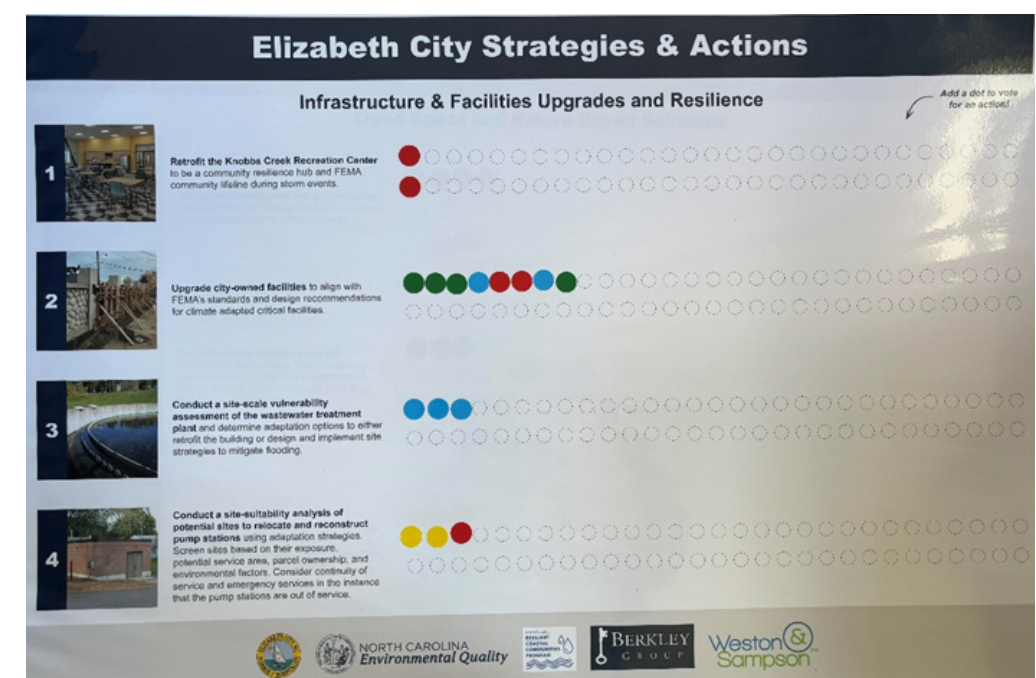
Open Space and Nature-Based Solutions Actions

Highest ranked action: Design and implement a living shoreline at College Park. The College Park area is subject to frequent overtopping of the bulkhead.



Resilient and Low-Impact Development

Highest ranked action: Implement long-term resilience actions from the City's Waterfront Masterplan, Charles Creek Flood Mitigation Study, Tiber Creek Drainage Basin Stormwater Master Plan, the Dawson-Hunter Stormwater Improvement Study, and the Regional VRA.



Infrastructure Actions

Highest ranked action: Upgrade city-owned facilities to align with FEMA's standards and design recommendations for climate adapted facilities.

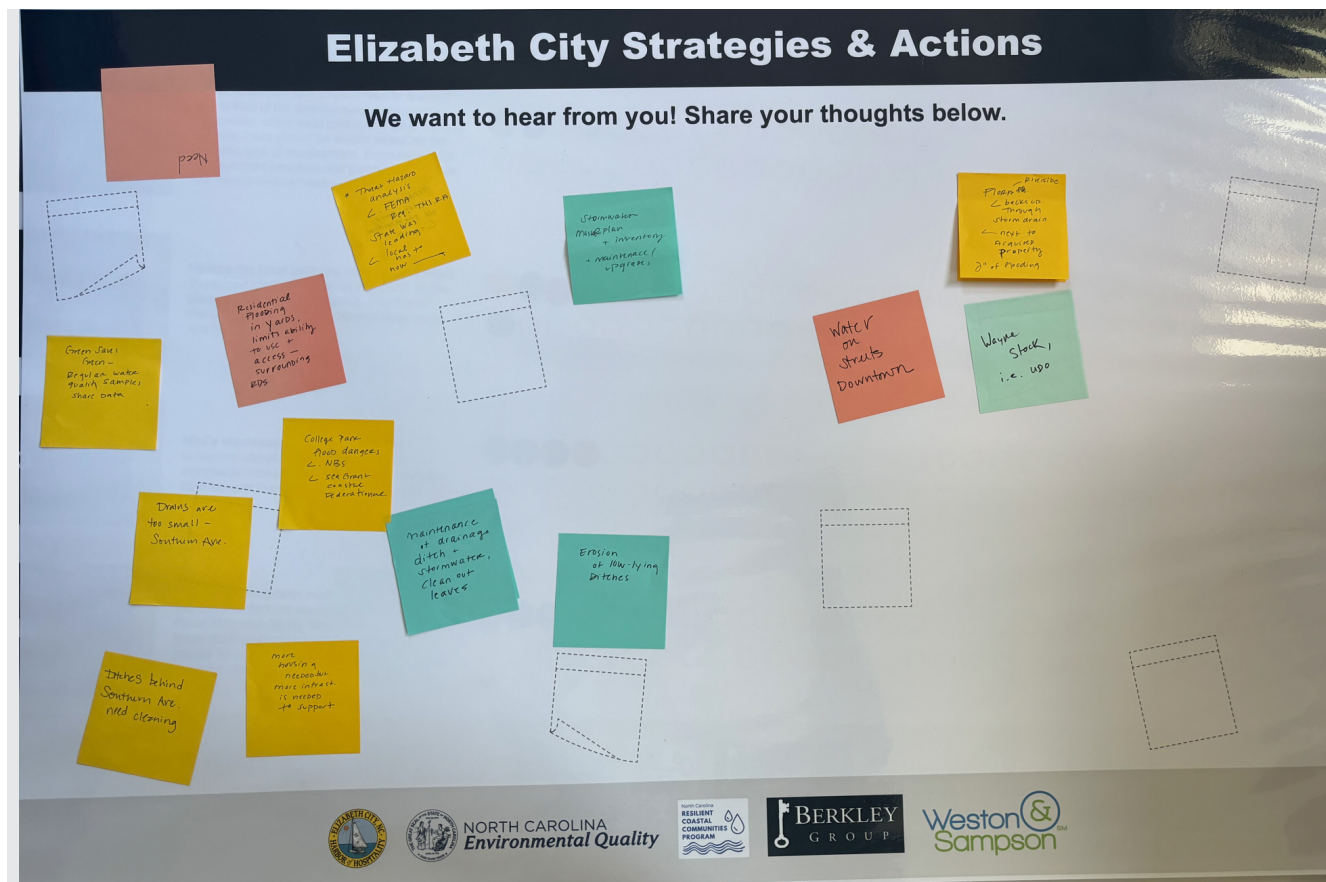
Additional Feedback

The following comments were received from participants at the open house.

- More housing supply and affordable housing is needed, in addition to the infrastructure to support it.
- Low-lying ditches are eroding and need maintenance.
- Complete a stormwater inventory and masterplan.
- Drainage ditches need to be cleaned out and debris removed.
- College Park creates dangerous conditions when flooded.
- Flooding in residential yards is an issue and makes the property unusable. Surrounding roads often flood.
- Stormwater drains on Southern Avenue are too small.
- Ditches behind Southern Avenue need to be cleaned.

Limitations

Although only six participants attended and was not as high as desired, most participants stayed for the duration of the open house and provided personal stories or accounts of flooding and storms. They actively engaged in the dot-voting exercise and had ideas for modifying actions or including new actions. Participants were eager to learn more about next steps, and how they could continue to be involved.



6 Risk and Vulnerability Assessment

6.1 Overview of the Risk and Vulnerability Assessment

The risk and vulnerability assessment utilizes critical asset data that was identified and sourced from the City of Elizabeth City Geographic Information System (GIS) Department and the Community Action Team (CAT) that was assembled as a part of this program. The risk and vulnerability assessment is a key component of Phase 1 of the RCCP and informed Phase 2, the project portfolio. The project portfolio includes potential projects that help mitigate the vulnerability of critical assets and help enhance the resilience of the City's systems.

6.2 Critical Assets

The critical assets and natural infrastructure assets used in this assessment were identified using the NC Resilient Coastal Communities Planning Handbook and provided by the City's GIS department. Critical assets mirror categories found in the in the 2020 Albemarle Regional Hazard Mitigation Plan. Data provided by the City's GIS department included relevant data included in the 2020 Albemarle Regional Hazard Mitigation Plan. For purposes of this assessment, critical assets and natural infrastructure assets were defined as places that serve as community lifelines. The synthesized list of assets (Table 4) is provided below. The complete list of assets can be found in Appendix B. The map of asset locations (Figure 1) can be found in Appendix C. As a result of this process, 247 critical assets were mapped and assessed. This list of assets was shared with the CAT during a workshop meeting in December of 2023 and adjustments were made to this list based on their feedback.

Table 4. Asset Types

Asset Type	Count of Assets
Infrastructure/ Utilities	110
Local Businesses/ Other	57
Government Facilities	43
Natural Resources	19
Medical	18

6.3 Social Vulnerability

Social vulnerability is a key component of understanding the City's overall vulnerability to climate impacts and natural hazards. Social vulnerability refers to social, economic, or physical characteristics of residents that may make them more susceptible to the impacts of climate change. For example, a resident who is lower income, would likely have less material or financial resources to recover from a natural disaster.

For this analysis, the CDC's Social Vulnerability Index (SVI) was used to access data concerning socially vulnerable populations. The CDC's SVI uses U.S. Census Data at the census tract level based on 15 social factors. These social factors are detailed in Table 5. A map of the socially vulnerable areas in reference to critical assets are provided in Appendix A of this document. For this analysis, the overall theme percentile scores were used as a criterion for sensitivity. A higher score (closer to 1) corresponds to a higher SVI, where a lower score (closer to 0) indicates a lower SVI.

Table 5. CDC Vulnerability Index

Theme	Factors
Socioeconomic Status	Below 150% Poverty
	Unemployed
	Housing cost burdened
	No high school diploma
Household Characteristics	No health insurance
	Aged 65 or older
	Age 17 or younger
	Civilian with a disability
	Single-parent household
Racial & Ethnic Minority Status	English language proficiency
Housing Type & Transportation	Hispanic or Latino, Black or African American, American Indian or Alaska Native, Native Hawaiian or Pacific Islander, Two or more races, Other races
	Multi-Unit Structures
	Mobile Homes
	Crowding
	No Vehicle
Group Quarters	

Elizabeth City has a high SVI score. Although social vulnerability varies across the county, higher social vulnerability is concentrated around Elizabeth City. Figure 2 in Appendix C provides a map of the vulnerability assessment scored critical assets overlaid on top of the SVI RPL Themes score.

6.4 Hazard Identification

To better understand potential climate hazards that the City faces, an existing conditions analysis was conducted in Phase 1. The existing conditions analysis identified relevant reports and assessments that identified potential hazards and resilience strategies for the City and the Albemarle region.

The climate hazards represented in this analysis were identified by the 2020 Albemarle Regional Hazard Mitigation Plan and are required by RCCP as a part of the vulnerability assessment.

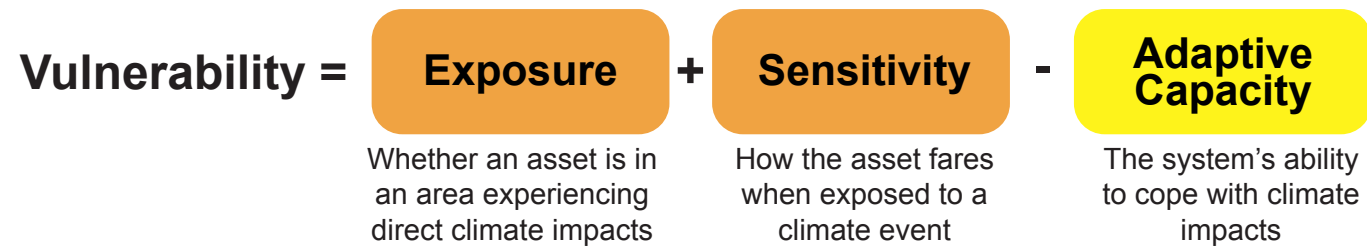
These hazards include historical flooding (includes precipitation), present-day coastal and riverine flooding, storm surge, and future sea level rise projections. The identified hazards were mapped using ArcGIS Pro as shown in the Appendix B of this document.

Table 6. Hazard Identification & Sources

Hazard	Dataset
Historical flooding	Elizabeth City Frequently Flooded Areas ⁵
Present-day tidal and riverine flooding	NC FRIS ⁶
Category 2 Storm Surge	National Storm Surge Hazard Maps ⁷
Future Sea Level Rise Projections	NOAA ⁸

6.5 Vulnerability Assessment

The vulnerability assessment quantified the vulnerability of critical assets and natural infrastructure (assets) against identified hazards. Vulnerability is determined by using the vulnerability equation as outlined by the RCCP Planning Handbook. The definitions used for this assessment reflect those provided in the *Vulnerability Assessment and Adaptation Framework, Third Edition*⁹ released by the Federal Highway Administration.



⁵ <https://data-ecity.opendata.arcgis.com/apps/5f8ab39f20d44d77b7cca85fa7897f9b/explore>

⁶ <https://fris.nc.gov/fris/Home.aspx?ST=NC>

⁷ <https://www.nhc.noaa.gov/nationalsurge/>

⁸ <https://coast.noaa.gov/slr/#/layer/slr>

⁹ https://www.fhwa.dot.gov/environment/sustainability/resilience/adaptation_framework/index.cfm

The scoring methodology used for this analysis is shown in Table 7 & 8.

Table 7. Indicator Descriptions for Vulnerability Components

Component	Indicator	Description
Exposure	Flood Risk Information System (FRIS) for NC (Present)	To determine historical/present-day exposure to flooding, the 1% and 0.2% layers were used. Exposure of, in, or out of these layers was based on the parcel polygon that the asset resided in. If the asset polygon was exposed, then the asset was marked as exposed.
	Category 2 Storm Surge	To determine the potential for flooding caused by hurricane storm surge exposure, the Category 2 event was selected. This selection was made based on Pasquotank County's hurricane history. The most severe hurricane to hit Pasquotank County was Category 2, in 2014. ¹⁰
	NOAA SLR Scenarios (Projected)	To determine the potential for future flooding caused by sea level rise (SLR), the 1, 2 & 3 ft NOAA projections for SLR were incorporated in this analysis. The planning horizon of up to 3 feet exceeds the minimum Step 6a requirements of 30 years of SLR. Using the local data extrapolated for Elizabeth City, the correlation is around 2070.
Sensitivity	SVI by Census Tract: RPL_Themes	To determine the social vulnerability component of sensitivity, RPL_Themes percentile scores were used as a criterion. A higher score (closer to 1) corresponds to a higher SVI or higher vulnerability, where a lower score (closer to 0) indicates a lower SVI or lower vulnerability. This is a CDC defined index. ¹¹
	Frequently Flooded Areas	To determine sensitivity of assets based on previous exposure, proximity to a frequently flooded area was used in this analysis. These areas were defined by a former Elizabeth City superintendent with 30+ years of experience. Assets within 1000 ft were considered more sensitive to future exposure.
Adaptive Capacity	Redundancy of Asset	To determine the ability of an asset to cope with exposure, redundancy was used. The determination of redundancy was based on the presence of multiple assets with the same asset type.

¹⁰ <https://coast.noaa.gov/hurricanes/#map=4/32/-80>

¹¹ <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>

Table 8. Indicator Scoring for Vulnerability Components

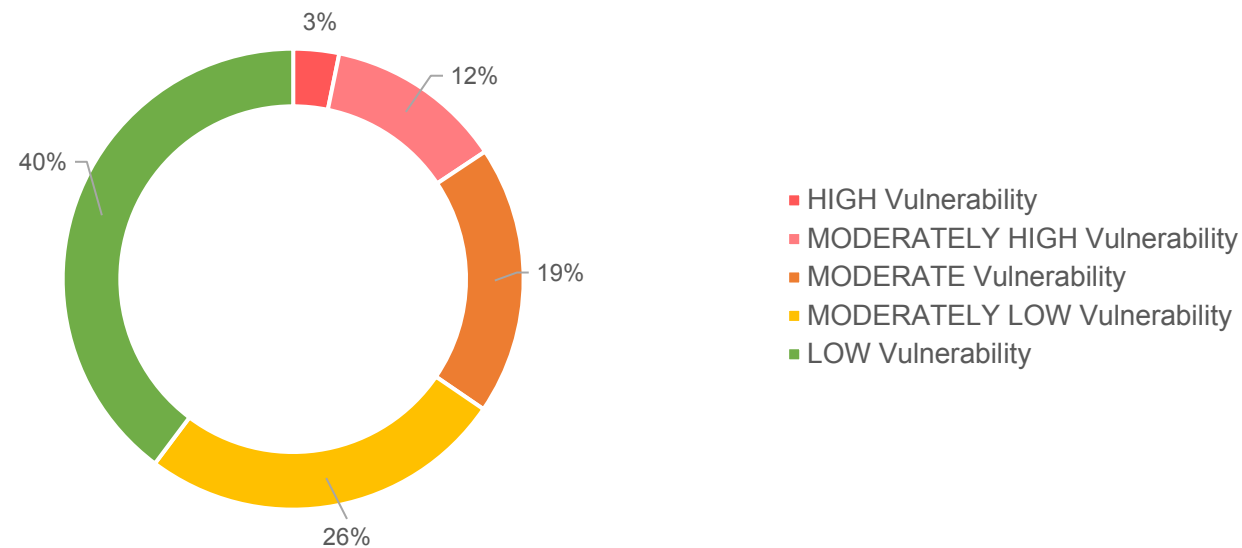
Component	Indicator	Scoring			
		0	1	2	3
Exposure	Flood Risk Information System (FRIS) for NC (Present)	Not Exposed		0.2% Exposure	1% Exposure
	Category 2 Storm Surge	Not Exposed		Exposed	
	NOAA SLR Scenarios (Projected)	Not Exposed	3 ft Exposure	2 ft Exposure	1 ft Exposure
Sensitivity	SVI by Census Tract: RPL_ Themes	<0.25	0.25 - 0.5	0.5 - 0.75	>0.75
	Frequently Flooded Areas	Not Within 1000 ft		Within 1000 ft	
Adaptive Capacity	Redundancy of Asset	No other assets	1 other asset		

Scoring for each of the three components was then scaled such that the final vulnerability scores ranged from 0 to 6. Final vulnerability scores were then classified into Low, Moderately Low, Moderate, Moderately High, and High Vulnerability.

6.6 Vulnerability Assessment Findings

The results of the vulnerability assessment yield the following distribution of vulnerability scores:

Vulnerability Score Results



The resultant vulnerability scores for all assets are in Table 10 in Appendix B and Map 3 in Appendix C. The resultant High and Moderately High Vulnerability assets are shown in Table 9 below and in Figure 4 in Appendix C.

Table 9. High & Moderately High Vulnerability Asset Results

Asset Name	Asset Type	Vulnerability Score
Knobbs Creek Recreation Center	Parks and Rec	HIGH
Waste Water Treatment Plant	Public Works	HIGH
Knobbs Creek Park	Public Park	HIGH
Waterfront Park	Public Park	HIGH
College Park (renamed from Dog Corner Park)	Public Park	HIGH
Fish Courts	Public Park	HIGH
Mariners' Wharf Park	Public Park	HIGH
Charles Creek Park	Public Park	HIGH
Grice St	Sewer Pump Station	MODERATELY HIGH
Providence Rd	Sewer Pump Station	MODERATELY HIGH
Main Pump Station	Sewer Pump Station	MODERATELY HIGH
Dawson St	Sewer Pump Station	MODERATELY HIGH
Private: Universal Forest Products	Sewer Pump Station	MODERATELY HIGH
Parks and Rec	Sewer Pump Station	MODERATELY HIGH
Crab plant	Sewer Pump Station	MODERATELY HIGH
Charles St	Sewer Pump Station	MODERATELY HIGH
Cale St	Sewer Pump Station	MODERATELY HIGH
Church St	Storm Water Pump Station	MODERATELY HIGH
MLK	Storm Water Pump Station	MODERATELY HIGH
Albemarle Hospital Cardio-Pulmonary Rehabilitation (Sentara Albemarle Medical Center)	Cardiac Rehabilitation	MODERATELY HIGH
Elizabeth City Regional Airport	Airport	MODERATELY HIGH
MACU	College	MODERATELY HIGH
Albemarle Hospital (Sentara Albemarle Medical Center)	Hospital	MODERATELY HIGH
National Guard Armory	Military	MODERATELY HIGH
Elizabeth City Post Office	Post Office	MODERATELY HIGH
Public Works Building	Public Works, Garage	MODERATELY HIGH
Police Department Sub Station	Police Department	MODERATELY HIGH
Elizabeth Street Tennis Court	Tennis Court	MODERATELY HIGH

Asset Name	Asset Type	Vulnerability Score
Elizabeth Street Tennis Court	Tennis Court	MODERATELY HIGH
Moth Boat Park	Public Court	MODERATELY HIGH
Pool Street Park	Fountain	MODERATELY HIGH
Gosnold Park	Public Park	MODERATELY HIGH
Veteran's Park	Public Park	MODERATELY HIGH
Mead's Pool	Swimming Pool	MODERATELY HIGH
Todds Pharmacy, Inc	Pharmacy	MODERATELY HIGH
First Christian Church	Church	MODERATELY HIGH
Mount Lebanon AME Zion Church	Church	MODERATELY HIGH
Christ Episocopal Church	Church	MODERATELY HIGH

Additional hazard maps for flood hazards, sea-level rise, and Category 2 hurricane inundation with the scoring for all critical assets are found in Appendix C, Figures 5 – 7.

6.7 Risk Assessment

Risk estimation is a critical component to using vulnerability assessment results and making informed decisions about asset management and project prioritization. For this assessment, parcel value data was used to represent the risk associated with each asset.

Methodology

After assigning vulnerability scores to each of the critical assets, the financial risk was calculated using the North Carolina Parcel dataset. The total parcel value includes the appraised value for land (LANDVAL) and appraised value for improvements (IMPROVAL). The parcel data selected for this assessment represents the most up-to-date attribute information for North Carolina. This dataset was used to represent the value of the land, in addition to the value of the built improvement. Building assessors data was not selected due to the lack of approximated values for natural land parcel areas.

Results

The results of this analysis yielded the grouped asset values, shown in Table 10.



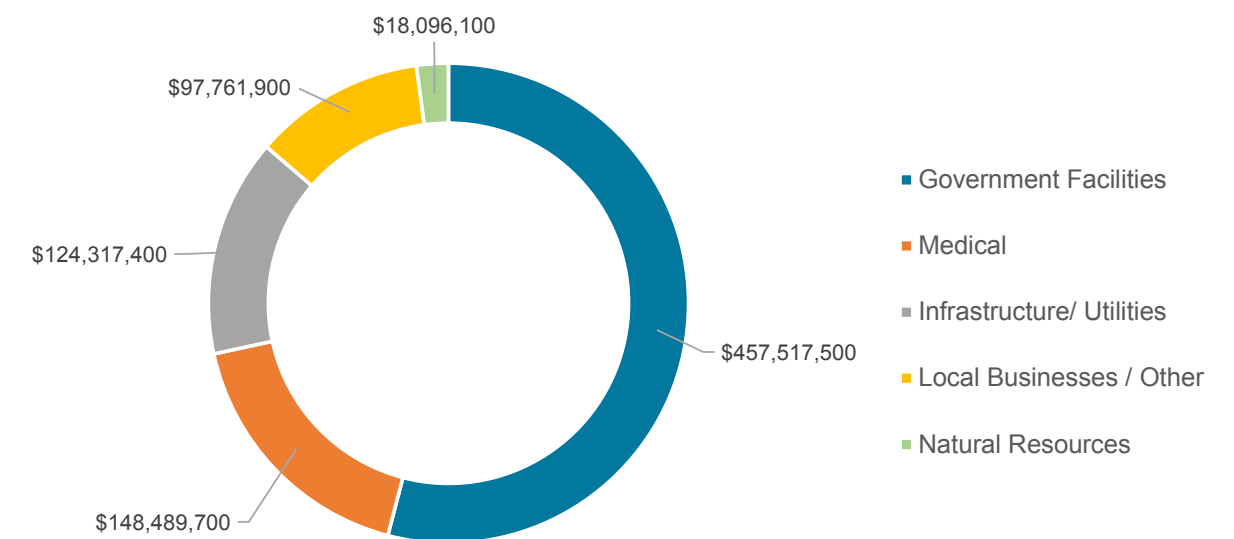
The Sentara Albemarle Medical Center has a moderately high vulnerability and high risk score.

Table 10. Grouped Risk Estimates by Sector

Sector	Number of Critical Assets at Risk	Asset Value
Government Facilities	43	\$457,517,500
Medical	18	\$148,489,700
Infrastructure/ Utilities	110	\$124,317,400
Local Businesses/ Other	57	\$97,761,900
Natural Resources	19	\$18,096,100

The sector with the highest value at risk was *Government Facilities*. This sector included facilities such as government offices, city hall, schools, and fire stations. Some of the highest scoring values were the waste water treatment plant, Elizabeth City Regional Airport, and Elizabeth City State University. The *Medical* sector had the second highest value of assets at risk. This sector included the Albemarle Hospital and pharmacies.

Risk Assessment Results



Limitations

The value of these assets can change over time since they are based on an appraised value for land and improvements. Financial data associated with parcels does not represent the value of each type of asset rather represents the value of the land that the asset is on and the improvements made to the parcel. The risk analysis does not quantify the actual flood damage from a storm. The asset value is not controlled based on vulnerability in this exercise. The type of risk assessment would require a more detailed analysis.



7 Project Portfolio

7.1 Selecting Priority Projects

Phase 2 of the RCCP develops a portfolio of resilience projects aimed at reducing exposure and sensitivity to hazards as well as strengthening the adaptive capacity of community assets and vulnerable populations. This strategy builds upon foundational plans and projects (detailed in Section 4) and prioritizes recommendations for the Project Portfolio.

A list of potential projects was shared during the May Open House and with the CAT to gain feedback and clarity on what projects would be prioritized for the City. Each priority project is provided a description based on the prescribed information provided in the RCCP Planning Handbook.

The priority projects for the City include:

- Knobbs Creek Recreation Center Resilience Updates and Nature-Based Solutions
- Stormwater Ordinance Update and Resilient Best Management Practices Handbook
- College Park Living Shoreline
- Resilience Upgrades for City-owned Facilities
- Site-Scale Vulnerability Assessment of the Wastewater Treatment Plant (WWTP)
- Site-Suitability Analysis for Pump Stations
- Join the FEMA Community Rating System
- Update the Local Land Use Plan and Zoning Ordinances
- Hire a Stormwater Program Manager
- Integrate Climate Resilience into Open Space/Parks Plan



Knobbs Creek Recreation Center Resilience Updates and Nature-Based Solutions



Project Description

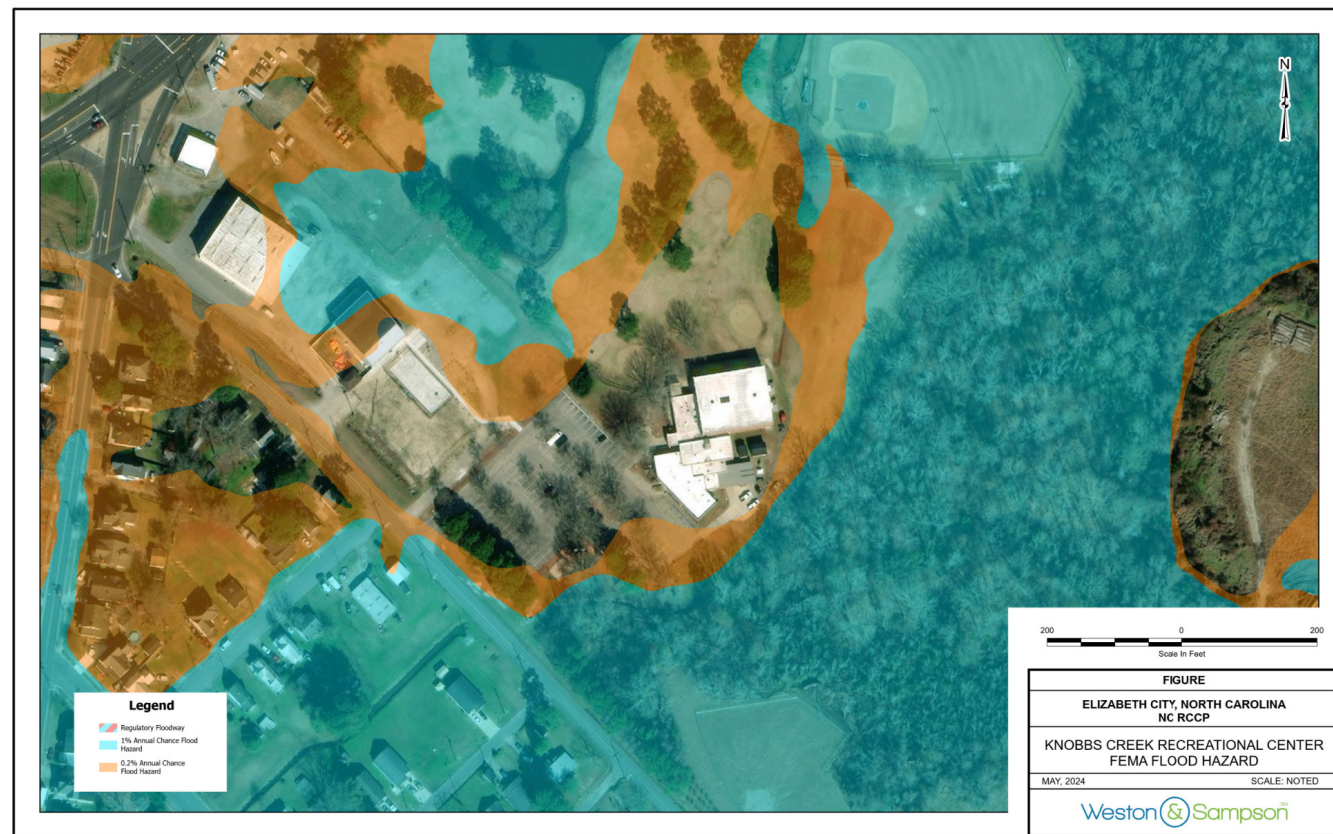
The Knobbs Creek Recreation Center currently serves as a shelter and a FEMA community lifeline during storm events. This action proposes retrofits and modifications so that the center can function as a “resilience hub” day to day.

Modifications may include elevating essential mechanical and electrical systems, installing battery storage and solar panels, floodproofing areas below the design flood elevation, and designing and installing nature-based solutions like a rain garden to help manage stormwater on site.



Location & Project Map

Knobbs Creek Recreation Center, 200 E. Ward Street



Source

City and Weston & Sampson

Scoping Questions

- At what elevation are critical systems, such as mechanical and electrical, currently located at in comparison to the base flood elevation?
- What resilience measures would bolster protection of the center as an emergency shelter?
- Where is the best location for a rain garden to serve as a model for the community?

Hazards Addressed

- Flooding
- Other
- All Hazards

Supporting Function

Emergency response, shelters

Type of Solution

- Plans, Policies, and Ordinances
- Nature-based Solution
- Infrastructure/Facility Retrofit
- Other: Building adaptation; emergency preparedness

Estimated Timeline



Responsible Entity

Elizabeth City/Pasquotank County Parks & Recreation

Potential Partners

- Boys and Girls Club
- Resiliency Contractor
- Elizabeth City/Pasquotank County Youth Programming

Existing Funding

NC RCCP Phase 3 (Applying for funding for rain garden design and installation)

Potential Funding Sources

- National Fish and Wildlife Foundation (NFWF)
- FEMA Hazard Mitigation Grant Program (HMGP)
- FEMA Flood Mitigation Assistance Grant Program (FMA)

Estimated Cost



- Raingarden design and engineering – \$20k
- Raingarden installation – \$10k
- Recreation center resiliency improvements – \$500k-\$1M

Anticipated Benefit



This project will have a significant benefit because it provides an emergency shelter for citizens during storm events, will expand the role of the recreation center as a “resilience hub,” and improve the project site with nature-based solutions.

Priority Rating



Stormwater Ordinance Update and Resilient Best Management Practices Handbook

Project Description

The City of Elizabeth City proposes to modernize its stormwater ordinance, promote best and resilient practices, and engage the community in a demonstration project for nature-based solutions. The City will identify outdated and otherwise deficient provisions of the stormwater management ordinance, propose ordinance updates, create a “Best Management Practices” handbook for developers, and create a rain garden at our recreation center.

The updated ordinance may include development impact fees to account for the size of the development and impact on stormwater, urban heat island, and other climate impacts. Fees should be scaled based on the size and type of development.

Location

City-wide with focus on areas vulnerable to precipitation-based flooding and stormwater impacts



Source

City

Scoping Questions

- Should the stormwater ordinance have varying standards for parts of the city based on their vulnerability to stormwater flooding?
- What are potential barriers to adoption and push-back that may be received by developers or private property owners?

Hazards Addressed

- Flooding
- Other: Stormwater, Urban Heat Island, Extreme Heat
- All Hazards

Supporting Function

Stormwater management

Type of Solution

- Plans, Policies, and Ordinances
- Nature-based Solution
- Infrastructure/Facility Retrofit
- Other

Estimated Timeline



Responsible Entity

Elizabeth City Department of Public Works

Potential Partners

- Elizabeth City Community Development Department Planning Division
- Elizabeth City Parks and Recreation Department

Existing Funding

None identified

Potential Funding Sources

NC RCCP Phase 3

Estimated Cost



Anticipated Benefit



This project will create funding for additional mitigation actions.

Priority Rating





College Park Living Shoreline



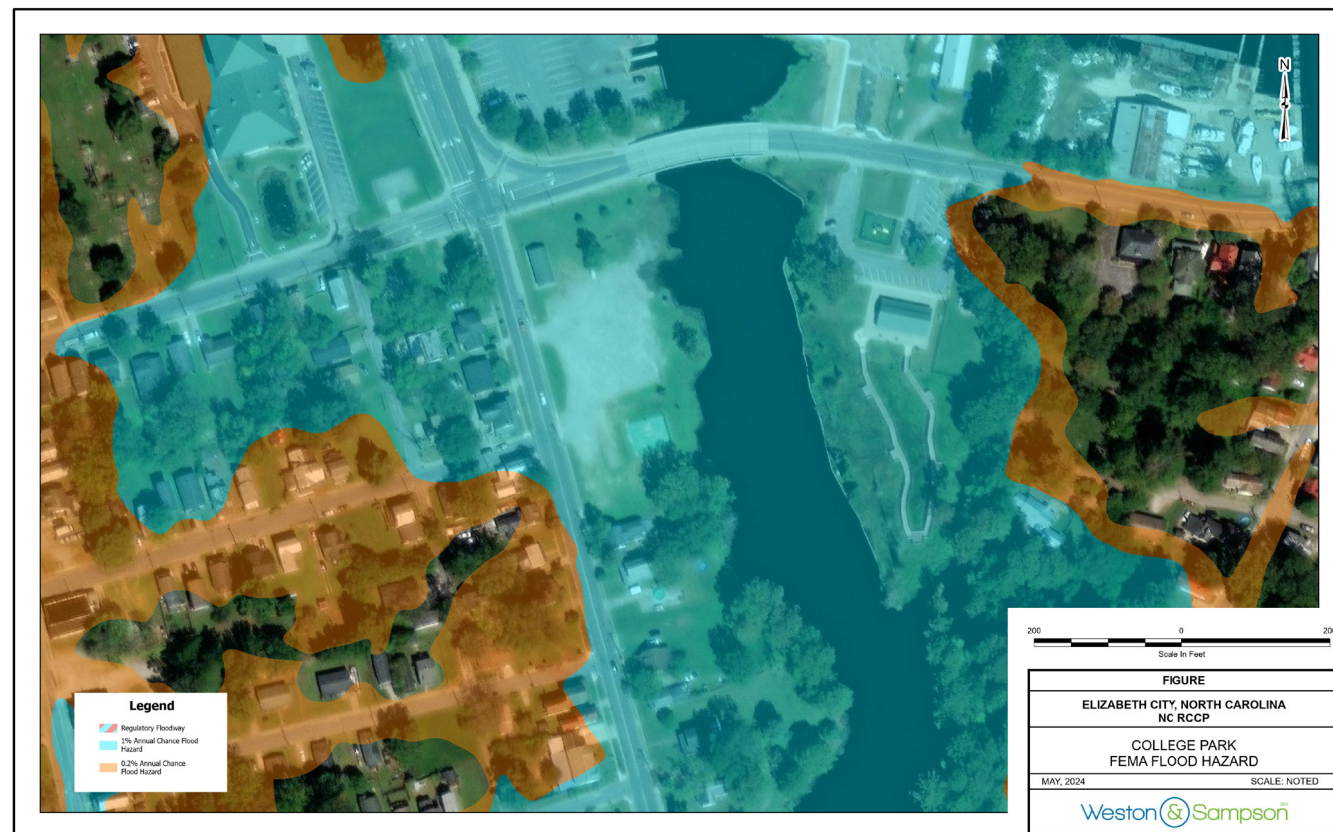
Project Description

Design and implement a living shoreline at College Park. The College Park area is subject to frequent overtopping of the bulkhead creating dangerous conditions. A living shoreline would contribute to softening of the shoreline, ecosystem restoration, beautification of the park, and the creation of new amenity for the public.



Location & Project Map

College Park, 600 Southern Avenue



Source

CAT

Scoping Questions

- What type of living shoreline is best suited for this location?
- Will the design include any engineered features such as a walkway or boardwalk?
- Is there an opportunity for marsh restoration with the living shoreline?

Hazards Addressed

- Flooding
- Other: Erosion, Storm damage
- All Hazards

Supporting Function

- Ecosystem restoration
- Habitat Creation
- Recreation
- Beautification

Type of Solution

- Plans, Policies, and Ordinances
- Nature-based Solution
- Infrastructure/Facility Retrofit
- Other

Estimated Timeline



Responsible Entity

Elizabeth City/Pasquotank County Parks & Recreation

Potential Partners

- Elizabeth City Department of Public Works, Community Development
- North Carolina SeaGrant
- The Nature Conservancy

Existing Funding

None identified

Potential Funding Sources

- NC DEQ Coastal and Water Grants
- NC Agriculture Community Conservation Assistance Program (CCAP)
- National Fish and Wildlife Foundation (NFWF)

Estimated Cost



Estimated cost considers design and construction.

Anticipated Benefit



A living shoreline here could help stabilize the shoreline, mitigate erosion and flooding, and allow this area to be used for recreation again.

Priority Rating





Resilience Upgrades for City-Owned Facilities



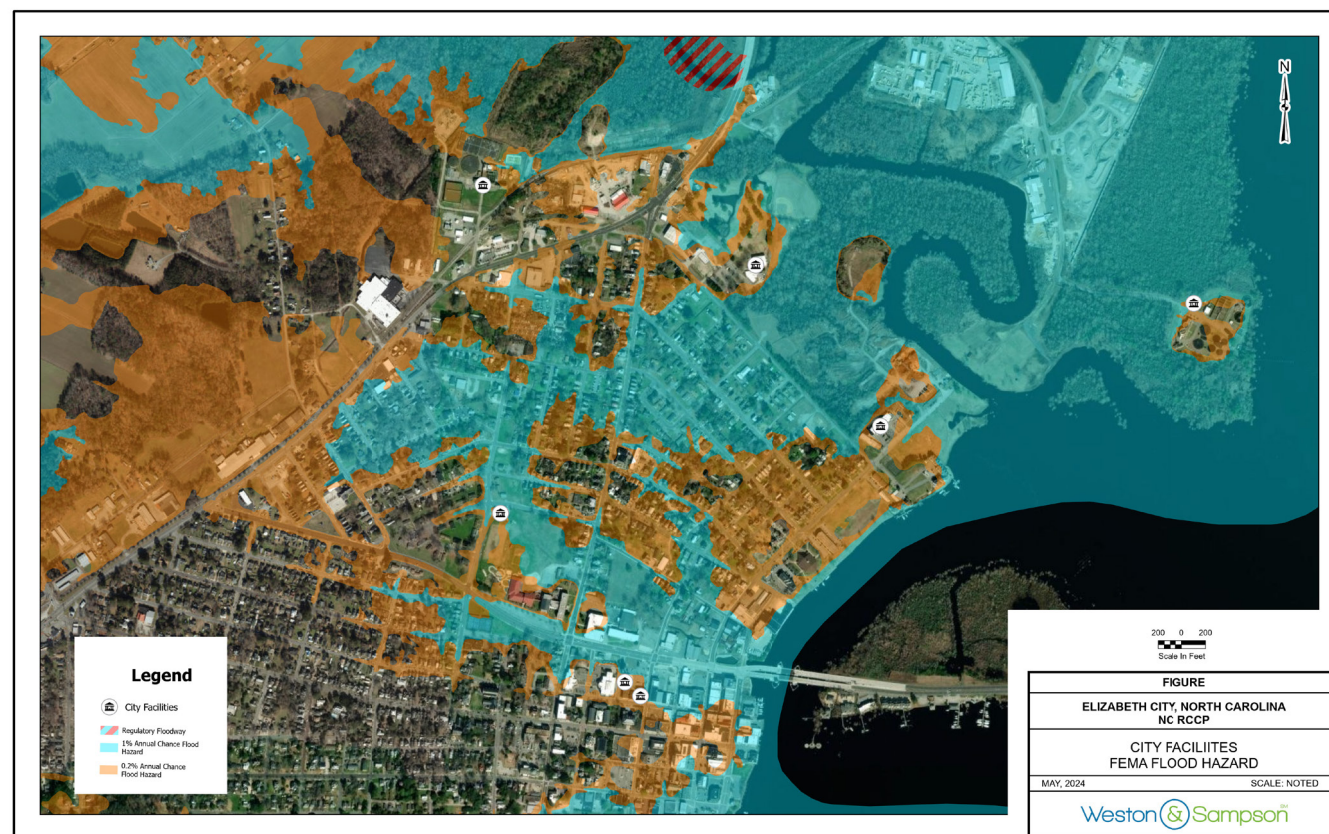
Project Description

Upgrade city-owned facilities to align with FEMA standards and design recommendations for climate adapted critical facilities.



Location & Project Map

Multiple facility locations



Source

City and Weston & Sampson based on Vulnerability Assessment

Scoping Questions

- Which facilities are most in need of an upgrade due to programming constraints, space needs, or outdated structure or equipment?
- What resilience retrofit method is the most appropriate for each facility?

Hazards Addressed

- Flooding
- Other
- All Hazards

Supporting Function

Multiple; different types of city-owned facilities

Type of Solution

- Plans, Policies, and Ordinances
- Nature-based Solution
- Infrastructure/Facility Retrofit
- Other

Estimated Timeline



Responsible Entity

Elizabeth City, various departments

Potential Partners

Contractor that specializes in facility design and resiliency retrofits

Existing Funding

None identified

Potential Funding Sources

- FEMA Hazard Mitigation Grant Program (HMGP)
- FEMA Flood Mitigation Assistance (FMA)
- FEMA Building Resilient Infrastructure and Communities (BRIC)

Estimated Cost



Anticipated Benefit



Impacts highly vulnerable assets. This will make the built environment of Elizabeth City more resilient and support the continuity of city operations during emergency events.

Priority Rating



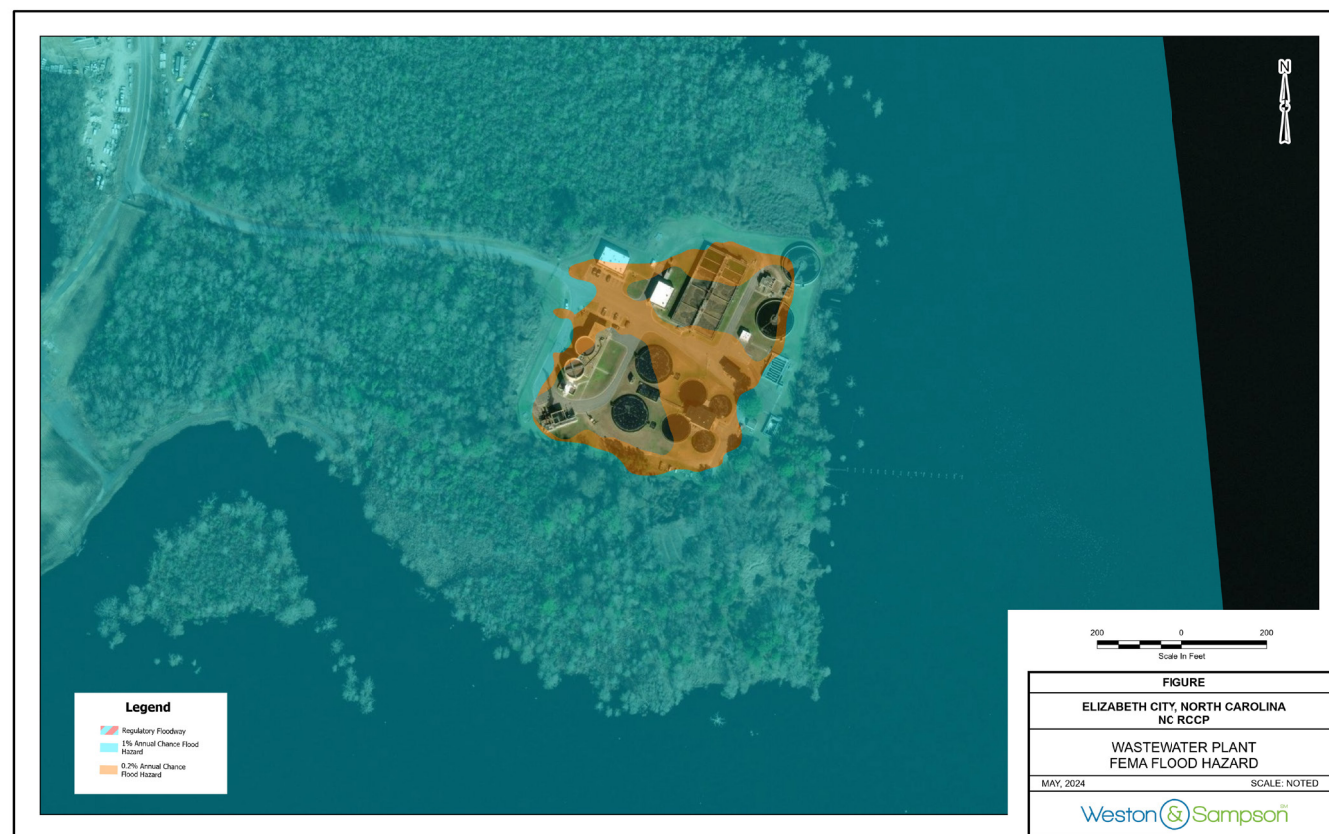
Site-Scale Vulnerability Assessment of the Wastewater Treatment Plant (WWTP)

Project Description

Conduct a site-scale vulnerability assessment of the wastewater treatment plant and determine adaptation options to either retrofit the building or design and implement nature-based site strategies to mitigate flooding.

Location & Project Map

Wastewater Treatment Plant, 450 Knobbs Creek Drive



Source

City and Weston & Sampson based on Vulnerability Assessment

Scoping Questions

- What are the findings of the detailed vulnerability assessment?
- Does the plant need facility upgrades to maintain continuity of service, or can flood mitigation be accomplished through site strategies such as berms, bioswales, living shorelines, and other measures?

Hazards Addressed

- Flooding
- Other
- All Hazards

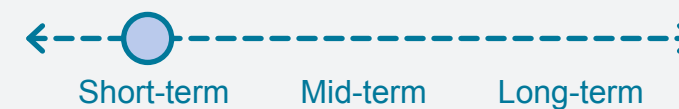
Supporting Function

Wastewater Treatment

Type of Solution

- Plans, Policies, and Ordinances
- Nature-based Solution
- Infrastructure/Facility Retrofit
- Other

Estimated Timeline



Responsible Entity

- Wastewater Treatment Facility
- Andrew Edwards, Wastewater Treatment Plant Superintendent

Potential Partners

- Elizabeth City Chief Operator WWTP
- Supporting staff
- Department of Public Works

Existing Funding

None identified

Potential Funding Sources

- FEMA Hazard Mitigation Grant Program (HMGP)
- FEMA Flood Mitigation Assistance (FMA)
- FEMA Building Resilient Infrastructure and Communities (BRIC)

Estimated Cost



Anticipated Benefit



This project would support uninterrupted treatment of wastewater for Elizabeth City.

Priority Rating





Site-Suitability Analysis for Pump Stations



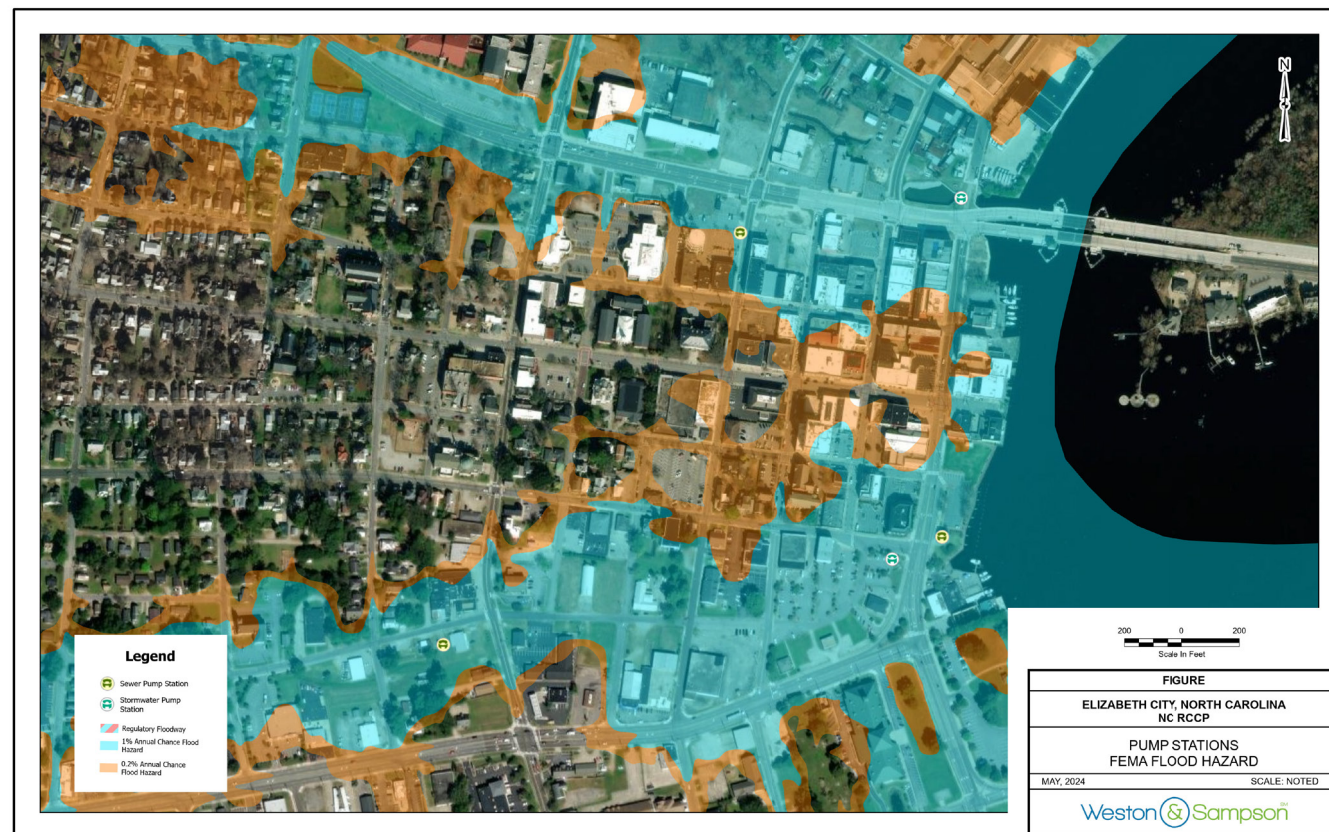
Project Description

Conduct a site-suitability analysis of potential sites to relocate and reconstruct pump stations using adaptation strategies. Screen relocation sites based on their flood exposure, potential service area, parcel ownership, and environmental factors. Consider continuity of service and emergency services in the instance that the pump stations are out of service.



Location & Project Map

Various pump stations



Source

City and Weston & Sampson based on vulnerability assessment

Scoping Question

Which pump stations are most in need of upgrades and are also highly vulnerable?

Hazards Addressed

- Flooding
- Other
- All Hazards

Supporting Function

Wastewater and stormwater pumping

Type of Solution

- Plans, Policies, and Ordinances
- Nature-based Solution
- Infrastructure/Facility Retrofit
- Other

Estimated Timeline



Responsible Entity

Elizabeth City Department of Public Works

Potential Partners

Wastewater Treatment Plant

Existing Funding

None identified

Potential Funding Sources

- FEMA Hazard Mitigation Grant Program (HMGP)
- FEMA Building Resilient Infrastructure and Communities (BRIC)

Estimated Cost



\$1M - \$20M (dependent on number of pump station projects)

Anticipated Benefit



This project will ensure safe wastewater treatment and transport for Elizabeth City.

Priority Rating





Join the FEMA Community Rating System



Project Description

Join the FEMA CRS to reduce flood insurance premiums. Elizabeth City has 1,106 active flood insurance policies with total annual payments over one million dollars. Joining CRS can be a way to incentivize improvements to floodplain management. Request info from FEMA on joining CRS.



Location

City-wide



Source

CAT, City, and Weston & Sampson

Scoping Question

What activities are currently being implemented in Elizabeth City that would qualify for CRS credit?

Hazards Addressed

- Flooding
- Other
- All Hazards

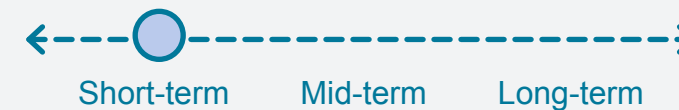
Supporting Function

Floodplain Management

Type of Solution

- Plans, Policies, and Ordinances
- Nature-based Solution
- Infrastructure/Facility Retrofit
- Other

Estimated Timeline



Responsible Entity

- City Administrator
- City CFM

Potential Partners

- Elizabeth City Department of Public Works,
- Elizabeth City Community Development Department

Existing Funding

None identified

Potential Funding Sources

Annual budgeting process

Estimated Cost



No cost to join CRS. Cost is representative of floodplain staff required to administer the program.

Anticipated Benefit



This project will not only save citizens money on their flood insurance premiums, but it would also foster more stringent floodplain management in Elizabeth City.

Priority Rating





Update the Local Land Use Plan and Zoning Ordinances



Project Description

Update the local land use plan (last updated in 2012) and zoning ordinances to adopt higher standards for climate resilience, stormwater management, and conservation of waterways and floodplains.



Location

City-wide



Source

CAT

Scoping Questions

- Should the land use plan have its own resilience section?
- What spots in the ordinances could be updated to make the city more resilient with higher standards? What best practices or precedents should be referenced?

Hazards Addressed

- Flooding
- Other
- All Hazards

Supporting Function

Adapting the built environment to climate impacts

Type of Solution

- Plans, Policies, and Ordinances
- Nature-based Solution
- Infrastructure/Facility Retrofit
- Other

Estimated Timeline



Responsible Entity

Elizabeth City Department of Community Development Planning Division

Potential Partners

Elizabeth City Department of Public Works

Existing Funding

General funds, staff time

Potential Funding Sources

N/A

Estimated Cost



Anticipated Benefit



This project will increase the overall resilience of Elizabeth City.

Priority Rating





Hire a Stormwater Program Manager



Project Description

Hire a stormwater program manager to monitor compliance of more stringent stormwater management standards and practices such as development fees, MS4 program, ordinance updates, stormwater utility, etc.



Location

City Hall, Elizabeth City



Source

CAT

Scoping Questions

- Would multiple staff members be needed to manage the program?
- How does MS4 compliance impact the role of this individual?

Hazards Addressed

- Flooding
- Other
- All Hazards

Supporting Function

Stormwater Management

Type of Solution

- Plans, Policies, and Ordinances
- Nature-based Solution
- Infrastructure/Facility Retrofit
- Other: Capacity Building

Estimated Timeline



Responsible Entity

Elizabeth City Department of Public Works

Potential Partners

N/A

Existing Funding

None identified

Potential Funding Sources

City annual budgeting

Estimated Cost



Anticipated Benefit



This project will improve stormwater management and provide a point person for stormwater issues/inquiries.

Priority Rating





Integrate Climate Resilience into Open Space/Parks Plan



Project Description

Integrate resilience considerations into the Open Space and Parks Masterplan. Create an implementation schedule for retrofitting park spaces to better accommodate or store flood waters in controlled ways.



Location

Parks in Elizabeth City



Source

CAT

Scoping Questions

- Which parks experience the most flooding?
- Should parks be prioritized based on their rate of flooding or their ability to store floodwaters?
- Are there effective retrofits that are easy to implement and maintain across multiple parks?

Hazards Addressed

- Flooding
- Other
- All Hazards

Supporting Function

Recreation

Type of Solution

- Plans, Policies, and Ordinances
- Nature-based Solution
- Infrastructure/Facility Retrofit
- Other

Estimated Timeline



Responsible Entity

Elizabeth City/Pasquotank County Parks & Recreation

Potential Partners

Elizabeth City Department of Public Works

Existing Funding

None identified

Potential Funding Sources

City annual budgeting

Estimated Cost



Anticipated Benefit



This project will provide high-retrofitting park spaces to better accommodate stormwater flooding and will reduce problematic flooding in other areas.

Priority Rating



Appendix **A**

Community Action Team (CAT) Meeting Materials

CAT Meeting 1 - December 14, 2023

North Carolina
**RESILIENT
COASTAL
COMMUNITIES
PROGRAM**

ELIZABETH CITY
HARBOR OF HOSPITALITY
North Carolina

ELIZABETH CITY
**North Carolina Resilient Coastal
Communities Program**

Community Action Team Meeting
December 14, 2023

Weston & Sampson BERKLEY GROUP

Thank you!

This project is funded by the North Carolina Department of Environmental Quality Division of Coastal Management



NORTH CAROLINA
Environmental Quality



City and Grant Coordinators Introductions



Jon Hawley
Grants Administrator

Randy Lassiter
Public Utilities
Project Manager



Mackenzie Todd
RCCP Program
Coordinator

Tancred Miller
RCCP Program
Coordinator

Kasen Wally
RCCP Program
Coordinator



Agenda

1. Introductions
2. Overview of RCCP Project Goals, Scope, and Schedule
3. CAT Member Roles and Responsibilities
4. Interactive Session! We want to hear from you:
 - What resilience means to you
 - Areas of known flooding
 - Critical assets that should be included in risk assessment
5. Vision Statement Discussion



Consultant Team Member Introductions



Bella Tisel
Project Manager



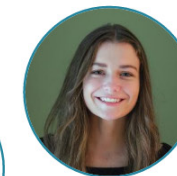
Chip Hutchens
Team Leader



Jeannie Lewis
Technical
Review



Anna Kimelbatt
Resiliency
Planner



Erin Herock
Resiliency Planner



Michael Zehner
Director of Planning
& Community
Development



Kate Jones
Principal Planner



Luke Peters
Environmental
Planner



CAT Member Introductions



Tell us about yourself!

- Joseph Peel
- Javis Gibbs
- Brian Parnell
- Kelly Hoeltzel
- Dr. Kevin Kupietz
- Jon Hawley
- Holly White

- Why were you interested in serving on the CAT?
- What is your favorite thing about Elizabeth City?
- We're looking for ideas for other team members. Do you know someone?



The Resilient Coastal Communities Program (RCCP)

- The RCCP is a state-local partnership designed to help overcome barriers in coastal resilience and adaptation planning, boost local government capacity, and support a proactive, sustainable, and equitable approach to coastal resilience planning and project implementation.
- Weston & Sampson has been hired as the technical consultant to complete Phases 1 and 2 of RCCP for Elizabeth City and Pasquotank County.

Program Objectives



What is Climate Resilience?



Adaptation

Adapting to life in a changing climate – involves adjusting to actual or expected future climate



Vulnerability

The degree to which a system is susceptible to adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of exposure, sensitivity, and adaptive capacity.



Resilience

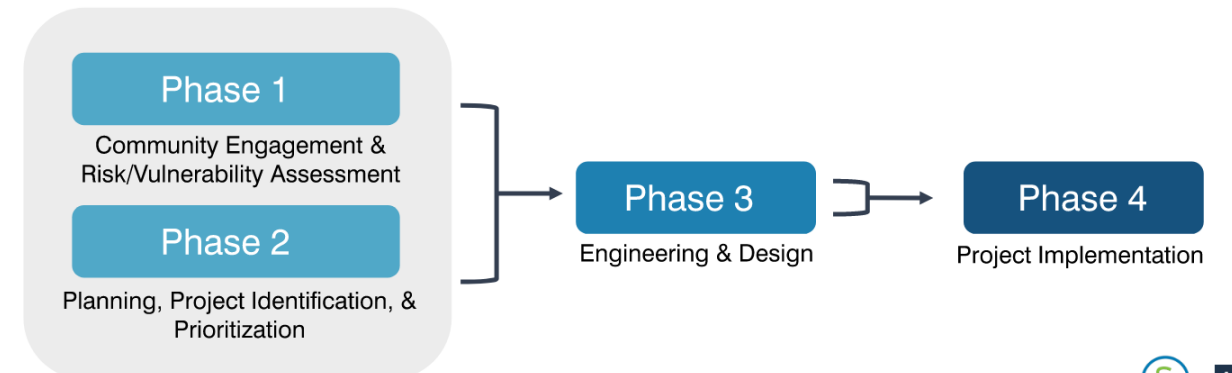
The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner.



The Resilient Coastal Communities Program (RCCP)

Program Scope

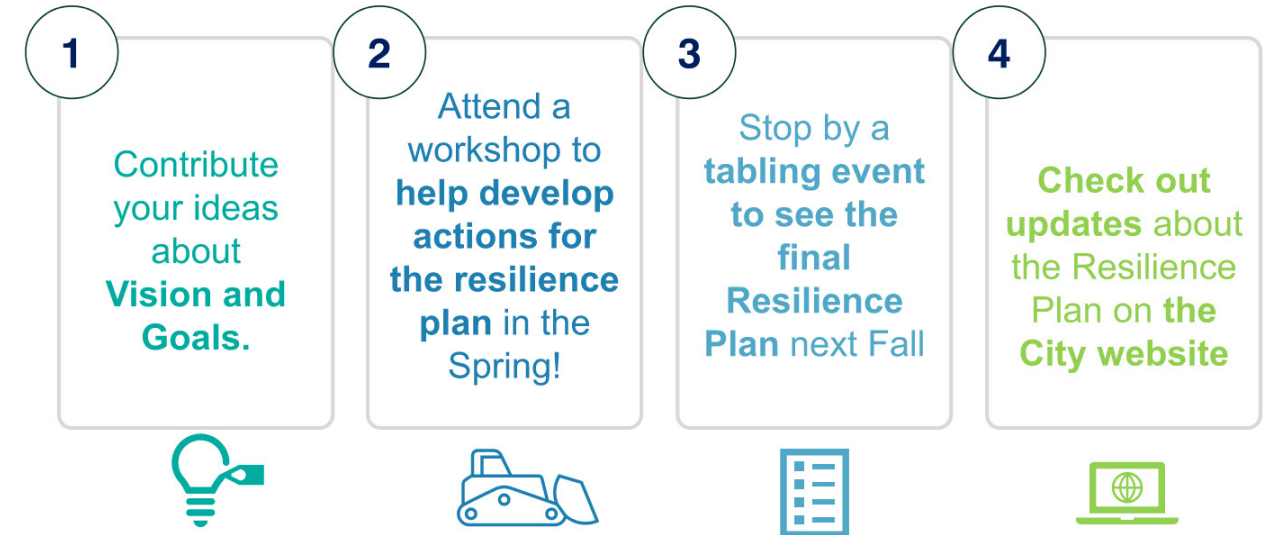
- All counties and municipalities within the CAMA jurisdiction are eligible to apply for the RCCP
- Once communities complete Phases 1 & 2, they become eligible to apply for additional funding via Phase 3 and Phase 4.



Project Schedule



How can you and other residents be involved?



Community Action Committee (CAT) Roles & Responsibilities

- Meet to help guide the process of developing a Resilience Strategy
- Assist the City in engaging community members and promoting the process
- Provide unique expertise
- Review deliverables and the final plan

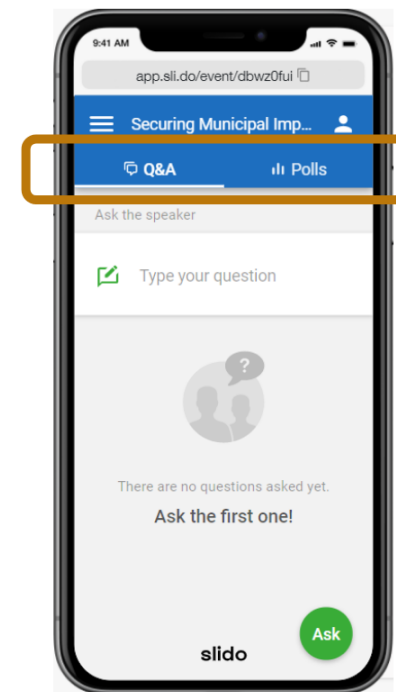
Weston & Sampson

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What does "resilience" mean to you?

#ElizabethCity

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What areas of Elizabeth City are particularly vulnerable to flooding?

#ElizabethCity

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What does "resilience" mean to you?
Wordcloud Poll 10 responses 7 participants



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What areas of Elizabeth City are particularly vulnerable to flooding?

Open text poll 8 responses 7 participants

- Anonymous: Main Street extended
- Anonymous: Dawson Street, Hunter Street, Church Street, Flora Street, Rivershore Road, Morgan Street, Cale Street
- Anonymous: Riverside ave, Elizabeth street, downtown by museum of albemarle
- Anonymous: Hunter St, Dawson St, Water St, Flora St,
- Anonymous: Downtown Most of City
- Anonymous: Southern waterfront, Oxford Heights
- Anonymous: Southern Ave
- Anonymous: Water Street; Road Street; Southern Ave; Rivershore Drive

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How would you suggest the City begin to address those vulnerabilities?

#ElizabethCity

Start presenting to display the poll results on this slide.

How would you suggest the City begin to address those vulnerabilities?

Open text poll 7 responses 6 participants

- Anonymous
Implement solutions in moffat nichol flooding study
- Anonymous
Culverts, Dredging, sheet piling, road crowning, storm water vaults and drains, pump station improvements
- Anonymous
Determine causes Prioritize
- Anonymous
Removal of impervious surfaces
- Anonymous
Enhanced stormwater pumping and storage, begin considering possible property buyouts
- Anonymous
Repairs to the storm water system along with additional storm water pump stations.
- Anonymous
Infrastructure upgrades

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What critical assets in Elizabeth City should be included in the risk and vulnerability assessment?

#ElizabethCity

Start presenting to display the poll results on this slide.

What critical assets in Elizabeth City should be included in the risk and vulnerability assessment?

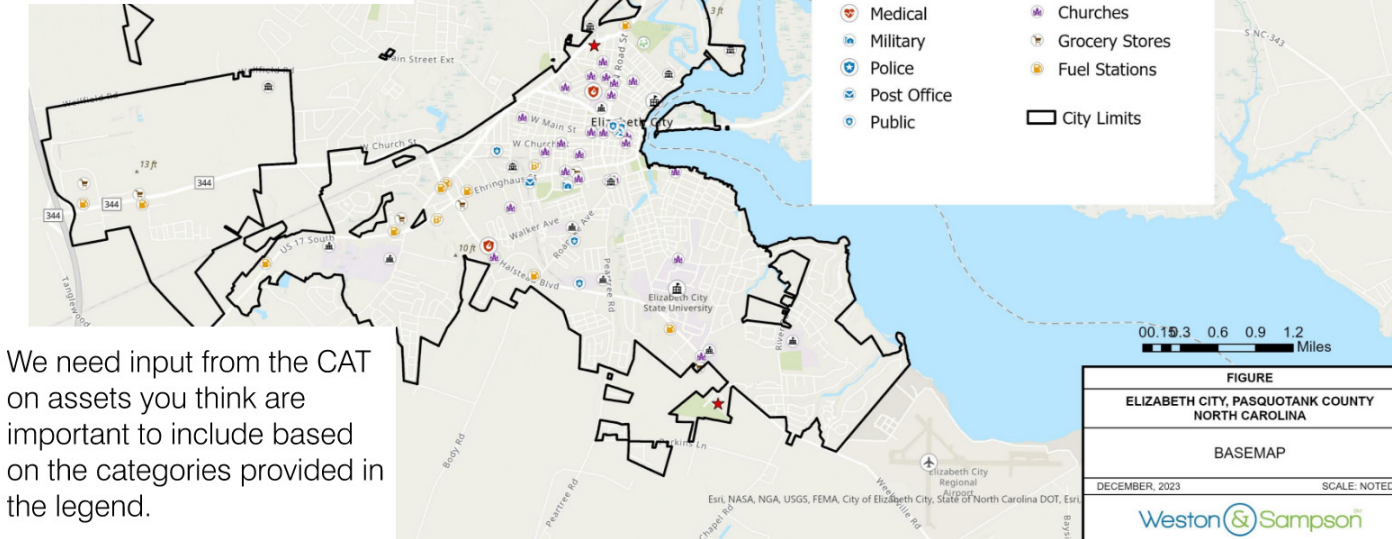
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- Anonymous
Nursing homes
- Anonymous
Water front Public safety Major Employers Educational Health care Roads transportation Comms including data and cell
- Anonymous
Colleges
- Anonymous
Airport/coast guard base
- Anonymous
Mariner's Wharf
- Anonymous
Waterfront park/parks
- Anonymous
Roads & bridge (158), open space, water and sewer lift stations, pharmacy, grocery stores, churches, hospital
- Anonymous
Medical services
- Anonymous
major thoroughfares
- Anonymous
Have Elizabeth City GIS print a city map with churches, police department, hospital, EMS stations, fire department, courthouses, sheriff's office/EOC/911 comms center
- Anonymous
Ground Water Wells and Lift Stations (Sewer)
- Anonymous
Water and sewer plants, downtown (including emergency and gov ops), major roads, other facilities tied to FEMA lifelines
- Anonymous
ditto

slido

Draft Critical Asset Map

A list of critical assets, shown on the map here, was acquired from the City, Albemarle HMP, and NC OneMap.



We need input from the CAT on assets you think are important to include based on the categories provided in the legend.

Example Vision Statements

We envision... our city government, residents, and businesses will be prepared during rainstorms, riverine flooding, and coastal storms events to reduce damages to property and injury or loss of life.

Natural areas and green space will help mitigate the impacts of heat and flooding while also providing beautiful space for recreation, farming, and local wildlife.

Our community will connect with one another and help one another during hard times.



Vision & Goal Statements from the Land Use Plan

-  Enhance and restore natural areas that protect against natural and coastal hazards.
-  Reduce instances of flooding by improving stormwater management.
-  Pursue infrastructure improvements and resilience to meet the needs of the future population.
-  Focus development in high growth areas opposed to sensitive environments.
-  Increase community participation in planning projects and implement climate-resilience educational programs.



How to make your Vision Statement - Tips

We envision City of Elizabeth City as a place that _____.

In the future, our community will be _____.

To reduce the impacts of climate hazards, the City will _____.



What goal statements resonate?

- Adapt city infrastructure such as storm drains, roads, or utility lines to enhance their capacity, or reduce damage during storm events
- Protect, maintain, or enhance the natural environment
- Prepare our communities through programs, events, and spreading information
- Create resources to make buildings more resilient to climate-related events
- Others: _____



CAT Meeting 2 - March 21, 2024



ELIZABETH CITY North Carolina Resilient Coastal Communities Program

Vision and Goal Workshop
March 21, 2024



You can use the QR Code to fill out your Vision Statement or the link in the chat.

<https://forms.gle/tMxiMdEcq1QJLuv16>



Thank you!

This project is funded by the North Carolina Department of Environmental Quality Division of Coastal Management



City and Grant Coordinators Introductions



Jon Hawley
Grants Administrator

Randy Lassiter
Public Utilities
Project Manager

Brian Parnell
Emergency
Management



Mackenzie Todd
RCCP Program
Coordinator

Tancred Miller
RCCP Program
Coordinator

Kasen Wally
RCCP Program
Coordinator



Agenda

1. Introductions
2. Overview of RCCP Project Goals, Scope, and Schedule
3. CAT Member Roles and Responsibilities
4. **Interactive Session! We want to hear from you:**
 - What resilience means to you
 - Areas of known flooding
 - Critical assets that should be included in risk assessment
5. Vision Statement Discussion



Consultant Team Member Introductions



Bella Tisel
Project Manager



Chip Hutchens
Team Leader



Jeannie Lewis
Technical Review



Anna Kimelbatt
Resiliency Planner

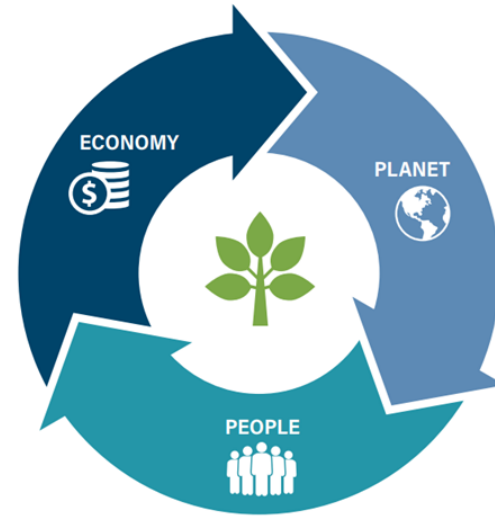


Erin Herock
Resiliency Planner



The Resilient Coastal Communities Program (RCCP)

The RCCP is a state-local partnership designed to help overcome barriers in coastal resilience and adaptation planning, boost local government capacity, and support a proactive, sustainable, and equitable approach to coastal resilience planning and project implementation.



Program Objectives

Address	Assist	Help	Advance	Link
Address barriers to coastal resilience at the local level	Assist communities with risk & vulnerability assessments	Help communities develop a portfolio of well-planned and prioritized projects	Advance priority projects to "shovel-ready" status	Link communities to funding streams for project implementation



Project Schedule

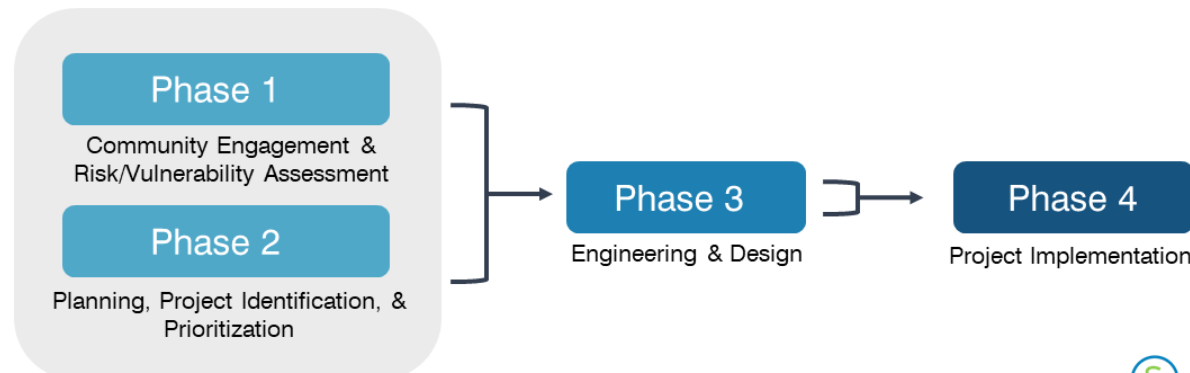
Thank you for participating in this activity tonight!



The Resilient Coastal Communities Program (RCCP)

Program Scope

- All counties and municipalities within the CAMA jurisdiction are eligible to apply for the RCCP
- Once communities complete Phases 1 & 2, they become eligible to apply for additional funding via Phase 3 and Phase 4.

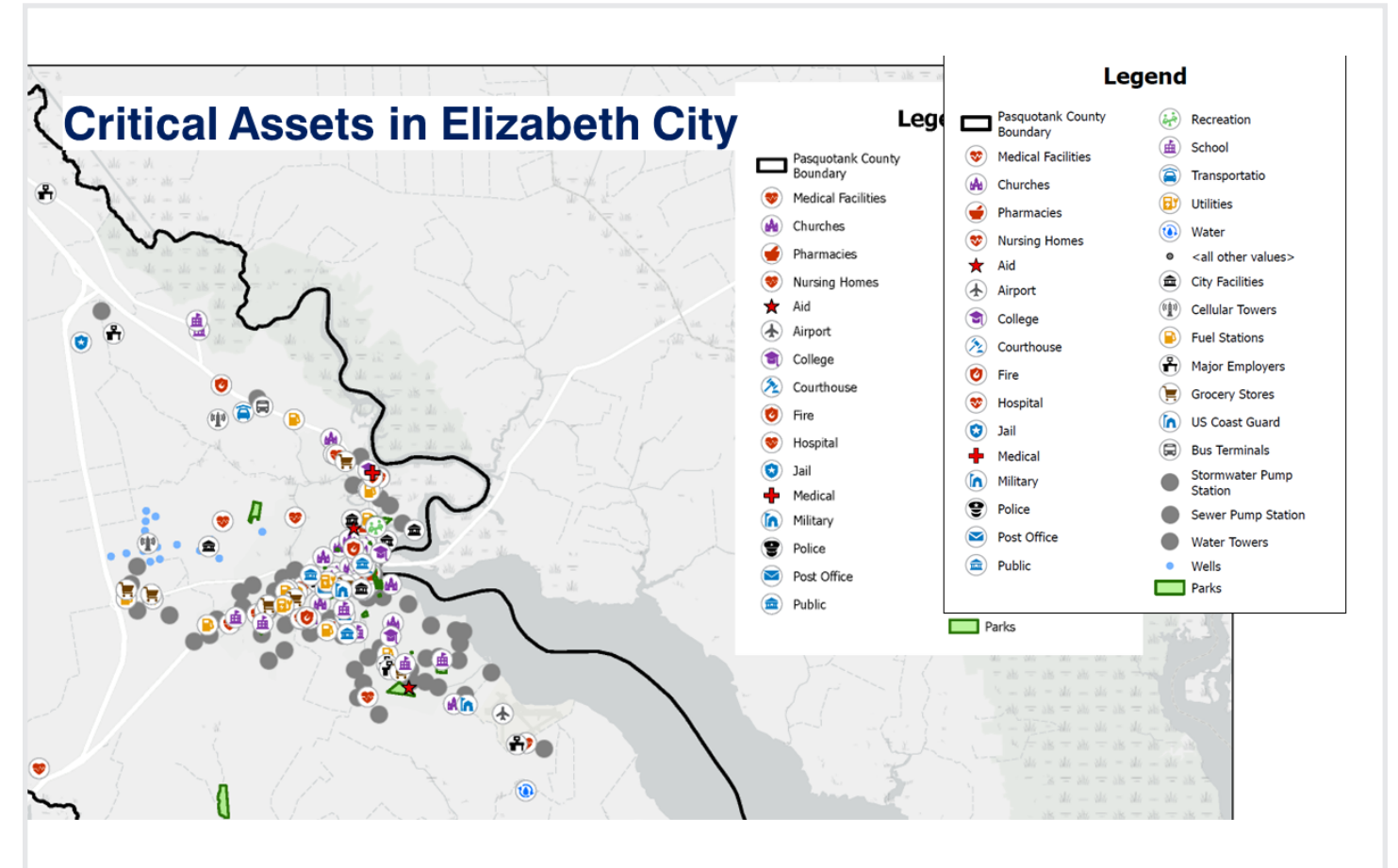
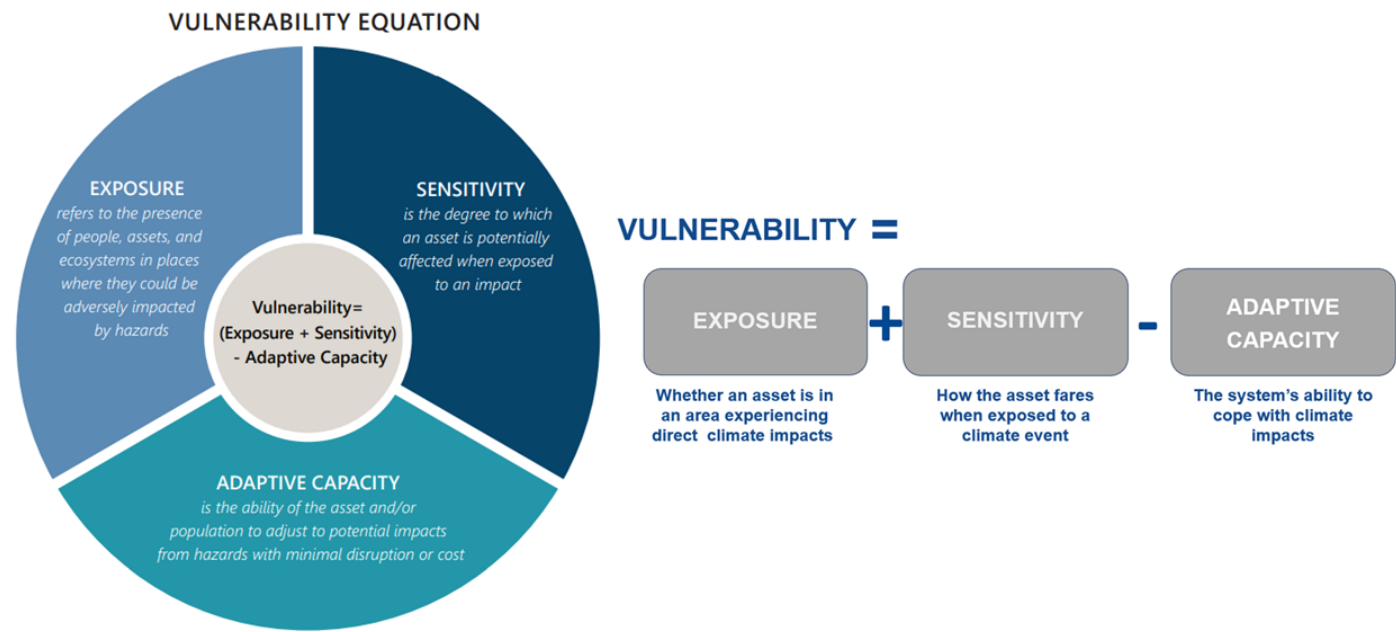


Understanding Vulnerability to Flooding

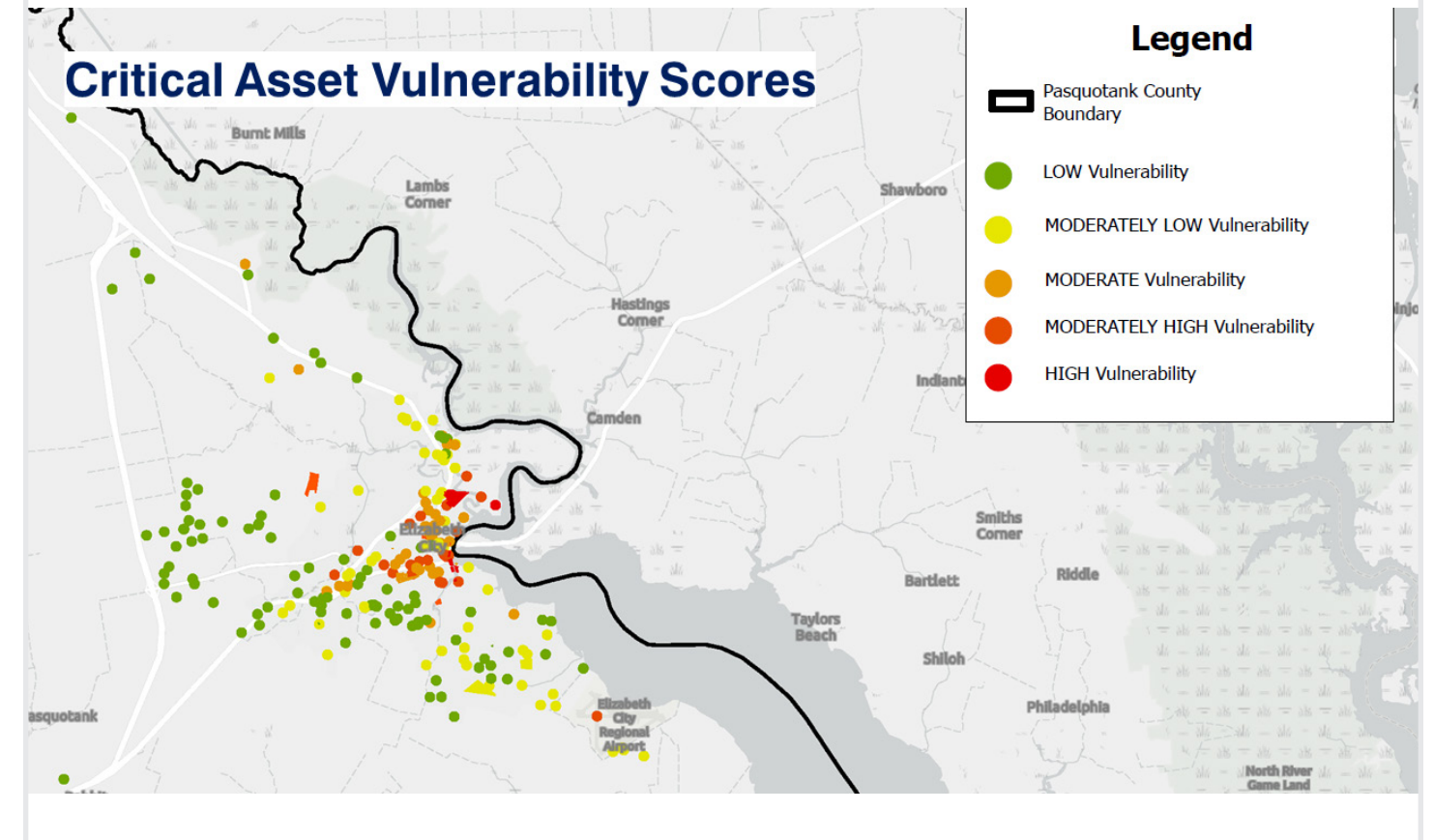
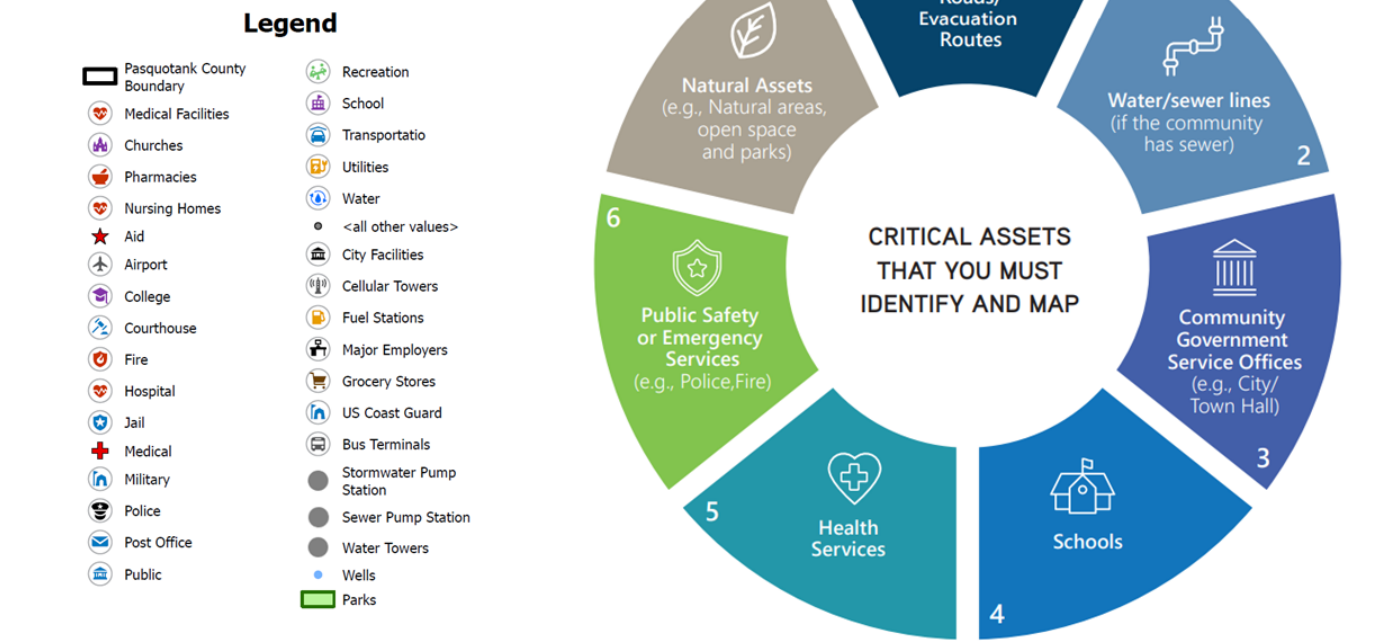
- Critical assets**
 What are the places, facilities, or services that are crucial for the City to function? What do you rely upon day to day?
- What places have flooded or may flood? (Exposure)**
 - Sea-Level Rise/Storm Surge
 - Rainfall/Precipitation
 - Severe storm flooding/hurricanes

Historical Data on Flooding
Future Data on Potential Flooding
- How well can critical assets handle flooding? (Adaptive Capacity)**
 Is there redundancy for this type of asset or this service? If so, that can help with service continuity.
 Is this an older building or facility? If so, it may be more vulnerable to damage.

Understanding Vulnerability to Flooding



Types of Critical Assets



Where have you seen flooding?

How can you and other residents be involved?



Example Vision Statements

We envision... our city government, residents, and businesses will be prepared during rainstorms, riverine flooding, and coastal storms events to reduce damages to property and injury or loss of life.

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What does "resilience" mean to you?

#ElizabethCity

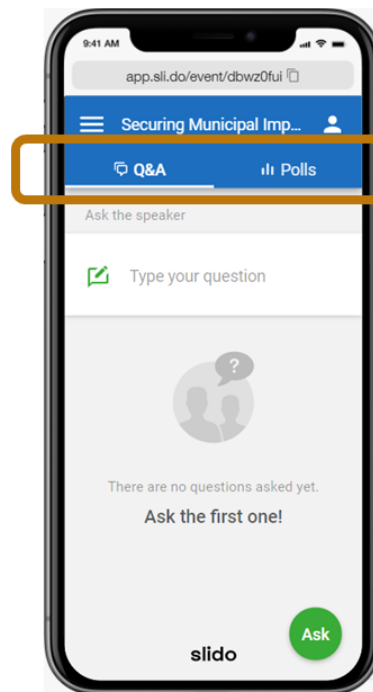
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Joining as a participant? # Enter code here →

#ElizabethCity



You can move between the Q&A tab and the polls tab!

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What areas of Elizabeth City are particularly vulnerable to flooding?

#ElizabethCity

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What critical assets in Elizabeth City should be included in the risk and vulnerability assessment?

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CAT Meeting 3 - April 8, 2024




North Carolina
**RESILIENT
COASTAL
COMMUNITIES
PROGRAM**



ELIZABETH CITY
**North Carolina Resilient Coastal
Communities Program**

Community Action Team Meeting
April 8, 2024



Thank you!

This project is funded by the North Carolina Department of Environmental Quality Division of Coastal Management



NORTH CAROLINA
Environmental Quality



City and Grant Coordinators Introductions



Jon Hawley
Grants Administrator

Randy Lassiter
Public Utilities
Project Manager

Brian Parnell
Emergency
Management



Mackenzie Todd
Coastal Resilience
Coordinator

Kasen Wally
RCCP Program
Coordinator



Agenda

1. Welcome
2. Project Updates
3. Vulnerability Assessment: Quick Review/Questions
4. **Interactive Session! We want to hear from you regarding action identification**
 - Response to draft actions
 - Additional actions that should be included
5. Next Steps



Consultant Team Member Introductions



Bella Tisel
Project Manager



Anna Kimelbatt
Resiliency Planner

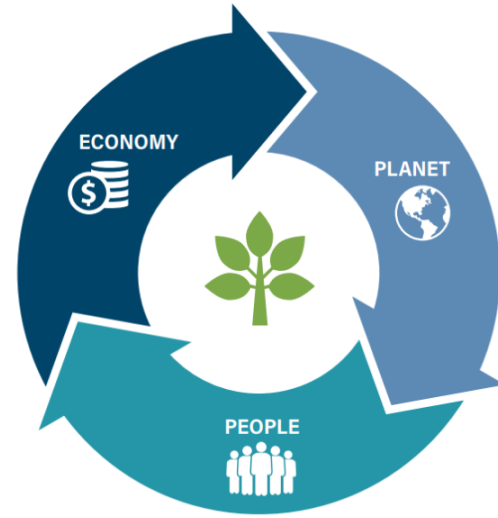


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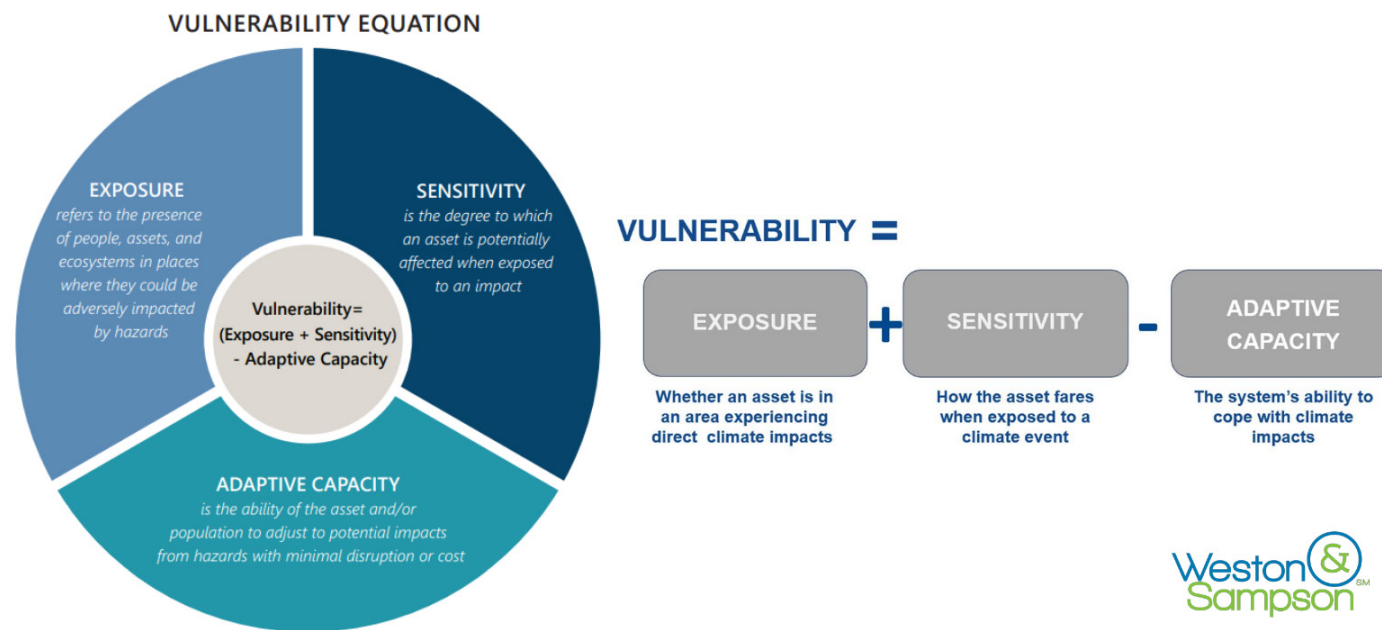


Understanding Vulnerability to Flooding

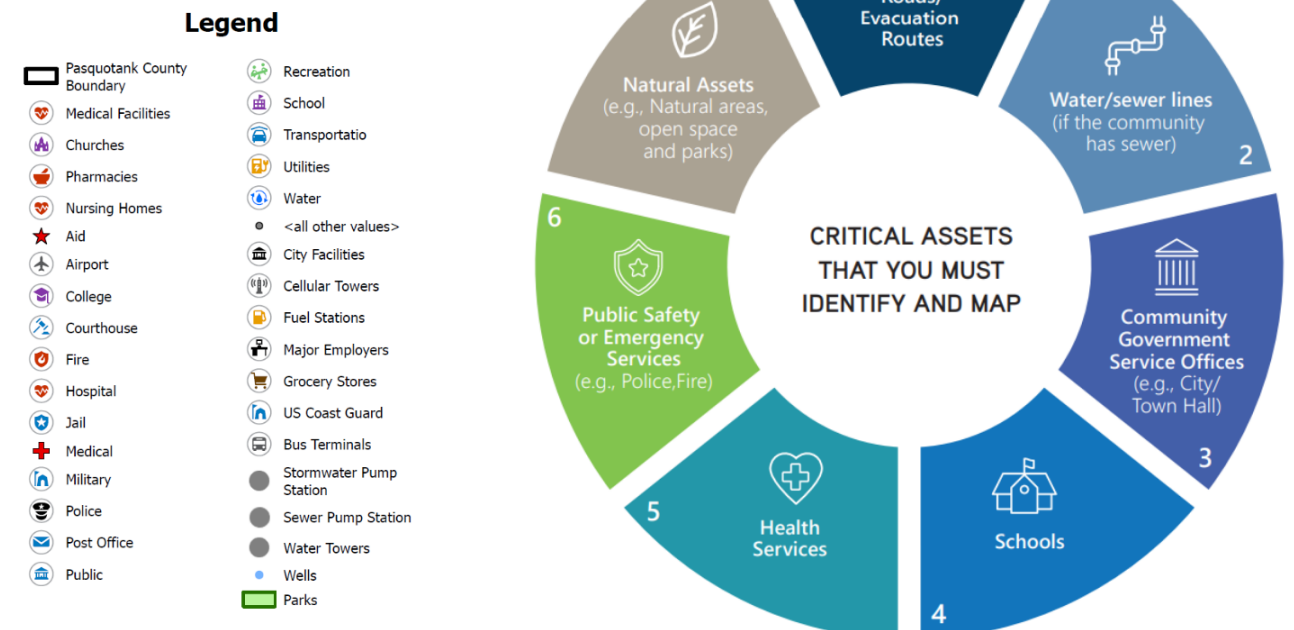
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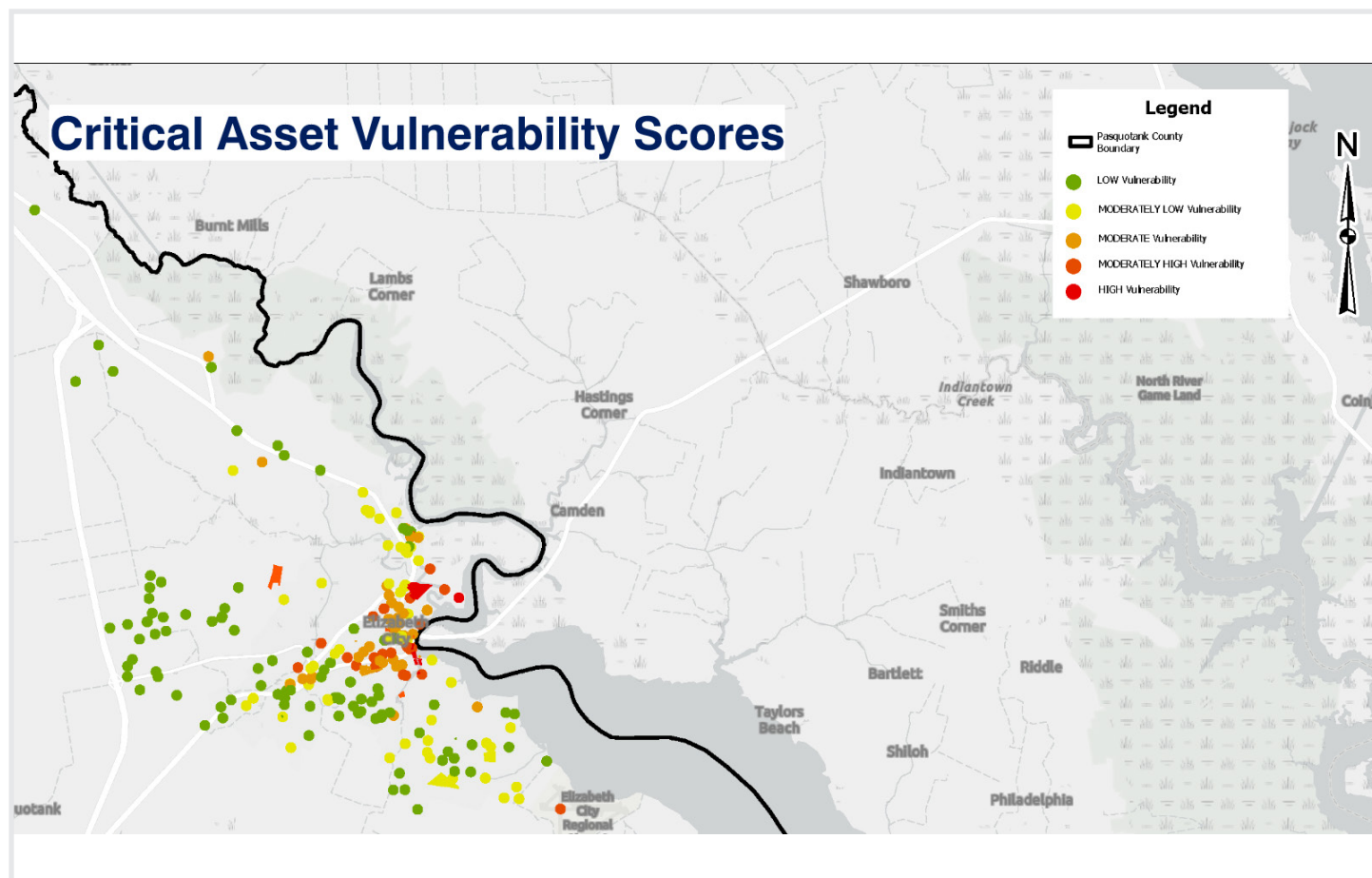
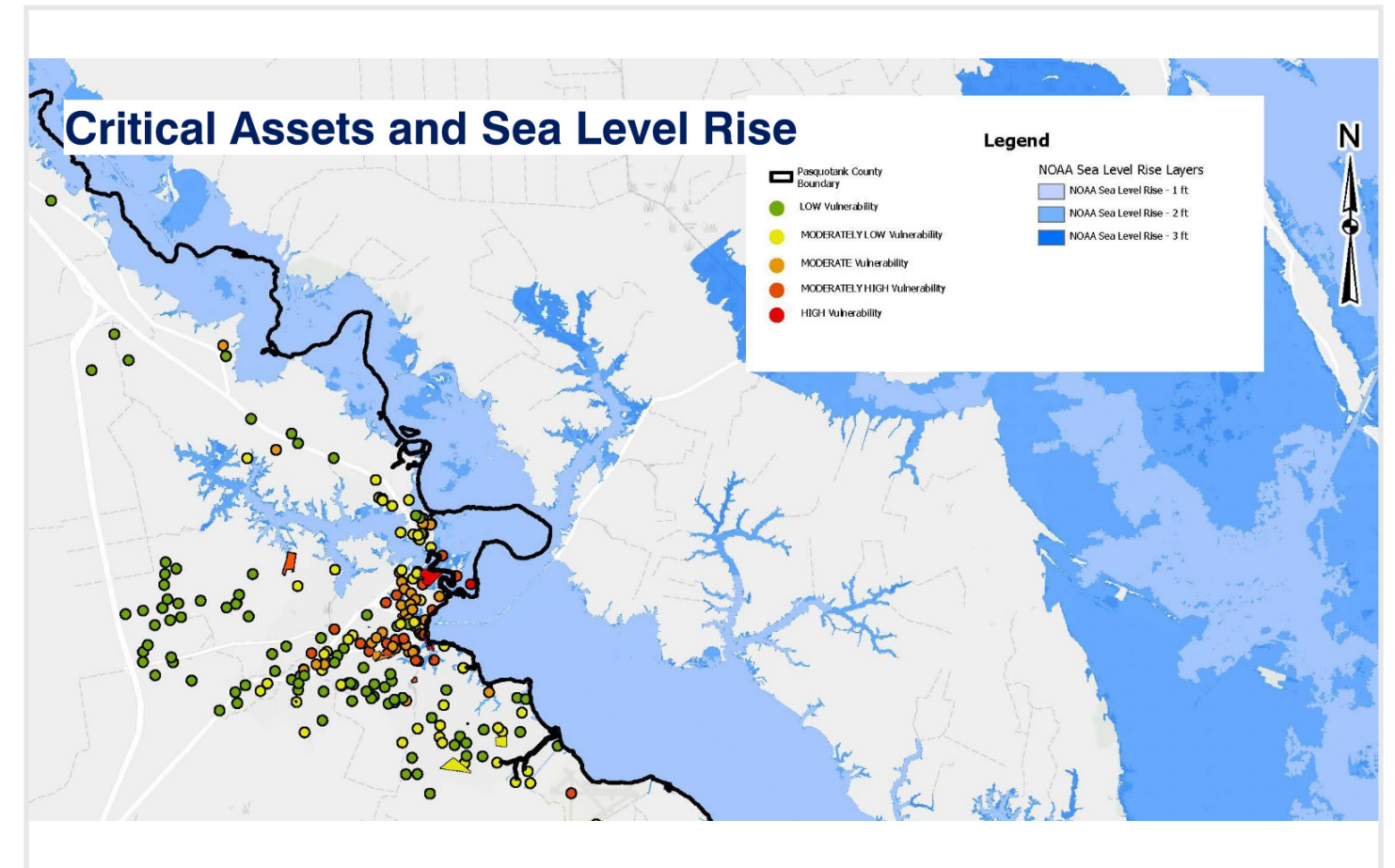
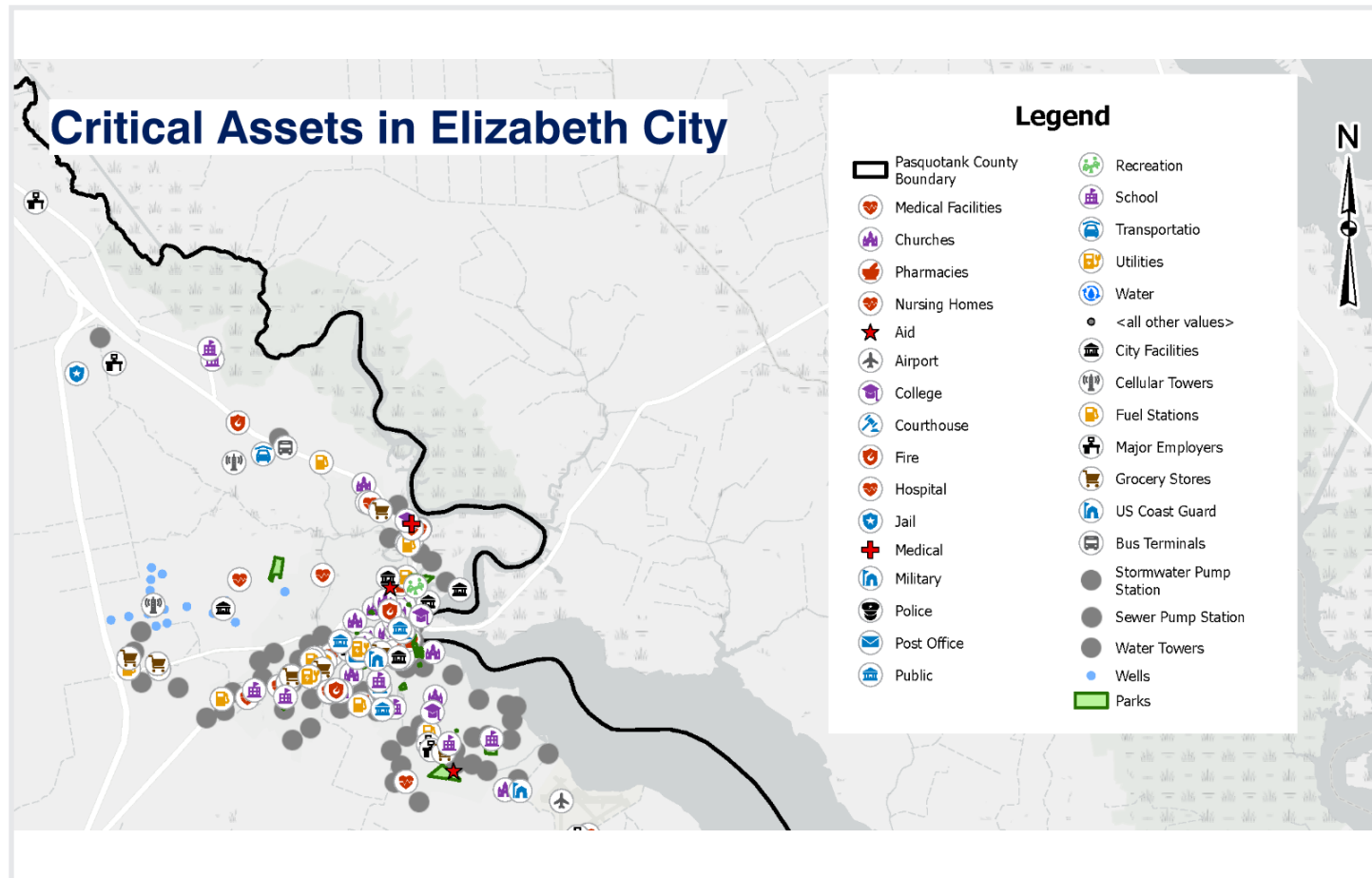
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Future Data on Potential Flooding
- How well can critical assets handle flooding? (Adaptive Capacity)**
 Is there redundancy for this type of asset or this service? If so, that can help with service continuity. Is this an older building or facility? If so, it may be more vulnerable to damage.

Understanding Vulnerability to Flooding



Types of Critical Assets





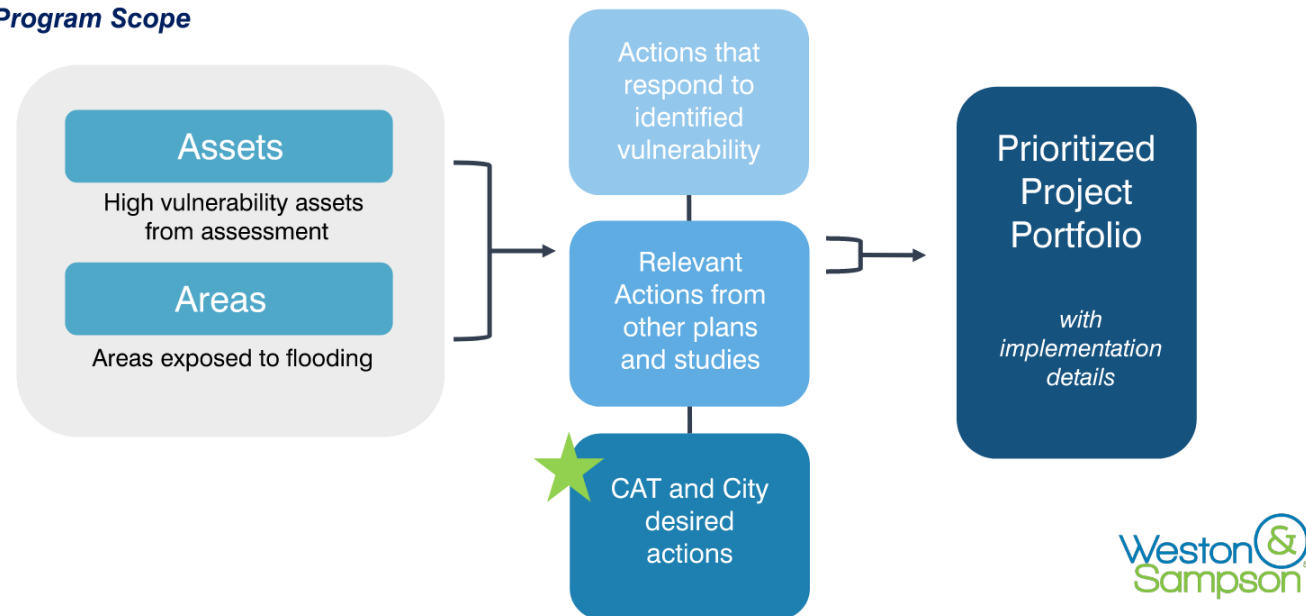
High and Moderately High Vulnerability Assets

Knobbs Creek Rec Center	Parks and Rec	6	HIGH Vulnerability
Waste Water Treatment Plant	Public Works	5	HIGH Vulnerability
Knobbs Creek Park	Public Park	5	HIGH Vulnerability
Waterfront Park	Public Park	5	HIGH Vulnerability
Dog Corner Park	Public Park	5	HIGH Vulnerability
Fish Courts	Public Park	5	HIGH Vulnerability
Mariners' Wharf	Public Park	5	HIGH Vulnerability
Charles Creek Park	Public Park	5	HIGH Vulnerability
Grice St	Sewer Pump Station	4	MODERATELY HIGH Vulnerability
Providence Rd	Sewer Pump Station	4	MODERATELY HIGH Vulnerability
Main Pump Station	Sewer Pump Station	4	MODERATELY HIGH Vulnerability
Dawson St	Sewer Pump Station	4	MODERATELY HIGH Vulnerability
Private: Universal Forest Products	Sewer Pump Station	4	MODERATELY HIGH Vulnerability
Parks and Rec	Sewer Pump Station	4	MODERATELY HIGH Vulnerability
Crab plant	Sewer Pump Station	4	MODERATELY HIGH Vulnerability
Charles St	Sewer Pump Station	4	MODERATELY HIGH Vulnerability
Cale St	Sewer Pump Station	4	MODERATELY HIGH Vulnerability
Church St	Storm Water Pump Station	4	MODERATELY HIGH Vulnerability
MLK	Storm Water Pump Station	4	MODERATELY HIGH Vulnerability
Albemarle Hospital Cardio-Pulmonary Rehabilitation	Cardiac Rehabilitation	4	MODERATELY HIGH Vulnerability
Airport	Airport	4	MODERATELY HIGH Vulnerability
MACU	College	4	MODERATELY HIGH Vulnerability
Albemarle Hospital	Hospital	4	MODERATELY HIGH Vulnerability
National Guard Armory	Military	4	MODERATELY HIGH Vulnerability
Post Office	Post Office	4	MODERATELY HIGH Vulnerability
Public Works Building	Public Works, Garage	4	MODERATELY HIGH Vulnerability
PD Sub Station	PD	4	MODERATELY HIGH Vulnerability
Elizabeth Street Tennis Courts	Tennis Court	4	MODERATELY HIGH Vulnerability
Moth Boat Park	Public Park	4	MODERATELY HIGH Vulnerability
Pool Street Park	Fountain	4	MODERATELY HIGH Vulnerability
Gosnold Park	Public Park	4	MODERATELY HIGH Vulnerability
Veteran's Park	Public Park	4	MODERATELY HIGH Vulnerability
Mead's Pool	Swimming Pool	4	MODERATELY HIGH Vulnerability
Todds Pharmacy, Inc.	Pharmacy	4	MODERATELY HIGH Vulnerability
First Christian Church	Church	4	MODERATELY HIGH Vulnerability



Project Portfolio– Methodology

Program Scope



Actions Related to Infrastructure-Improvements

Group Brainstorm

- Stormwater mitigation, potentially with nature-based solutions, combination of grey and green infrastructure
- Identifying areas of large impervious surfaces/asphalt, study to determine whether or not it could be replaced with pervious coverage to facilitate better stormwater management, or other materials that would reduce urban heat island effect.
- Hot spot analysis of frequently flooded roads, focusing on secondary roads and critical connections, focus on roads city maintains (a primary route may be flooded), how critical routes may relate to critical assets
- Amending city code to allow for pervious paving, zoning and development regulations
- Making sure this is a priority, making sure the city has what it needs to build better in the future, well thought out standards for stormwater mitigation
- Land use plan most recently updated 2012; lay the policy foundation for resilient development
- EC does not participate in the CRS, can be a way to incentivize changes. Look into economic impact on EC by joining, how many flood insurance policies in the city? Request info from FEMA on joining CRS.
- Making development pay for supporting resiliency, improve standards, potentially charge larger stormwater fees with an eye for preparing for future conditions, fee could be scaled toward size of development, set more realistic standards for what our current conditions are
- Making sure any NBS has a reasonable maintenance cost, identify locations for NBS where the surrounding community would be amendable to considering it
- Any opportunity where projects have dual purpose (ie functional floodable parks)



Actions Identified – Infrastructure (Will be shared to review later)

Wastewater Treatment Plant - Conduct a site-scale vulnerability assessment of the wastewater treatment plant and determine adaptation options to either retrofit the building or design and implement site strategies to mitigate flooding.

Pump Stations – Conduct a site-suitability analysis of potential sites to relocate and reconstruct pump stations using adaptation strategies. Screen sites based on their exposure, potential service area, parcel ownership, and environmental factors. Consider continuity of service and emergency services in the instance that the pump stations are out of service.

Airport - Partner with the airport to consider a short- and long-term operations plan that incorporates climate resilience and disaster preparedness and recovery. Conduct a site-scale vulnerability assessment of the airport and immediate surrounding area. Study should consider Coast Guard operations, ECSU flight instruction, and ensuring resilient growth for our broader Aviation Park.

Actions Identified – Nature-based solutions (Will be shared to review later)

Resilient Parks Masterplan - Complete a resilient parks and open space master plan. Elizabeth City has six high vulnerability public parks – a resilient parks master plan could include a more detailed vulnerability assessment of these parks and a strategic plan for implementing resilient retrofits to the parks and their facilities. The city could consider a coastal shoreline connecting multiple parks into a protective system - *for example Moth Boat Park, Downtown Waterfront Market, Mariners Wharf, Waterfront Park, and Coast Guard Park could be an option.*

City Green Infrastructure Projects - Identify locations for green infrastructure on city-owned property and public rights of way to help mitigate the impacts of stormwater flooding and improve drainage.

Streambank Restoration - Evaluate and implement streambank stabilization or channelization along the Pasquotank River and its and tributaries to lessen riverine flooding and bank overtopping

Actions Related to Nature-Based Solutions, Open Spaces, or Ecosystems

Group Brainstorm

- College Park; that area is subject to frequent overtopping of the bulkhead. Good location for a living shoreline. Accommodate recreational uses in the design. Quick, short-term win to build momentum
- What projects can we get FMA funding for? Can some of these spaces be reclaimed for the city (acquisition projects)?
- Coastguard Park; metal building frequently floods, not a competitive project for CAMA land use grant. Metal building stores sailboats, crew program equipment, issues with mold.
- Parks- how would you address it if you were to let it be floodable, or if you were to prevent it from flooding completely
- Moffet&Nichol flood study (flood mitigation study and waterfront master plan), is there anything from that past study that we can carry forward?



Actions Related to Climate-Adapted Buildings or Facilities

Group Brainstorm

- Downtown is subject to flooding from riverine flooding and stormwater runoff
- FEMA's recommendations for critical facilities
- Adopting higher standards in the city for new and redevelopment, better construction standards. Investigate what standards the City wants to adopt. Start with the standards. Must be able to enforce in order to implement.
- Incentivizing developers to implement higher standards
- City can request repetitive loss and Severe repetitive loss data from FEMA. Can help the City identify where elevations and buyouts/acquisitions may be appropriate. COG is working on obtaining that information.
- State has given local authority to communities regarding stormwater. Will need to identify an individual for this position. Navigating compliance with newer standards.



Actions Identified – Buildings & Facilities (Will be shared to review later)

Public Works Facility - Integrate climate adaptation and resilience measures into the design of the new public works multiplex. Select a site for the multiplex with limited exposure to flooding.



Actions Identified – Community Resilience (Will be shared to review later)

Sentera Albemarle Medical Center - Reach out to the hospital and initiate conversations/desktop exercises for disaster scenarios, including potential recovery times.

NFIP and CRS - Conduct outreach to homeowners to expand enrollment in the NFIP. Develop city priorities for Community Rating System points.

MCU - Coordinate with Mid-Atlantic Christian University to encourage development of shelter-in-place planning and response for flood related events as it pertains to student and staff safety.

Outreach - Develop a community preparedness campaign with educational resources about storm preparedness and recovery.

Home Elevation - Create an Albemarle Regional position to support residents with FEMA Home Elevation applications.

Actions Related to Community Resilience and Resident Preparedness

Group Brainstorm

- _____

Please engage in the following

Join	Join us for community engagement at Potato Fest on May 18th !
Review	Review the actions spreadsheet
Provide	Provide comments on the draft plan
Get	Get the word out!



Appendix **B**

Critical Assets Vulnerability Assessment Scores

Table 11. Critical Assets Vulnerability Assessment Scores

Asset Name	Asset Type	Value Type	E	S	A	V	Vulnerability Score
Knobbs Creek Recreation Center	Parks and Rec	Local Businesses / Other	3	3	0	6	HIGH Vulnerability
Waste Water Treatment Plant	Public Works	Government Facilities	3	3	1	5	HIGH Vulnerability
Knobbs Creek Park	Public Park	Natural Resources	3	3	1	5	HIGH Vulnerability
Waterfront Park	Public Park	Natural Resources	3	3	1	5	HIGH Vulnerability
College Park (renamed from Dog Corner Park)	Public Park	Natural Resources	3	3	1	5	HIGH Vulnerability
Fish Courts	Public Park	Natural Resources	3	3	1	5	HIGH Vulnerability
Mariner's Wharf	Public Park	Natural Resources	3	3	1	5	HIGH Vulnerability
Charles Creek Park	Public Park	Natural Resources	3	3	1	5	HIGH Vulnerability
Grice St	Sewer Pump Station	Infrastructure/ Utilities	2	3	1	4	MODERATELY HIGH Vulnerability
Providence Rd	Sewer Pump Station	Infrastructure/ Utilities	2	3	1	4	MODERATELY HIGH Vulnerability
Main Pump Station	Sewer Pump Station	Infrastructure/ Utilities	2	3	1	4	MODERATELY HIGH Vulnerability
Dawson St	Sewer Pump Station	Infrastructure/ Utilities	2	3	1	4	MODERATELY HIGH Vulnerability
Private: Universal Forest Products	Sewer Pump Station	Infrastructure/ Utilities	2	3	1	4	MODERATELY HIGH Vulnerability
Parks and Rec	Sewer Pump Station	Infrastructure/ Utilities	2	3	1	4	MODERATELY HIGH Vulnerability
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Albemarle Hospital Cardio-Pulmonary Rehabilitation	Cardiac Rehabilitation	Medical	3	1	0	4	MODERATELY HIGH Vulnerability
EC Regional Airport	Airport	Government Facilities	3	1	0	4	MODERATELY HIGH Vulnerability
Mid-Atlantic Christian University	College	Government Facilities	3	2	1	4	MODERATELY HIGH Vulnerability
Albemarle Hospital (Sentara Albemarle Medical Center)	Hospital	Medical	3	1	0	4	MODERATELY HIGH Vulnerability
National Guard Armory	Military	Government Facilities	1	3	0	4	MODERATELY HIGH Vulnerability
EC Post Office	Post Office	Government Facilities	1	3	0	4	MODERATELY HIGH Vulnerability

E = Exposure Score S = Sensitivity Score A = Adaptive Capacity Score V = Vulnerability Score

Asset Name	Asset Type	Value Type	E	S	A	V	Vulnerability Score
Public Works Building	Public Works, Garage	Government Facilities	1	3	0	4	MODERATELY HIGH Vulnerability
Police Department Sub Station	Police	Government Facilities	1	3	0	4	MODERATELY HIGH Vulnerability
Elizabeth Street Tennis Courts	Tennis Court	Local Businesses / Other	2	2	0	4	MODERATELY HIGH Vulnerability
Moth Boat Park	Public Park	Natural Resources	3	2	1	4	MODERATELY HIGH Vulnerability
Pool Street Park	Fountain	Local Businesses / Other	1	3	0	4	MODERATELY HIGH Vulnerability
Gosnold Park	Public Park	Natural Resources W	2	3	1	4	MODERATELY HIGH Vulnerability
Veteran's Park	Public Park	Natural Resources	3	2	1	4	MODERATELY HIGH Vulnerability
Mead's Pool	Swimming Pool	Local Businesses / Other	3	1	0	4	MODERATELY HIGH Vulnerability
Todds Pharmacy, Inc.	Pharmacy	Local Businesses / Other	2	3	1	4	MODERATELY HIGH Vulnerability
First Christian Church	Church	Local Businesses / Other	2	3	1	4	MODERATELY HIGH Vulnerability
Mount Lebanon AME Zion Church	Church	Local Businesses / Other	2	3	1	4	MODERATELY HIGH Vulnerability
Christ Episcopal Church	Church	Local Businesses / Other	2	3	1	4	MODERATELY HIGH Vulnerability
Church of Jesus Christ of Latter Day Saints - Hall	Church	Local Businesses / Other	2	3	1	4	MODERATELY HIGH Vulnerability
Eastern Star Church of God in Christ	Church	Local Businesses / Other	2	3	1	4	MODERATELY HIGH Vulnerability
Waterbrooke of Elizabeth City	Nursing Home	Medical	3	1	1	3	MODERATE Vulnerability
Grace Dr	Sewer Pump Station	Infrastructure/ Utilities	1	3	1	3	MODERATE Vulnerability
Pearl St	Sewer Pump Station	Infrastructure/ Utilities	2	2	1	3	MODERATE Vulnerability
City Hall	Sewer Pump Station	Infrastructure/ Utilities	2	2	1	3	MODERATE Vulnerability
Holiday Inn	Sewer Pump Station	Infrastructure/ Utilities	2	2	1	3	MODERATE Vulnerability
ElizabethSt/Water St	Storm Water Pump Station	Infrastructure/ Utilities	2	2	1	3	MODERATE Vulnerability
Lincare Infusion Services	Home Care	Medical	2	2	1	3	MODERATE Vulnerability
The Learning Palace	Mental Health Homes	Medical	1	3	1	3	MODERATE Vulnerability
Salvation Army	Aid	Local Businesses / Other	2	2	1	3	MODERATE Vulnerability
College of the Albemarle	College	Government Facilities	3	1	1	3	MODERATE Vulnerability
US Federal Courthous	Courthouse	Government Facilities	1	2	0	3	MODERATE Vulnerability

Asset Name	Asset Type	Value Type	E	S	A	V	Vulnerability Score
EC Fire Station 2	Fire	Government Facilities	2	2	1	3	MODERATE Vulnerability
VFD Soundneck Sub	Fire	Government Facilities	2	1	0	3	MODERATE Vulnerability
EC Police Department	Police	Government Facilities	1	2	0	3	MODERATE Vulnerability
City Hall	Public	Government Facilities	2	2	1	3	MODERATE Vulnerability
PasquotankCo Sheriff	Public	Government Facilities	2	2	1	3	MODERATE Vulnerability
Sheep-Harney	School	Government Facilities	2	2	1	3	MODERATE Vulnerability
Pasquotank Elementary School	School	Government Facilities	2	2	1	3	MODERATE Vulnerability
Pasquotank HS	School	Government Facilities	3	1	1	3	MODERATE Vulnerability
NC DOT	Transportatio	Government Facilities	2	1	0	3	MODERATE Vulnerability
EC Public Works	Utilities	Government Facilities	1	3	1	3	MODERATE Vulnerability
Water Plant	Public Works	Government Facilities	2	2	1	3	MODERATE Vulnerability
Warehouse	Purchasing	Government Facilities	1	2	0	3	MODERATE Vulnerability
Food Lion - 683 S Hughes Blvd,	Grocery Stores	Local Businesses / Other	2	2	1	3	MODERATE Vulnerability
La Perla - 501 W Ehringhaus St	Grocery Stores	Local Businesses / Other	1	3	1	3	MODERATE Vulnerability
Walnut Park	Public Park	Natural Resources	2	2	1	3	MODERATE Vulnerability
Enfield Ball Park	Softball	Local Businesses / Other	1	3	1	3	MODERATE Vulnerability
Enfield Recreation Area	Public Park	Natural Resources	1	3	1	3	MODERATE Vulnerability
Anita Hummer Park for Children	Public Park	Natural Resources	1	3	1	3	MODERATE Vulnerability
Coast Guard Park	Public Park	Natural Resources	3	1	1	3	MODERATE Vulnerability
Sawmill Park	Public Park	Natural Resources	3	1	1	3	MODERATE Vulnerability
Roger McLean Splash Pad	Public Park	Natural Resources	1	3	1	3	MODERATE Vulnerability
W. L. Pete Hooker Park	Public Park	Natural Resources	1	3	1	3	MODERATE Vulnerability
Walgreens #10132	Pharmacy	Local Businesses / Other	2	2	1	3	MODERATE Vulnerability
CVS/pharmacy	Pharmacy	Local Businesses / Other	1	3	1	3	MODERATE Vulnerability
Pharmacy at Sentara Albemarle Regional Medical Center	Pharmacy	Local Businesses / Other	3	1	1	3	MODERATE Vulnerability
Faithway Apostolic Church Inc	Church	Local Businesses / Other	2	2	1	3	MODERATE Vulnerability

Asset Name	Asset Type	Value Type	E	S	A	V	Vulnerability Score
First United Methodist Church	Church	Local Businesses / Other	1	3	1	3	MODERATE Vulnerability
Freewill Independent Church	Church	Local Businesses / Other	2	2	1	3	MODERATE Vulnerability
Holy Trinity Community Church	Church	Local Businesses / Other	1	3	1	3	MODERATE Vulnerability
Kingdom Hall of Jehovah's Witnesses	Church	Local Businesses / Other	1	3	1	3	MODERATE Vulnerability
Living Word Church	Church	Local Businesses / Other	2	2	1	3	MODERATE Vulnerability
Olive Branch Missionary Baptist Church	Church	Local Businesses / Other	1	3	1	3	MODERATE Vulnerability
Blackwell Memorial Baptist Church	Church	Local Businesses / Other	2	2	1	3	MODERATE Vulnerability
Cathedral of Faith Church	Church	Local Businesses / Other	1	3	1	3	MODERATE Vulnerability
City Road United Methodist Church	Church	Local Businesses / Other	2	2	1	3	MODERATE Vulnerability
Poole St Water Tower	Water Tower	Infrastructure/ Utilities	1	2	1	2	MODERATELY LOW Vulnerability
Sweet 17	Sewer Pump Station	Infrastructure/ Utilities	1	2	1	2	MODERATELY LOW Vulnerability
Russell Ln	Sewer Pump Station	Infrastructure/ Utilities	2	1	1	2	MODERATELY LOW Vulnerability
Jail	Sewer Pump Station	Infrastructure/ Utilities	1	2	1	2	MODERATELY LOW Vulnerability
Whitehurst	Sewer Pump Station	Infrastructure/ Utilities	2	1	1	2	MODERATELY LOW Vulnerability
Water Plant	Sewer Pump Station	Infrastructure/ Utilities	1	2	1	2	MODERATELY LOW Vulnerability
William Cr	Sewer Pump Station	Infrastructure/ Utilities	2	1	1	2	MODERATELY LOW Vulnerability
Knobbs Creek	Sewer Pump Station	Infrastructure/ Utilities	2	1	1	2	MODERATELY LOW Vulnerability
Cell Tower - {C764F803-6FBB-46E3-BEA7-65E0ABFD7814}	Cell Tower	Infrastructure/ Utilities	2	1	1	2	MODERATELY LOW Vulnerability
Cell Tower - {4EE9C797-EC51-429A-B079-1CCE32EA5A8A}	Cell Tower	Infrastructure/ Utilities	2	1	1	2	MODERATELY LOW Vulnerability
Harbour's Edge Retirement Center	Home For The Aged	Medical	2	1	1	2	MODERATELY LOW Vulnerability
Rice Therapeutic Home	Mental Health Homes	Medical	2	1	1	2	MODERATELY LOW Vulnerability
Hoffler Flow Controls	Major Employer	Local Businesses / Other	2	1	1	2	MODERATELY LOW Vulnerability
TCOM	Major Employer	Local Businesses / Other	2	1	1	2	MODERATELY LOW Vulnerability
Hockmeyer Equipment Corporation	Major Employer	Local Businesses / Other	2	1	1	2	MODERATELY LOW Vulnerability

Asset Name	Asset Type	Value Type	E	S	A	V	Vulnerability Score
US Coast Guard	US Coast Guard	Government Facilities	1	1	0	2	MODERATELY LOW Vulnerability
Weeksville VFD	Fire	Government Facilities	2	1	1	2	MODERATELY LOW Vulnerability
Cooperative Ext	Public	Government Facilities	1	2	1	2	MODERATELY LOW Vulnerability
Weeksville Elem	School	Government Facilities	2	1	1	2	MODERATELY LOW Vulnerability
Pasquotank Water Dep	Water	Government Facilities	1	1	0	2	MODERATELY LOW Vulnerability
Crown - 1013 N Road St	Fuel Station	Infrastructure/ Utilities	1	2	1	2	MODERATELY LOW Vulnerability
Speedway - 1129 N Road St	Fuel Station	Infrastructure/ Utilities	2	1	1	2	MODERATELY LOW Vulnerability
76 - 444 S Hughes Blvd,	Fuel Station	Infrastructure/ Utilities	1	2	1	2	MODERATELY LOW Vulnerability
Eagle Mart - 500 S Hughes Blvd	Fuel Station	Infrastructure/ Utilities	1	2	1	2	MODERATELY LOW Vulnerability
River Road Soccer Complex	Soccer Complex	Local Businesses / Other	1	1	0	2	MODERATELY LOW Vulnerability
Fun Junktion	Public Park	Natural Resources	3	0	1	2	MODERATELY LOW Vulnerability
Harbor Pharmacy	Pharmacy	Local Businesses / Other	1	2	1	2	MODERATELY LOW Vulnerability
Todd's Northside Professional Phcy	Pharmacy	Local Businesses / Other	2	1	1	2	MODERATELY LOW Vulnerability
Community Care Clinic	Pharmacy	Local Businesses / Other	1	2	1	2	MODERATELY LOW Vulnerability
Food Lion Pharmacy #2238	Pharmacy	Local Businesses / Other	1	2	1	2	MODERATELY LOW Vulnerability
First Baptist Church	Church	Local Businesses / Other	1	2	1	2	MODERATELY LOW Vulnerability
New Calvary Baptist Church	Church	Local Businesses / Other	1	2	1	2	MODERATELY LOW Vulnerability
Carolina House of Elizabeth City	Nursing Home	Medical	1	1	1	1	MODERATELY LOW Vulnerability
W R Winslow Memorial Home	Nursing Home	Medical	2	0	1	1	MODERATELY LOW Vulnerability
Guardian Care of Elizabeth City	Nursing Home	Medical	2	0	1	1	MODERATELY LOW Vulnerability
Well-10	Well	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability
Hastings Lane	Sewer Pump Station	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability
Villa Drive	Sewer Pump Station	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability
Summerfield	Sewer Pump Station	Infrastructure/ Utilities	2	0	1	1	MODERATELY LOW Vulnerability
Meadowland	Sewer Pump Station	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability

Asset Name	Asset Type	Value Type	E	S	A	V	Vulnerability Score
River Rd	Sewer Pump Station	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability
Pelican Pointe II	Sewer Pump Station	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability
Tamsco	Sewer Pump Station	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability
River View Estates	Sewer Pump Station	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability
EC Airport	Sewer Pump Station	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability
Old Gateway Bank	Sewer Pump Station	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability
Private: River Road Middle	Sewer Pump Station	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability
Spalding Park	Sewer Pump Station	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability
Coastal Rehabilitation, Inc.	Home Care	Medical	1	1	1	1	MODERATELY LOW Vulnerability
Spicer AFL	Mental Health Homes	Medical	1	1	1	1	MODERATELY LOW Vulnerability
Telephonics Corporation	Major Employer	Local Businesses / Other	1	1	1	1	MODERATELY LOW Vulnerability
Food Bank	Aid	Government Facilities	1	1	1	1	MODERATELY LOW Vulnerability
Elizabeth City State University	College	Government Facilities	1	1	1	1	MODERATELY LOW Vulnerability
Newland Volunteer Fire Department	Fire	Government Facilities	1	1	1	1	MODERATELY LOW Vulnerability
Central Elementary School	School	Government Facilities	2	0	1	1	MODERATELY LOW Vulnerability
River Road MS	School	Government Facilities	1	1	1	1	MODERATELY LOW Vulnerability
NC Dominion Power	Utilities	Government Facilities	2	0	1	1	MODERATELY LOW Vulnerability
Sunoco Gas Station - 1735 Weeksville Rd	Fuel Station	Infrastructure/ Utilities	1	1	1	1	MODERATELY LOW Vulnerability
Food Lion - 1313 N Road St, Elizabeth City	Grocery Stores	Local Businesses / Other	1	1	1	1	MODERATELY LOW Vulnerability
South Park Sports Complex	Softball	Local Businesses / Other	1	1	1	1	MODERATELY LOW Vulnerability
Holy Family Catholic Church Parish	Church	Local Businesses / Other	1	1	1	1	MODERATELY LOW Vulnerability
Calvary Baptist Church	Church	Local Businesses / Other	1	1	1	1	MODERATELY LOW Vulnerability
Church of Christ Bayside	Church	Local Businesses / Other	1	1	1	1	MODERATELY LOW Vulnerability
Heritage Care of Elizabeth City	Nursing Home	Medical	0	1	1	0	LOW Vulnerability
Well-1	Well	Infrastructure/ Utilities	0	0	1	0	LOW Vulnerability

Asset Name	Asset Type	Value Type	E	S	A	V	Vulnerability Score
Well-2	Well	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Well-3	Well	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Well-4	Well	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Well-5	Well	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Well-6	Well	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Well-7	Well	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Well-8	Well	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Well-9	Well	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Well-11	Well	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Well-12	Well	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Well-13	Well	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Well-14	Well	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Well-15	Well	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Well-16	Well	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Well-17	Well	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Halstead Blvd Water Tower	Water Tower	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability
ECSU Water Tower	Water Tower	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
City Center West	Sewer Pump Station	Infrastructure/Utilities	1	0	1	0	LOW Vulnerability
Lexington Dr	Sewer Pump Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability
Adams Landing	Sewer Pump Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability
17 South	Sewer Pump Station	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Magnolia Woods	Sewer Pump Station	Infrastructure/Utilities	1	0	1	0	LOW Vulnerability
Bryon Court	Sewer Pump Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability
Roanoke	Sewer Pump Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability
Pasquotank School	Sewer Pump Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability

Asset Name	Asset Type	Value Type	E	S	A	V	Vulnerability Score
Halstead Blvd	Sewer Pump Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability
Herrington Village	Sewer Pump Station	Infrastructure/Utilities	0	3	1	0	LOW Vulnerability
Ida Acres	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Peartree North	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Elizabeth Gardens	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Pelican Pointe I	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Winfield	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Winslow Acres	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Stockbridge	Sewer Pump Station	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Northeastern High School	Sewer Pump Station	Infrastructure/Utilities	1	0	1	0	LOW Vulnerability
South Park	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Rosewood	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
WalMart	Sewer Pump Station	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Perkins Lane	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Northside Park	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Hunters Lake	Sewer Pump Station	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Herons Ridge	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Private: Commerce	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Private: Tanglewood Lake Apt	Sewer Pump Station	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Private: ECPPS	Sewer Pump Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability
Tooley Harbor	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Private: Coastal Beverage	Sewer Pump Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability
Private: Queen Elizabeth	Sewer Pump Station	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Hall Honda	Sewer Pump Station	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
K-Mart	Sewer Pump Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability

Asset Name	Asset Type	Value Type	E	S	A	V	Vulnerability Score
Lakeside	Sewer Pump Station	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Millbrooke	Sewer Pump Station	Infrastructure/Utilities	1	0	1	0	LOW Vulnerability
Private: Walkers Landing	Sewer Pump Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability
Private: Central/Northeastern Schools	Sewer Pump Station	Infrastructure/Utilities	1	0	1	0	LOW Vulnerability
COA Private #1	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
COA Private #2	Sewer Pump Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Elizabeth City Bus Terminal	Bus Terminal	Government Facilities	0	1	0	0	LOW Vulnerability
Cell Tower - {936B6CF0-B0D3-4EF7-889F-13D12F300E72}	Cell Tower	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Cell Tower - {DA806824-1FCF-4B59-8BC1-6D25797DFABF}	Cell Tower	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Quality Home Staffing, Inc.	Home Care	Medical	0	2	1	0	LOW Vulnerability
Baxter Street	Mental Health Homes	Medical	0	0	1	0	LOW Vulnerability
Fort Bragg Drive	Mental Health Homes	Medical	0	1	1	0	LOW Vulnerability
Pearl's II Inc.	Mental Health Homes	Medical	1	0	1	0	LOW Vulnerability
Moneysworth	Major Employer	Local Businesses / Other	0	1	1	0	LOW Vulnerability
J.W. Jones Lumbar Company	Major Employer	Local Businesses / Other	0	1	1	0	LOW Vulnerability
EC Fire Station 1	Fire	Government Facilities	0	2	1	0	LOW Vulnerability
Providence VFD	Fire	Government Facilities	0	1	1	0	LOW Vulnerability
Pasquotank Correctio	Jail	Government Facilities	0	1	0	0	LOW Vulnerability
Pasquotank-Camden EMS	Medical	Medical	0	1	0	0	LOW Vulnerability
Health Dept/Social Security	Public	Government Facilities	0	2	1	0	LOW Vulnerability
School Administration	Public	Government Facilities	0	2	1	0	LOW Vulnerability
PW Moore	School	Government Facilities	0	2	1	0	LOW Vulnerability
Northeastern HS	School	Government Facilities	0	0	1	0	LOW Vulnerability
Northside Elem	School	Government Facilities	0	1	1	0	LOW Vulnerability

Asset Name	Asset Type	Value Type	E	S	A	V	Vulnerability Score
Kermit White Graduate and Continuing Education Center	School	Government Facilities	0	1	1	0	LOW Vulnerability
WellField Complex	Public Works	Government Facilities	0	0	1	0	LOW Vulnerability
Murphy USA - 108 Tanglewood Pkwy, Elizabeth City	Fuel Station	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Shell - 1416 W Ehringhaus St	Fuel Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability
Citgo - 1622 N Road St	Fuel Station	Infrastructure/Utilities	0	1	1	0	LOW Vulnerability
Exxon - 1012 Halstead Blvd	Fuel Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability
Speedway - 1120 Hwy 17	Fuel Station	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
BP - 1008 Hwy 17	Fuel Station	Infrastructure/Utilities	0	2	1	0	LOW Vulnerability
7 Eleven - 3800 Patrick Way	Fuel Station	Infrastructure/Utilities	0	0	1	0	LOW Vulnerability
Food Lion - 1805 Weeksville Rd	Grocery Stores	Local Businesses / Other	0	1	1	0	LOW Vulnerability
ALDI - 3805 Conlon Way	Grocery Stores	Local Businesses / Other	0	0	1	0	LOW Vulnerability
Food Lion - 1515 W Ehringhaus St	Grocery Stores	Local Businesses / Other	0	2	1	0	LOW Vulnerability
Walmart Supercenter - 101 Tanglewood Pkwy	Grocery Stores	Local Businesses / Other	0	0	1	0	LOW Vulnerability
Edgewood Play Lot	Public Park	Natural Resources	0	1	1	0	LOW Vulnerability
Northeastern Park	Public Park	Natural Resources	1	0	1	0	LOW Vulnerability
Tarheel Pharmacy	Pharmacy	Local Businesses / Other	0	2	1	0	LOW Vulnerability
Wal-Mart Pharmacy #10-1527	Pharmacy	Local Businesses / Other	0	0	1	0	LOW Vulnerability
Glad Tidings Community Church	Church	Local Businesses / Other	0	3	1	0	LOW Vulnerability
Memorial Missionary Baptist Church	Church	Local Businesses / Other	0	2	1	0	LOW Vulnerability
New Community Church	Church	Local Businesses / Other	0	2	1	0	LOW Vulnerability
Cann Memorial Presbyterian Church	Church	Local Businesses / Other	0	2	1	0	LOW Vulnerability
Church of God and Saints of Christ	Church	Local Businesses / Other	0	1	1	0	LOW Vulnerability
Emmanuel United Fellowship	Church	Local Businesses / Other	0	2	1	0	LOW Vulnerability

Appendix **C**

Detailed Maps

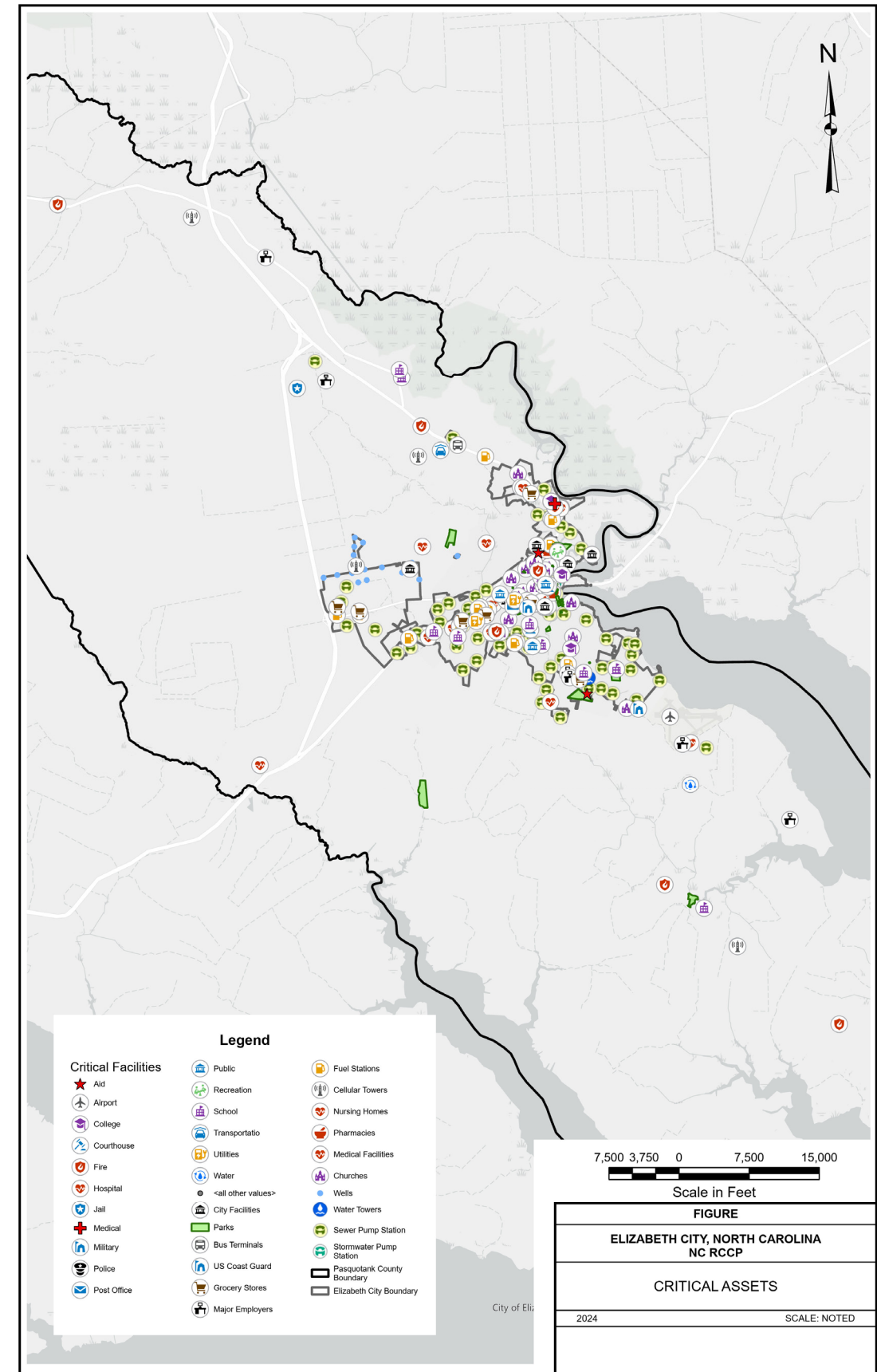


Figure 1. Critical Assets

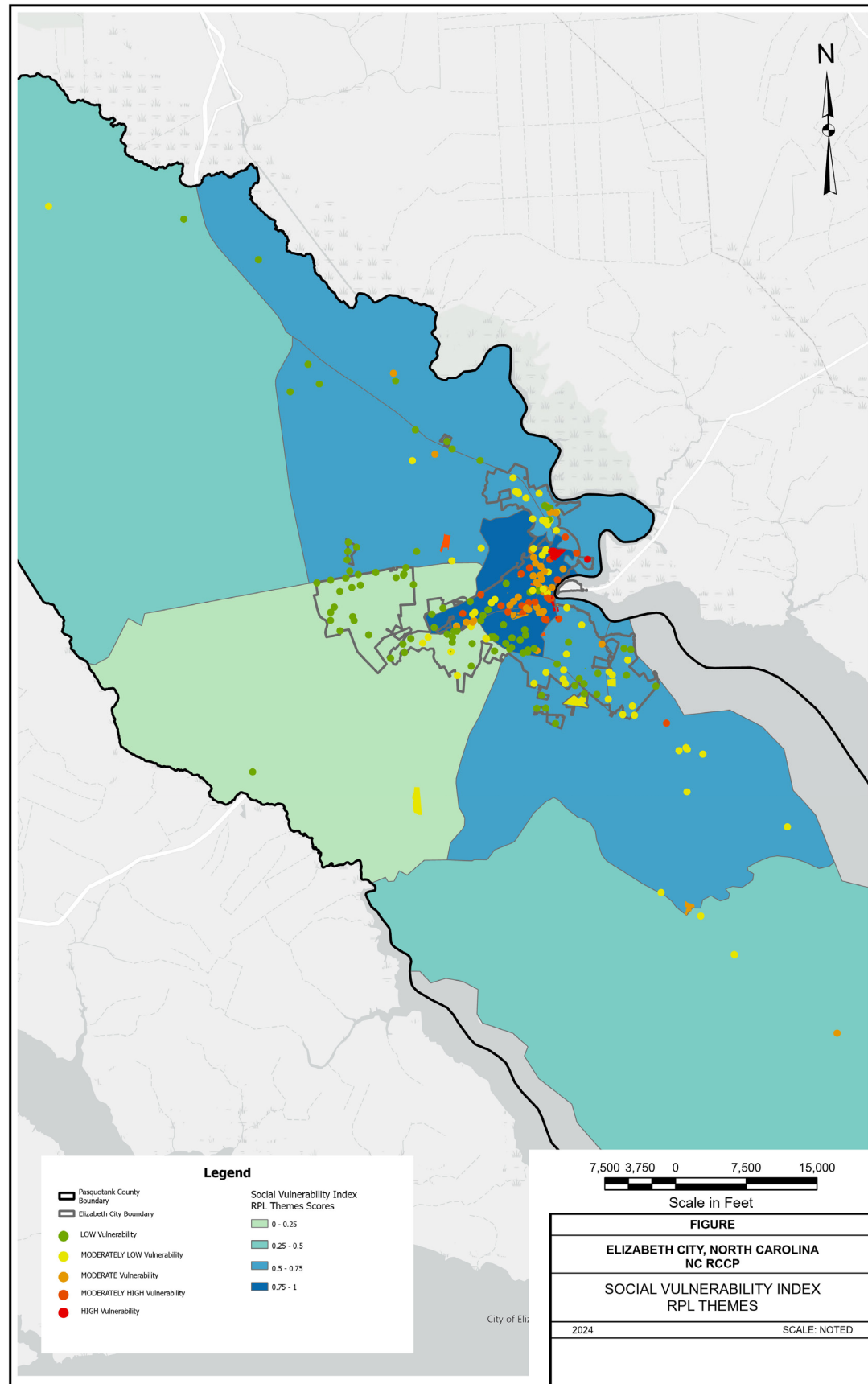


Figure 2. Social Vulnerability Map RPL Themes Scores

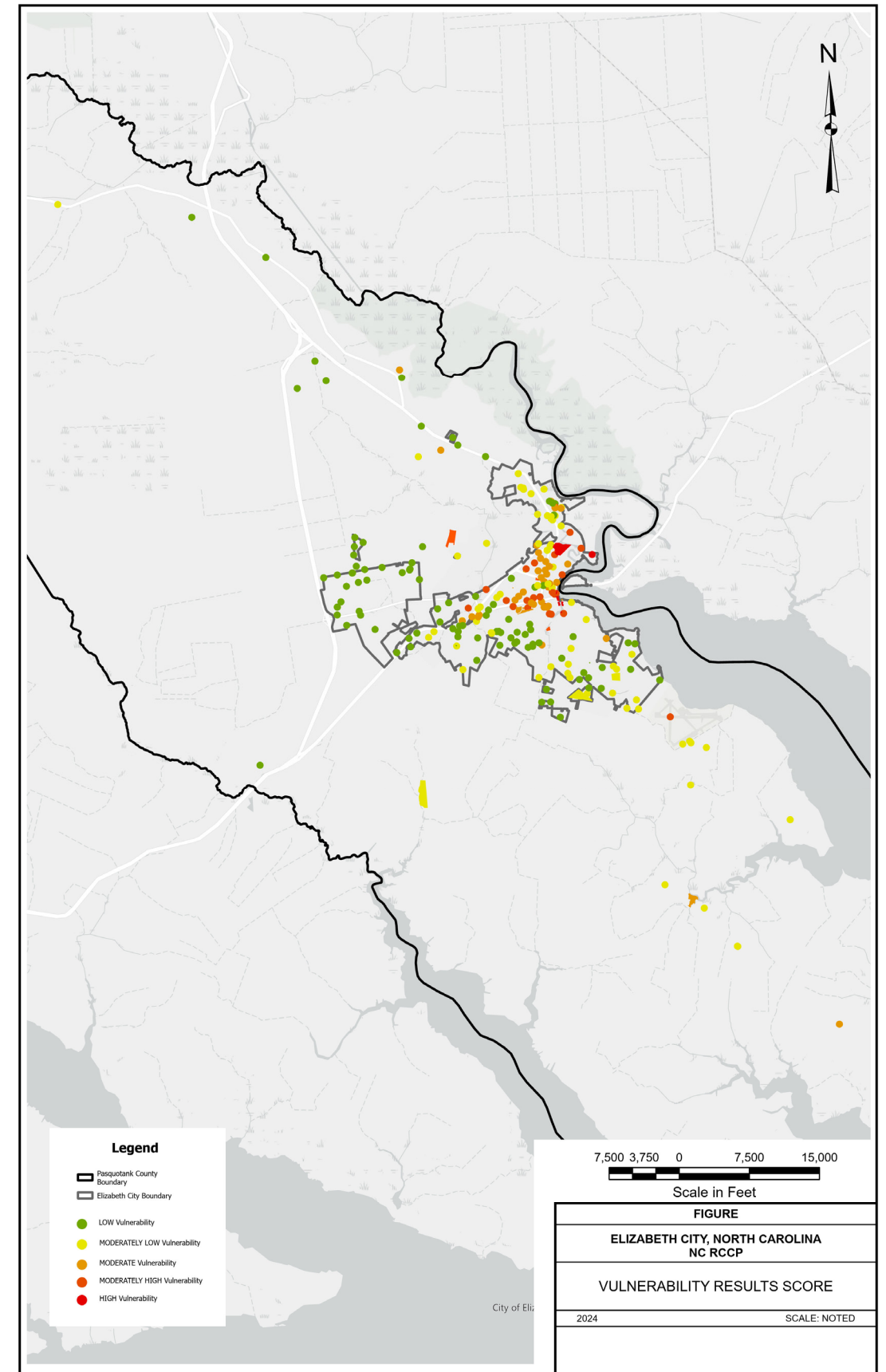


Figure 3. Vulnerability Score Results Map

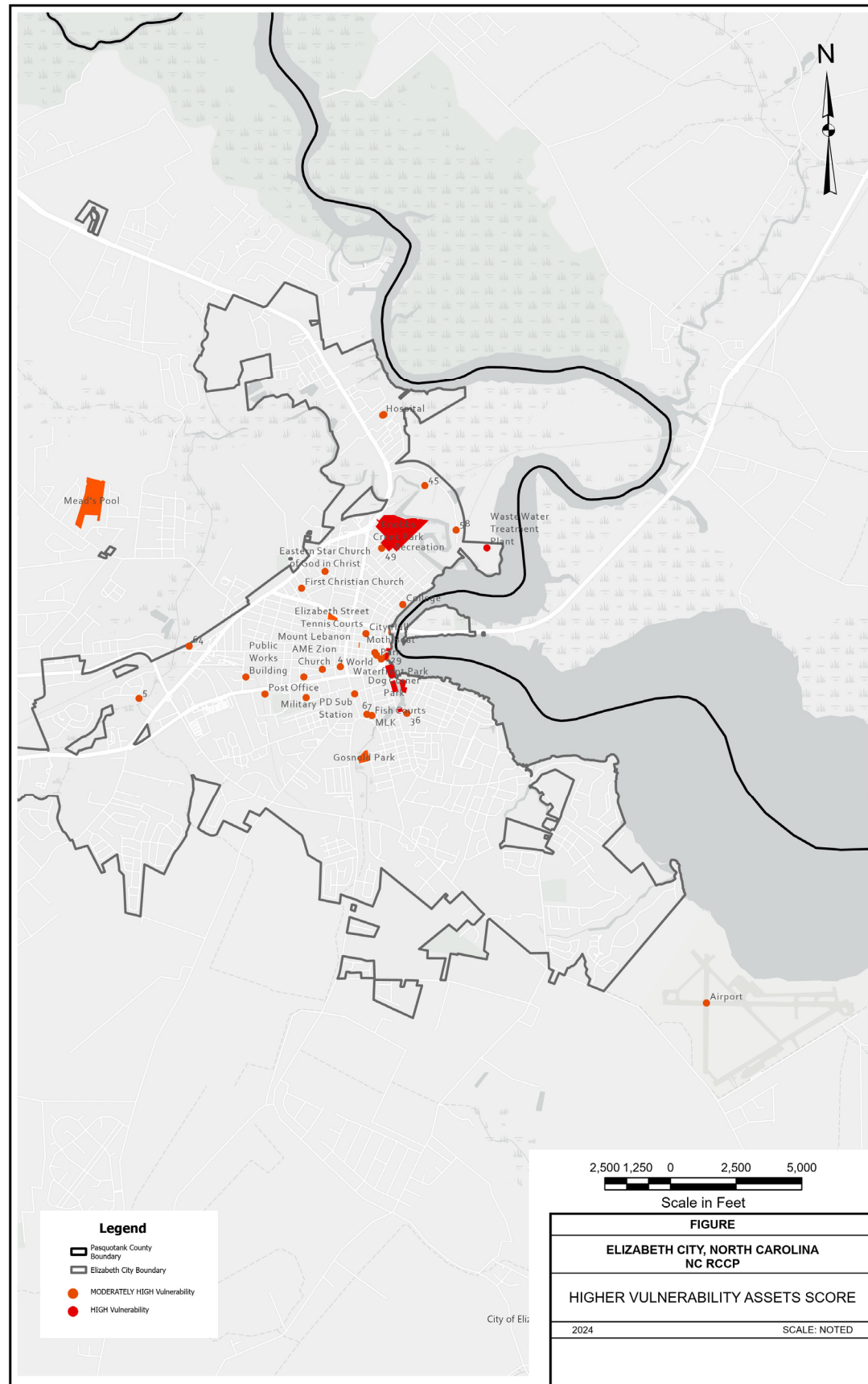


Figure 4. Higher Vulnerability Assets Map

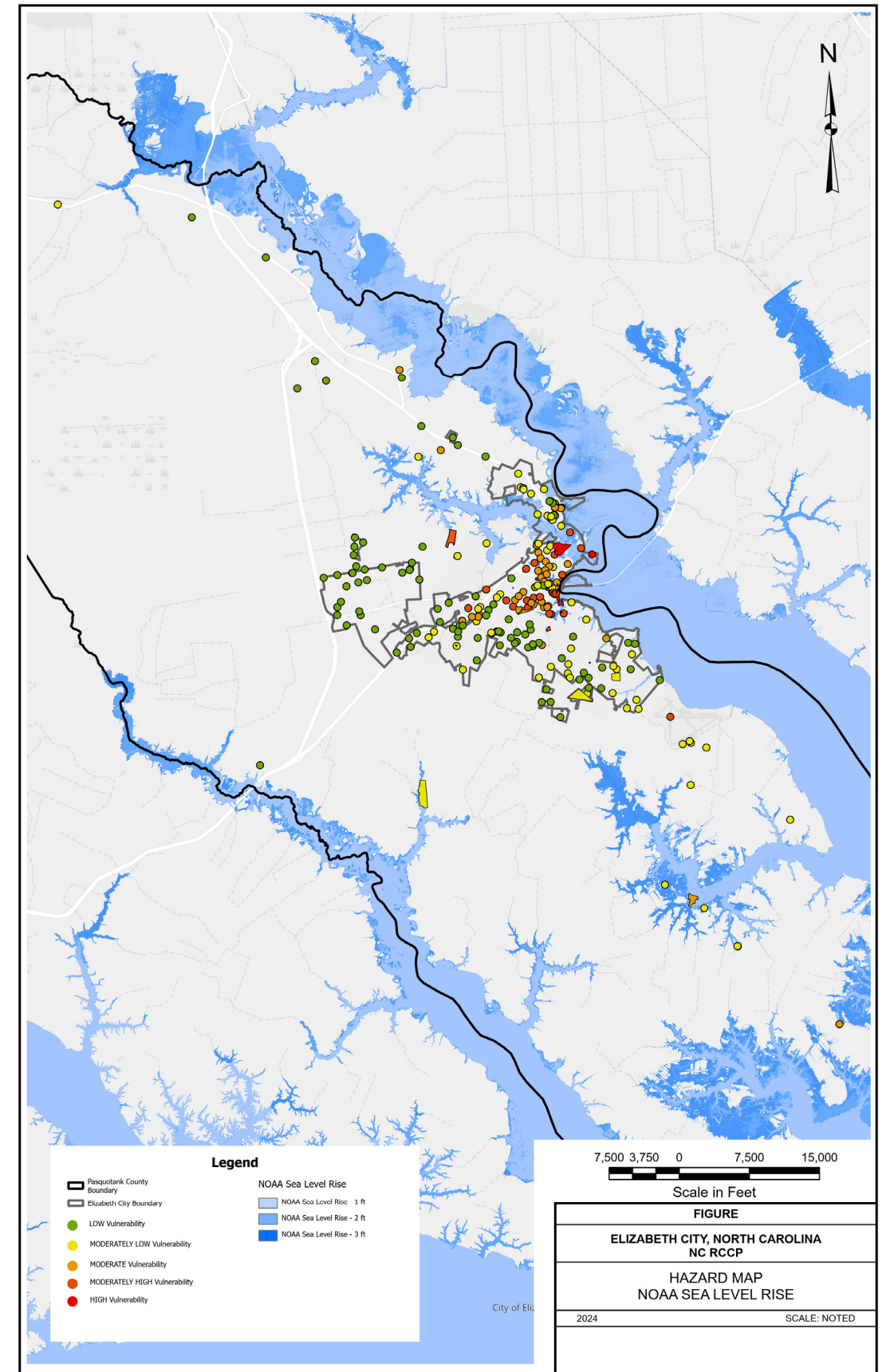


Figure 5. Hazard Map - NOAA Sea Level Rise

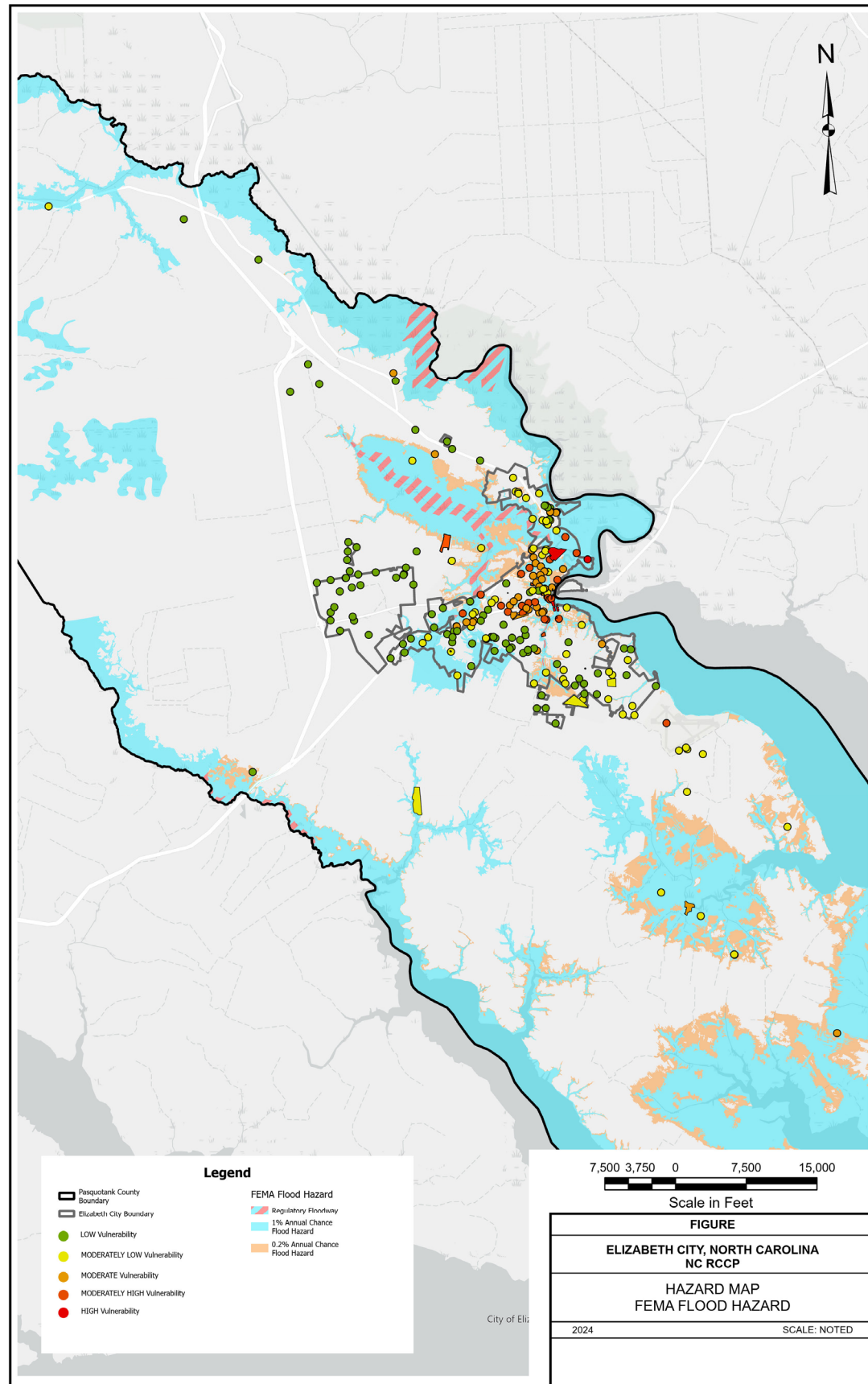


Figure 6. Hazard Map - FEMA Flood Hazards Layer

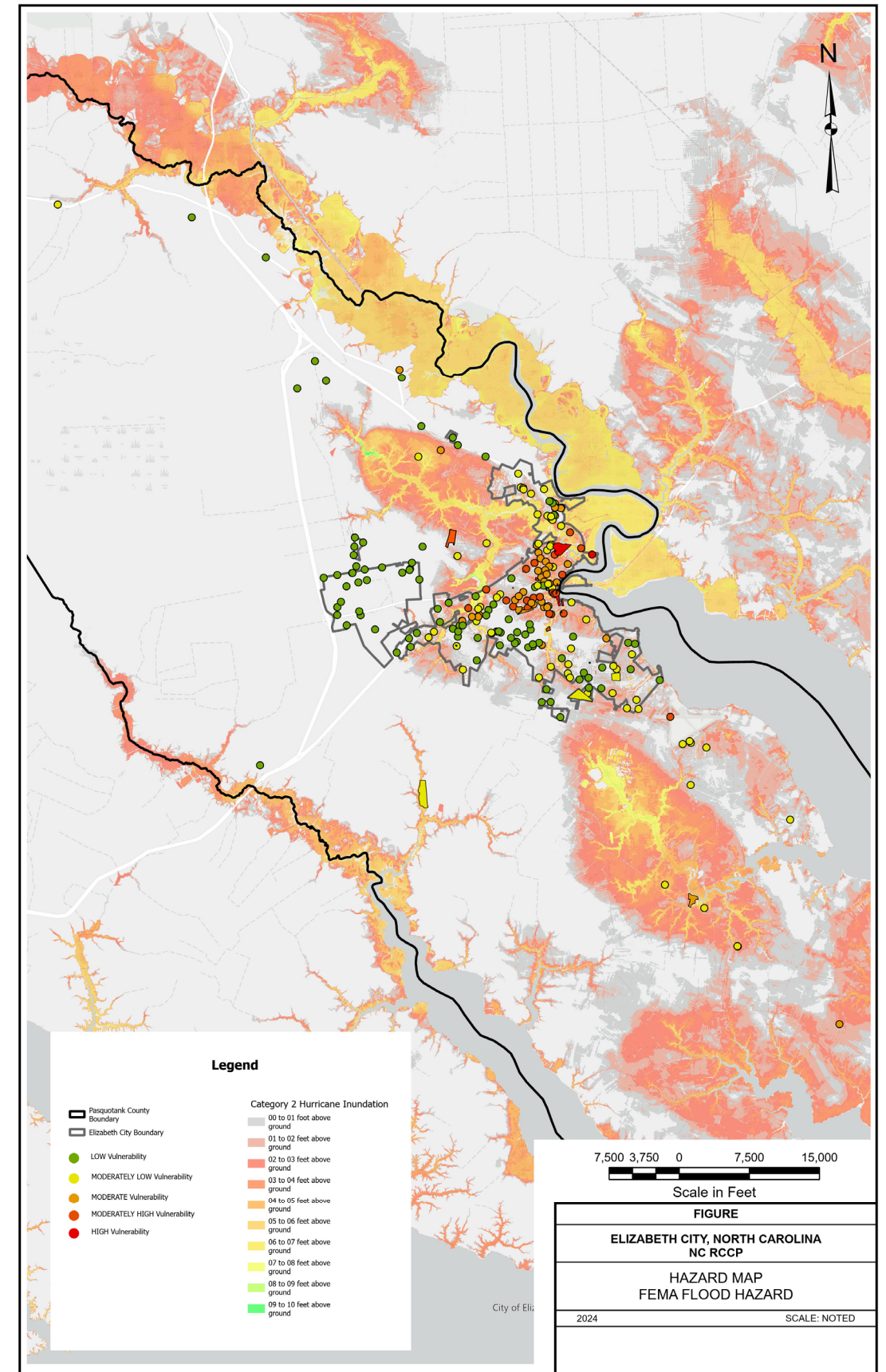


Figure 7. Hazard Map - Category 2 Hurricane Inundation

Appendix **D**

CAT Correspondence Log

Correspondence with the Community Action Team (CAT)

Date	Communication
December 14, 2023	CAT RCCP Kick-off Meeting
January 2024	Shared critical asset dataset with CAT for review, and CAT provided additions
March 21, 2024	Vision and Goals Workshop
Mar-April	CAT Vision and Goals Survey
April 22, 2024	Provided risk and vulnerability assessment for CAT review
April 8, 2024	Went over risk and vulnerability assessment and developed strategies and actions with CAT at meeting
May 16, 2024	Invited CAT to participate in a public open house on strategies and actions
June 19, 2024	Shared final Resilience Strategy with CAT for review