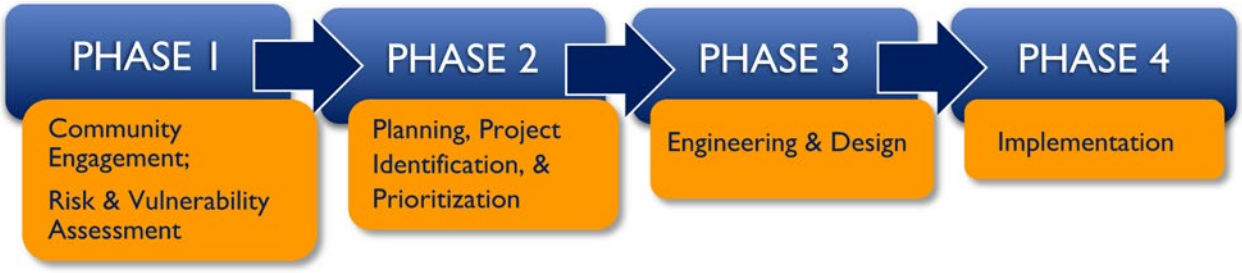
RESILIENCE STRATEGY

TOWN OF WASHINGTON PARK

Spring 2024

EXECUTIVE SUMMARY

The North Carolina Resilient Coastal Communities Program (RCCP) was established with the objective of providing financial grants and technical assistance to support a proactive, locally and data driven, and equitable approach to coastal resilience planning and project implementation. The RCCP is administered by the North Carolina Department of Environmental Quality – Division of Coastal Management (DCM) and is comprised of four phases.



Source: NC DCM

The four phases of the RCCP are focused on:

- Forming a Community Action Team (CAT) and identifying and engaging stakeholders, including traditionally underserved populations;
- Establishing community vision and goals;
- Assessing coastal risks and vulnerabilities;
- Developing nature-based solutions that incorporate sustainable planning, design, engineering, and natural resource management; and,
- Linking communities to funding streams and technical expertise for project implementation

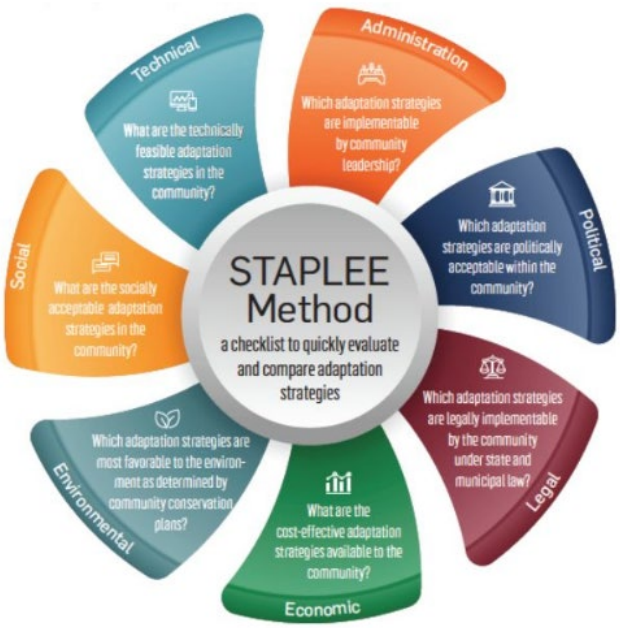
The **Town of Washington Park** was selected to participate in the first two phases of the RCCP in Spring 2023. Phases 1 and 2 were completed between August 2023 and June 2024, culminating in this Resilience Strategy, the main deliverable of the program's initial phases, which is designed to be integrated into existing local plans and ordinances.

The Resilience Strategy provides a framework to:

- Document the steps and outcomes of the Phase 1 and 2 resiliency planning process;
- Provide a clarity of purpose;
- Identify opportunities for short-term and long-term resiliency actions based on community input;
- Set project priorities for Phase 3 – Engineering and Design; and,
- Identify, attract, and secure potential funding opportunities for project implementation

Through input from the CAT and the public and available data, community hazards were identified to include flooding (riverine and nuisance), sea level rise, storm surge, drought, wildfire, and coastal erosion. Varying types of critical assets and natural infrastructure, located throughout the town's jurisdiction, were identified. Critical assets were also identified outside of the Town's jurisdictional boundaries, in the case of particularly vital assets or services.

The Town's **resilience vision** is defined as "Washington Park is a resilient community supporting the protection of life, property and the natural environment through preparedness, durable systems, quality infrastructure and services, and waterfront protection from erosion. The town is able to rapidly and effectively recover from hazard events due to strong partnerships and proactive measures to educate residents."



Source: FEMA

To implement the vision, fourteen (14) resiliency **goals and objectives** were defined and grouped under economic, social, and environmental categories.

Based on local input and the risk and vulnerability assessment, a suite of nine (9) potential solutions, including planning/policy related solutions and green/hybrid and hard/grey infrastructure projects, were evaluated using the FEMA STAPLEE method and a benefit-cost analysis. This method takes into consideration the social, technical, administrative, political, legal, economic, and environmental aspects, and potential impacts of each project solution.

The cost or the economic case for different strategies or actions must be considered when developing resilience strategies. The proposed adaptation actions were also reviewed using an informal benefit-cost analysis. Ratings of high, medium, or low are assigned to the anticipated costs and the benefits associated with each action based on general criteria that are established by the community.

	Benefit/cost ratings
	Benefit
HIGH	**Action would have significant impact on risk reduction**
MEDIUM	**Action would have an impact on risk reduction**
LOW	**Long-term benefits are difficult to quantify in the short term**
	Cost
HIGH	**Cost of project is high and/or funding will be more difficult to acquire**
MEDIUM	**Cost of project is medium and/or funding will be easier to acquire**
LOW	**Cost of project is low and/or funding is available in existing budget**

After additional stakeholder input, scoring analysis and consideration by the CAT, six (6) **prioritized project solutions** were identified for the Town of Washington Park (see Table 1). The CAT selected the Living Shoreline at Public Shoreline Areas project, the most popular project based upon Phase 2 Open House input, to move forward to RCCP Phase 3. These project solutions are described in more detail in the Project Portfolio.

Table 1. Priority Project Solutions

Project Name	Project Description
✓ Living Shoreline at Public Shoreline Areas	Incorporate a living shoreline along approximately 2,500 feet of public shoreline within Washington Park to reduce shoreline erosion. (chosen to advance to RCCP Phase 3)
Stormwater Action Plan – Stormwater System Upgrade	Develop a Stormwater Action Plan combined with strategically upgrading the stormwater system through improved and expanded infrastructure. The project will establish mapping and condition assessments for stormwater system components and outfalls with a focus on known problem areas and areas identified via a desktop analysis. The project will promote proactive stormwater maintenance through development of interactive mapping tools and maintenance guidance. The project will encourage stormwater quality awareness through public outreach efforts and produce construction drawings for a priority project.
Riverside Drive Flood Attenuation Park	Create a flood attenuation park along Riverside Drive that will provide a storage facility and treatment devices that can dually serve as a community gathering and/or event space.
Green Stormwater Infrastructure at Riverside Drive and W. Isabella Avenue	Implement green stormwater infrastructure along Riverside Drive and West Isabella Avenue. The projects will connect green practices into the existing stormwater conveyance systems without major modifications. Practices for consideration are bioretention, permeable pavement, or a submerged gravel wetland. Projects will be developed with a goal to improve aesthetics within the community.
Develop a Sanitary Sewer System	Develop a sewer system or tie into the City of Washington's sewer system. The project will convert septic properties to a collection system. The collection system, a lift station, and force main will need to be evaluated, designed, and constructed to serve the over 150 homes in the community.
Tributary Improvements East of Isabella Avenue	Increase flood capacity along the tributary east of Isabella Avenue and Shorewood Drive. Assess effects of stormwater discharge from North Shores Drive.

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INTRODUCTION

The Resilient Coastal Communities Program (RCCP) is funded through the North Carolina General Assembly, the National Fish and Wildlife Foundation, and the National Oceanic and Atmospheric Administration (NOAA) and administered by the North Carolina Department of Environmental Quality – Division of Coastal Management (DCM). Program partners include the North Carolina Office of Recovery and Resiliency, the North Carolina Sea Grant, and the North Carolina Nature Conservancy. The goal of the RCCP is to increase community adaptation ability and resilience and is a component of the statewide North Carolina Resilient Communities Program, called for in the North Carolina Climate Risk Assessment and Resilience Plan.

The four phases of the RCCP are designed to address barriers to coastal resilience at the local level; engage community stakeholders including those that are socially vulnerable; assess coastal risks and vulnerabilities; develop nature-based solutions to strategically improve the resiliency of communities and their natural and built infrastructure; and link communities to funding streams for project implementation.

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

The 20 designated North Carolina Coastal Area Management Act (CAMA) counties, as well as, municipalities, homeowners associations, and federal and state-recognized tribes within this jurisdictional area are eligible to apply for the RCCP. The Town of Washington Park was selected to participate in the first two phases in Spring 2023 which were completed between August 2023 and June 2024.

This Resilience Strategy documents Phase 1 and 2 steps and includes all associated deliverables/materials including those for the development of a CAT, stakeholder engagement, inventory and review of existing local and regional plans, defining of community vision and goals, development of a Community Engagement Strategy, identification/mapping of hazards and critical assets/natural infrastructure/socially vulnerable populations, Risk and Vulnerability Assessment Report, identification of a suite of potential project solutions, project prioritization, and the concluding Project Portfolio.

COMMUNITY ACTION TEAM REPORT

RCCP Phase 1, Step 1 involves of the creation of a CAT consisting of key stakeholders, ideally with diverse and multi-disciplinary backgrounds, and expertise in planning and community development, hazard mitigation, utility management, engineering, the community's economy, engaging with vulnerable and underrepresented populations, and nature-based solutions. CAT members could include:

- Community residents
- Neighborhood or faith leaders
- Municipal/county managers
- Planners
- Elected officials
- Utility managers
- Community and economic developers
- Business community representatives

- Disaster recovery coalitions/groups
- Councils of Governments (COGs)
- State and federal land managers
- Non-governmental organizations (NGOs)
- Others working with the community on resilience planning

The CAT Champion, or lead member, was identified and worked with the contractors to identify additional CAT members to fill the roles detailed above. Potential members were contacted by phone and/or email either by the contractors or the CAT Champion. The need for CAT members was announced to the public at Town Council meetings and elected officials were selected to serve and underserved community representatives were identified.

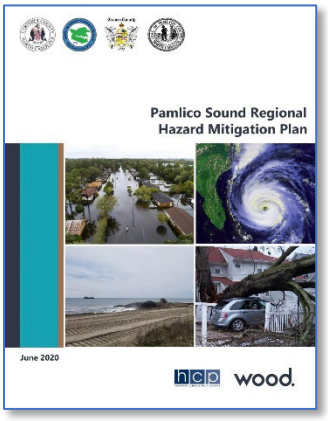
COMMUNITY ACTION TEAM MEMBERS

- CAT Champion – April Alligood, Town Clerk/Finance Officer
- Dennie Dale, Resident
- Tom Richter, Mayor
- Jeff Peacock, Mayor Pro Tem
- Lee Bowen, Commissioner
- Belinda Cowell, Commissioner
- Wade Dale, Commissioner
- Vail Rumley, Commissioner
- Beth Byrd, Resident/Planning Board Member
- Cheryl Lee, Resident
- Julie Risher, Resident
- Mindy Maddin, Resident

Refer to Appendix A for Community Action Team Materials.

REVIEW OF EXISTING LOCAL & REGIONAL EFFORTS

To avoid the duplication of work and build upon and remain consistent with previous resiliency efforts, existing programs, plans, policies and ordinances were reviewed and incorporated as part of RCCP Phase 1, Step 2. The Pamlico Sound Regional Hazard Mitigation Plan contains a baseline vulnerability and risk assessment and served as a reference point for conducting the assessments while considering additional factors and the local context.



RELEVANT PLANS, ORDINANCES, POLICIES, and PROGRAMS

- **NCORR Regions Innovating for Strong Economies and Environment (RISE) Program: Resilience Projects for the Mid-East Region (2022) –** The Regional Resilience Portfolio Program is a two-part effort consisting of the Climate Change and Natural Hazards Vulnerability Assessment for the Mid-East Region and a Project Portfolio. The Project Portfolio is a compilation of regionally focused resilience projects that will provide benefits throughout the Mid-East Region. *(Source: NCORR)*
- **Albemarle-Pamlico National Estuary Partnership Comprehensive Conservation and Management Plan (2012-2022) –** This plan is organized around four basic questions and related answers: what is a healthy Albemarle-Pamlico system; what is the current condition of the system; what are the most significant challenges facing the system over the next 10 years; and what actions should be implemented to best achieve a healthy system? *(Source: APNEP)*
- **Pamlico Peninsula Resilient Regions Report (2016)** – This report was developed to assist Beaufort County and nine other Pamlico Peninsula Counties in the NC East Alliance region with developing and implementing resiliency measures and provides specific advice on how to strengthen existing programs and develop new programs or strategies so that the county and region can be more resilient from an economic perspective to future crisis. The assessment examined current and planned economic development strategies and initiatives and related fields. *(Source: International Economic Development Council)*
- **Pamlico Sound Regional Hazard Mitigation Plan (2020)** – This plan ensures all possible activities are reviewed and implemented so that the problems are addressed by the most appropriate and efficient solutions. This plan provides a framework for all interested parties to work together toward mitigation. It establishes the vision and guiding principles for reducing hazard risk and proposes specific mitigation actions to eliminate or reduce identified vulnerabilities. *(Source: Holland Consulting Partners/Wood)*
- **Beaufort County Emergency Operations Plan (2016) –** The Beaufort County Emergency Operations Plan has been developed to address multiple hazards which threaten the county. Using a functional format, this plan encourages an Integrated Emergency Management approach to disaster and fosters prompt, efficient and coordinated response operations by elements of the emergency organization. *(Source: NCEM)*
- **Hurricane Matthew Resilient Redevelopment Plan, Beaufort County (2017) –** The purpose of the plan is to provide a roadmap for community rebuilding and revitalization assistance for the communities that were damaged by the hurricane. The program empowers communities to prepare locally driven recovery plans to identify redevelopment strategies, innovative reconstruction projects, and other needed actions. *(Source: NCEM)*
- **Hurricane Matthew Resilient Redevelopment Plan, Northeast Region (2017) –** As part of the program, NC Emergency Management facilitated development of regional resilient redevelopment plans for four "prosperity zones" as identified by the NC Dept of Commerce, created to facilitate collaborative and coordinated planning and use of resources. *(Source: NCEM)*
- **Beaufort County Comprehensive Transportation Plan (2013)** – The Beaufort County Comprehensive Transportation Plan (CTP) is a long-range plan which identifies major transportation improvement needs and develops long term solutions for the next 25 to 30 years. The CTP study involves both government officials and the public in an effort to determine the area's future transportation needs

based on the best information available including, but not limited to, population, economic conditions, traffic trends and patterns of land development in the county. *(Source: NCDOT)*

- Beaufort County CAMA Land Use Plan (2010) – This locally adopted land use plan is certified by the North Carolina Coastal Resources Commission and is then used by DCM in making CAMA permit decisions and to ensure projects and activities remain consistent with the policies of a local land use plan. *(Source: NCDEQ)*
- Beaufort County Comprehensive Bicycle Plan (2020) – This plan will support the county's ongoing efforts to promote sustainable growth and development as well as healthy living habits. The plan provides a framework for the county, municipalities, residents, developers, NCDOT, and other regional planning partners to strategically build better connections for bicycling in the county. It provides detailed recommendations for bicycle facilities, programs, policies, and implementation, and aims to use bicycling as a tool for improvements in mobility, safety, health, economy, environment, and overall quality of life. *(Source: Mid-East Commission Planning Department)*
- Washington Park Public Input Meeting Report (2023) – The Mayor of Washington Park requested that the Mid-East Commission facilitate a meeting to gather resident input and compile with resident survey findings for American Rescue Plan funding consideration. The report summarizes the meeting findings for consideration by the Washington Park Planning Board, who would present its recommendations to the Town Council for consideration. *(Source: Pat Harris, Mid-East Commission)*
- Town of Washington Park Code of Ordinances – The adopted code includes applicable ordinances such as Building Code; Drainage Ditches; Emergency Management; Flood Damage Prevention; Subdivision; Townscape Committee; Zoning; Streets and Sidewalks and Utilities: Water and Sewer.

VISION & GOALS

Phase 1, Step 3 involves developing a community-specific vision, goals, and objectives to guide the planning process. Relevant local and regional plans were summarized for the CAT and vision statements and goals from each plan were reviewed as well as, example goals from resiliency plans outside the area. Using this input, example vision statements, goals, and themes were identified and were used to guide the CAT's brainstorming process during CAT Meeting 1.

The team was encouraged to employ the triple bottom line approach to resiliency, which considers environmental, economic, and social factors. Worksheets were provided to CAT members for use in identifying draft vision statements, goals, and objectives that reflected local values and priorities. The team worked together during the meeting to complete the worksheets. Team members also had an opportunity to complete the worksheets following the meeting.

Input from the CAT was used to finalize the resilience vision, goals, and objectives listed below.

RESILIENCE VISION

Washington Park is a resilient community supporting the protection of life, property and the natural environment through preparedness, durable systems, quality infrastructure and services, and waterfront protection from erosion. The town is able to rapidly and effectively recover from hazard events due to strong partnerships and proactive measures to educate residents.

RESILIENCE GOALS and OBJECTIVES

Economic

Goal 1: Provide quality municipal infrastructure and services.
Objectives:

- Maintain the town's road system and improve/upgrade the system as needed.
- Maintain the town's recreational infrastructure.
- Maintain and improve the town's drainage infrastructure.
- Provide high quality public services.

Goal 2: Improve and maintain buildings to support resilience to hazards.
Objectives:

- Incentivize the construction of "flood resistant" homes.
- Elevate homes in flood prone areas.
- Floodproof the town office and other non-residential buildings in flood prone areas.
- Promote research and development of building construction and design standards that can better withstand storm damage.
- Promote energy efficiency and solar panels for homes and town owned buildings.

Goal 3: Protect and maintain critical infrastructure and ensure that critical infrastructure is resilient to anticipated hazards.
Objectives:

- Identify key community assets that will need increased physical and fiscal protection from the major weather events and incremental climate change impacts we will face in the next 20-50 years.
- Protect, maintain, and enhance critical infrastructure.
- Reduce power outages for residents and businesses.
- Promote research and development of utility infrastructure hardening.
- Create redundancies in the water service network.
- Continue to foster a strong partnership with the City of Washington (the town's electric and water service provider).

Goal 4: Identify and obtain funding for resilience projects.
Objectives:

- Develop a list of resilience projects suitable for funding.
- Identify funding and grant opportunities to implement resilience projects.
- Identify funding to reduce repetitive losses from previous hazard events, such as funding for building elevation/floodproofing and equitable buyouts.
- Utilize partnerships and apply for identified grant opportunities to implement projects.

Environmental

Goal 5: Reduce flooding.
Objectives:

- Reduce the potential for flooding of homes and businesses.
- Develop flood mitigation projects, including nature based and sustainable solutions.
- Identify both structural and non-structural solutions to flooding.

Goal 6: Act quickly and decisively to reduce the most harmful impacts of climate change – flooding, drought, landslides, and wildfires.
Objectives:

- Incorporate resilience into local programs and policies.
- Use interagency collaboration to continuously build resilience in local government policies and operations.
- Align federal, state, and local funding and project prioritization to promote multiple natural and community benefits.
- Incentivize private endeavors that minimize and address future risks.
- Plan for anticipated local sea level rise.

Goal 7: Improve stormwater management.
Objectives:

- Map the town's stormwater system in GIS.
- Maintain and improve the capacity of the stormwater system.
- Conduct planning processes leading to recommendations for stormwater BMP's.
- Improve construction and site design standards to reduce debris caused by flooding and storms.
- Demolish dilapidated homes and remove impervious surfaces as practicable and feasible.
- Encourage the construction of permeable surfaces to reduce flash flooding.
- Drainage ditches should be targeted for stormwater projects to reduce runoff and improve water quality.

Goal 8: Protect an intact network of natural resources.
Objectives:

- Provide guidance on sustainable growth practices that respect the natural functions of the regional ecosystem and allow for their natural adaptation as the ecosystem undergoes relatively rapid change in coming decades. (See NC Wildlife's Green Growth Toolbox as a resource.)
- Incentivize reliance on "natural" protective systems as much as possible (i.e., leaving wetlands, forests and marshes as intact as possible to absorb floodwaters and mitigate storm surge).
- Plan for a network of natural lands that should be protected.
- Protect existing natural infrastructure and invest in additional natural infrastructure to enhance existing natural features, processes, and solutions.

Goal 9: Resolve riverfront erosion issues through the implementation of nature-based and/or hybrid solutions.
Objectives:

- Protect waterfront property on the Pamlico River, Runyon Creek, and Maple Branch from shoreline erosion.
- Protect the town owned public waterfront properties from shoreline erosion.
- Consider nature-based solutions to shoreline erosion issues such as living shorelines.
- Work with professionals versed in shoreline erosion issues to have effective nature-based and/or hybrid solutions engineered and designed.

Goal 10: Plant, protect and maintain trees around the community.
Objectives:

- Reestablish the Townscape Committee.

- Work with a professional landscape architecture firm to develop a townscape/streetscape plan including short-term, mid-term, and long-term implementation actions and cost estimates.
- Obtain guidance from sources such as arborists and the Cooperative Extension.
- Budget for implementation of the townscape/streetscape plan.

Social

Goal 11: Develop effective hazard response and recovery.
Objectives:

- Continue partnering with Beaufort County Emergency Management and the City of Washington.
- Restore services quickly and efficiently following a hazard event.
- Minimize damage and loss of life from disasters.
- Plan how to deal with increased solid waste and storm debris disposal as natural disasters are anticipated to result in more home and property destruction in the future.
- Develop a Comprehensive Evacuation Plan.
- Plan for serving areas cut off by flood waters post storm events.
- Rebound quickly following a hazard event.
- Review local land development regulations and capital improvement plans for opportunities to incorporate hazard resilience.

Goal 12: Foster beneficial partnerships.
Objectives:

- Improve interjurisdictional partnerships.
- Continue to foster successful partnerships with Beaufort County and the City of Washington.
- Partner with local community groups and non-profit organizations.
- Partner with state and federal agencies.
- Improve partnerships with local universities.

Goal 13: Foster strong and inclusive partnerships with residents.
Objectives:

- Foster strong relationships and partnerships with residents to achieve success.
- Communicate with residents on a regular basis through multiple communication venues (websites and social media, newspaper, television, radio, newsletters, in person community events, etc.).
- Utilize social networks to be proactive in resilience efforts.
- Seek increased community input and engagement in public meetings, events, and in planning processes.

Goal 14: Continue to fulfill Federal and State requirements for receipt of future disaster recovery and hazard mitigation assistance.
Objectives:

- Continue to participate in the National Flood Insurance Program (NFIP).
- Continue to participate in the optional Community Rating System (CRS) program, which gives residents a discount on flood insurance.
- Continue to satisfy requirements for a local Coastal Area Management Act (CAMA) approved Land Use Plan.
- Continue to participate in updates to the Pamlico Sound Regional Hazard Mitigation Plan.

STAKEHOLDER ENGAGEMENT STRATEGY

EXISTING CONDITIONS, ISSUES, and OPPORTUNITIES

RCCP Phase 1, Step 4 directs contractors to develop and implement a stakeholder engagement strategy. Information was presented and stakeholder input was gathered through various methods such as site visits, two public open houses coinciding with Phase 1 and Phase 2, a public survey, interactive displays, handouts, PowerPoint presentations and a GIS storymap available at the second open house.

Public Survey

A public survey was developed in partnership with the CAT and released after CAT Meeting 1. Survey questions were based around resiliency to flooding, coastal erosion, coastal storms and sea level rise and were designed to be completed in 15 minutes or less depending on the amount of input.

Advertisement methods included:

- Flyer contained a link to the online survey and information on hard copies available at Town Hall, plus a phone number to request a mailed hard copy
    - Flyer posted electronically – Town website, Washington Park Neighbors Facebook page
    - Flyer posted in person – Town Office, Brown Library
- Announcement was made at Board of Commissioners meeting
- Notice was sent via town's email list

Survey input was used to identify existing conditions, issues, needs, and opportunities to enhance resiliency. Information was gathered on how personal lives and property have been affected by flooding, how flooding is perceived in the community, and what measures they have taken to prevent or avoid flooding. This information was used to recommend appropriate strategies for flooding resilience including public education campaigns. A total of 30 stakeholders responded to the survey.

Phase 1 Open House

The in-person Phase 1 Open House was held on December 14, 2023 from 4:00 p.m. – 6:30 p.m. at the Washington Park Town Office and a virtual meeting was held December 15, 2023 from 4:00 p.m. – 6:30 p.m.

Advertisement methods included:

- Flyer posted electronically – Town website, Washington Park Neighbors Facebook page
- Flyer posted in person – Town Office, Brown Library
- Notice was sent via town's email list
- An article in the town's newsletter, the "Washington Park Crier"
- News release ran in Washington Daily News newspaper
- Announcement was made at Board of Commissioners meeting

For the Phase 1 Open House, poster displays included:

- What is resiliency?
- Hazard Identification Exercise Maps (interactive)
- What does resiliency mean to you? (interactive)
- North Carolina Resilient Coastal Communities Program

- Community Vision and Goals Exercise (interactive)

The public survey was available at the Phase 1 Open House to gather stakeholder input and there was also a resource table with handouts on topics such as the RCCP, flood readiness, stormwater education, creating home rain gardens, septic maintenance, mold remediation, etc. Some of these materials were made available in Spanish. Contractors and CAT members were on hand to interact with the public during the in-person and virtual events.

DRAFT RESILIENCY ACTIONS

In Spring 2024, a storymap was created using ArcGIS Online and was posted at WashingtonParkFloodResilience.org. The storymap presented Resiliency 101, Washington Park's vision statement, CAT members, existing resiliency plans, public survey input, the risk and vulnerability assessment, the top flood related hazards, the STAPLEE analysis, and proposed draft actions. The storymap was presented at the Phase 2 Open House.

Phase 2 Open House

The Phase 2 Open House was held on March 20, 2024 from 4:00 p.m. – 6:30 p.m. at the Washington Park Town Office.

Advertisement methods included:

- Flyer posted electronically – Town website, Washington Park Neighbors Facebook page
- Flyer posted in person – Town Office, Brown Library
- Notice was sent via the town's email list
- News release ran in Washington Daily News newspaper
- A sign was placed near the road outside of the Town Office
- Announcement was made at Board of Commissioners meeting

For the Phase 2 Open House, displays included:

- What is resiliency?
- North Carolina Resilient Coastal Communities Program
- Action Strategy Areas
- Draft Actions
    - Rank your top (6) preferred actions and provide input, including an option to suggest other projects that were not listed (interactive)

In addition to the interactive posters, comment forms were also available to provide another method to solicit feedback on preferred projects and other aspects of the community's resiliency program. Resource handouts were also available, and contractors were in attendance to interact with the public.

Public input indicates that the Living Shoreline at Public Shoreline Areas project is the highest priority for the community.

ENGAGEMENT TOOLS LIST

- Public Survey

- Webpage/GIS storymap
- Notifications (news release, social media ads, flyers, announcements)
- Public Open Houses (In-person and Virtual)

Refer to Appendix B for Stakeholder Engagement Materials.

RISK AND VULNERABILITY ASSESSMENT REPORT

The Risk and Vulnerability Report details the quantitative and qualitative assessments performed for evaluating the vulnerability of critical assets, natural infrastructure, and vulnerable populations to hazards faced by the community.

As part of Phase 1, Step 5, the contractor team identified critical assets including community resources, built infrastructure, natural infrastructure, and socially vulnerable populations. Critical assets were identified primarily within the Town's jurisdictional boundaries, and in some cases were identified outside of the Town's jurisdictional boundaries in the case of particularly vital assets or services.

MAPPING ASSETS, NATURAL INFRASTRUCTURE, AND VULNERABLE POPULATIONS

Community Assets

Contractors worked with the CAT at Meeting 2 to identify community assets in list format, then researched what GIS data was available and created maps of community assets located within the Town's jurisdictional boundaries. In some cases, there was already a data layer available. In other instances, the GIS data was created by the contractors based on CAT input on which assets to include. In the sources listed below, "created" is used to designate data that was developed by the contractor.

Sources:

- Government Services – created
- Water System – Beaufort County
- Transportation
    - Road Network – Beaufort County
    - Bridges – NC Dept. of Transportation (NC DOT)
    - Rail – NC DOT

Natural Infrastructure

Contractors researched existing natural infrastructure data and shared an initial list with the CAT. The team helped to add additional natural assets to the list. Contractors also worked with the team to identify local public land and private land used for public recreational purposes. Contractors then created maps of natural infrastructure located within the Town's jurisdictional boundaries.

Sources:

- Parks/Public Land – created
- Wetlands – NC Coastal Regional Evaluation of Wetland Significance (NC CREWS)
- Priority Forests – NC Natural Heritage Program
- Floodplains – Federal Emergency Management Agency (FEMA)

- Surface Water
    - Rivers and Streams – NC DEQ
    - 303D Listed Waters – Environmental Protection Agency (EPA)
    - Fish Nursery Areas – NC DEQ
- Managed Areas – NC Natural Heritage Program
- Biodiversity and Wildlife Habitat Assessment – NC Natural Heritage Program

Vulnerable Populations

Maps of vulnerable populations were downloaded from the Center for Disease Control including the overall Social Vulnerability Index, Socioeconomic Status, Household Composition/Disability, Race/Ethnicity/Language, and Housing Type/Transportation. The CAT reviewed the series of vulnerable populations maps and provided additional input on the presence of vulnerable populations and the accuracy of the data.

Sources:

- Social Vulnerability Index – US Center for Disease Control
- 2021 American Community Survey 5-year estimates from the US Census Bureau
- EPA Environmental Justice Screen Reports

IDENTIFYING AND MAPPING HAZARDS

Riverine flooding, nuisance flooding, sea level rise, storm surge, drought, wildfire and coastal erosion were evaluated as community hazards to assess risk and vulnerability within the community. Hazards not applicable to specific communities were not factored into the complete risk and vulnerability assessments. After the initial assessment, riverine flooding, nuisance flooding, sea level rise, storm surge, drought, wildfire and coastal erosion were further evaluated for Washington Park as community hazards. Definitions of each hazard and the data used to calculate risk and vulnerability are shown below. Refer to the vulnerability index for the thresholds used for each dataset and how each dataset was used to calculate vulnerability. Maps were created of each hazard, including hazard layers overlaid with critical assets and natural infrastructure.

Riverine Flooding

Riverine flooding is defined as when a stream exceeds its capacity and overflows into adjacent low-lying or dry land (Riverine Flooding | National Risk Index (fema.gov)). FEMA has created datasets to indicate flooded areas during a 100-yr and 500-yr storms. This data, along with Zone X indicating moderate to low flooding risk, was used to identify potential flood vulnerabilities within the community.

Sources:

- North Carolina Emergency Management Floodplain Mapping program
- OpenFEMA Data Sets | FEMA.gov
- Riverine Flooding | National Risk Index (fema.gov)

Nuisance Flooding

Nuisance flooding is caused by stormwater holding in low-lying areas within a community. To assess nuisance flooding, a digital elevation model was downloaded from the North Carolina Spatial Data Download (nc.gov) to identify low lying areas using ESRI ArcGIS PRO Hydrology tools including Fill DEM, and Sink. Low lying areas capable of holding a storm greater than or equal to the 5-yr storm were evaluated based on proximity to an asset to determine vulnerability.

Sources:

- North Carolina Spatial Data Download (nc.gov)
- ESRI Arc Hydro
- National Stormwater Calculator (epa.gov)

Sea Level Rise

Sea level rise (SLR) is the direct effect of climate change rising the global mean sea level from thermal expansion of warming ocean waters with the addition of water mass caused by melting glaciers and ice sheets. To assess SLR, the 1ft, 2ft, and 3ft NOAA Sea Level Rise data for North Carolina was used evaluate the vulnerability of each asset within each scenario.

Sources:

- Sea Level Rise Data Download (noaa.gov)
- Sea Level Rise Technical Report: Download and FAQs (noaa.gov)

Storm Surge

Storm surge is the rise in water, generated by a storm, over and above the predicted tide levels. To assess storm surge, The National Hurricane Center data for the potential storm surge of Hurricane Florence (2018) was used to identify storm surge vulnerability. This data presented the highest risk for the communities based on current data from a recent storm event. This dataset uses a 1 thru 5 symbology to categorize vulnerability: Intertidal Zone/ Estuarine Wetland, Greater than 1-foot above ground, Greater than 3 feet above ground, Greater than 6 feet above ground, Greater than 9 feet above ground, respectively. These categories were placed into three scenarios (Intertidal Zone/Estuarine Wetland, 1-3 ft, and above 3 ft) where each scenario was assigned a high, medium, low threshold to evaluate vulnerability to critical assets.

Sources:

- NHC Data in GIS Formats (noaa.gov)
- Storm Surge Overview (noaa.gov)
- Potential Storm Surge Flooding Map (Inundation): Interactive Example (noaa.gov)

Drought (2000-Present)

Drought is defined as a prolonged period of dry conditions caused by a lack of precipitation, resulting in a water shortage. To assess drought conditions for each community, the Historical Drought data from Drought.gov was used to calculate the potential vulnerability for drought conditions based on previous data (2000-2023). Each community was given a constant drought vulnerability score based on the thresholds presented with the vulnerability index.

Sources:

- Historical Data and Conditions | Drought.gov
- Drought Basics | Drought.gov

Wildfire

A wildfire is an unplanned, uncontrolled fire that spreads quickly. The Wildfire Risk to Communities data from the US Forest Service was used to predict the vulnerability of a wildfire affecting each community and its

assets. This data takes into consideration population, building location, building coverage, land cover, and wildfire hazards.

Sources:

- Data: USFS – Wildfire Risk to Communities Wildfire VHazard Potential
- WRC_PopulatedAreas_Methods_Dec2020.pdf (wildfirerisk.org)

Coastal Erosion

Coastal erosion is the wearing down of rock, soil, and/or sand along the coast causing displacement and loss of land. Coastal erosion is typically caused from SLR, wave action, tides, and coastal flooding. To assess coastal erosion, Google Earth time lapse imagery was used to generate a shoreline profile. This data was then analyzed within ESRI ArcGIS Pro to calculate erosion rate per year. The vulnerability index thresholds were then used to determine the vulnerability of the shoreline.

Sources:

- Google Earth
- Coastal Erosion | U.S. Climate Resilience Toolkit

ASSESSING VULNERABILITY

Vulnerability = Exposure + Sensitivity - Adaptive Capacity

- **Vulnerability** – Describes a system's susceptibility to harm or change. Vulnerability is the combined result of exposure, sensitivity, and adaptive or response capacity and, as such, a function of the character, magnitude, and rate of the climate change hazard to which a system is exposed, as well as of non-climatic (social and environmental) characteristics of the system, which determine its sensitivity and adaptive capacity.
- **Exposure** – Refers to the probability of physical contact between an asset and a hazard.
- **Sensitivity** – Is the degree to which an asset is impacted by a hazard.
- **Adaptive Capacity** – Is the ability of an asset to cumulatively adapt to all hazards.

To assess vulnerability, the contractor developed multiple vulnerability indexes which combined exposure, sensitivity, and adaptive capacity to estimate cumulative vulnerability of critical assets within six categories: Building Infrastructure, Affordable Housing, Downtown Commercial District, Transportation Infrastructure, Sewer & Utility System Infrastructure, and Natural Resources.

Exposure and sensitivity were objective factors within the vulnerability equation.

EXPOSURE – The exposure parameter analyzed effects of different coastal hazards on community critical assets by categorizing each exposure to the individual hazard as high, medium, or low. This score was weighted based on the hazard risk within the community. These hazards included: riverine flooding, nuisance flooding, storm surge, drought, fire, and sea level rise. Hazards that did not directly affect the community were considered and removed from the list. Exposure thresholds were set based on best available data and can be viewed in the Vulnerability Index.

SENSITIVITY – The sensitivity parameter analyzed the cumulative effects of the hazards on critical assets within each category by assigning a percent threshold or indicating a high/low need for that asset within the community. For example, high sensitivity for building infrastructure indicates that greater than 66% of the community asset building – within a certain subcategory (e.g., police stations) - were affected by the coastal

hazard or that a particular building was highly sensitive to the function of the community. This assessment indicated the value of redundancy and alternative uses of assets.

ADAPTIVE CAPACITY – Adaptive capacity was a subjective factor within our assessment that used objective data and community input to evaluate an asset's ability to recover and/or the ability of that assets to be modified for resiliency. Factors such as: social vulnerability, feasibility of relocation, feasibility of retrofit, and possible alternatives were evaluated to give each critical asset an adaptive capacity score. Contractors relied on input from the CAT to evaluate the adaptive capacity of each critical asset. Thresholds for adaptive capacity are within the Vulnerability Index.

Asset	Exposure Score 0-3	Sensitivity Score 0-3	Adaptive Capacity 0-3	Vulnerability Score 0-6
Asset name	*0 = no exposure* *1 = low* *2 = medium* *3 = high*	*0 = no sensitivity* *1 = low* *2 = medium* *3 = high*	*0 = no adaptive capacity* *1 = low* *2 = medium* *3 = high*	*0-2 = low* *3-4 = medium* *5-6 = high*

Critical assets were given a score based on the average exposure, sensitivity, and adaptive capacity scores. These scores were then used in the vulnerability equation to calculate cumulative vulnerability. The thresholds for each category are listed below:

Exposure Parameters

Riverine Flooding

- High: Zone AE (100-yr flood level)
- Med: 0.2 percent (500-yr flood level) + adjacent lower elevation up to 7 ft
- Low: X Zone (Low to Moderate risk)

Nuisance Flooding

- High: Low lying area on the property or within 25 ft of structure or asset / intersect linear feature
- Med: Up to 50 ft from property or within 50 ft of structure or asset
- Low: >50 ft from property or >50 ft of structure or asset

Sea Level Rise

- High: 1 ft
- Med: 2 ft
- Low: 3 ft

Storm Surge (Based on CAT 5 Storm)

- High: 9+ ft
- Med: 3-9 ft
- Low: <3 ft

Drought (2000 - Present)

Washington Park was given a consistent low score based on county evaluation. Historical Data and Conditions | Drought.gov

- High – 3+ periods >18 days of Extreme or Exceptional Drought or 5+ periods of 30+ days of Severe Drought

- Med – 1-2 periods of Extreme or Exceptional Drought or >12 days or 2-5 periods of Severe Drought >18 days
- Low – No cases of prolonged (>12 day) severe or Extreme or Exceptional Drought periods

Wildfire - (Data: USFS – Wildfire Risk to Communities Wildfire VHazard Potential)

- Low: USFS – Very low or low
- Med: USFS – Moderate
- High: USFS – High or very high

Generated Report for Risk and Vulnerability. Map | National Risk Index (fema.gov)

Coastal Erosion

Shoreline erosion was assessed separately.

- High: Potential erosion on property along Pamlico River / <50 ft from river
- Med: Potential erosion on property along tributaries / >50 ft or <100 ft from tributaries
- Low: Surface erosion

Groups

Buildings

Exposure

- High weight (3): Riverine Flood, Storm Surge, and Nuisance Flood
- Med weight (2): Drought, Fire
- Low weight (1): SLR, Coastal Erosion

Sensitivity (Infrastructure group)

- High: >66%+ Facilities affected / Needed by the community
- Medium: 33%-66% / Other facilities can be used (Alternatives)
- Low: <33% / Facility not needed to operate

Adaptive Capacity

- Subjective – need community input
- Social Vulnerability Index
- Ability to relocate building infrastructure (Ex. From 25yr to 50yr floodplain)
- The ability to raise structure
- Accessibility to residents once moved (SVI)
- Land availability
- Ability to retrofit for flooding (raise generator/sensitive components)
- Another facility can be used in its place
- Facility is not needed to operate

Affordable Housing

Exposure

- Average Score of exposure parameters

Sensitivity (Infrastructure group)

- High: >66% of area affected by 2 exposure parameters / High SVI
- Medium: 33%-66% of area affected by 2 exposure parameters / Moderate SVI
- Low: <33% of area affected by 2 exposure parameters / Low SVI

Adaptive Capacity

- Subjective – need community input
- Social Vulnerability Index
- Ability to relocate building infrastructure
- The ability to raise structure
- Accessibility to residents once moved (SVI)
- Land availability
- Ability to retrofit for flooding (raise generator/sensitive components)

Downtown Commercial District

Exposure

- Average Score of exposure parameters

Sensitivity (Infrastructure group)

- High: >66% of area affected by 2 exposure parameters / Buildings affected are needed by the community / Cultural significance
- Medium: 33%-66% of area affected by 2 exposure parameters / alternatives available
- Low: <33% of area affected by 2 exposure parameters / Buildings impacted do not affect the community

Adaptive Capacity

- Subjective – need community input
- Economically viable
- Ability to relocate building infrastructure
- The ability to raise structure
- Accessibility to residents once moved (SVI)
- Land availability
- Ability to retrofit for flooding (raise generator/sensitive components)

Transportation Infrastructure

Exposure

- High weight (3): Riverine Flood, Storm Surge, and Nuisance Flood
- Med weight (2): SLR, Coastal Erosion
- Low weight (1): Fire, Drought

Sensitivity

- High: >50% of structures affected by natural hazards
- Medium: 25% - 50% affected by natural hazards
- Low: <25% affected by natural hazards

Adaptive Capacity

- Subjective – need community input
- Replacement cost
- Detour length
- Disruption duration
- FHWA roadway functional classification (roadways with higher functional classification may result in greater system disruptions if damaged)
- Evacuation routes

- Emergency services/freight route
- Access to food and services (supermarkets, bottled water, prescriptions, batteries, critical goods)
- Historical repair cost
- Access to critical areas (roads that provide the only access to critical areas are more significant to the adaptive capacity of larger response systems)

Sewer Infrastructure & Utility System Infrastructure (Sewer/Water/Electric/Communications)

Exposure

- Hight weight value (3): Riverine Flood, Storm Surge, and Nuisance Flood
- Med Weight value (2): SLR, Drought, Coastal Erosion
- Low Weight value (1): Fire

Sensitivity

- High: > 66% Exposure and/or Age >30 yrs. and structural repair needed
- Medium: 33% - 66% Exposure and/or Age 15-30 yrs. and maintenance needed
- Low: >33% Exposure and/or Age <15 and no action needed for repair or maintenance

Adaptive capacity

- Waterlines
  - Low = 8" or greater pipe
  - Med = 4" - 6" pipe
  - High = 2" or less diameter pipe
- Sewer
  - Low = Poor Capacity
  - Med = Good Capacity
  - High = Excellent Capacity
- Subjective– need community input
- Social Vulnerability Index
- Ability to relocate utility infrastructure (Ex. From 25-yr to 50-yr floodplain)
- The ability to increase capacity
- Ability to retrofit infrastructure to be more resilient to flooding

Natural Resources (Streams, Wetlands, Managed Areas, Natural Areas)

Exposure

- Average Score of exposure parameters

Sensitivity (Increased flooding due to deforestation or removal of buffers and no ability to replace)

- High: Buffer <50 ft / 50ft from structure / 50% affected / 1 ft SLR
- Med: Buffer <50 ft and >100ft / 100ft from structure / 25%-50% / 2 ft SLR
- Low: Buffer >100 ft / >100 ft form structure / >25% / 3 ft SLR

Adaptive Capacity

- Wetlands/ Open Areas
  - Low = Less than 5 ac.
  - Med = >5 - <15 ac.
  - High = >15 ac.
- Stream

- Low = Less than 3000 ft
- Med = >3000 ft and <10,000 ft
- High = >10,000 ft

- Restorative capacity
- Ability to increase flood capacity
- Alternative use capacity (Ex. park and floodplain)

Shoreline Erosion

Exposure

- High weight (3): Riverine Flood, Storm Surge, SLR
- Med weight (2): Nuisance flood
- Low weight (1): Fire, Drought

Sensitivity (average yearly erosion since 1993)

- High: < -6 ft
- Med: <0 and >-6ft
- Low: >0 (accretion occurred)

Adaptive Capacity (erosion or accretion from 2007 to 2019)

- High: Accretion occurred
- Med: <0 ft and >-6 ft
- Low: < -6 ft

ESTIMATING RISK

In order to estimate risk to critical assets, supplemental data was gathered in addition to what was available from the hazard mitigation and a quantitative tool was utilized.

Asset Values

The following critical assets and natural infrastructure were assigned a rough estimate of monetary value using the identified methodology. Assets were only valued if they were in Washington Park's jurisdiction (city limits or ETJ).

Table 2. Risk Estimate Methodology and Sources

Critical Asset or Natural Infrastructure	Methodology and Sources
Government Services	Sum of insurance values of each critical asset
Water System	$57.73 per linear foot of water line (Uni-Bell PVC Pipe Association) + $7,000 per fire hydrant + $506,104 per water storage tank (Landmark) + $57,500 per public water supply well + tax value of water treatment plant
Electric System	$73.86 per linear foot of electric transmission lines (Power Grid International) + tax value of electric substations
Roads	$8,650,000 per mile of roadway (NCDOT average cost)
Bridges	$4,800,000 per bridge (NCDOT average cost)

Parks/Public Land/Public Shorelines	Sum of tax value of each critical asset
Wetlands	$560,000 per acre for coastal wetlands (NC Division of Mitigation value)
Streams	$740.09 per linear foot (NC Division of Mitigation value)
Managed Areas	Sum of tax value of each critical asset

Table 3. Risk Estimate Worksheet

Critical Asset or Natural Infrastructure	# of Critical Assets or Areas at Risk	Estimated Monetary Value
Government Services	2 buildings/properties	$250,000
Water System	25,603.53 linear feet of water lines, 15 fire hydrants	$1,583,092
Electric System	25,819.2 linear feet of electric lines	$1,905,791
Roads	4.89 linear miles	$42,298,500
Bridges	1 bridge	$4,800,000
Parks/Public Land/Public Shorelines	4 properties (2 including public shorelines)	$1,942,948
Wetlands	14.7 acres	$8,232,000
Streams	5,485 linear feet	$4,059,394
Managed Areas	3 properties	$1,710,796

Refer to Appendix C for Risk and Vulnerability Assessment Materials.

PROJECT PORTFOLIO

The assembled project portfolio details six (6) high priority projects, addressing hazards, type of strategy area and approach, priority rating, potential sources of funding, cost and project duration estimates, project map(s), project description, and project scope. These projects were developed to coincide with the top priority solution that would help make the community more resilient to the hazards identified: riverine flooding, nuisance flooding, sea level rise, storm surge, drought, wildfire, and coastal erosion. One nature-based or hybrid solution project is eligible to move forward into Phase 3 of the RCCP, Engineering and Design. The Town of Washington Park CAT, along with stakeholders, choose to move forward with the Living Shoreline at Public Shoreline Areas project, the most popular project based upon Phase 2 Open House input, to advance to RCCP Phase 3. Steps taken to assemble the project portfolio that led to the community and the CAT choosing this project are outlined below.

IDENTIFY A SUITE OF POTENTIAL PROJECT SOLUTIONS

The first step to assembling the project portfolio was to identify a suite of potential solutions. The contractors helped the CAT identify 36 potential solutions. The Pamlico Sound Hazard Mitigation Strategies identified an additional 26 potential solutions that could also be carried forward. These solutions were categorized by Planning/Policy, Green and Hybrid Infrastructure Solutions, and Hard/Grey Infrastructure Solutions and presented to the CAT at Meeting 4. Each CAT member then identified their top solutions.

CONSOLIDATE AND PRIORITIZE PROJECTS

The second step in assembling the project portfolio was to consolidate and prioritize the project solutions. The CAT identified nine (9) solutions from the suite of potential solutions that could move forward based on the STAPLEE Method and a simple benefit/cost rating system to help consolidate and prioritize all the potential project solutions. The STAPLEE Method assesses the social, technical, administrative, political, legal, economic, and environmental aspects and potential impacts of each project solution. The benefit/cost rating system used a high/medium/low scoring system to predict benefits and costs of each project solution.

Potential priority projects were presented to the CAT during the 5th meeting where the STAPLEE and benefit/cost rating metrics were reviewed and finalized. These projects were then brought to the community for additional feedback at the Phase 2 Public Open House. The Town of Washington Park along with the CAT identified six (6) priority projects to be presented in the project portfolio.

Priority Projects

- Living Shoreline at Public Shoreline Areas (project chosen to advance to RCCP Phase 3)
- Stormwater Action Plan – Stormwater System Upgrade
- Riverside Drive Flood Attenuation Park
- Green Stormwater Infrastructure at Riverside Drive and W. Isabella Avenue
- Develop a Sanitary Sewer System
- Tributary Improvements East of Isabella Avenue

North Carolina RESILIENT COASTAL COMMUNITIES PROGRAM

TOWN OF WASHINGTON PARK

Living Shoreline at Public Shoreline Areas

Project Summary	
Project Description	Incorporate a living shoreline along approx. 2,500 feet of public shoreline within Washington Park to reduce shoreline erosion.
Project Scope	<u>Engineering/Design</u> This will include a detailed shoreline assessment and engineering/design of chosen alternative(s). Multiple shoreline options, including expanding the existing terminal groins, will be presented. Swimming and paddling access will be maintained. Concept planning completed by East Carolina University students will be referenced. - Survey - Shoreline assessment - Concept Design/ Alternatives (3) - Engineering/design - SEPA Documentation (Archaeological Survey) - Permitting Due Diligence <u>Implementation</u> Construct a living shoreline along public shoreline areas within Washington Park to reduce shoreline erosion. The engineering/design phase will determine the type of living shoreline project that is implemented. There is the potential for multiple project types on different shoreline areas. Swimming and paddling access will be maintained. - Permitting - Construction - Construction Administration - Construction Inspections
Hazard(s) Addressed by Project	List Hazards Specific to the Community Which Impact the Project Location (Refer to Hazard Mapping) ▪ Coastal Erosion
Type of Solution/Strategy Area	List Strategy Area Column(s) from Matrix (e.g., Policy, Planning, Green and Hybrid [Nature-Based] Solutions, Hard/Grey Infrastructure) <u>Engineering/Design</u> ▪ Green and Hybrid Solutions

	Implementation ▪ Green and Hybrid Solutions				
Type of Strategy Approach	List Strategy Approach from Matrix (e.g., Avoid, Accommodate, Protect, Retreat, Build Adaptive Capacity) ▪ Protect				
Project Estimated Cost	Engineering/Design - $225,000 ($90/ft.) Implementation - $1,125,000 ($450/ft) - $2,500,000 ($1000/ft)				
Potential Implementation Funding Sources	Potential Sources for Project/Action Implementation Engineering/Design ▪ NC Resilient Coastal Communities Program Phase 3 ▪ NC Environmental Enhancement Grant (EEG) ▪ NC Division of Coastal Management Public Beach and Coastal Waterfront Access Grant ▪ NC Parks and Recreation Trust Fund (PARTF) Grant ▪ Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure in Communities (BRIC) Grant ▪ National Fish and Wildlife Foundation (NFWF) National Coastal Resilience Fund Implementation ▪ NC Resilient Coastal Communities Program Phase 4 ▪ NC Environmental Enhancement Grant (EEG) ▪ NC Division of Coastal Management Public Beach and Coastal Waterfront Access Grant ▪ NC Parks and Recreation Trust Fund (PARTF) Grant ▪ Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure in Communities (BRIC) Grant ▪ National Fish and Wildlife Foundation (NFWF) National Coastal Resilience Fund				
Project Estimated Timeline	2-3 years (engineering/design and construction)				
Priority Rating	High				
Potential Submission for RCCP Phase 3	♦	Yes		No	*Project must be a nature-based solution or hybrid solution to be considered for RCCP Phase 3.*
Project Map					


Runyon Creek
Pamlico River
NC-32/River Road
Edgewater Drive
Beech Street
Riverside Drive
Pine Street
Walnut Street
Oak Street
Fairview Avenue
Bank Street
Hickory Street
College Avenue
Isabella Avenue
Small Street
Spruce Street
Shorewood Drive
Washington Park, NC
Resilient Coastal
Communities Program
Living Shoreline at
Public Shoreline Areas
Project Location
Legend
Living Shoreline at Public Shoreline Areas Project Location
Railroads
Washington Park Roads
Beaufort County Roads
Washington Park Town Limits
Surface Water
0 200 400 800 Feet

Stormwater Action Plan – Stormwater System Upgrade

North Carolina RESILIENT COASTAL COMMUNITIES PROGRAM

TOWN OF WASHINGTON PARK

Stormwater Action Plan – Stormwater System Upgrade

Project Summary	
Project Description	Develop a Stormwater Action Plan combined with strategically upgrading the stormwater system through improved and expanded infrastructure. The project will establish mapping and condition assessments for stormwater system components and outfalls with a focus on known problem areas and areas identified via a desktop analysis. The project will promote proactive stormwater maintenance through development of interactive mapping tools and maintenance guidance. The project will encourage stormwater quality awareness through public outreach efforts and produce construction drawings for a priority project.
Project Scope	Engineering/Design - Develop a Stormwater Action Plan. This plan will complete a stormwater ground assessment and surface hydrology analysis that will be incorporated into an online mapping system that can submit real-time data to analyze, prioritize, and take action on potential problem areas. The plan will also incorporate a maintenance plan that will be tracked by the online tool. The plan will include assessing and documenting the type and location of stormwater infrastructure, collecting and analyzing data on the hydraulic flow, assessing stormwater system capacity and functionality, and identifying projects to upgrade the system and improve the ability of the system to convey water, improve backwater conditions, and/or improve water quality. Both hard/grey infrastructure and green/nature-based solutions will be considered in the Stormwater Action Plan. The project will include design and construction documents for a high priority project chosen in partnership with the community. - Hydro Analysis - Field Work - Natural Resources Assessment - Project Prioritization/Recommendations - Design - Arc Online Tool - Stormwater Maintenance Manual - Public Education Implementation - Strategically upgrade the stormwater system through pipe replacements (upsizing where needed), increasing the size and quantity of culverts and catch basins, redefining ditches, implementing backflow

	preventors, installing bioswales, bioretention cells, etc. The previously developed Stormwater Action Plan will determine project prioritization. - Permitting - Construction - Construction Administration - Construction Inspections
Hazard(s) Addressed by Project	List Hazards Specific to the Community Which Impact the Project Location (Refer to Hazard Mapping) ▪ Flooding (Nuisance, Riverine)
Type of Solution/Strategy Area	List Strategy Area Column(s) from Matrix (e.g., Policy, Planning, Green and Hybrid [Nature-Based] Solutions, Hard/Grey Infrastructure) <u>Stormwater Action Plan</u> ▪ Planning ▪ Green and Hybrid Solutions <u>Stormwater System Upgrade</u> ▪ Green and Hybrid Solutions
Type of Strategy Approach	List Strategy Approach from Matrix (e.g., Avoid, Accommodate, Protect, Retreat, Build Adaptive Capacity) ▪ Accommodate ▪ Build Adaptive Capacity
Project Estimated Cost	<u>Engineering/Design</u> - $375,000 <u>Implementation</u> - $150,000 - $500,000 (per local stormwater retrofit project)
Potential Implementation Funding Sources	Potential Sources for Project/Action Implementation <u>Stormwater Action Plan</u> ▪ NC Resilient Coastal Communities Program Phase 3 ▪ Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure in Communities (BRIC) Capability and Capacity Building (C&CB) Grant ▪ NC Department of Environmental Quality Water Resources Development Grant (WRDG) <u>Stormwater System Upgrade</u> ▪ NC Resilient Coastal Communities Program Phase 4 ▪ Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure in Communities (BRIC) Grant ▪ Federal Emergency Management Agency (FEMA) Flood Mitigation Assistance (FMA) Grant ▪ NC Environmental Enhancement Grant (EEG) ▪ NC Land and Water Fund Grant

	▪ NC Department of Environmental Quality Water Resources Development Grant (WRDG) ▪ NC Department of Environmental Quality 319 Grant ▪ HUD Community Development Block Grant – Mitigation (CDBG-MIT)				
Project Estimated Timeline	3 – 5 years (project may be completed in phases)				
Priority Rating	High				
Potential Submission for RCCP Phase 3	♦	Yes		No	*Project must be a nature-based solution or hybrid solution to be considered for RCCP Phase 3.*
Project Map					

Riverside Drive Flood Attenuation Park

North Carolina RESILIENT COASTAL COMMUNITIES PROGRAM

TOWN OF WASHINGTON PARK

Riverside Drive Flood Attenuation Park

Project Summary	
Project Description	Create a flood attenuation park along Riverside Drive that will provide a storage facility and treatment devices that can dually serve as a community gathering and /or event space.
Project Scope	<u>Engineering/Design</u> Design a flood attenuation park along Riverside Drive. This park would be designed to capture water as the first barrier from the river. See 'WEDG' (Waterfront Edge Design Guidelines) rating system for parks. 'WEDG guidance': https://wedg.waterfrontalliance.org/resources/ Rain gardens, stormwater wetlands, and other concepts which improve the aesthetics of the park will be utilized. Public recreational uses will be maintained. - Survey - Concept planning - Landscape Design - Engineering/Design <u>Implementation</u> Construct a flood attenuation park along Riverside Drive. The engineering/design process will determine specific improvements. Rain gardens and other concepts which improve the aesthetics of the park will be utilized. Public recreational uses will be maintained. - Permitting - Construction - Construction Administration - Construction Inspections
Hazard(s) Addressed by Project	List Hazards Specific to the Community Which Impact the Project Location (Refer to Hazard Mapping) ▪ Flooding (Riverine)
Type of Solution/Strategy Area	List Strategy Area Column(s) from Matrix (e.g., Policy, Planning, Green and Hybrid [Nature-Based] Solutions, Hard/Grey Infrastructure) <u>Engineering/Design</u>

	▪ Green and Hybrid Solutions Implementation ▪ Green and Hybrid Solutions
Type of Strategy Approach	List Strategy Approach from Matrix (e.g., Avoid, Accommodate, Protect, Retreat, Build Adaptive Capacity) ▪ Accommodate
Project Estimated Cost	Engineering/Design - $100,000 Implementation - $200,000 - $500,000
Potential Implementation Funding Sources	Potential Sources for Project/Action Implementation Engineering/Design ▪ NC Resilient Coastal Communities Program Phase 3 ▪ NC Environmental Enhancement Grant (EEG) ▪ NC Division of Coastal Management Public Beach and Coastal Waterfront Access Grant ▪ NC Parks and Recreation Trust Fund (PARTF) Grant ▪ Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure in Communities (BRIC) Grant ▪ NC Land and Water Fund Grant ▪ NC Department of Environmental Quality 319 Grant ▪ NC Department of Environmental Quality Water Resources Development Grant (WRDG) Implementation ▪ NC Resilient Coastal Communities Program Phase 4 ▪ NC Environmental Enhancement Grant (EEG) ▪ NC Division of Coastal Management Public Beach and Coastal Waterfront Access Grant ▪ NC Parks and Recreation Trust Fund (PARTF) Grant ▪ Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure in Communities (BRIC) Grant ▪ NC Land and Water Fund Grant ▪ NC Department of Environmental Quality 319 Grant ▪ NC Department of Environmental Quality Water Resources Development Grant (WRDG)
Project Estimated Timeline	2-3 years (engineering/design and construction)
Priority Rating	High
Potential Submission for RCCP Phase 3	♦ Yes ☐ No *Project must be a nature-based solution or hybrid solution to be considered for RCCP Phase 3.*
Project Map	


Runyon Creek
Pamlico River
NC-32/River Road
Edgewater Drive
Beech Street
Riverside Drive
Pine Street
Walnut Street
Oak Street
Fairview Avenue
Bank Street
Hickory Street
College Avenue
Isabella Avenue
Small Street
Spruce Street
Shorewood Drive
Washington Park, NC
Resilient Coastal
Communities Program
Riverside Drive
Flood Attenuation Park
Project Location
Legend
Riverside Drive Flood Attenuation Park Project Location
Railroads
Washington Park Roads
Beaufort County Roads
Washington Park Town Limits
Surface Water
0 200 400 800 Feet
N
W
E
S

Green Stormwater Infrastructure at Riverside Drive and W. Isabella Avenue

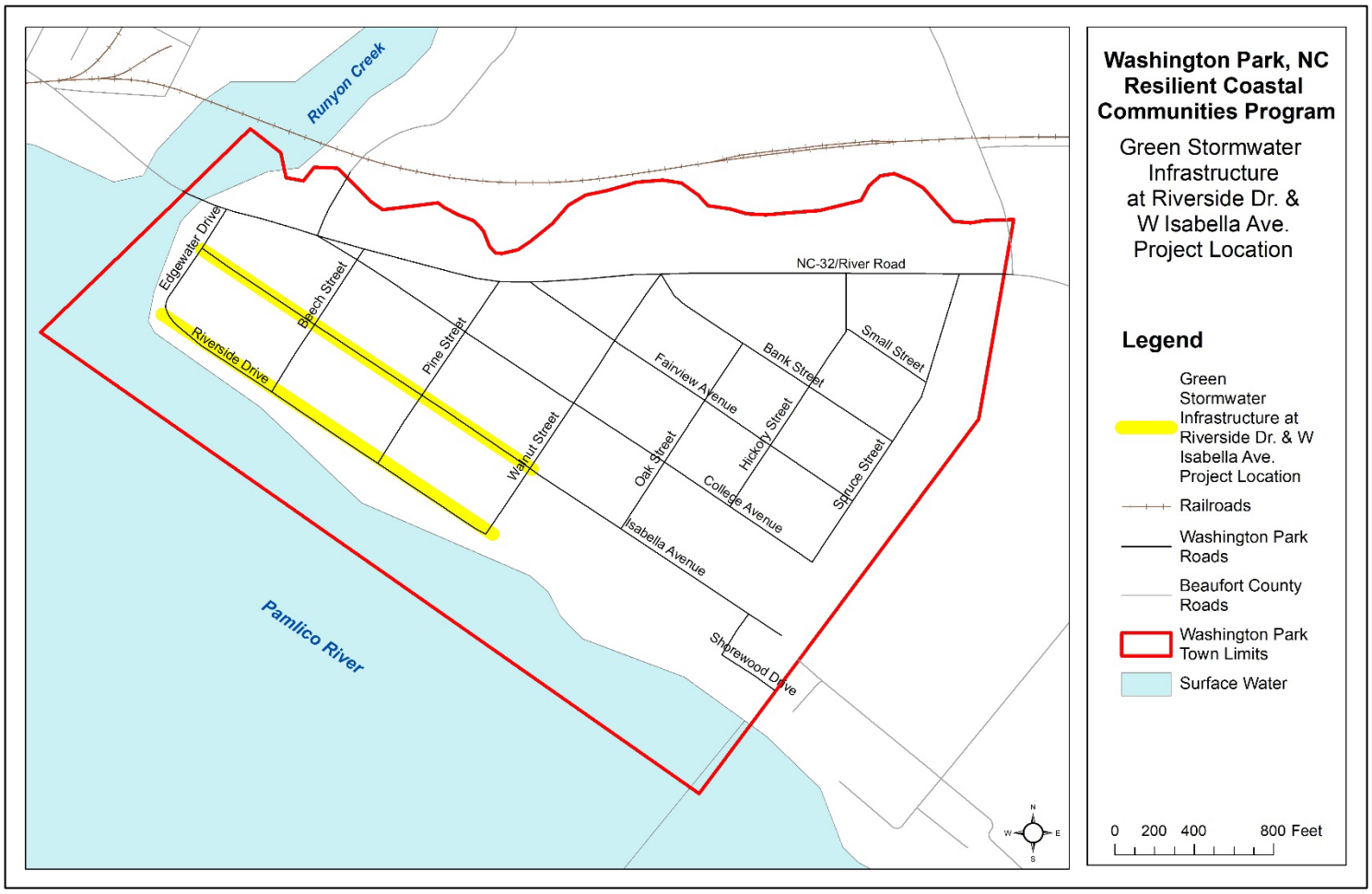
North Carolina RESILIENT COASTAL COMMUNITIES PROGRAM

TOWN OF WASHINGTON PARK

Green Stormwater Infrastructure at Riverside Dr. and W. Isabella Ave.

Project Summary	
Project Description	Implement green stormwater infrastructure along Riverside Drive and West Isabella Avenue. The projects will connect green practices into the existing stormwater conveyance systems without major modifications. Practices for consideration are bioretention, permeable pavement, or a submerged gravel wetland. Projects will be developed with a goal to improve aesthetics within the community.
Project Scope	Engineering/Design – Identify appropriate projects and complete engineering/design for green stormwater infrastructure along Riverside Drive and West Isabella Avenue. - Survey - Concept planning - Engineering/Design - Permitting Due Diligence Implementation – Construct green stormwater infrastructure along Riverside Drive and West Isabella Avenue. Specific projects and placement will be determined during engineering/design phase. Improvements could include stormwater infiltration medians, bioswales, permeable pavement, bioretention cells, etc. - Permitting - Construction - Construction Administration - Construction Inspections
Hazard(s) Addressed by Project	List Hazards Specific to the Community Which Impact the Project Location (Refer to Hazard Mapping) ▪ Flooding (Nuisance)
Type of Solution/Strategy Area	List Strategy Area Column(s) from Matrix (e.g., Policy, Planning, Green and Hybrid [Nature-Based] Solutions, Hard/Grey Infrastructure) Engineering/Design ▪ Green and Hybrid Solutions Implementation

	▪ Green and Hybrid Solutions
Type of Strategy Approach	List Strategy Approach from Matrix (e.g., Avoid, Accommodate, Protect, Retreat, Build Adaptive Capacity) ▪ Accommodate
Project Estimated Cost	Engineering/Design - $70,000 Implementation - $60,000 - $250,000 (per green stormwater infrastructure project)
Potential Implementation Funding Sources	Potential Sources for Project/Action Implementation Engineering/Design ▪ NC Resilient Coastal Communities Program Phase 3 ▪ NC Environmental Enhancement Grant (EEG) ▪ NC Land and Water Fund Grant ▪ NC Department of Environmental Quality Water Resources Development Grant (WRDG) ▪ NC Department of Environmental Quality 319 Grant Implementation ▪ NC Resilient Coastal Communities Program Phase 4 ▪ NC Environmental Enhancement Grant (EEG) ▪ NC Land and Water Fund Grant ▪ NC Department of Environmental Quality Water Resources Development Grant (WRDG) ▪ NC Department of Environmental Quality 319 Grant
Project Estimated Timeline	2-3 years (engineering/design and construction)
Priority Rating	High
Potential Submission for RCCP Phase 3	♦ Yes No *Project must be a nature-based solution or hybrid solution to be considered for RCCP Phase 3.*
Project Map	


Runyon Creek
Pamlico River
Edgewater Drive
Beech Street
Riverside Drive
Pine Street
Walnut Street
NC-32/River Road
Fairview Avenue
Bank Street
Small Street
Oak Street
Hickory Street
College Avenue
Spruce Street
Isabella Avenue
Shorewood Drive
Washington Park, NC
Resilient Coastal
Communities Program
Green Stormwater
Infrastructure
at Riverside Dr. &
W Isabella Ave.
Project Location
Legend
Green Stormwater Infrastructure at Riverside Dr. & W Isabella Ave. Project Location
Railroads
Washington Park Roads
Beaufort County Roads
Washington Park Town Limits
Surface Water
0 200 400 800 Feet

Develop a Sanitary Sewer System

North Carolina RESILIENT COASTAL COMMUNITIES PROGRAM

TOWN OF WASHINGTON PARK

Develop a Sanitary Sewer System

Project Summary	
Project Description	Develop a sewer system or tie into the City of Washington's sewer system. The project will convert septic properties to a collection system. The collection system, a lift station, and force main will need to be evaluated, designed, and constructed to serve the over 150 homes in the community. Connecting to the City of Washington's wastewater treatment plant is preferred because of staffing issues and the logistics of the town maintaining their own WWTP. Multi-tank septic collection systems or advanced septic systems are a potential alternative if sewer is determined to not be feasible.
Project Scope	Engineering/Design – Complete a feasibility study for development of a sewer system or tying into the City of Washington's sewer system. Complete engineering/design in preparation for construction. The town's wastewater is currently provided by privately owned on-site septic systems. The town is at risk for future septic system failure due to sea level rise, saltwater intrusion and associated rising groundwater tables. - Feasibility study - Survey - NEPA/SEPA - Engineering/design - Permitting Due Diligence Implementation - Construct a sewer system or tie into the City of Washington's sewer system. - Permitting - Construction - Construction Administration - Construction Inspections
Hazard(s) Addressed by Project	List Hazards Specific to the Community Which Impact the Project Location (Refer to Hazard Mapping) ▪ Sea level rise ▪ Saltwater intrusion ▪ Economic and social resilience
Type of Solution/Strategy Area	List Strategy Area Column(s) from Matrix (e.g., Policy, Planning, Green and Hybrid [Nature-Based] Solutions, Hard/Grey Infrastructure)

	Engineering/Design ▪ Planning ▪ Hard/Grey Infrastructure Implementation ▪ Hard/Grey Infrastructure
Type of Strategy Approach	List Strategy Approach from Matrix (e.g., Avoid, Accommodate, Protect, Retreat, Build Adaptive Capacity) ▪ Avoid ▪ Build Adaptive Capacity
Project Estimated Cost	Feasibility Study - $75,000 Engineering/Design - $750,000 - $900,000 Implementation - $11,000,000 - $14,000,0000
Potential Implementation Funding Sources	Potential Sources for Project/Action Implementation Engineering/Design ▪ US Environmental Protection Agency (EPA)/US Dept. of Agriculture Rural Development (USDA-RD) - Closing America's Wastewater Access Gap Grant ▪ Southeast Rural Community Assistance Program (SERCAP) – Community Planning Program ▪ NC Dept. of Environmental Quality (DEQ) – Clean Water State Revolving Fund Implementation ▪ US Dept. of Agriculture Rural Development (USDA-RD) ▪ NC Dept. of Environmental Quality (DEQ) – Clean Water State Revolving Fund ▪ Community Development Block Grant – Infrastructure (CDBG-I)
Project Estimated Timeline	4-6 years (feasibility study/engineering/design and construction)
Priority Rating	High
Potential Submission for RCCP Phase 3	Yes ♦ No *Project must be a nature-based solution or hybrid solution to be considered for RCCP Phase 3.*
Project Map	


Runyon Creek
Pamlico River
NC-32/River Road
Edgewater Drive
Beech Street
Riverside Drive
Pine Street
Walnut Street
Oak Street
Fairview Avenue
Bank Street
Hickory Street
College Avenue
Small Street
Spruce Street
Isabella Avenue
Shorewood Drive
Washington Park, NC
Resilient Coastal
Communities Program
Develop a Sanitary
Sewer System
Project Location
(Townwide Project)
Legend
Washington
Park Town
Limits (Project
Location)
Railroads
Washington
Park Roads
Beaufort County
Roads
Surface Water
0 200 400 800 Feet

Tributary Improvements East of Isabella Avenue

North Carolina RESILIENT COASTAL COMMUNITIES PROGRAM

TOWN OF WASHINGTON PARK

Tributary Improvements East of Isabella Avenue

Project Summary	
Project Description	Increase flood capacity along the tributary east of Isabella Avenue and Shorewood Drive. Assess effects of stormwater discharge from North Shores Drive.
Project Scope	<u>Engineering/Design</u> Design solutions to increase the flood capacity along the tributary east of Isabella Ave. and Shorewood Dr. Potential projects include bioswales, stream restoration, floodplain restoration and/or wetland creation. - Survey - Concept planning - Natural Resources Documentation - Engineering/Design - Permitting Due Diligence <u>Implementation</u> Construct project(s) to increase the flood capacity along the tributary east of Isabella Ave. and Shorewood Dr. The engineering/design process will determine specific improvements which could include bioswales, stream restoration, floodplain restoration and/or wetland creation. - Permitting - Construction - Construction Administration - Construction Inspections
Hazard(s) Addressed by Project	List Hazards Specific to the Community Which Impact the Project Location (Refer to Hazard Mapping) ▪ Flooding (Riverine)
Type of Solution/Strategy Area	List Strategy Area Column(s) from Matrix (e.g., Policy, Planning, Green and Hybrid [Nature-Based] Solutions, Hard/Grey Infrastructure) <u>Engineering/Design</u> ▪ Green and Hybrid Solutions <u>Implementation</u> ▪ Green and Hybrid Solutions

Type of Strategy Approach	List Strategy Approach from Matrix (e.g., Avoid, Accommodate, Protect, Retreat, Build Adaptive Capacity) ▪ Accommodate				
Project Estimated Cost	Engineering/Design - $150,000 Implementation - $300,000 - $650,000				
Potential Implementation Funding Sources	Potential Sources for Project/Action Implementation Engineering/Design ▪ NC Resilient Coastal Communities Program Phase 3 ▪ NC Environmental Enhancement Grant (EEG) ▪ Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure in Communities (BRIC) Grant ▪ NC Land and Water Fund Grant ▪ NC Department of Environmental Quality Water Resources Development Grant (WRDG) ▪ NC Department of Environmental Quality 319 Grant ▪ National Fish and Wildlife Foundation (NFWF) National Coastal Resilience Fund Implementation ▪ NC Resilient Coastal Communities Program Phase 4 ▪ NC Environmental Enhancement Grant (EEG) ▪ Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure in Communities (BRIC) Grant ▪ NC Land and Water Fund Grant ▪ NC Department of Environmental Quality Water Resources Development Grant (WRDG) ▪ NC Department of Environmental Quality 319 Grant ▪ National Fish and Wildlife Foundation (NFWF) National Coastal Resilience Fund				
Project Estimated Timeline	2-4 years (engineering/design and construction)				
Priority Rating	High				
Potential Submission for RCCP Phase 3	♦	Yes		No	*Project must be a nature-based solution or hybrid solution to be considered for RCCP Phase 3.*
Project Map					


Runyon Creek
Pamlico River
NC-32/River Road
Edgewater Drive
Beech Street
Riverside Drive
Pine Street
Walnut Street
Fairview Avenue
Oak Street
Bank Street
Hickory Street
College Avenue
Small Street
Spruce Street
Isabella Avenue
Shorewood Drive
N
W
E
S
Washington Park, NC
Resilient Coastal
Communities Program
Tributary Improvements
East of Isabella Ave.
Project Location
Legend
Tributary Improvements East of Isabella Ave. Project Location
Railroads
Washington Park Roads
Beaufort County Roads
Washington Park Town Limits
Surface Water
0 200 400 800 Feet

Appendix A

Community Action Team Materials

Community Action Team Members:

April Alligood, Town Clerk/Finance Officer
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252-946-3157

Tom Richter, Mayor:
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Jeff Peacock, Mayor Pro Tem
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Lee Bowen, Commissioner:
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252-362-1236

Belinda Cowell, Commissioner:
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252-945-0673

Wade Dale, Commissioner:
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Vail Rumley, Commissioner:
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Beth Byrd, Resident/Planning Board member:
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Contractors:

Mid-East Commission:

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RK&K:

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NC Division of Coastal Management:

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NC Sea Grant:

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North Carolina RESILIENT COASTAL COMMUNITIES PROGRAM

Town of Washington Park

Community Action Team - Meeting Framework

Each meeting is anticipated to be approximately 2-hours in duration. Meeting dates, times and locations are noted below. The review of relevant RCCP materials and CAT coordination will occur between each meeting. Meeting agendas will be provided in advance of each meeting. Meeting topics are subject to change as additional topics or needs are identified.

PHASE 1 COMMUNITY ENGAGEMENT AND RISK/VULNERABILITY ASSESSMENT

MEETING 1

Date: Wed. Oct. 4, 2023

Time: 10:00 am – 12:00 pm

Location: Washington Park Town Hall, 408 Fairview Ave. Washington, NC 27889

VISION AND GOALS, EXISTING PLANS & COMMUNITY ENGAGEMENT

Phase 1, Step 1: Form Community Action Team

- A. Introduce team members and contractors.

Phase 1, Step 2: Review Existing Plans and Efforts

- A. Review existing plans, ordinances, policies, and programs, including Pamlico Sound Regional Hazard Mitigation Plan.
- B. Compile information on critical assets, natural resources, social vulnerability, risk assessments, and resiliency related projects.
- C. Identify and document additional data and resources necessary to complete the community's Risk and Vulnerability Assessment.

Phase 1, Step 3: Set Vision and Goals

- A. Review community plans and Hazard Mitigation Plan for resiliency vision and goal statements.
- B. Identify example resiliency vision and goal statements.
- C. Develop community-specific visions and goals.

Phase 1, Step 4: Develop a Community Engagement Strategy

- A. Identify audiences/stakeholders, including vulnerable populations.
- B. Identify tools, techniques, and strategies for informing and engaging the community, including a targeted approach for reaching vulnerable populations.
- C. Develop a community engagement strategy and schedule.

MEETING 2

Date: Wed. Nov. 1, 2023

Time: 10:00 am – 12:00 pm

Location: Washington Park Town Hall, 408 Fairview Ave. Washington, NC 27889

EXISTING CONDITIONS – CRITICAL ASSETS & NATURAL INFRASTRUCTURE

Phase 1, Step 5: Map Critical Assets and Natural Infrastructure

- Review inventory of critical assets and natural infrastructure.
- Review and discuss critical assets, natural resources, social vulnerability, available risk assessments, and resiliency related projects.
- Review draft mapping of critical assets and natural infrastructure.
- Select critical assets and natural infrastructure to include in the RCCP Risk and Vulnerability Assessment.
- Discuss hazards to include in the Risk and Vulnerability Assessment.

MEETING 3

Date: Wed. TBD

Time: 10:00 am – 12:00 pm

Location: Washington Park Town Hall, 408 Fairview Ave. Washington, NC 27889

RISK & VULNERABILITY ASSESSMENT & PUBLIC MEETING PLANNING

Phase 1, Step 6: Conduct Risk and Vulnerability Assessment

- A. Identify and map the hazards.
  - 1. Review hazard mapping including hazards overlaid with critical assets and natural resources.
- B. Assess Vulnerability
  - 1. Review vulnerability index to measure exposure, sensitivity and adaptive risk for critical assets and natural infrastructure.
  - 2. Complete vulnerability worksheets.
- C. Estimate Risk
  - 1. Complete quantitative risk worksheets.
- *Community Engagement:* Plan a Public Open House to engage the community during Phase 1. Two-week public comment period required before moving into Phase 2.

PHASE 2 PLANNING, PROJECT IDENTIFICATION, AND PRIORITIZATION

MEETING 4

Date: Wed. TBD

Time: 10:00 am – 12:00 pm

Location: Washington Park Town Hall, 408 Fairview Ave. Washington, NC 27889

SUITE OF POTENTIAL STRATEGIES

Phase 2, Step 1: Identify a Suite of Potential Solutions

- A. Review the community's plans and other local sources for previously identified projects.
- B. Brainstorm a suite of potential solutions.
- C. Capture a suite of innovative solutions that can be used to apply for funding or self-funding.
- D. Link various strategies to the Phase I Risk Assessment with those being most vulnerable or most at risk
- E. Collaborate to further define the solutions.
- F. Discuss development of resiliency projects and actions portfolio.

MEETING 5

Date: Wed. TBD

Time: 10:00 am – 12:00 pm

Location: Washington Park Town Hall, 408 Fairview Ave. Washington, NC 27889

PRELIMINARY PROJECT PRIORITIZATION & PUBLIC MEETING PLANNING

Phase 2, Step 2: Consolidate and Prioritize Projects

- A. Describe strategies.
- B. Evaluate strategies and their feasibility (STAPLEE method).
- C. Conduct an informal cost-benefit analysis to review proposed strategies.
- D. CAT to review strategies and discuss preliminary project priorities.
- *Community Engagement:* Plan a Public Open House to engage the community during Phase 2 and obtain input on strategies and priorities. One-week public comment period following Open House.

MEETING 6

Date: Wed. TBD

Time: 10:00 am – 12:00 pm

Location: Washington Park Town Hall, 408 Fairview Ave. Washington, NC 27889

PUBLIC INPUT & DRAFT RESILIENCE STRATEGY ELEMENTS

Phase 2, Step 2: Consolidate and Prioritize Projects (continued)

- A. Consider public input and select priority projects.
- B. Identify at least five (5) priority projects for final project portfolio.
- C. Discuss project sites and details for each priority project.
- D. Collaborate on priority project templates.

MEETING 7

Date: Wed. TBD

Time: 10:00 am - 12:00 pm

Location: Washington Park Town Hall, 408 Fairview Ave. Washington, NC 27889

RESILIENCE STRATEGY DOCUMENT

Phase 2, Step 3: Develop the Resilience Strategy Document

- A. High level review of Resilience Strategy document.
- B. Review priority project portfolio.
- C. Discuss RCCP Phase 3 and 4 application process.
- D. Pick one nature-based or hybrid project to apply for Phase 3 & 4 funding.
- E. Vote on endorsement of Resilience Strategy document.

RESILIENCY STRATEGY DOCUMENT

Following Meeting 6, the Contractor team will develop the Town of Washington Park Resilience Strategy Document. Elements of the document will be shared with the CAT as developed throughout the planning process. The CAT will be provided the entire draft Resilience Strategy Document for review and comment before the plan is finalized.

Thank you for participating on the Town of Washington Park Community Action Team!
We appreciate your involvement as we plan for a more resilient community.

North Carolina
RESILIENT COASTAL COMMUNITIES PROGRAM

Town of Washington Park

Community Action Team – Meeting #1

AGENDA

Wednesday, Oct. 04, 2023, 10:00 AM - 12:00 PM

Location: Washington Park Town Hall, 408 Fairview Avenue, Washington, NC 27889

10:00 – 10:15 AM	**Introduction to Resilient Coastal Communities Program** ▪ Introduction of contractors and team members ▪ Review of Resilient Coastal Communities Program ▪ Review of Community Action Team meeting schedule and tasks ▪ See Community Action Team Meeting Framework document
10:15 – 10:30 AM	**Review of Existing Plans and Ordinances**
10:30 – 10:50 AM	**Community Vision Statement Exercise** ▪ Review Vision Statements from adopted plans and other vision statement examples ▪ Exercise: Community Vision Statement
10:50 – 11:15 AM	**Community Goals Exercise** ▪ Review goals from adopted plans and other resiliency goal examples ▪ Goals should address all three points; economic, environmental, social ▪ Exercise: Community Goals
11:15 – 11:30 AM	**Social Vulnerability Data**
11:30 – 11:50 AM	**Community Engagement Strategy** ▪ Public Survey ▪ Public Open House ▪ Strategies to engage the community, including vulnerable populations
11:50 AM – NOON	**Discussion / Adjournment**

North Carolina
RESILIENT COASTAL COMMUNITIES PROGRAM

WASHINGTON PARK

Community Action Team – Meeting #1

MEETING SUMMARY

WEDNESDAY, OCTOBER 4, 2023, 10:00 AM - 12:00 PM, WASHINGTON PARK TOWN OFFICE

Attendees:

- Jamie Heath, Mid-East Commission
- Seth Laughlin, Mid-East Commission
- Tris Ford, RK&K
- Sarah Spiegler, NC Sea Grant
- Mackenzie Todd, NC Division of Coastal Management
- Kasen Wally, NC Division of Coastal Management
- Belinda Cowell, Washington Park
- Denise Dale, Washington Park
- Jeff Peacock, Washington Park
- Beth Byrd, Washington Park
- Paul Kennedy, Washington Park
- RW Dale, Washington Park
- Tom Richter, Washington Park
- Lee Bowen, Washington Park (virtual attendee)

Meeting Purpose:

- Introduction of contractors and team members
- Review of Resilient Coastal Communities Program
- Review of Community Action Team meeting schedule and tasks
- Review of existing plans and ordinances
- Review vision statements from adopted plans and other vision statement examples
- Exercise: Community Vision Statement
- Review goals from adopted plans and other resiliency goal examples
- Exercise: Community Goals
- Review social vulnerability data
- Plan Community Engagement Strategy

Notes:

- Mayor Tom Richter led introductions.
- Jamie Heath presented overview of Resilient Coastal Communities Program.
- Existing plans and ordinances were reviewed.
- Example vision statements were reviewed.

- The Community Vision Statement exercise was completed and worksheets were collected. Jamie Heath stated draft vision statement would be made available for comment via email.
- Example goals were reviewed.
- The Community Goals exercise was completed and worksheets were collected. Jamie Heath stated draft goals and objectives would be made available for comment via email.
- Social vulnerability data was reviewed.
    - Center for Disease Control (CDC) Social Vulnerability Index data was reviewed.
        - Socioeconomic status - Group generally felt that SVI should be lower. The community is less vulnerable than the data shows. Although, there are retired people on a limited income in town.
        - Household characteristics – Group generally felt that the SVI should be lower. The community is less vulnerable than the data shows. Although high 65+ population is a vulnerability. Group generally felt that the town should show medium level vulnerability for household characteristics.
        - Racial and ethnic minority – Group agreed that the SVI should be lower. The community is less vulnerable than the data shows. Very few racial and ethnic minority populations in town.
        - Housing type & transportation – Group generally felt that the SVI should be lower. The community is less vulnerable than the data shows. Although, the community is still vulnerable during disasters.
    - EPA Environmental Justice Screen reports were reviewed.
        - There was a question on what RMP means, which is Risk Management Program – fertilizers.
    - There was a question on methodology used for CDC Social Vulnerability Index and EPA's Environmental Justice Screen reports. Ms. Heath stated she would follow up with more information.
    - Local census data was reviewed.
        - The group generally felt that 9.3% seemed high for no vehicle access.
- The Community Engagement Strategy was planned, including vulnerable populations to consider and outreach methods. There will be a survey and public open house in Phase 1 and Phase 2.
    - The draft public survey for Phase 1 was reviewed. The survey will be available both online and in hard copy format.
        - There was a question on whether we can put a field on the survey that allows us to capture email addresses. Ms. Heath stated that to keep surveys anonymous, we would leave a note with our contact information, and to email or call to sign-up for more information/further communications.
        - Noted that the town does not have sewer. Need to also reference septic where we reference sewer in the survey.
    - Outreach methods were discussed.
        - Beth Byrd runs Washington Park Neighbors Facebook page.

- Town has a website.
- Town has a newsletter published quarterly or as needed.
- There are no other public places in town to post the survey besides the Town Office, but the library in Washington would be a good addition.
- The yard sign coming over the bridge is perfect for events but text must be limited so it can be read at driving speeds.
- The town has an email list that can be utilized and is working on growing the list.
- There will maybe be a spring picnic, which would be a good place to gather survey responses. The Election Day event is another potential.
- It was noted that we should offer snacks to encourage open house attendance.

- Other notes about the community.
  - Washington Park participates in the CRS program.
  - There are 217 houses in Washington Park.
  - There used to be more children in town. The community is aging.

North Carolina
RESILIENT
COASTAL
COMMUNITIES
PROGRAM

Town of Washington Park

Community Action Team – Meeting #2

AGENDA

Wednesday, Nov. 01, 2023, 10:00 AM - 12:00 PM

Location: Washington Park Town Hall, 408 Fairview Avenue, Washington, NC 27889

10:00 – 10:30 AM	**Critical Assets and Natural Infrastructure** ▪ Inventory list ▪ Maps
10:30 – 10:45 AM	**Potential Hazards and Non-Climate Stressors**
10:45 – 11:00 AM	**Available Risk Assessments** ▪ From Pamlico Sound Regional Hazard Mitigation Plan
11:00 – 11:30 AM	**Known Issues** ▪ From 2023 Washington Park Public Input Report ▪ From RCCP application ▪ Other known issues
11:30 – 11:45 AM	**Current / Past Resilience Projects**
11:45 – 12:00 PM	**Discussion / Adjournment**

North Carolina
RESILIENT
COASTAL
COMMUNITIES
PROGRAM

WASHINGTON PARK

Community Action Team – Meeting #2

MEETING SUMMARY

WEDNESDAY, NOVEMBER 1, 2023, 10:00 AM - 12:00 PM, WASHINGTON PARK TOWN OFFICE

Attendees:

- Jamie Heath, Mid-East Commission
- Seth Laughlin, Mid-East Commission
- Lisa Williams, Mid-East Commission
- Tris Ford, RK&K
- Gordon Marsh, RK&K
- Sarah Spiegler, NC Sea Grant
- Mackenzie Todd, NC Division of Coastal Management
- Kasen Wally, NC Division of Coastal Management
- Belinda Cowell, Washington Park
- Denise Dale, Washington Park
- Jeff Peacock, Washington Park
- Beth Byrd, Washington Park
- Paul Kennedy, Washington Park
- R. Wade Dale, Washington Park
- Tom Richter, Washington Park
- Lee Bowen, Washington Park
- April Alligood, Wahington Park
- Peter A. Farrell, resident
- Julie Risher, resident
- Mindy Maddin, resident
- Cheryl Lee McDowell, resident

Meeting Purpose:

- Review draft critical assets and natural infrastructure inventory list and maps
- Discuss potential hazards and non-climate stressors
- Review available risk assessments
- Discuss known coastal hazard issues
- Discuss any current/past resilience projects

Notes:

- Draft critical assets and natural infrastructure inventory list and maps
    - Noted that Town Hall and public works building are in the 100-year floodplain.

- Need to make note of nearby assets even if not in town's jurisdiction, so it doesn't appear as if the town is isolated. Example, nearby Elementary School in Washington. Nearby IGA grocery store on River Rd.
- Noted that street system is a valuable asset. 4.1 miles of town-owned roads.
- Noted that water service is provided by Beaufort County, not Washington. No wells, etc. in town limits, just water lines. Jamie Heath will contact Beaufort County for water line data. Beaufort County does not have GIS files, only paper maps of water system.
- Other critical assets seemed correct.
- Noted need to get linear feet of shoreline and put the shoreline itself as an asset under natural infrastructure.
- Noted that the Pamlico River is south of the town, not east.
- Noted to add Isabella Ave. town owned parcel to parks/public land list and map.
- Other natural infrastructure seems correct.
- Noted on all maps, remove Honey Pod Farm Road. Relabel River Rd. to show that it is also NC-32.
- Town owned parcel on corner of Edgewater Dr. should connect, mapping error with parcels lining up. Fix on all maps that show the parcel.
- On the fish nursery area map, fill in the canal with blue to show it is water.
- Darken the floodplain layers, particularly the 500-year floodplain layer is difficult to see.

- Potential hazards and non-climate stressors
  - Sea level rise is a concern.
  - Flooding, primarily riverine and tidal is a concern. Rainfall flooding is minimal but it does happen.
  - Damaging storms, tornadoes and winds are a concern.
  - Storm surge is a concern.
  - Shoreline erosion is a top priority concern for town owned property.
  - Drought, heatwaves and wildfires are not a top concern.
  - Non-climate stressors include;
    - Aging or potentially undersized infrastructure
    - Population dynamics
      - Elderly population
    - Altered drainage patterns
      - Maybe not "altered" but drainage needs attention.
- Available risk assessments
  - Reviewed the Beaufort County risk assessment from the Pamlico Sound Regional Hazard Mitigation Plan.
  - Noted that flood maps have been updated since risk assessment was completed.
  - Noted that there are some critical assets listed for the town such as commercial and banking establishments that don't exist in the town limits. Town staff will work with

contractors to correct that issue during the next Hazard Mitigation Plan update, scheduled to occur in 2025.

- Known coastal hazard issues
    - Reviewed issues from 2023 Washington Park Public Input Report.
    - Reviewed issues from RCCP application.
    - Additional issues identified;
        - The west end of Isabella Ave. floods in any type of rain, water can't get through vegetation to storm drains.
        - Recently during Tropical Storm Ophelia River Road/NC-32 flooded. It floods at a depression in the road before you get to the bridge. This is an essential hurricane evacuation route. It was raised some before when the bridge was redone but was not raised enough. It is just that section and a section in front of Banks Dr. that flood on River Rd./NC-32. Noted that these are both 100-year flood areas. Noted that raising the road another foot may resolve the issue.
        - Edgewater Drive just past the bridge floods easily.
        - Noted that Florence in 2018 hit the town hard. There was 20 inches of water in Town Hall.
        - Noted that a Nor'easter can cause tidal flooding. No sunny day flooding.
- Current/past resilience projects
    - There has been a flap valve installed at Isabella Ave. to help with backflow in ditches. More ditch flapper valves are needed.
    - Some residents in the 100-year floodplain have elevated their homes. Many have paid out of pocket because of difficulties obtaining FEMA funding.
    - NC Dept. of Agriculture is currently working on snagging and clearing Maple Creek.
    - There is a drainage project at College Street.
    - The City of Washington has raised some electric lines and put some underground in town due to flooding. The town would like more to be underground but it is very expensive to install.
    - The Town Office and the Town Public Works building have had floodproofing up to 36 inches, except for the outlets.
    - The town is currently partnering with city planning students at ECU related to the shoreline area. The students will be exploring the feasibility of a living shoreline and doing some concept planning for the area.
- Other
    - Noted April Alligood's email address aawashpark@gmail.com. April will be Town Clerk when Dennie retires.
    - Noted desire for strong public input. Noted that town needs to capture resident email addresses. These can be used for broadcasting storm information.
    - Noted to resend draft vision, goals and objectives by email.

- Confirmed next Community Action Team meeting for Wed. Dec. 6th from 10:00 am – 12:00 pm.
- Confirmed Public Open House for Phase 1 on Thurs. Dec. 14th, drop-in style from 4:00 – 6:30 pm. Same location, Town Office. Jamie Heath will work with Dennie Dale and April Alligood to advertise.
- Virtual Public Open House for Phase 1 will be Fri. Dec. 15th, drop-in style from 4:00 – 6:30 pm. Will be co-hosted for all 4 of our participating communities.

North Carolina
RESILIENT
COASTAL
COMMUNITIES
PROGRAM

Town of Washington Park

Community Action Team – Meeting #3

AGENDA

Wednesday, Dec. 6, 2023, 10:00 AM - 12:00 PM

Location: Washington Park Town Hall, 408 Fairview Avenue, Washington, NC 27889

10:00 – 10:30 AM	**Hazards Mapping**
10:30 – 11:15 AM	**Vulnerability Assessment**
11:15 – 11:30 AM	**Risk Estimate**
11:30 – 11:45 AM	**Public Open House Activity Plan**
11:45 – 12:00 PM	**Discussion / Adjournment**

North Carolina RESILIENT COASTAL COMMUNITIES PROGRAM

WASHINGTON PARK

Community Action Team – Meeting #3

MEETING SUMMARY

WEDNESDAY, DECEMBER 6, 2023, 10:00 AM – 12:00 PM, WASHINGTON PARK MUNICIPAL BUILDING

Attendees:

- Jamie Heath, Mid-East Commission
- Seth Laughlin, Mid-East Commission
- Gordon Marsh, RK&K
- Dennie Dale, Town of Washington Park
- Belinda Cowell, Town of Washington Park
- Wade Dale, Town of Washington Park
- Tom Richter, Town of Washington Park
- April Alligood, Town of Washington Park
- Cheryl Lee McDowell, Resident of Washington Park

Meeting Purpose:

- Review draft hazards mapping
- Review draft vulnerability assessment
- Review draft risk estimate
- Discuss public open house activity plan

Notes:

- Draft hazards maps
    - Draft hazards maps for Washington Park were reviewed including:
        - Floodplain, storm surge, and sea level rise layers overlaid with critical assets.
        - Sea level rise layers overlaid with natural infrastructure.
        - Potentially hazardous sites.
        - Public shoreline history (to show erosion hazard)
    - Discussed adding a sea level rise map with orthoimagery showing groins on public shorelines.
    - Need to remove “43 ft.” text in middle of shoreline inset map.
    - Westerly winds contribute the most to erosion of shoreline.
    - Discussed the effect of sea level rise on the shoreline and groins.
    - Discussed tidal influence on shoreline erosion.
    - Discussed groin design/spacing and potential impact on downstream properties.

  - There can be multiple shoreline solutions. Discussed example in South Port that is in planning phase, also on a large river.
  - The Hurricane Florence map is very close to accurate. It flushed out within about 24 hours. Sandy soil aided drainage.
  - There are few escape routes when water comes up, people are trapped. Staff could not access Town Hall during Florence.
  - When storms sit at the mouth of the Pamlico it pushes water up the whole time. The town is situated at a bad angle as well. The NOAA storm surge maps were concerning.
  - There was previously a gas station near the bridge which explains the leaking underground storage tank there.
  - There was a question on what is leaking. Answer is usually gas and sometimes heating fuel. There was a question on whether they are deep enough to reach the water table. They typically are not buried deeply. They are subject to monitoring by DEQ if shown in the "leaking underground storage tanks" layer.
  - Homeowners need education and info on elevation assistance. Realtors need education as well. Potential public outreach/education project.
- Draft vulnerability assessment
  - Vulnerability assessment thresholds were reviewed.
  - The draft vulnerability assessment worksheet was reviewed.
  - Noted that building infrastructure category only includes municipal owned buildings, not residences.
  - Shoreline erosion vulnerability assessment typos: should say ft. not in. Should be greater than 6 ft.
  - Need to combine like streets.
  - Bank St. and Fairview Ave. should be high vulnerability roads, add to list.
  - Remove Honey Pod Farm Rd. from roads list. It is essentially a driveway now, not a public road.
  - Water system exposure should be 3 (shows 4).
  - Add Isabella parcel under managed areas.
  - Town buildings should have adaptation score of moderate 2 rather than low 1, due to flood resistant materials. This will bring buildings to medium vulnerability score.
- Draft risk estimate
  - Reviewed draft risk estimate methodology and worksheet.
  - Discussed that many community-owned assets were valued based on property tax values, which some communities feel undervalues the asset.
  - There are 15 fire hydrants in town, not 51.
  - Value of municipal buildings from insurance policy is about $250,000. Will update value on risk estimate worksheet.
- Public open house

- Discussed public open house and activities we will have. Open house will occur on Dec. 14th in person and Dec. 15th virtually.
- The newsletter was delivered on Nov. 30th and advertised the open house.

- Other
  - The next Community Action Team meeting will be held Wed. Jan. 17, 2024 at 10:00 am.

North Carolina
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Town of Washington Park

Community Action Team – Meeting #4

AGENDA

Wednesday, Jan. 17, 2024, 10:00 AM - 12:00 PM

Location: Washington Park Town Hall, 408 Fairview Avenue, Washington, NC 27889

10:00 – 10:30 AM	**Phase 1 Public Input Review** • Public survey response summary • Public open house feedback summary
10:30 – 11:45 AM	**Identify a Suite of Potential Solutions** • STAPLEE worksheets
11:45 – 12:00 PM	**Discussion / Adjournment**

North Carolina
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WASHINGTON PARK

Community Action Team – Meeting #4

MEETING SUMMARY

WEDNESDAY, JANUARY 17, 2024, 10:00 AM – 12:00 PM, WASHINGTON PARK MUNICIPAL BUILDING

Attendees:

- Jamie Heath, Mid-East Commission
- Seth Laughlin, Mid-East Commission
- Gordon Marsh, RK&K
- Tris Ford, RK&K
- Mackenzie Todd, DCM
- Kasen Wally, DCM
- Sarah Siegler, NC Sea Grant
- April Alligood, Town of Washington Park
- Belinda Cowell, Town of Washington Park
- Beth Byrd, Planning Board member
- Paul Kennedy, Resident
- Cheryl Lee, Resident
- Jeff Peacock, Town of Washington Park
- Peter Farrell, Resident

Meeting Purpose:

- Review Phase 1 public input (survey and open house)
- Review draft Suite of Potential Solutions

Notes:

- Phase 1 public survey results
    - Phase 1 public survey results were reviewed. There were 30 total responses.
    - Noted some areas in the public survey results summary document where spacing needs to be corrected.
    - Noted that “serious challenge” and “extreme challenge” could have been combined.
    - Noted the concern with stormwater flooding expressed by residents.
    - There was a comment that a lot of the stormwater flooding could be eradicated by cleaning ditches.

- There was a question on whether there are any homes still using private wells. It was stated that those that do just use for gardens and everyone or almost everyone is hooked up to county water.
- Noted that the town board has been trying to get people to sign up for the email list.
- Noted that the reason the website is rated low as a means of communication is because it is not functional/not user friendly. The website is in need of an upgrade.
- We mentioned that in the future we should use text as a communication option on the survey.
- There was no further discussion on the public survey results.

- Phase 1 public open house results
  - Phase 1 public open house results were reviewed.
  - There was a comment that a majority of attendees have also been attending CAT meetings.
  - There was a question on what we learned from the vision goals exercise. It was explained that in addition to getting resident input the point of the exercise was also to educate residents on what the CAT has done so far. The full list of objectives for each goal was available for those who wanted more information, while the posters just showed the overarching goals.
  - Discussed whether there is a need for two public open houses. It was stated that another public open house is required as part of RCCP Phase 2.
- Draft suite of potential solutions
  - The draft suite of potential solutions on the STAPLEE worksheets were reviewed. There was also a brief explanation of the STAPLEE scoring method which will be used to further prioritize projects at the next meeting.
  - Noted that stormwater/ditches were the highest priority from the local input survey (completed prior to/outside RCCP). Stormwater flooding was also a common complaint in the RCCP Phase 1 survey.
  - Noted that most CAT members would prefer if we pick the most effective projects for them.
  - There was a question to why the project was not scaling down as we explained the need to incorporate many possible solution to the same problem.
  - Noted that the town does not have control over building codes. Under policy, “Improve building codes” should be removed.
  - Noted that under planning, Emergency Preparedness and Response Plan should be removed. The town partners on the county plan and does not feel the need for a town level plan.
  - Noted the possibility of a septic vulnerability assessment project.
  - Noted that beavers are also an issue on Maple Branch Creek project.
  - Noted that there should be a project or duck valve analysis/backflow preventer analysis.

- Asked CAT members to turn in STAPLEE worksheet comments if desired and they will be incorporated into prioritization.

- Other
  - Noted that ECU developed an erosion control study for the shoreline. Ms. Cowell will send a copy.
  - There was a discussion on town ARPA funds and the past public input survey regarding fund expenditures (outside of RCCP). It was stated that there is a broad range of spending ability with the ARPA funds.
  - The possibility of moving through the RCCP more quickly was discussed. It was explained that there are certain steps we are required to complete according to the program handbook.
  - We will contact the town and send everyone an email and calendar invite to schedule CAT meeting 5.

North Carolina
RESILIENT COASTAL COMMUNITIES PROGRAM

Town of Washington Park

Community Action Team – Meeting #5

AGENDA

Wednesday, Feb. 7, 2024, 10:00 AM - 12:00 PM

Location: Washington Park Town Hall, 408 Fairview Avenue, Washington, NC 27889

10:00 – 11:30 AM	**Consolidate and Prioritize Projects** • Project examples • Revised project list • STAPLEE scoring explanation • STAPLEE worksheet • Cost-benefit worksheet
11:30 – 11:45 AM	**Phase 2 Public Open House** • Wed. March 20th, 4:00 – 6:30 pm, drop-in style • Activities • Advertising
11:45 – 12:00 PM	**Discussion / Adjournment**

North Carolina
RESILIENT
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COMMUNITIES
PROGRAM

WASHINGTON PARK

Community Action Team – Meeting #5

MEETING SUMMARY

WEDNESDAY, FEBRUARY 7, 2024, 10:00 AM – 12:00 PM, WASHINGTON PARK MUNICIPAL BUILDING

Attendees:

- Jamie Heath, Mid-East Commission
- Seth Laughlin, Mid-East Commission
- Gordon Marsh, RK&K
- Tris Ford, RK&K
- Doug Keller, RK&K
- Kasen Wally, DCM
- Sarah Spiegler, NC Sea Grant
- April Alligood, Town of Washington Park
- Belinda Cowell, Town of Washington Park
- Beth Byrd, Planning Board member
- Paul Kennedy, Resident
- Cheryl Lee, Resident
- Jeff Peacock, Town of Washington Park
- Wade Dale, Town of Washington Park
- Lee Bowen, Town of Washington Park

Meeting Purpose:

- Consolidate and prioritize projects
- Plan Phase 2 public open house

Notes:

- Consolidate and prioritize projects
    - Project categories were discussed including policy, planning, green/hybrid infrastructure solutions and hard/grey infrastructure solutions.
    - Examples of nature-based solutions (green infrastructure) were discussed with example photos on PowerPoint.
    - The STAPLEE scoring method was discussed.
    - The cost-benefit analysis was discussed.
    - The updated draft suite of potential solutions was reviewed.

- Under policy, "Complete a stormwater fee feasibility study…" Remove this project, not a priority.
- Under planning, "Work with local Council of Governments and/or contractor to match local projects with grant opportunity, apply for those grants and administer successful grants." This is important, but should be an implementation step for projects, not a project within itself.
- Under planning, "Develop a Stormwater Action Plan and stormwater assessment tool…" Yes, this is a need. Need to change the cost to medium on the cost benefit worksheet.
- Under planning, "Complete a Shoreline Erosion Assessment to assess…" Noted that in practice this will be combined with the implementation project, with the assessment occurring prior to implementation. All shoreline erosion solution projects should be combined as one project. This will change the cost to high on the cost benefit worksheet.
- Under planning, "Develop or outsource stormwater personnel training…" Yes, this is a need.
- Under planning, "Complete a wastewater feasibility study…" This project can be removed. The town already checked on it and it would be too expensive to tie into City of Washington system.
- Under planning, "Continue to coordinate all development/planning decisions with review of appropriate CAMA LUPs…" This project can be removed. Can be noted as a continuing action.
- Under planning, "Maintain reciprocal mutual aid agreements…" This project can be removed. Can be noted as a continuing action.
- Under planning, "Continue to support and participate in the directives of the County Emergency Operations Plan…" This project can be removed. Can be noted as a continuing action.
- Under planning, "Hold an annual public hazard mitigation meeting to educate the public…" This project can be removed. Leave as county emergency management responsibility.
- Under planning, "Maintain continual contact/working relationship with electric service providers…" This project can be removed. Can be noted as a continuing action. Noted that City of Washington provides electric service.
- Under planning, "Integrate new greenway and public park improvements into comprehensive planning and capital improvement efforts…" This project can be removed. Can be noted as a continuing action.
- Under planning, "Maintain current listings of Severe Repetitive Loss properties and conduct annual outreach activities to encourage homeowners to participate in FEMA sponsored acquisition and elevation programs." This project can be

removed. Leave as county emergency management responsibility. Acquisition is not a priority.

- Under planning, "Develop a Public Information Plan…" They already participate in Washington's Public Information Plan, so this can be removed and noted as a continuing action. Noted that the town needs a lot more points to move up to the next CRS program class.
- Under planning, "Upgrade the town website…" This can be removed, already happening.
- Under green and hybrid infrastructure solutions, "Monitor trees and vegetation on publicly owned property…" This can be removed and noted as a continuing action.
- Under green and hybrid infrastructure solutions, "Maintain debris removal and monitoring services contracts for post disaster response…" This can be removed and noted as a continuing action.
- Under green and hybrid infrastructure solutions, "Incorporate a living shoreline along the public shoreline areas within Washington Park to reduce shoreline erosion." High priority. Noted that recreational use/swimming area needs to be provided/maintained in design. Recommend that all shoreline erosion solutions be combined into one project. The assessment, followed by potential solutions that will come out of assessment all as one project.
- Under green and hybrid infrastructure solutions, "Implement green stormwater infrastructure along Riverside Dr." Noted that we would need to leave green space for recreation, weddings, etc. It would need to be improvements that improve the aesthetic of the area such as rain gardens, etc. Noted there is one catch basin on Riverside Dr. with no outlet. Potential bioretention cell project area.
- Add a project, "Implement green stormwater infrastructure along the west side of Isabella Dr. (between intersections with Edgewater Dr. and Beech St.)." Noted that grass median already exists and holds water there. Noted that the area will not drain when the river is high. Noted that there are limited spaces due to utility lines here, this would need to be looked at in design phase for appropriate placement.
- Under green and hybrid infrastructure solutions, "Increase flood capacity along tributary east of Isabella and Shorewood Dr." This can be left as a project but noted not much flooding on this side of Isabella.
- Under green and hybrid infrastructure solutions, "Implement 20 strategically placed bioretention cells through the town." Noted the cumulative effect of small-scale green solutions.
- Under green and hybrid infrastructure solutions, "Create a flood attenuation park along Riverside Dr." This should be combined with previous project,

"Implement green stormwater infrastructure along Riverside Dr." Need to maintain usage for recreation and community events.

- Under hard/grey infrastructure solutions, "Construct new terminal groins to reduce shoreline erosion." Recommend that all shoreline erosion solutions be combined into one project. The assessment, followed by potential solutions that will come out of assessment all as one project.
- Under hard/grey infrastructure solutions, "Increase culvert sizes and catch basins at highly flooded areas." Yes, this is a need.
- Under hard/grey infrastructure solutions, "Strategically upgrade stormwater system…" Yes, this is a need.
- Under hard/grey infrastructure solutions, "Incorporate backflow preventors on stormwater pipes that are susceptible to tidal influence." Yes, this is a need, but only in certain areas.

- The Phase 2 Public Open House was discussed.
  - The event will be held Wed. March 20th from 4:00 – 6:30 pm, drop-in style, in the Council Chambers at the Police Dept.
  - We will be asking the public for input on the priority projects and they will be able to vote for which projects they like. There will also be education on the program and the project types including green infrastructure/nature-based solutions.
  - Advertisement materials were discussed. A flyer will be sent to the town to be shared on the Friends of Washington Park Facebook page and posted in person at Town Hall and the Brown Library in Washington.
  - The event will be on the town website calendar.
  - There will be a notice sent out via the town's email list.
  - A press release will be developed and sent to the Washington Daily News.
  - Unsure if there will be a "Town Crier" newsletter prior to the event. If a newsletter does go out, the event will be included.
- The next Community Action Team meeting will occur on Wed. April 10th at 10:00 am.

North Carolina
RESILIENT COASTAL COMMUNITIES PROGRAM

Town of Washington Park

Community Action Team – Meeting #6

AGENDA

Wednesday, April 10, 2024, 10:00 AM - 12:00 PM

Location: Washington Park Town Hall, 408 Fairview Avenue, Washington, NC 27889

10:00 – 10:30 AM	**Phase 2 Public Open House Results**
10:30 – 11:45 AM	**Priority Project Portfolios** • Review draft project portfolios • Discuss additional project details for portfolios • Select project to move forward – RCCP Phase 3 (engineering/design) applications due May 31st
11:45 – 12:00 PM	**Discussion / Adjournment**

North Carolina
RESILIENT
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COMMUNITIES
PROGRAM

WASHINGTON PARK

Community Action Team – Meeting #6

MEETING SUMMARY

WEDNESDAY, APRIL 10, 2024, 10:00 AM – 12:00 PM, WASHINGTON PARK MUNICIPAL BUILDING

Attendees:

- Jamie Heath, Mid-East Commission
- Seth Laughlin, Mid-East Commission
- Tris Ford, RK&K
- Gordon Marsh, RK&K
- Doug Keller, RK&K
- Sarah Spiegler, NC Sea Grant
- April Alligood, Town of Washington Park
- Jeff Peacock, Town of Washington Park
- Belinda Cowell, Town of Washington Park
- Cheryl Lee, Washington Park resident
- R. Wade Dale, Town of Washington Park

Meeting Purpose:

- Review Phase 2 public open house results
- Review draft project portfolios
- Discuss additional details for project portfolios
- Select project to move forward to RCCP Phase 3

Notes:

- Reviewed results from public open house. There was a good turnout.
    - Gordon explained the weighted scoring system.
    - The most popular project from the open house was the "Living Shoreline at Public Shoreline Areas" project.
- Reviewed draft priority project portfolios.
    - We need to add a new project on developing a sewer system or tying into the City of Washington's sewer system. Link the project back to future risk of sea level rise/rising groundwater tables affecting the functionality of septic. Applicable grant program is EPA/USDA-RD Closing America's Wastewater Access Gap grant. DEQ is looking for pilot communities in NC to take advantage of this federal grant.

- Living Shoreline at Public Shoreline Areas
  - Discussed that this is the highest priority for the town and the reason that they got into the RCCP. It was also the most popular project from public input.
- Upgrade the stormwater system.
  - This is another high priority for the town. It was the second most popular project from public input.
  - Discussed combining this project with the Stormwater Action Plan project. Stormwater Action Plan being first step (planning/engineering/design) and Upgrade the Stormwater System being the implementation project.
  - Noted that mapping has not been done for the stormwater system.
  - Noted that this could potentially be a hybrid project rather than just hard/grey infrastructure if green/nature-based solutions are evaluated as well.
  - Discussed stormwater pipes going into the river. Stormwater comes back up through pipes.
  - Discussed the need for flapper valves. The current flapper valves are pressure type.
  - Discussed that the team would like to move forward with a grant application for this project as well. Discussed Golden Leaf Flood Mitigation Grant as the best option.
- Stormwater Action Plan
  - Discussed combining this with the Upgrade Stormwater System project, as discussed above.
  - Need to add engineering/design elements to project description. (To prepare for implementation grant.)
  - Yes, the town would be interested in the online system.
- Riverside Drive Flood Attenuation Park
  - Discussed potential design elements which can also improve aesthetics. Recreational uses would be maintained.
- Green Stormwater Infrastructure at Riverside Drive
  - Discussed combining the three green stormwater/bioretention cell projects (Green Stormwater Infrastructure at Riverside Drive, Green Stormwater Infrastructure at West Side of Isabella Avenue, Bioretention Cells in Highly Flooded Areas).
  - Doug pulled up the Flood Risk Information System (FRIS) to show the high areas in town. He explained that bioretention cells need to be 2 ft. above the normal high-water line. Water can be captured at higher elevations before it sheet-flows down to lower elevations.
- Green Stormwater Infrastructure on West Side of Isabella Ave.
  - Discussed combining this project (see above).

- Bioretention Cells in Highly Flooded Areas
  - Discussed combining this project (see above).
- Tributary Improvements East of Isabella Avenue
  - Discussed the difference in the tributary improvements and the stormwater system upgrade project.
  - Discussed issue with N. Shores Rd. in neighboring subdivision draining to Washington Park. It used to drain to the Pamlico River and is now causing flooding in Washington Park in the vicinity of E Isabella Ave. And the surrounding area. Jamie said she would send contact information for Sam Singleton with the Mid-East RPO who can help the town work with NCDOT.

- The project the team selected to move forward to RCCP Phase 3 (engineering/design) was the Living Shoreline at Public Shoreline Areas project (will be confirmed with board). Applications are due May 31st.
- The next Community Action Team meeting will occur on Thurs. May 23rd at 10:00 am.

North Carolina
RESILIENT
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WASHINGTON PARK

Community Action Team - Meeting #7

MEETING SUMMARY

THURSDAY, MAY 23, 2024, 10:00 AM - 12:00 PM, WASHINGTON PARK MUNICIPAL BUILDING

Attendees:

- Jamie Heath, Mid-East Commission
- Tris Ford, RK&K
- Gordon Marsh, RK&K
- Sarah Spiegler, NC Sea Grant
- April Alligood, Town of Washington Park
- Belinda Cowell, Town of Washington Park
- Tom Richter, Town of Washington Park

Meeting Purpose:

- Review draft Washington Park Resilience Strategy and vote on endorsement.

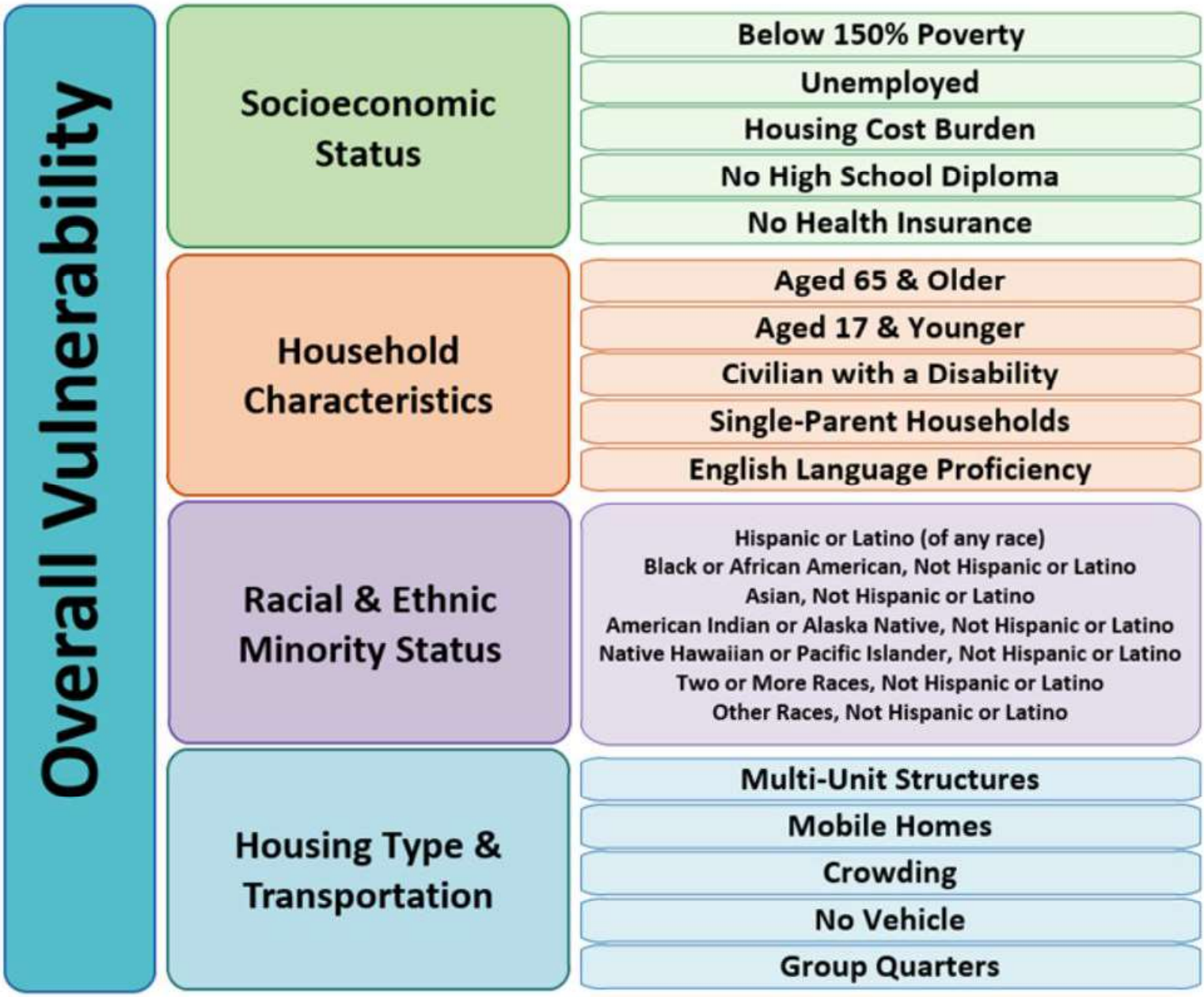
Notes:

- The draft Washington Park Resilience Strategy was reviewed. A general overview of the document layout was given and the primary focus was the project profiles.
- Discussed details of Stormwater Action Plan – Upgrade the Stormwater System project. Noted system inventory needs. Holistic system inventory before project design/implementation makes sense so we are not fixing one problem and causing other problems. Noted outside areas flowing into town including North Shores Subdivision. There will be a sub-watershed level analysis in the action plan to account for this.
- Discussed details of living shoreline project. There was a question on how swimming and paddling access can be maintained. Gordon Marsh stated that there are multiple options and there may be different solutions on different areas of the shoreline. In the access area(s), options include reinforcement incorporated with a cove area, or the use of terminal groins with a Y-shape to allow sediment to still flow downstream.
- Discussed details of develop a sanitary sewer system project. Jamie Heath said she would find out what grant Bath used and make sure it is on the funding sources list. It was stated that a feasibility study was completed by River's and Associates for the town to develop a sewer system tapping into Washington's wastewater treatment plant, but it is probably about twenty years old. It will still be helpful to get a copy even if it is dated.

- There was a discussion on water quality in the Pamlico River near Washington Park. It was questioned what the state DEQ is tracking, whether they have monitored for E.coli, and whether there is additional monitoring needed. Jamie Heath said she would follow up on this. There is the possibility to get additional monitoring completed through an NC DEQ 205j grant if needed, but the monitoring may be completed already since it is a major water body.
- Updates needed:
    - In the Community Action Team contact list in the appendix, April Alligood's phone number needs to be updated. Put town office phone number.
    - SVI maps in Appendix A need to be changed to landscape format/page size standardized.
    - Stormwater Action Plan – Upgrade the Stormwater System project profile: Implementation funding sources formatting needs to be corrected.
    - Flood Attenuation Park project profile: Hyperlink 'WEDG' design guidelines. Add construction administration and inspections to construction scope list. Add survey and landscape design to engineering/design scope list.
    - Riverside Dr. and W Isabella Ave. Green Stormwater Infrastructure project profile: Add survey and permitting due diligence to engineering/design scope. Change design in scope to engineering/design. For implementation cost, add (per green stormwater infrastructure project).
    - Sewer System project profile: Add one year for the Feasibility Study to the timeline. Add construction administration and construction inspections to construction scope. Add survey and permitting due diligence to the engineering/design scope. Add a statement to project description that tapping into the City of Washington's wastewater treatment plant is preferred because of staffing issues with the town maintaining their own plant. Add a statement regarding multi septic tank collection systems or advanced septic systems as a potential alternative if sewer is determined to not be feasible.
    - Tributary Improvements E Isabella Ave. project profile: In engineering/design scope, change design to engineering/design. Add permitting due diligence.
    - Add the Meeting 7 summary to the appendix.
- The Community Action Team voted to endorse the Washington Park Resilience Strategy with the noted updates.
- This was the final Community Action Team meeting. Board adoption of the Washington Park Resilience Strategy document is recommended. Jamie Heath is available to facilitate if needed and will deliver three final bound hard copies after board adoption is completed.

Variables Used

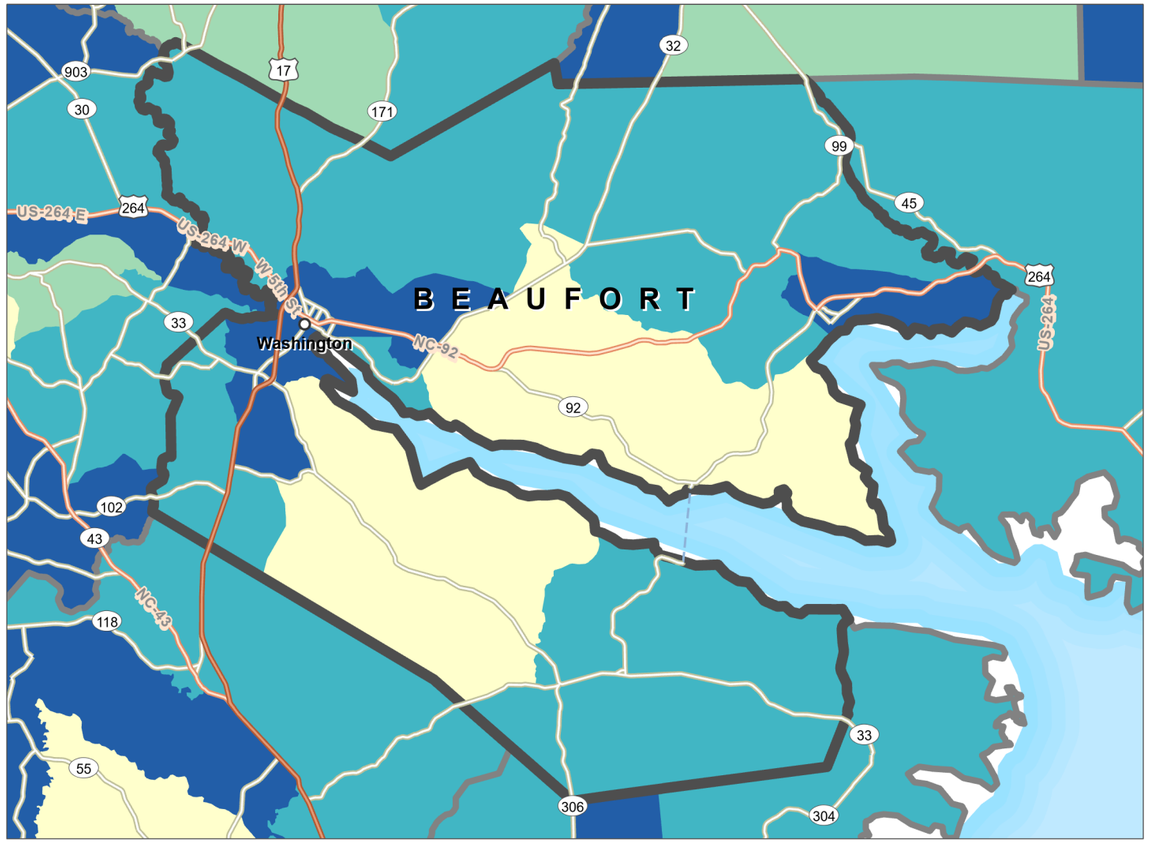
American Community Survey (ACS), 2016-2020 (5-year) data for the following estimates:



CDC/ATSDR Social Vulnerability Index 2020

BEAUFORT COUNTY, NORTH CAROLINA

Overall Social Vulnerability[1]



Highest (Top 4th) | Vulnerability (SVI 2020)[2] | Lowest (Bottom 4th)

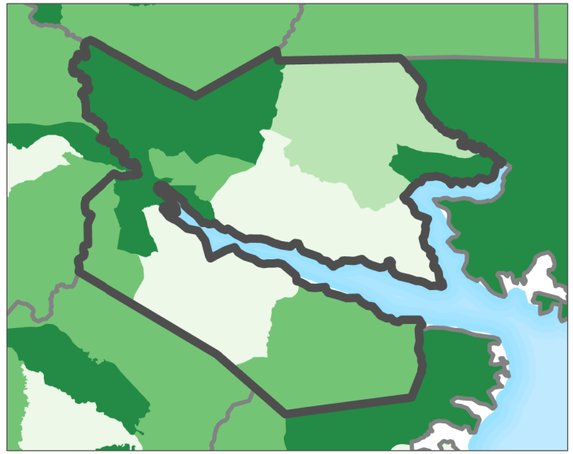
Data Unavailable[3]

0 1.75 3.5 7 10.5
Miles

Social vulnerability refers to a community's capacity to prepare for and respond to the stress of hazardous events ranging from natural disasters, such as tornadoes or disease outbreaks, to human-caused threats, such as toxic chemical spills. The **CDC/ATSDR Social Vulnerability Index (CDC/ATSDR SVI 2020)[4] County Map** depicts the social vulnerability of communities, at census tract level, within a specified county. CDC/ATSDR SVI 2020 groups **sixteen census-derived factors** into **four themes** that summarize the extent to which the area is socially vulnerable to disaster. The factors include economic data as well as data regarding education, family characteristics, housing, language ability, ethnicity, and vehicle access. Overall Social Vulnerability combines all the variables to provide a comprehensive assessment.

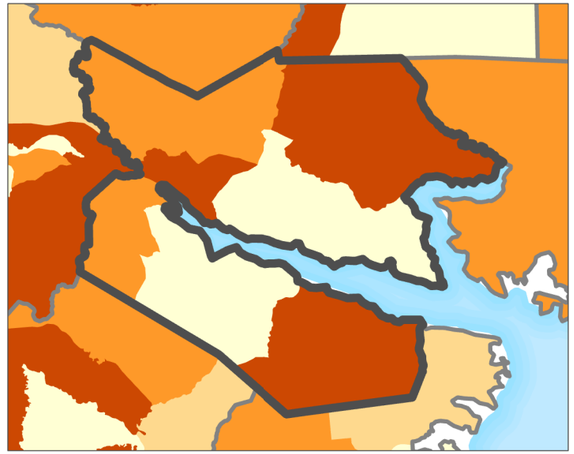
CDC/ATSDR SVI Themes

Socioeconomic Status[5]



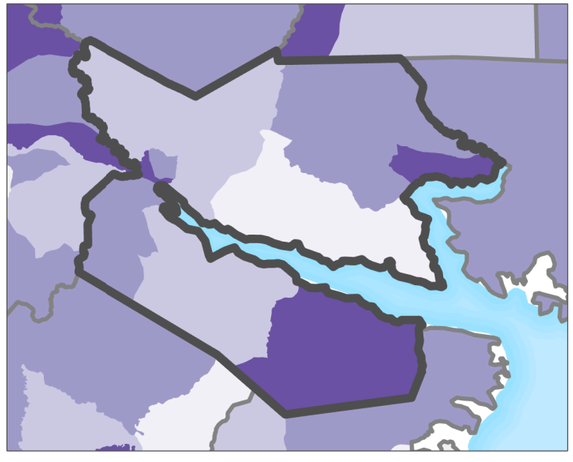
Highest (Top 4th) | Vulnerability (SVI 2020)[2] | Lowest (Bottom 4th)

Household Characteristics[6]



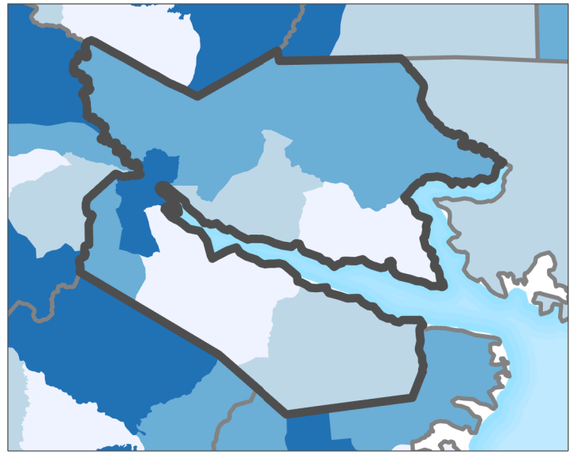
Highest (Top 4th) | Vulnerability (SVI 2020)[2] | Lowest (Bottom 4th)

Racial and Ethnic Minority Status[7]



Highest (Top 4th) | Vulnerability (SVI 2020)[2] | Lowest (Bottom 4th)

Housing Type/Transportation[8]



Highest (Top 4th) | Vulnerability (SVI 2020)[2] | Lowest (Bottom 4th)

Data Sources: [2]CDC/ATSDR/GRASP, U.S. Census Bureau, Esri® StreetMapTM Premium.
Notes: [1]Overall Social Vulnerability: All 16 variables. [3]Census tracts with 0 population. [4]The CDC/ATSDR SVI combines percentile rankings of US Census American Community Survey (ACS) 2016-2020 variables, for the state, at the census tract level. [5]Socioeconomic Status: Below 150% Poverty, Unemployed, Housing Costs Burden, No High School Diploma, No Health Insurance. [6]Household Characteristics: Aged 65 and Older, Aged 17 and Younger, Civilian with a Disability, Single-Parent Household, English Language Proficiency. [7]Race/Ethnicity: Hispanic or Latino (of any race); Black and African American, Not Hispanic or Latino; American Indian and Alaska Native, Not Hispanic or Latino; Asian, Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander, Not Hispanic or Latino; Two or More Races, Not Hispanic or Latino; Other Races, Not Hispanic or Latino. [8]Housing Type/Transportation: Multi-Unit Structures, Mobile Homes, Crowding, No Vehicle, Group Quarters.
Projection: NAD 1983 StatePlane North Carolina FIPS 3200 Feet.

References: Flanagan, B.E., et al., A Social Vulnerability Index for Disaster Management. *Journal of Homeland Security and Emergency Management*, 2011. 8(1).
CDC/ATSDR SVI web page: https://www.atsdr.cdc.gov/placeandhealth/svi/index.html.

Overall SVI Nationwide Comparison
By Census Tract | 2020

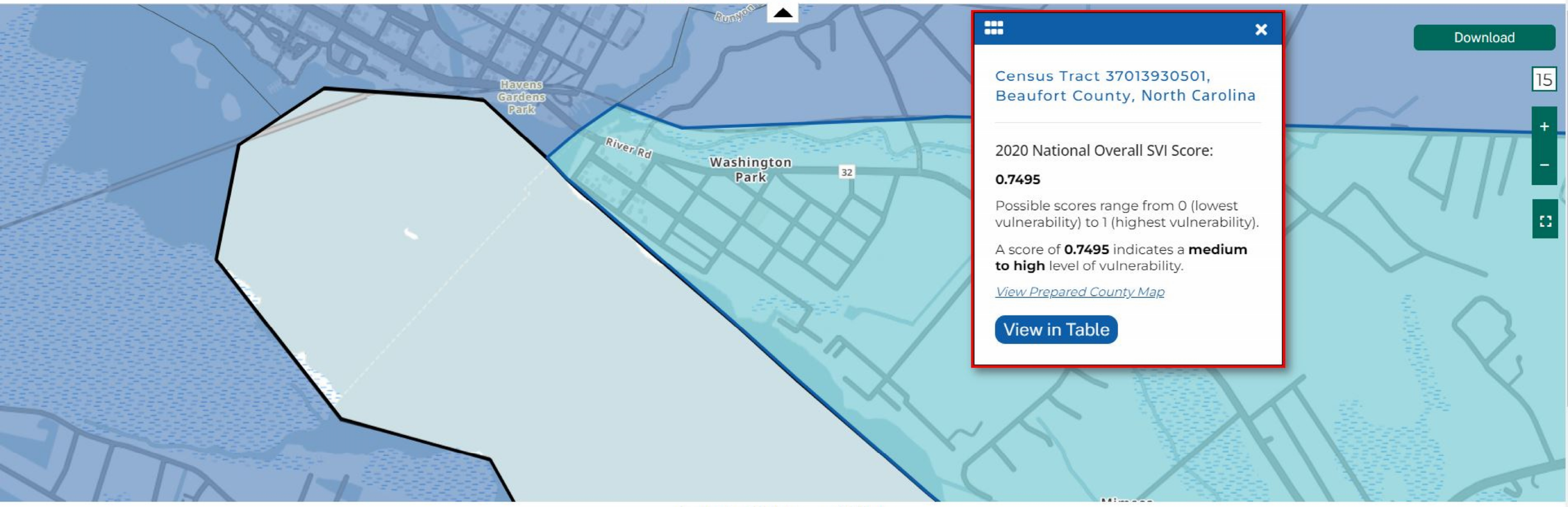
Map Features: Click to view

Map Transparency

Search within: U.S.

Find address, county, or ZIP code

Map | Table | More



Level of Vulnerability

Low	Low-Medium	Medium-High	High	No Data

Housing Type & Transportation

Nationwide Comparison

By Census Tract | 2020

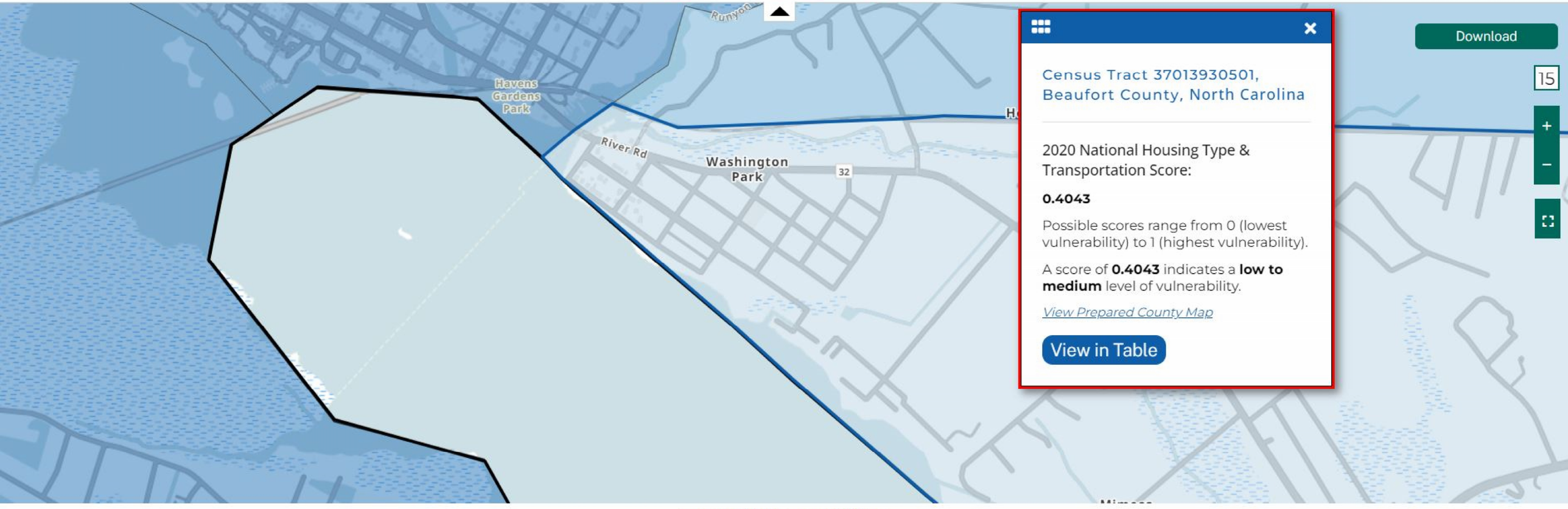
Map Features: Click to view

Map Transparency

Search within: U.S.

Find address, county, or ZIP code

Map | Table | More



Level of Vulnerability

Low	Low-Medium	Medium-High	High	No Data

Socioeconomic Status Nationwide Comparison
By Census Tract | 2020

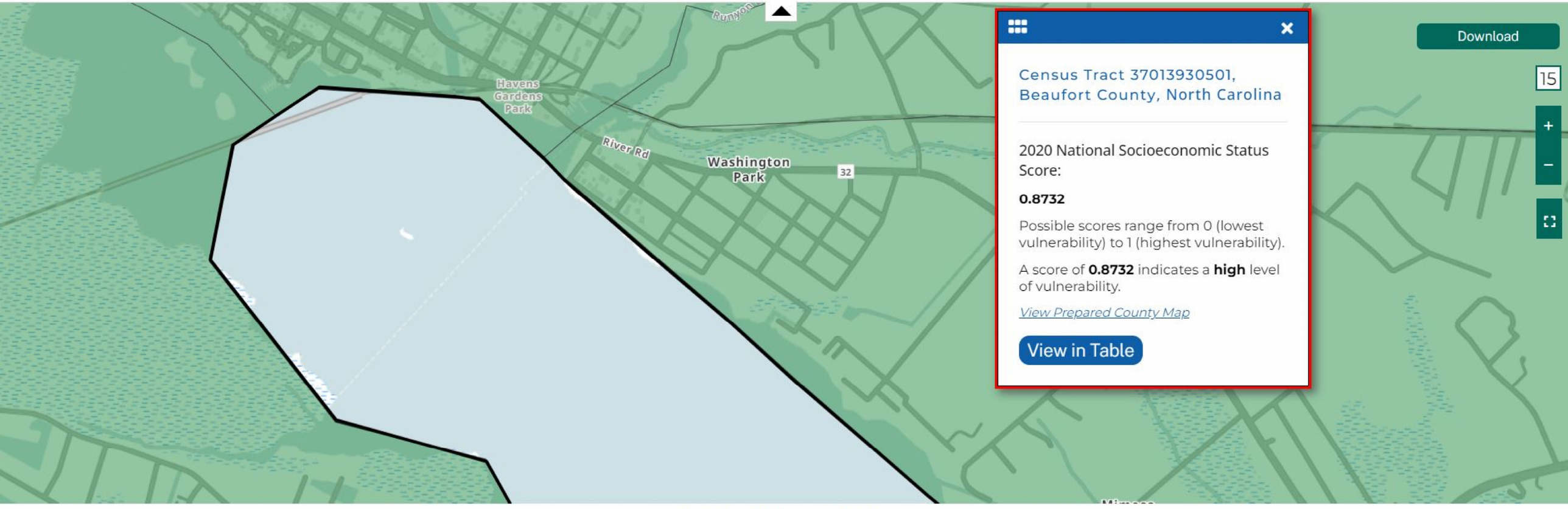
Map Features: Click to view

Map Transparency

Search within: U.S.

Find address, county, or ZIP code

Map | Table | More



Level of Vulnerability

Low	Low-Medium	Medium-High	High	No Data

Racial & Ethnic Minority Status

Nationwide Comparison

By Census Tract | 2020

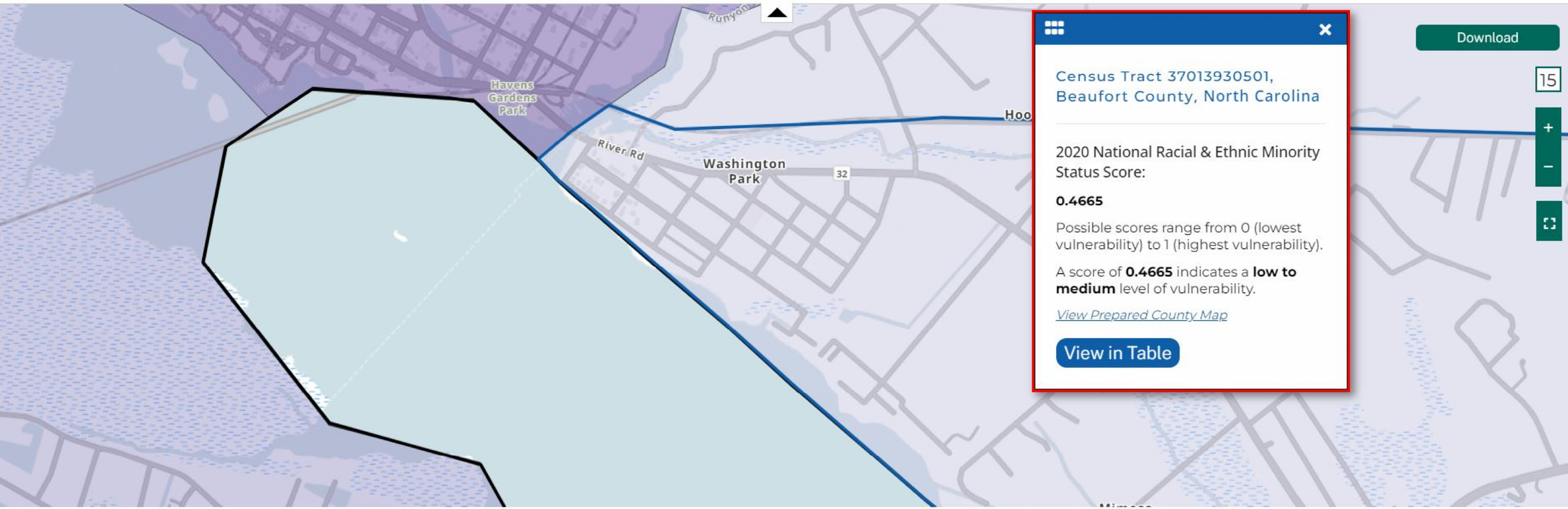
Map Features: Click to view

Map Transparency

Search within: U.S.

Find address, county, or ZIP code

Map | Table | More



Level of Vulnerability

Low	Low-Medium	Medium-High	High	No Data

Household Characteristics Nationwide Comparison
By Census Tract | 2020

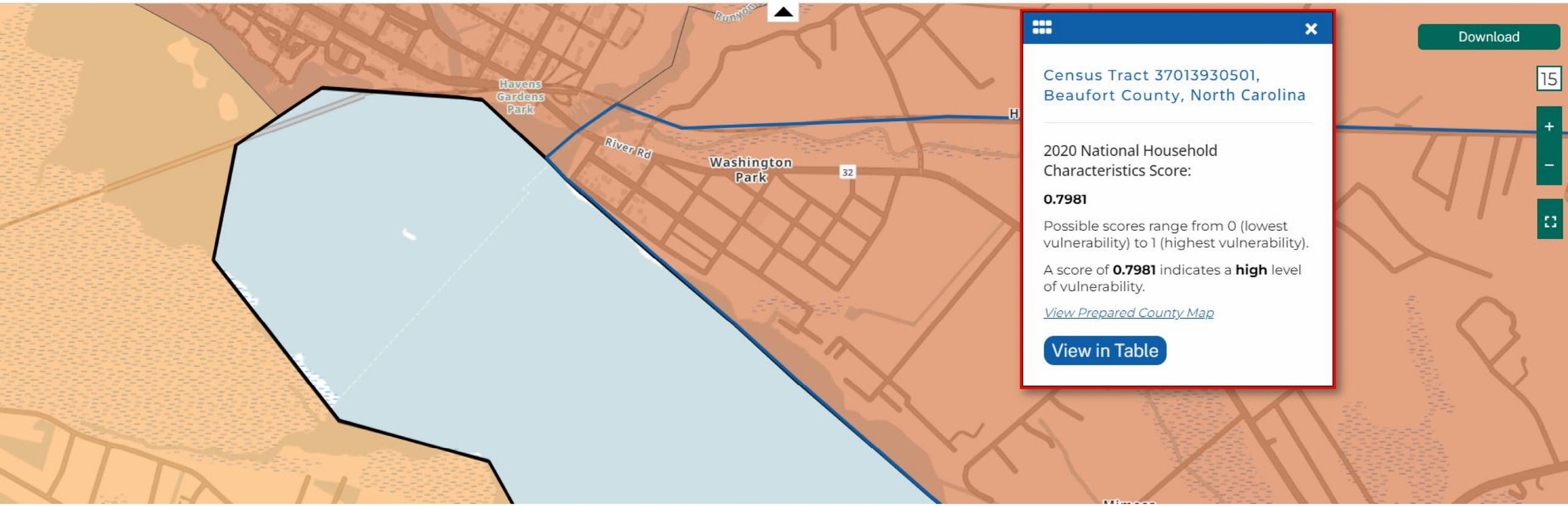
Map Features: Click to view

Map Transparency

Search within: U.S.

Find address, county, or ZIP code

Map | Table | More



Level of Vulnerability

Low	Low-Medium	Medium-High	High	No Data

Town of Washington Park

Town Level Social Vulnerability Data – US Census Bureau

TOWN OF WASHINGTON PARK CENSUS DATA

Disability: 24.1% of population with a disability

Elderly: 34.9% of population 65 years and over

Language Barrier: 1.5% of population speak a language other than English at home

Median Household Income: $84,107

Minority: 5.4% minority population (2020 US Decennial Census)

Poverty Rate: 5.3% of population below poverty rate

Vehicle Access: 9.3% of households have no vehicle available

(All data except minority population is 2021 American Community Survey 5-year estimates from the US Census Bureau.)

EJScreen Report (Version 2.11)

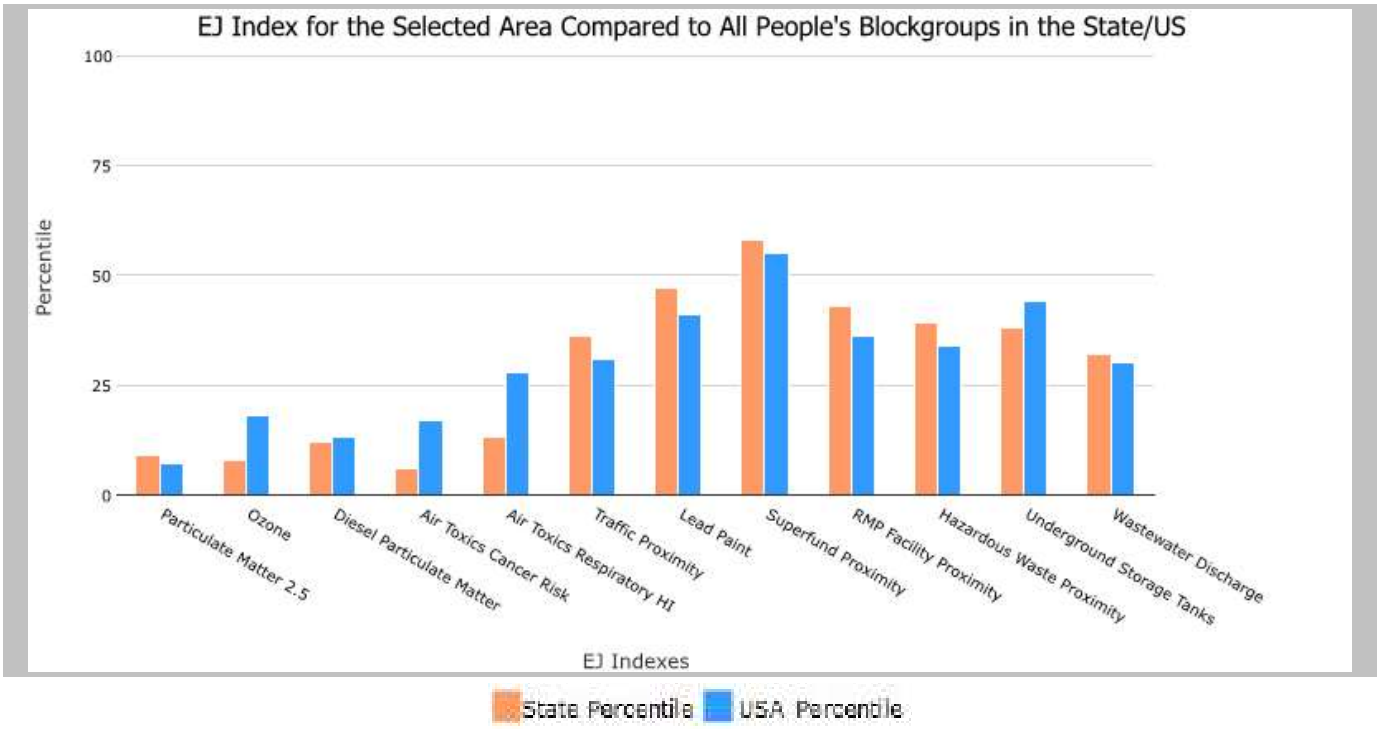
Blockgroup: 370139305011, NORTH CAROLINA, EPA Region 4

Approximate Population: 1,660

Input Area (sq. miles): 3.75

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
Particulate Matter 2.5 EJ index	9	7
Ozone EJ index	8	18
Diesel Particulate Matter EJ index*	12	13
Air Toxics Cancer Risk EJ index*	6	17
Air Toxics Respiratory HI EJ index*	13	28
Traffic Proximity EJ index	36	31
Lead Paint EJ index	47	41
Superfund Proximity EJ index	58	55
RMP Facility Proximity EJ index	43	36
Hazardous Waste Proximity EJ index	39	34
Underground Storage Tanks EJ index	38	44
Wastewater Discharge EJ index	32	30

EJ Indexes - The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.



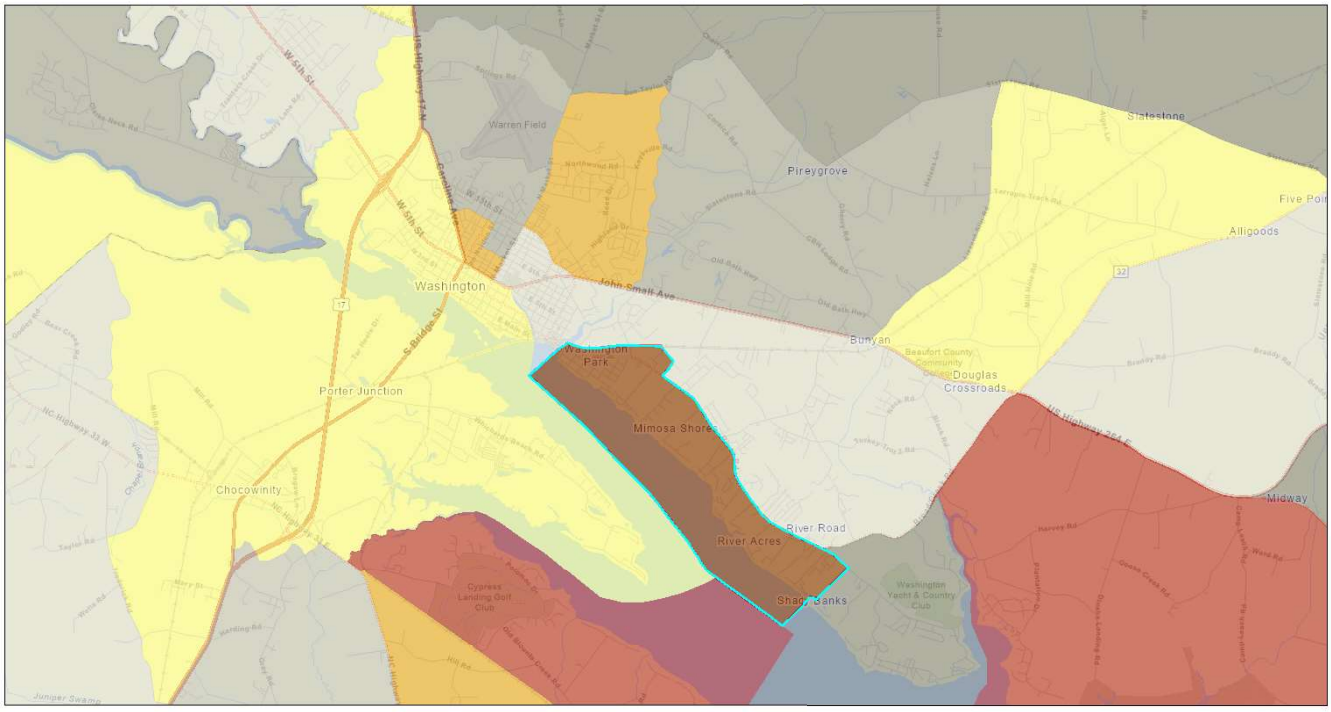
*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

EJScreen Report (Version 2.11)

Blockgroup: 370139305011, NORTH CAROLINA, EPA Region 4

Approximate Population: 1,660

Input Area (sq. miles): 3.75



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJScreen Report (Version 2.11)

Blockgroup: 370139305011, NORTH CAROLINA, EPA Region 4

Approximate Population: 1,660

Input Area (sq. miles): 3.75

Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 (µg/m^3)	6.34	7.67	12	8.67	6
Ozone (ppb)	37.8	41.5	12	42.5	20
Diesel Particulate Matter* (µg/m^3)	0.0951	0.178	15	0.294	<50th
Air Toxics Cancer Risk* (lifetime risk per million)	20	28	21	28	<50th
Air Toxics Respiratory HI*	0.3	0.36	39	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	120	400	49	760	37
Lead Paint (% Pre-1960 Housing)	0.25	0.15	73	0.27	53
Superfund Proximity (site count/km distance)	0.15	0.08	89	0.13	79
RMP Facility Proximity (facility count/km distance)	0.23	0.41	59	0.77	42
Hazardous Waste Proximity (facility count/km distance)	0.34	0.83	50	2.2	39
Underground Storage Tanks (count/km^2)	1.3	3.9	51	3.9	52
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.00021	0.28	49	12	36
Socioeconomic Indicators					
Demographic Index	17%	35%	20	35%	26
Supplemental Demographic Index	13%	15%	41	15%	49
People of Color	4%	37%	8	40%	11
Low Income	30%	33%	45	30%	54
Unemployment Rate	10%	5%	82	5%	82
Limited English Speaking Households	0%	2%	0	5%	0
Less Than High School Education	3%	11%	21	12%	23
Under Age 5	5%	6%	50	6%	48
Over Age 64	40%	16%	96	16%	95
Low Life Expectancy	20%	21%	38	20%	52

EJScreen Report (Version 2.11)

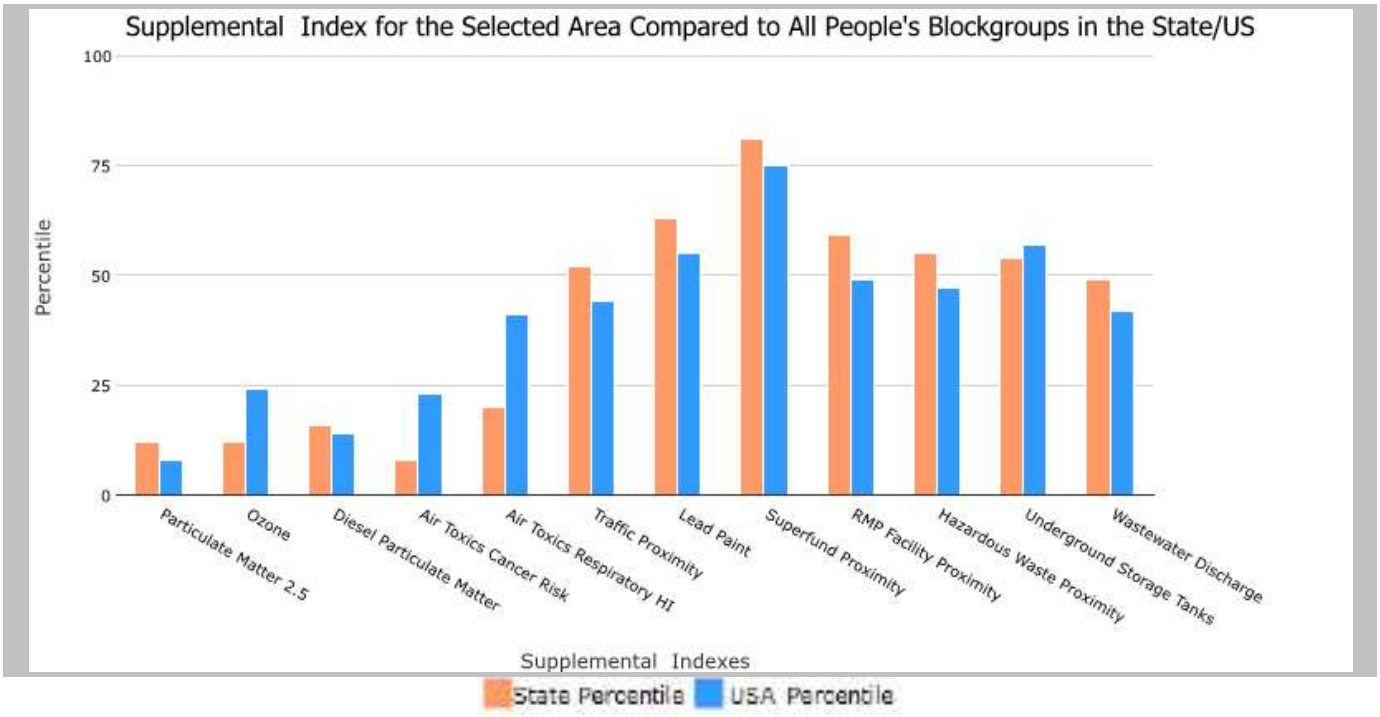
Blockgroup: 370139305011, NORTH CAROLINA, EPA Region 4

Approximate Population: 1,660

Input Area (sq. miles): 3.75

Selected Variables	State Percentile	USA Percentile
Supplemental Indexes		
Particulate Matter 2.5 Supplemental Index	12	8
Ozone Supplemental Index	12	24
Diesel Particulate Matter Supplemental Index*	16	14
Air Toxics Cancer Risk Supplemental Index*	8	23
Air Toxics Respiratory HI Supplemental Index*	20	41
Traffic Proximity Supplemental Index	52	44
Lead Paint Supplemental Index	63	55
Superfund Proximity Supplemental Index	81	75
RMP Facility Proximity Supplemental Index	59	49
Hazardous Waste Proximity Supplemental Index	55	47
Underground Storage Tanks Supplemental Index	54	57
Wastewater Discharge Supplemental Index	49	42

Supplemental Indexes - The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on low-income, limited English speaking, less than high school education, unemployed, and low life expectancy populations with a single environmental indicator.



This report shows the values for environmental and demographic indicators, EJScreen indexes, and supplemental indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. For additional information, see: www.epa.gov/environmentaljustice.

EJSCREEN ACS Summary Report

Location: Blockgroup: 370139305011
Ring (buffer): 0-mile radius
Description:

Summary of ACS Estimates	2016 - 2020
Population	1,660
Population Density (per sq. mile)	818
People of Color Population	62
% People of Color Population	4%
Households	884
Housing Units	1,063
Housing Units Built Before 1950	120
Per Capita Income	43,850
Land Area (sq. miles) (Source: SF1)	2.03
% Land Area	54%
Water Area (sq. miles) (Source: SF1)	1.72
% Water Area	46%

	2016 - 2020 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	1,660	100%	341
Population Reporting One Race	1,648	99%	423
White	1,626	98%	340
Black	22	1%	31
American Indian	0	0%	13
Asian	0	0%	13
Pacific Islander	0	0%	13
Some Other Race	0	0%	13
Population Reporting Two or More Races	12	1%	16
Total Hispanic Population	28	2%	46
Total Non-Hispanic Population	1,632		
White Alone	1,598	96%	321
Black Alone	22	1%	31
American Indian Alone	0	0%	13
Non-Hispanic Asian Alone	0	0%	13
Pacific Islander Alone	0	0%	13
Other Race Alone	0	0%	13
Two or More Races Alone	12	1%	16
Population by Sex			
Male	660	40%	174
Female	1,000	60%	237
Population by Age			
Age 0-4	80	5%	49
Age 0-17	263	16%	107
Age 18+	1,397	84%	266
Age 65+	662	40%	178

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2016 - 2020 .

EJSCREEN ACS Summary Report

Location: Blockgroup: 370139305011
Ring (buffer): 0-mile radius
Description:

	2016 - 2020 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	1,348	100%	276
Less than 9th Grade	0	0%	13
9th - 12th Grade, No Diploma	41	3%	40
High School Graduate	235	17%	160
Some College, No Degree	230	17%	114
Associate Degree	105	8%	89
Bachelor's Degree or more	737	55%	149
Population Age 5+ Years by Ability to Speak English			
Total	1,580	100%	339
Speak only English	1,531	97%	321
Non-English at Home[1+2+3+4]	49	3%	49
[1]Speak English "very well"	49	3%	49
[2]Speak English "well"	0	0%	13
[3]Speak English "not well"	0	0%	13
[4]Speak English "not at all"	0	0%	13
[3+4]Speak English "less than well"	0	0%	13
[2+3+4]Speak English "less than very well"	0	0%	13
Linguistically Isolated Households*			
Total	0	0%	13
Speak Spanish	0	0%	13
Speak Other Indo-European Languages	0	0%	13
Speak Asian-Pacific Island Languages	0	0%	13
Speak Other Languages	0	0%	13
Households by Household Income			
Household Income Base	884	100%	186
< $15,000	75	8%	66
$15,000 - $25,000	182	21%	146
$25,000 - $50,000	169	19%	75
$50,000 - $75,000	77	9%	46
$75,000 +	381	43%	131
Occupied Housing Units by Tenure			
Total	884	100%	186
Owner Occupied	737	83%	165
Renter Occupied	147	17%	112
Employed Population Age 16+ Years			
Total	1,430	100%	300
In Labor Force	740	52%	249
Civilian Unemployed in Labor Force	75	5%	64
Not In Labor Force	690	48%	168

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of anyrace.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJSCREEN ACS Summary Report

Location: Blockgroup: 370139305011
Ring (buffer): 0-mile radius
Description:

	2016 - 2020 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	3,966	100%	512
English	3,656	92%	401
Spanish	289	7%	368
French, Haitian, or Cajun	0	0%	13
German or other West Germanic	21	1%	31
Russian, Polish, or Other Slavic	0	0%	13
Other Indo-European	0	0%	13
Korean	0	0%	13
Chinese (including Mandarin, Cantonese)	0	0%	13
Vietnamese	0	0%	13
Tagalog (including Filipino)	0	0%	13
Other Asian and Pacific Island	0	0%	13
Arabic	0	0%	13
Other and Unspecified	0	0%	13
Total Non-English	310	8%	650

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A meansnot available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2016 - 2020.
*Population by Language Spoken at Home is available at the census tract summary level and up.

RCCP STAPLEE Criteria Worksheet
Washington Park

STAPLEE Criteria >>	Social		Technical			Administrative			Political			Legal			Economic				Environmental					TOTAL
Considerations for Alternative Actions	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT Waste Sites	Consistent w/ Community Environmental Goals	Consistent w/ Federal Laws	
POLICY																								
1. Responsible development policy **Comments:** Implement regulations for responsible and sustainable coastal development, considering factors such as setback requirements, building materials, and energy efficiency.		1	0	1	1							1		0	1	1	1	1	1	0	0	1	1	11
2. Low-impact development policy on government facilities **Comments:** Policy geared toward enforcing stormwater retention and infiltration through design.		1	1	1	1							1		0	0	1	0	1	1	0	0	1	1	10
3. Explore a stormwater fee **Comments:** Policy to implement a stormwater fee to generate income for stormwater projects		0	0	1	1							1		0	1	1	1	0	1	0	0	0	1	8
4. Develop a renewable energy policy **Comments:** Policy that addresses renewable energy development.		1	0	0	1							1		0	1	1	0	1	1	0	0	0	1	8
5. Improve building codes **Comments:** Higher electrical outlet, elevation requirements, material requirements		0	1	1	1							1		0	1	0	1	1	0	0	0	0	1	8
6. Improve zoning codes **Comments:** Stricter codes within flood prone areas		0	0	1	1							1		0	1	0	1	1	0	0	0	0	1	7
PLANNING																								
7. Complete a grant analysis to assess future grant opportunities. **Comments:**		1	1	1	1							1		1	1	1	1	0	0	0	0	0	1	10
8. Complete a hydro analysis for the town to assess flood prone areas in depth. **Comments:** Assess drainage issues within the town		1	0	1	1							0		1	1	0	0	1	1	0	0	1	1	9
9. Shoreline Erosion Assessment **Comments:** Assess shoreline erosion and stabilization to recommend sustainable alternative for a healthy shoreline		1	1	1	1							1		1	1	1	0	1	1	0	0	1	1	12

RCCP STAPLEE Criteria Worksheet
Washington Park

STAPLEE Criteria >>	Social		Technical			Administrative			Political			Legal			Economic				Environmental					TOTAL
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10. Stormwater Maintenance Plan **Comments:** Includes ditches and tributaries		1	1	1	1							1		1	1	1	1	1	1	0	0	1	1	13
11. Emergency Preparedness and Response plan **Comments:**		1	1	1	1							1		1	1	1	1	1	0	0	0	0	1	11
12. Social Equity Resiliency Plan **Comments:** Implement actions to relocate lower-income residential from high flood prone areas or retrofit homes to accommodate		1	1	1	1							1		1	1	1	1	1	1	0	0	0	1	12
13. Stormwater assessment **Comments:** Assess the vulnerability of the stormwater infrastructure and the viability of a stormwater fee and closing ditches		1	1	1	1							1		1	1	1	1	1	1	0	0	0	1	12
14. Stormwater personnel training **Comments:** Training of erosion control, stormwater maintenance, stormwater repair		1	1	1	1							1		1	1	1	1	1	1	0	0	0	1	12
15. SLR outreach strategy / Public Information Plan **Comments:** Educate citizens and real estate agents on SLR and Coastal vulnerability. A PIP will get the town additional points in the CRS program.		1	1	1	1							1		1	1	1	0	1	1	0	0	0	1	11
GREEN AND HYBRID SOLUTIONS																								
16. Incorporate a living shoreline along the public shoreline areas within Washington Park to reduce shoreline erosion. **Comments:** A shoreline assessment is recommended for further analysis.		1	1	1	0							1		1	1	0	0	0	1	1	0	1	1	10
17. Construct new terminal groins to reduce shoreline erosion. **Comments:** Incorporate the existing groins		1	1	1	0							0		0	1	0	0	0	1	1	0	1	1	8
18. Implement green stormwater infrastructure along Riverside Dr. **Comments:** Permeable parking, stormwater infiltration medians, ext.		1	1	1	1							1		1	1	1	0	0	1	0	0	1	1	11

RCCP STAPLEE Criteria Worksheet
Washington Park

STAPLEE Criteria >>	Social		Technical			Administrative			Political			Legal			Economic				Environmental					TOTAL
Considerations for Alternative Actions	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT Waste Sites	Consistent w/ Community Environmental Goals	Consistent w/ Federal Laws	
19. Increase flood capacity along tributary east of Isabella and Shorewood Dr. **Comments:** Incorporate bioswales, stream restoration, floodplain restoration and/or wetland creation.		1	0	1	0							0		1	1	1	0	0	1	0	0	1	1	8
20. Increase biomass of Maple Branch Creek to slow down water fluctuation **Comments:**		1	0	1	1							0		0	1	0	0	0	1	0	0	1	1	7
21. Implement strategically placed bioretention cells through the town. **Comments:**		1	0	1	0							1		1	1	1	0	0	1	0	0	1	1	9
22. Increase stormwater capacity along railroad. **Comments:**		1	0	1	1							0		1	1	0	0	0	1	0	0	0	1	7
23. Install permeable parking through the town. **Comments:**		1	1	0	1							1		1	1	1	0	0	1	0	0	1	1	10
24. Create a flood Attenuation park along Riverside St. **Comments:**		1	0	1	1							1		1	1	0	0	0	1	0	0	1	1	10
25. Implement green street stormwater infrastructure at the tennis courts and Town Office along Fairview Ave. **Comments:**		1	0	0	1							1		1	1	1	0	0	1	0	0	1	1	9
HARD/GREY INFRASTRUCTURE SOLUTIONS																								
26. Increase culvert sizes at highly flooded areas. **Comments:** Implement a stormwater assessment		1	0	1	0							1		1	1	0	0	1	1	0	0	0	1	8
27. Increase catch-basin capacity at highly flooded areas. **Comments:** Implement a stormwater assessment		1	0	1	0							1		1	1	0	0	1	1	0	0	0	1	8

RCCP STAPLEE Criteria Worksheet
Washington Park

STAPLEE Criteria >>	Social		Technical			Administrative			Political			Legal			Economic				Environmental					TOTAL
Considerations for Alternative Actions	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT Waste Sites	Consistent w/ Community Environmental Goals	Consistent w/ Federal Laws	
28. Strategically install retention ponds to decrease holistic flooding. **Comments:** Implement a plan to determine where to install retention ponds		1	0	1	0							1		1	1	0	0	1	1	0	0	1	1	9
29. Upgrade storm water system capacity. **Comments:** Implement a plan to determine weaknesses		1	0	1	1							1		1	1	0	0	1	1	0	0	0	1	9
30. Upgrade drainage system **Comments:** Complete overhaul of ditches and drainage pipes		1	0	1	1							1		1	1	0	0	1	1	0	0	0	1	9
31. Eliminate open ditches **Comments:** Pipe the ditches		1	0	0	1							0		0	0	0	0	1	1	0	0	0	1	5
32. Reinforce bulkheads along the shoreline **Comments:**		1	1	0	0							1		1	1	0	0	1	0	0	0	0	1	7
33. Incorporate tidal and flooding pipes that connect Pamlico River to Maple Branch **Comments:** Need an engineering study		1	0	1	1							1		0	1	0	1	1	1	0	0	0	1	9
34. Retrofit Townhall for flood events. **Comments:**		1	1	0	0							1		1	1	0	0	1	0	0	0	0	1	7
35. Retrofit Public Works building for flood events. **Comments:**		1	1	0	0							1		1	1	0	0	1	0	0	0	0	1	7
36. Reduce flooding along NC-32/River Rd. Increase culvert size/ rise rd. **Comments:**		1	0	1	1							0		1	1	0	0	1	1	0	0	0	1	8
Pamlico Sound Hazard Mitigation Plan																								
B1. Continue to coordinate all development/planning decisions with review of appropriate CAMA LUP's including stated redevelopment policies and actions.		0	1	1	1							1		1	1	1	1	0	0	1	1	1	1	12

RCCP STAPLEE Criteria Worksheet
Washington Park

STAPLEE Criteria >>	Social		Technical			Administrative			Political			Legal			Economic				Environmental					TOTAL
Considerations for Alternative Actions	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT Waste Sites	Consistent w/ Community Environmental Goals	Consistent w/ Federal Laws	
B2. Maintain reciprocal mutual aid agreements with surrounding communities for fire protection and emergency response.		1	1	1	1							1		1	1	1	0	0	0	0	0	0	1	9
B3. Annually evaluate adequacy of existing local early warning and emergency response communications equipment and prepare annual capital improvements plans to improve early warning and communication effectiveness before, during, and following disaster events.		1	1	1	0							1		1	1	1	0	1	0	0	0	0	1	9
B4. Develop standard protocols for training/ certification of volunteer staff for shelter management, traffic control, first aid, etc., to improve volunteer response capability during and following disaster events, including coordination with American Red Cross personnel on an annual basis		1	1	1	1							1		1	1	1	1	1	0	0	0	0	1	11
B5. Complete an annual evaluation of each designated emergency shelter, including structural inspection, resource inventory, staffing plan, and vulnerability assessment, including coordination with American Red Cross personnel.		1	1	1	1							1		1	1	1	1	0	0	0	0	0	1	10
B6. Provide citizens and visitors with maps of evacuation routes which will facilitate the evacuation of the county in case of a hazardous event. This effort will involve the production of hard copy maps for distribution.		1	1	0	1							1		1	1	1	0	0	0	0	0	0	1	8
B7. Continue to monitor and establish programs to maintain continuity of government operations through annual review and update of the Continuity of Operations Plan (COOP).		1	1	0	1							1		1	1	1	0	0	0	0	0	0	1	8
B8. Continue to support and participate in the directives of the County Emergency Operations Plan (EOP). The EOP includes evacuation procedures and response to hazards not addressed in this plan such as hazardous materials, petroleum products, hazardous waste, nuclear threat/attack, and civil disorder. The County will review and update the EOP annually to ensure that it coordinates with the most recent NCEM and NCOEMS directives.		1	1	1	1							1		1	1	1	0	0	0	0	1	0	1	10
B9. Continue to apply for grant funds, allocate local funding, and work with local electric service providers to procure and maintain back0up generators/transfer switches for all critical public facilities, with an emphasis on emergency services facilities, critical water/sewer facilities, and shelter facilities. Evaluate the equipment on a regular basis to assure it continues to meet the needs of the operations occurring at each facility. Backup generators are still needed at the following facilities: Southside High School, S.W. Snowden Elementary School, and John Cotten Taylor Elementary School.		1	1	1	1							1		1	1	1	1	0	0	0	0	0	1	10
B10. Hold an annual public hazard mitigation meeting, attended by the HMPC and participating jurisdictions, to educate the public and elected officials and receive comments about the location of high risk facilities/development, the jurisdictions' overall vulnerability to natural and man0made hazards, and the jurisdictions' hazards mitigation efforts.		1	1	1	1							1		1	1	1	0	0	0	0	0	0	1	9

RCCP STAPLEE Criteria Worksheet
Washington Park

STAPLEE Criteria >>	Social		Technical			Administrative			Political			Legal			Economic				Environmental					TOTAL
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B11. Maintain the Hazard Mitigation Planning Committee (HMPC) and hold annual HMPC meetings to continue relationship building and communicate about mitigation measures taking place throughout the community.		1	1	1	1							1		1	1	1	0	0	0	0	1	0	1	10
B12. Maintain continual contact/working relationship with electric service providers in the county to address the following: 1) Disaster preparedness techniques (e.g., tree trimming, vegetation planting requirements, pole replacement); 2) Identification of critical electrical facilities needing retrofit or upgrade and map with elevation reference marks; 3) Identification of problem areas and potential solutions; and 4) Communication with county officials during and immediately after a natural hazard event that results in loss of electrical power.		1	1	1	1							1		1	1	1	0	0	0	0	0	0	1	9
B13. Monitor trees and vegetation on publicly owned property to assure that no property or utility damage will occur as a result of diseased or dying trees or other vegetation. This strategy only applies to the municipal jurisdictions.		1	1	0	0							1		1	0	0	0	1	1	0	0	1	1	8
B14. Continue to maintain all property acquired with public mitigation funds within the Special Flood Hazard Area (SFHA) as undisturbed open space in perpetuity. Continue to proactively establish open space within the floodplain and floodway as grant funds become available to carry out this initiative.		1	1	1	1							1		0	1	0	1	0	1	0	0	1	1	10
B15. Integrate new greenway and public park improvements into comprehensive planning and capital improvement efforts (including coordination with all local certified CAMA Land Use Plans).		1	1	1	1							1		0	1	1	1	1	1	0	0	1	1	12
B16. Annually review local floodplain ordinances to provide improved flood protection standards and require freeboard for retrofitting and new construction as required by NC State Building Code. The County will consider establishing a freeboard requirement.		1	1	1	1							1		1	1	1	0	0	0	0	0	1	1	10
B17. Maintain current listings of Severe Repetitive Loss properties and conduct annual outreach activities to encourage homeowners to participate in FEMA sponsored residential acquisition and elevation programs; continue to apply for HMGP/HMA funding for residential acquisition and elevation.		1	1	1	1							1		1	1	1	0	0	1	0	0	1	1	11
B18. Encourage County Commissioners and elected officials of non-CRS communities to participate in the Community Rating System		1	1	1	1							1		1	1	1	1	0	0	0	0	1	1	11
B19. Continue to work with local real estate agencies and manufactured home vendors to ensure that agents are informing clients when property for sale is located within an SFHA. The county will provide these agencies with brochures documenting the concerns relating to development located within the flood prone areas and ways that homeowners may make their home more disaster resistant to strong winds, lightning, and heavy rains.		1	1	1	1							1		1	1	1	0	1	1	0	0	1	1	12
B20. Make information regarding hazards and development regulations within floodplains available through the following: 1) Ensure that local libraries maintain information relating to flooding and flood protection, 2) Provide a link on the municipal website to FEMA resources addressing flooding and flood protection, evacuation procedures, disaster preparedness, and post-disaster recovery, and 3) Provide website links to relevant hazard mitigation measures.		1	0	1	1							1		1	1	1	0	1	1	0	1	1	1	12

RCCP STAPLEE Criteria Worksheet
Washington Park

STAPLEE Criteria >>	Social		Technical			Administrative			Political			Legal			Economic				Environmental					TOTAL
Considerations for Alternative Actions	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT Waste Sites	Consistent w/ Community Environmental Goals	Consistent w/ Federal Laws	
B21. Promote national "awareness" weeks (i.e., hurricane preparedness, severe weather preparedness, etc.) through local media. ("Awareness" weeks are listed on the National Weather Service website at http://www.nws.noaa.gov/os/severeweather/severewx cal.shtml)		1	1	0	1							1		1	1	1	0	0	0	0	0	1	1	9
B22. Educate the general public to the importance of weather alert radios and systems that can operate on alternative power and can provide up to the moment information regarding locations of severe storms and possible tornadoes		1	1	1	1							1		1	1	1	0	1	0	0	0	1	1	11
B23. Maintain a Hazardous Material Action Plan that addresses the proper containment of spills, etc. This effort will be coordinated with the county LEPC.		1	1	0	1							1		1	1	1	0	1	0	0	1	1	1	11
B24. Monitor natural and man-made drainage structures to ensure they are clear and functioning properly; prioritize needed drainage projects and review funding alternatives annually.		1	1	1	1							1		1	1	1	0	1	1	0	0	1	1	12
B25. Continue to coordinate annually with the NC Forestry Division to address the threat of wildfire throughout the County. These efforts will involve posting of the daily fire risk present within the County on the County website daily. Additionally, the County will distribute and make information available regarding County methods for mitigating fire hazards.		1	1	1	1							1		1	1	1	0	0	1	0	0	1	1	11
B26. Maintain Debris Removal and Monitoring Services Contracts for post-disaster response. These services should focus on preparing documentation necessary to ensure full reimbursement of cost associated with community cleanup and immediate infrastructure restoration.		1	1	1	1							1		1	1	1	0	0	1	0	0	1	1	11

Benefit-Cost Overview

The cost or the economic case for different strategies or actions must be considered when developing resilience strategies. An informal cost-benefit analysis should be used to review proposed adaptation actions. Ratings of high, medium, or low are assigned to the anticipated costs and the benefits associated with each action based on general criteria that are established by the community.

Make sure to explore and identify potential funding mechanisms for project or action item implementation.

	Benefit/cost ratings
	Benefit
HIGH	Action would have significant impact on risk reduction
MEDIUM	Action would have an impact on risk reduction
LOW	Long-term benefits are difficult to quantify in the short term
	Cost
HIGH	Cost of project is high and/or funding will be more difficult to acquire
MEDIUM	Cost of project is medium and/or funding will be easier to acquire
LOW	Cost of project is low and/or funding is available in existing budget

Strategy	Benefit	Cost
1. Develop a Stormwater Action Plan and Stormwater Assessment Tool. This plan will complete a stormwater ground assessment and surface hydrology analysis that will be incorporated into an online mapping system that can submit real-time data to analyze, prioritize, and take action on potential problem areas. The plan will also incorporate a maintenance plan that will be tracked by the online tool.	**HIGH**	**LOW**
2. Develop or outsource Stormwater personnel training to have staff personnel who are equipped to analyze, maintain, and/or take action on any need stormwater issues. Comments: Training of erosion control, stormwater maintenance, stormwater repair	**MEDIUM**	**LOW**
3. Incorporate a living shoreline along the public shoreline areas within Washington Park to reduce shoreline erosion. This would include a detailed shoreline assessment, Engineering and Design of chosen Alternative, and Construction. Comments: Multiple shoreline options, including expanding the existing terminal groins, should be presented.	**HIGH**	**HIGH**
4. Implement green stormwater infrastructure along Riverside Dr. Comments: Permeable parking, stormwater infiltration medians, etc.	**MEDIUM**	**MEDIUM**
5. Increase flood capacity along tributary east of Isabella Ave. and Shorewood Dr. Comments: Incorporate bioswales, stream restoration, floodplain restoration and/or wetland creation.	**MEDIUM**	**HIGH**
6. Implement 20 strategically placed bioretention cells through the town.	**MEDIUM**	**MEDIUM**
7. Install bioretention cells along Isabella Ave. from Edgewater to Beech. Comments: Could be implemented with existing future project.	**MEDIUM**	**MEDIUM**
8. Create a flood attenuation park along Riverside St. Comments: This park will be designed to capture water as the first barrier from the river. See 'WEDGE' rating system for parks.	**MEDIUM**	**MEDIUM**
9. Strategically upgrade stormwater system through pipe replacements, increasing size and/or quantity of culverts and catch basin, redefining ditches, implementing backflow preventors, ext. Comments: The Stormwater Action Plan can be utilized to determined prioritization.	**HIGH**	**HIGH**

Benefit/Cost Ratings

RCCP STAPLEE Criteria Worksheet
Washington Park

STAPLEE Criteria >>	Social		Technical			Administrative			Political			Legal			Economic				Environmental					TOTAL
Green = High (19-20) Orange = Med (17-18) Yellow = Low (15-6)	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT Waste Sites	Consistent w/ Community Environmental Goals	Consistent w/ Federal Laws	
Considerations for Alternative Actions																								
PLANNING SOLUTIONS																								
1. Develop a Stormwater Action Plan and Stormwater Assessment Tool. This plan will complete a stormwater ground assessment and surface hydrology analysis that will be incorporated into an online mapping system that can submit real-time data to analyze, prioritize, and take action on potential problem areas. The plan will also incorporate a maintenance plan that will be tracked by the online tool. **Comments:**	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	0	0	1	1	17
2. Develop or outsource Stormwater personnel training to have staff personnel who are equipped to analyze, maintain, and/or take action on any need stormwater issues. **Comments:** Training of erosion control, stormwater maintenance, stormwater repair	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	1	19
GREEN AND HYBRID SOLUTIONS																								
3. Incorporate a living shoreline along the public shoreline areas within Washington Park to reduce shoreline erosion. This would include a detailed shoreline assessment, Engineering and Design of chosen Alternative, and Construction. **Comments:** Multiple shoreline options, including expanding the existing terminal groins, should be presented.	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	0	1	1	19
4. Implement green stormwater infrastructure along Riverside Dr. **Comments:** Permeable parking, stormwater infiltration medians, etc.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	20
5. Increase flood capacity along tributary east of Isabella Ave. and Shorewood Dr. **Comments:** Incorporate bioswales, stream restoration, floodplain restoration and/or wetland creation.	1	1	0	1	0	1	0	0	1	1	1	0	1	1	1	1	1	0	1	0	0	1	1	15
6. Implement 20 strategically placed bioretention cells through the town. **Comments:**	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	1	1	18
7. Install bioretention cells along Isabella Ave. from Edgewater to Beech. **Comments:** Could be implemented with existing future project.	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	1	1	18
8. Create a flood attenuation park along Riverside St. **Comments:** This park will be designed to capture water as the first barrier from the river. See 'WEDGE' rating system for parks.	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	1	0	0	1	1	17

RCCP STAPLEE Criteria Worksheet
Washington Park

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Considerations for Alternative Actions																								
HARD/GREY INFRASTRUCTURE SOLUTIONS																								
9. Strategically upgrade stormwater system through pipe replacements, increasing size and/or quantity of culverts and catch basin, redefining ditches, implementing backflow preventors, ext. Comments: The Stormwater Action Plan can be utilized to determined prioritization.	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	1	17

Appendix B

Stakeholder Engagement Materials

Please tell us about yourself.

Do you live and/or work in Washington Park? 30 responses

Yes (24 responses)
Live (4 responses)
Live and work from home in Washington Park
Yes, my husband Larry and I live at 104 Isabella Avenue.

If yes, how long have you lived and/or worked in Washington Park? 30 responses

18 years
6 years
8 years
20 yrs
54 YEARS
20 years
50+ years
26 years
17 years
3 years
21 Years
10 years
2 yrs
35 years
since 2006
35 years
23 yrs
26 yrs
20 YRS
lifetime - 81 years
1 yr
30 years
26
30+ years
25 years
5 mos.
We moved into our home in August, 2022.
8 years

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Do you own and/or rent your property (home, business, or both as applicable)?30 responses

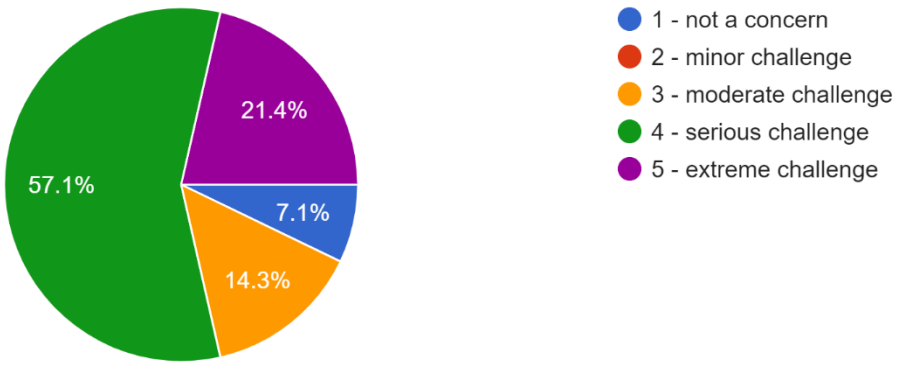
Own (18 responses)
Yes (4 responses)
Own home (3 responses)
Own and rent
Own property
rent (home)
Both own and rent
We own.

Please identify your zip code (home, work, or both as applicable).30 responses

27889 (28 responses)
27889-5232 (2 responses)

Coastal Storms, Erosion and Flooding

On a scale of 1-5, how significant of a risk do you think coastal erosion poses to your community?
14 responses



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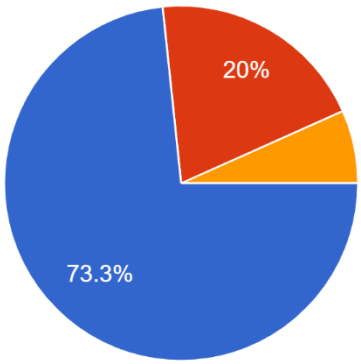
Phase 1 Public Survey Summary

Which of the following statements about coastal storms do you most agree with?

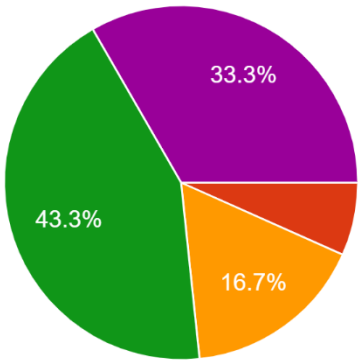
30 responses



- I am very worried about coastal storms in the future.
- I am slightly worried about coastal storms in the future.
- I am not worried about coastal storms in the future.

On a scale of 1-5, how significant of a risk do you think flooding currently poses to your community?

30 responses



- 1 - not a concern
- 2 - minor challenge
- 3 - moderate challenge
- 4 - serious challenge
- 5 - extreme challenge

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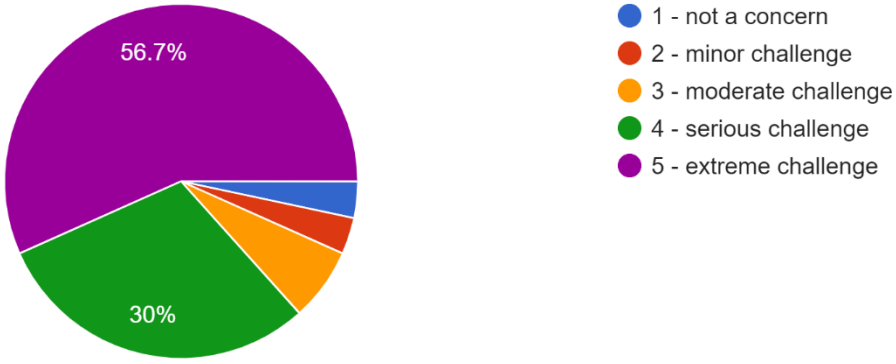
Phase 1 Public Survey Summary

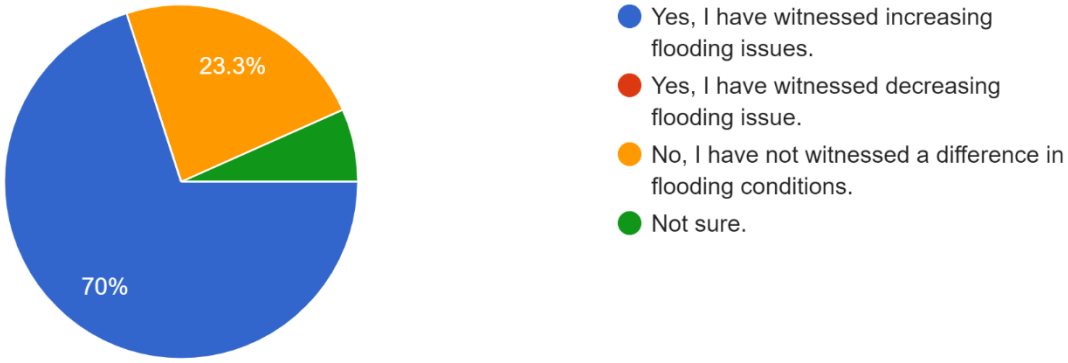
On a scale of 1-5, how significant of a risk do you think flooding will pose to your community in the next 20-40 years, given climate change and rising sea levels?

30 responses



Throughout your time living and/or working in Washington Park, has your experience with flooding changed?

30 responses



Comments on previous question (optional). 11 responses

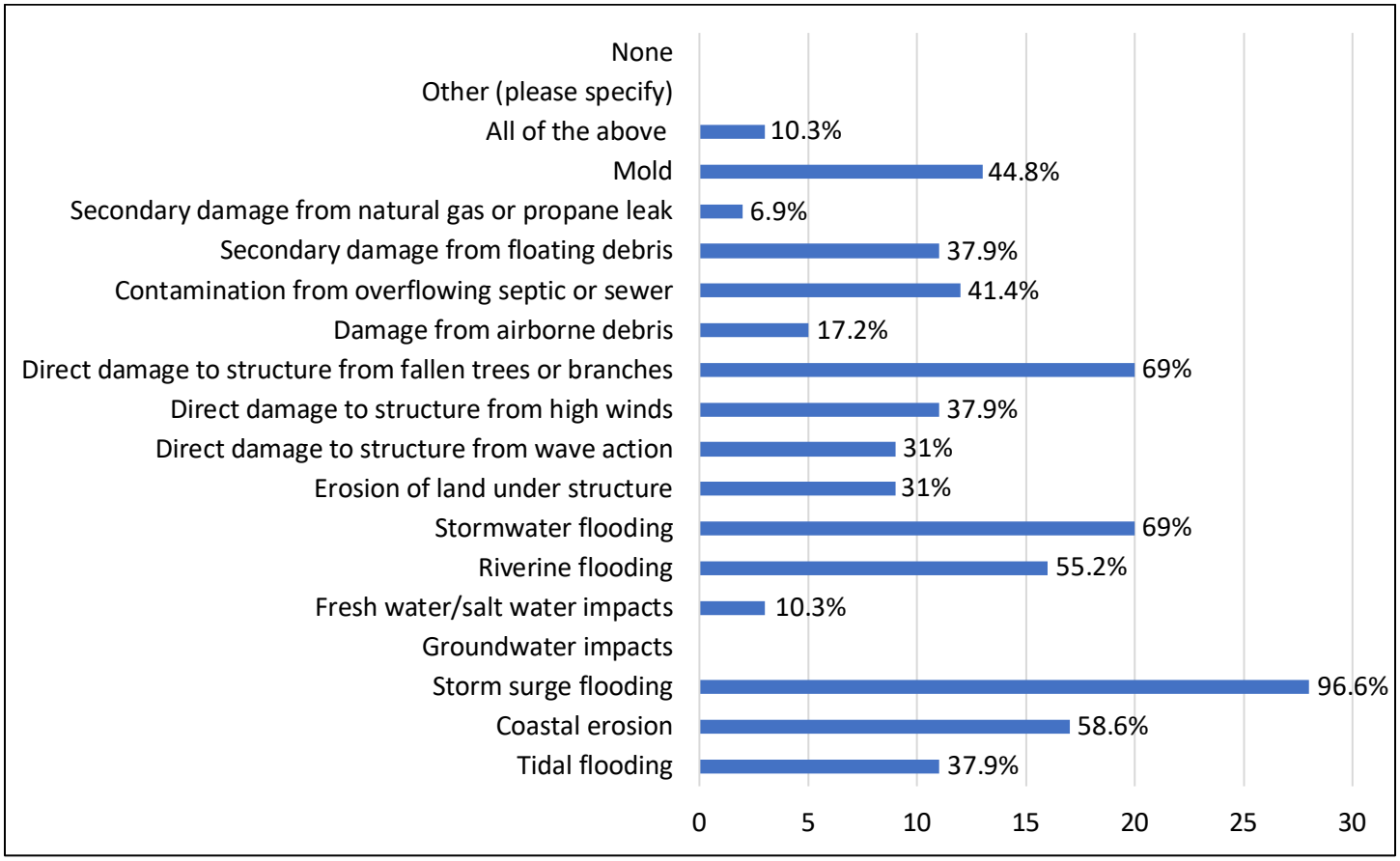
- Clean out the ditches
- We in WP have not taken climate change seriously. We need to take action now and go into debt if necessary to take actions which address the LONG TERM issues which are surely coming.
- I was born in 1965 and have lived in Washington Park most of my life. My first real experience with flooding came in the mid 1990s with hurricanes Bertha and Floyd. I had never seen water so high. Since that time, we have consistently dealt with flooding, with major hurricanes it seems every few years.
- Although we personally haven't been flooded our neighbors have and with more regularity
- It depends on the storm and its track
- I MARK THE HEIGHT OF EACH FLOOD AND THE YEAR IT OCCURRED. THE MARKS GET HIGHER AND HIGHER A WITH EACH REMARKABLE STORM.
- I have seen flooding increase, and shoreline erosion
- The hurricanes and even tropical storms bring more water to my lot than 18 years ago.
- Only after they paved college Ave.
- Over 25 years and more the level of water during a hurricane has risen
- Having lived in WP just over a year, we have witnessed one serious flooding condition with tropical storm Ophelia in September 2023. Our property was inundated with 18" of water with water intrusion into the garage.

WASHINGTON PARK

Phase 1 Public Survey Summary

Coastal Hazards and Impacts

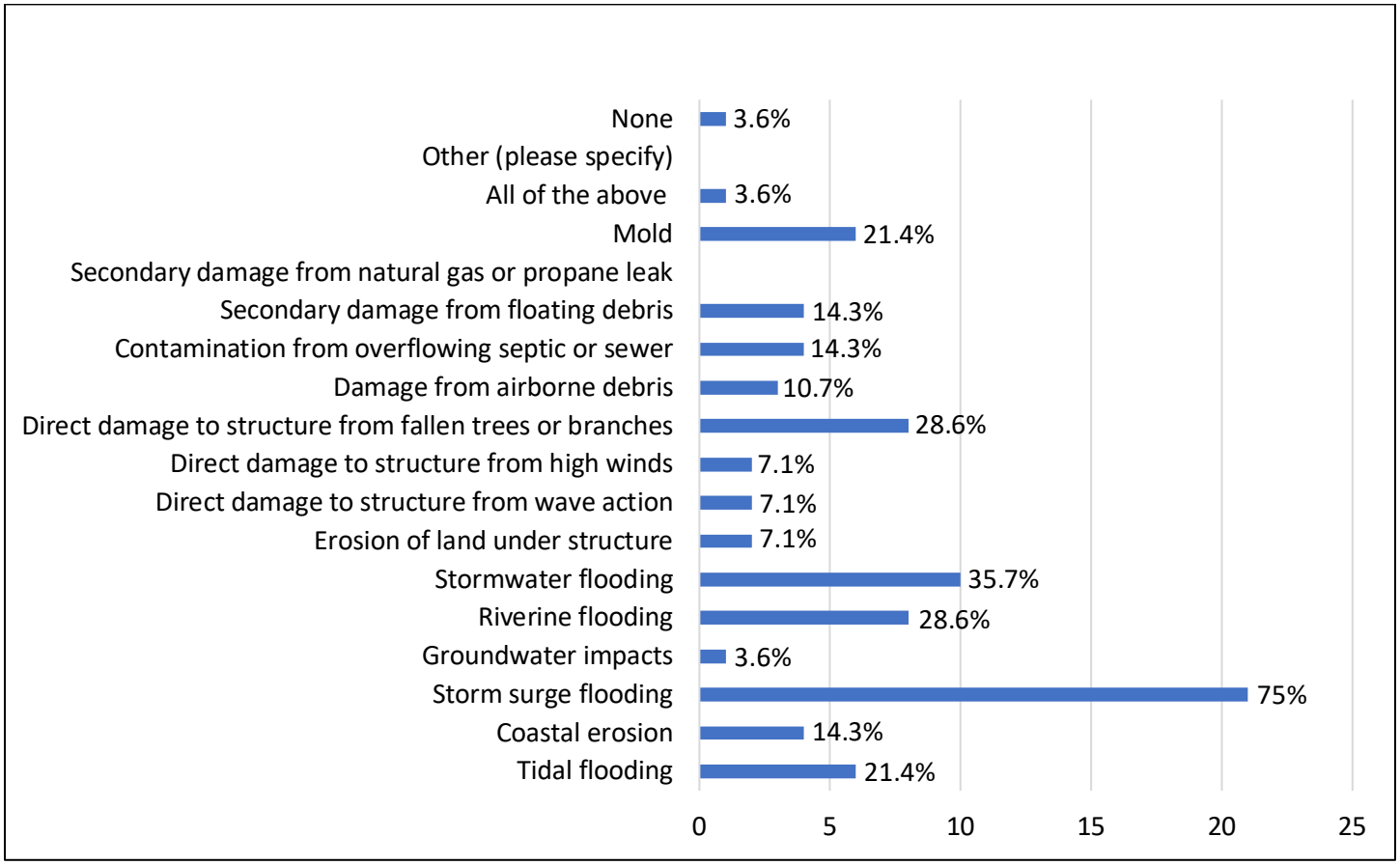
What type of coastal hazards have you witnessed in your community? Select all that apply. 29 responses



Comments on previous question (optional). 2 responses

Groundwater impacts - possibly, not measured.
Only because of paving college Ave

Which of those same hazards have directly impacted your home or your business? Select all that apply.28 responses



Comments on previous question (optional).3 responses

- We had to tear down our garage and build a new one after a tree limb fell on it 6/7 yesrs sgo due to a hurricane
- Contamination from overflowing septic systems: Maybe - not measured
- My husband and I have elevated our home after Florence. Although this was/is a huge expense we felt it was worth the effort as we love the area and could not stand the thought of our home flooding. We tried for years to get FEMA via Beaufort County to elevate the home but was very disappointed by that program.

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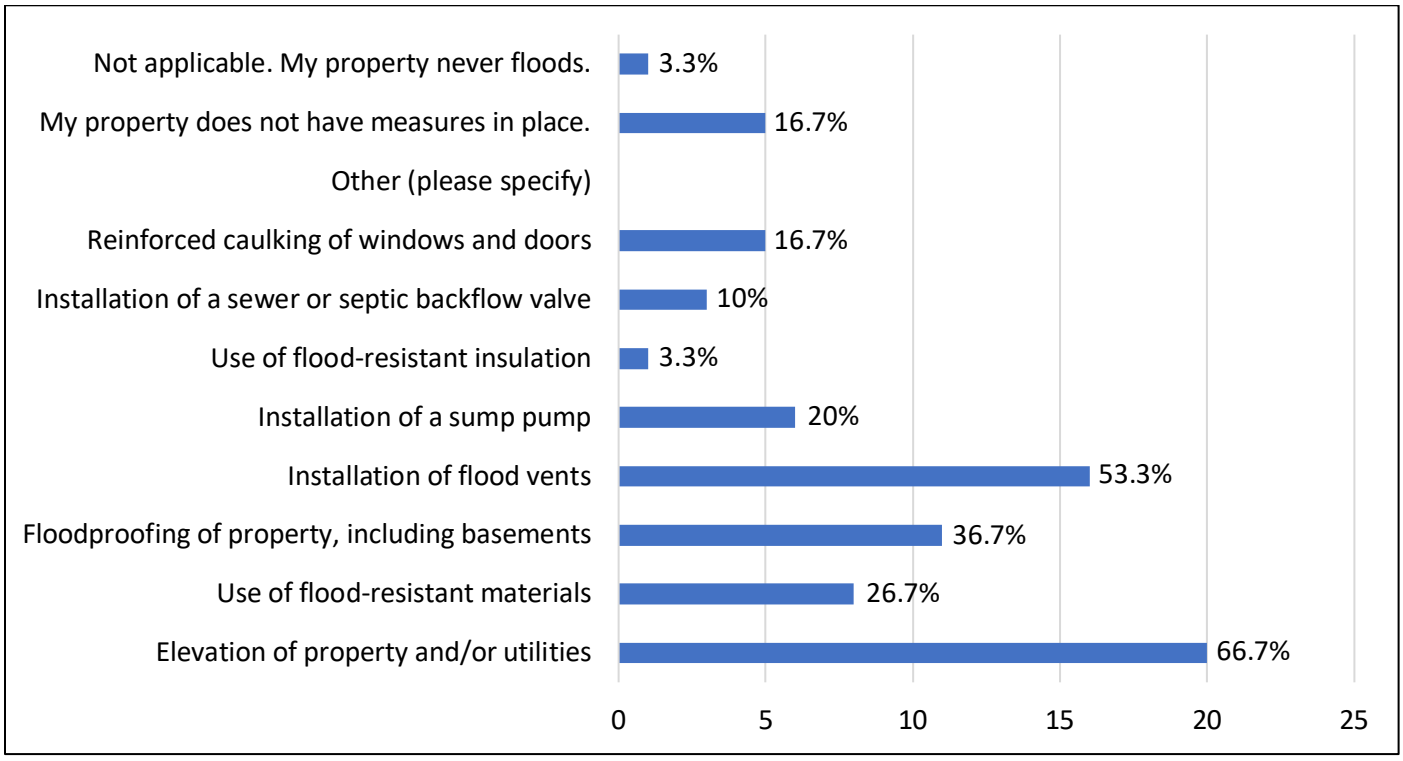
Phase 1 Public Survey Summary

Do you have measures in place to prevent and/or reduce flooding or flood-related damages and losses to your property? If yes, what type of actions have you taken? Check all that apply.30 responses



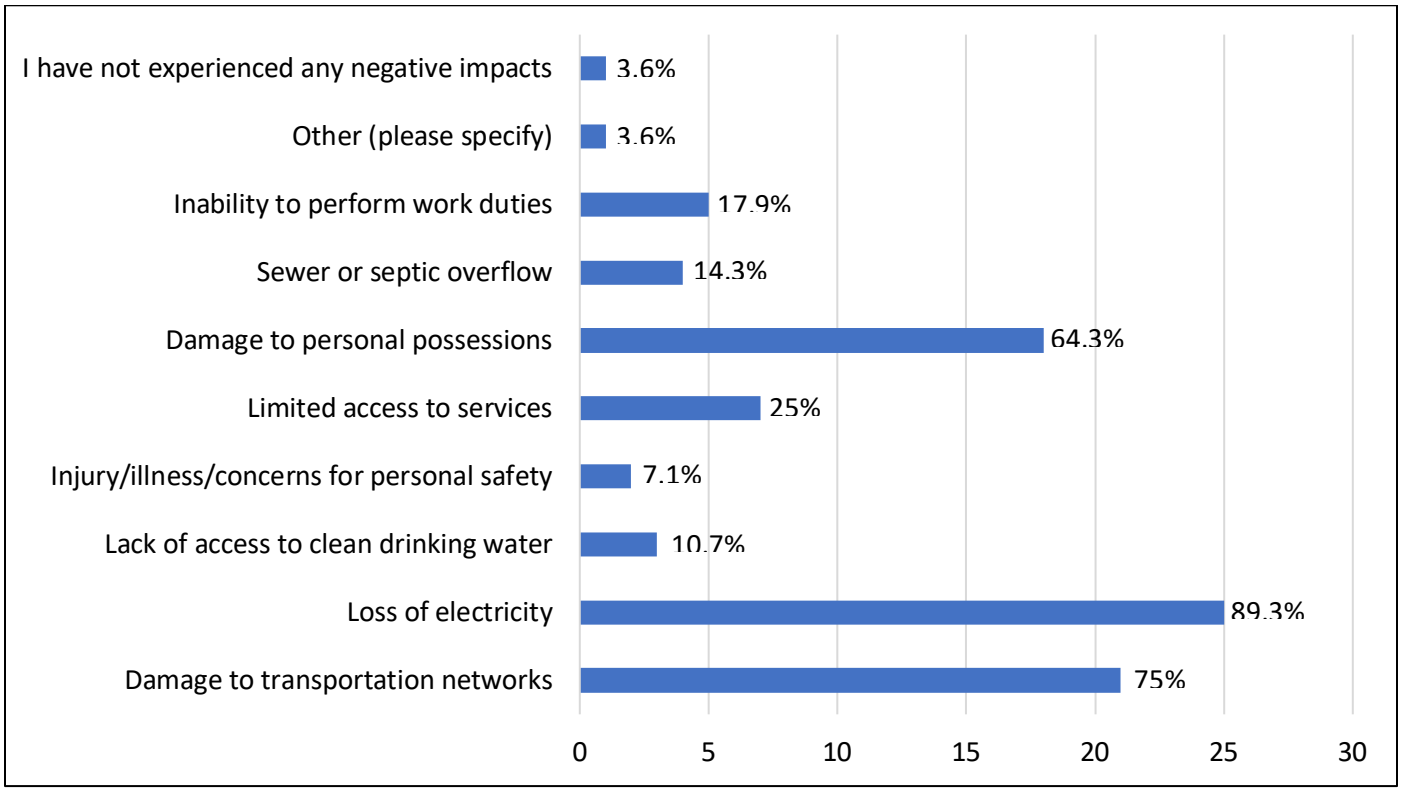
Have you ever considered moving to another location (can be inside or outside of Washington Park) to avoid future flood losses, impacts, or damages?

30 responses

WASHINGTON PARK

Phase 1 Public Survey Summary

Aside from any impacts to your home or business, have you experienced any other negative impacts as a result of flooding events? Check all that apply.28 responses



Comments on previous question (optional)4 responses

- Workshop, carport and driveway have flooded
- CPAP need electricity
- FLOODING HAMPERS TRANSPORTATION, AND ACCESS AND ABILITY TO LEAVE MY HOUSE, AND GAS LINE ACCESS AND ELECTRICAL DANGER, AND LANDSCAPE DAMAGE TO PLANTS AND FENCES.
- Some items stored in the garage (refrigerator, building materials) were a loss due to flooding.

WASHINGTON PARK

Phase 1 Public Survey Summary

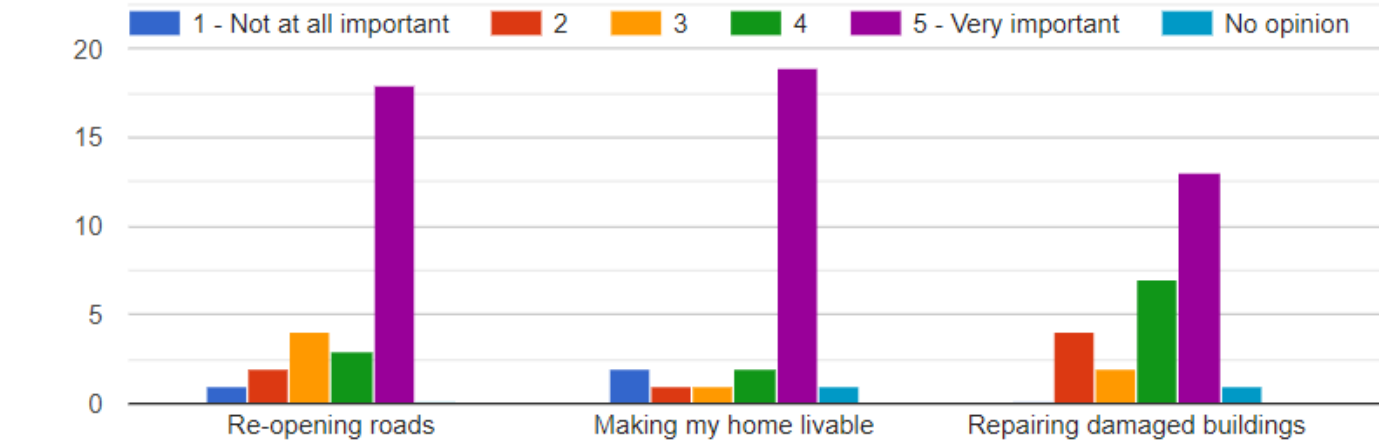
Are there any specific areas of your community vulnerable to coastal hazards? If so, please list them by location. Please use street intersections or landmarks to describe locations.12 responses

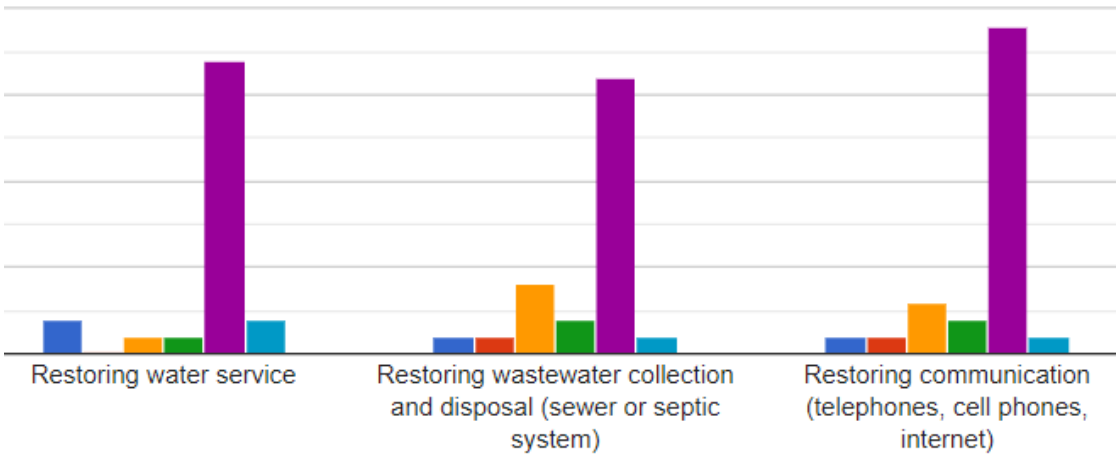
- Our corner of Isabella and Beech is a low spot in the park. The drainage ditches need a complete overhaul and perhaps redesign. The Park government needs to do more than just short term fixes or react to short term hazards.
- Riverside drive
- Failure to regulate has resulted in unused fuel tanks left in place. Septic fields are vulnerable and public sewage is not available.
- Fairview Ave & Spruce Fairview Ave and Hickory Bank and Hickory Fairview Ave & Oak Street College & Oak College & Hickory Spruce & College Isabella Ave (West End)
- All
- waterfront and maple branch of runyon creek
- Coner of river road and Edgewater
- Lower Spruce Street area. Lower Isabella Ave. area. River Road. Riverside Rd area.
- EVERYTHING WEST PINE STREET AND SOUTH OF COLLEGE
- Wash. Park shoreline erosion: Pamlico River, including mouth of Runyan creek, low elevation areas.
- West end of Washington Park is the lowest and the most vulnerable.
- Our home is near the intersection of Edgewater and Isabella, a northwest location in Washington Park. This area is within the 100 year floodplain.

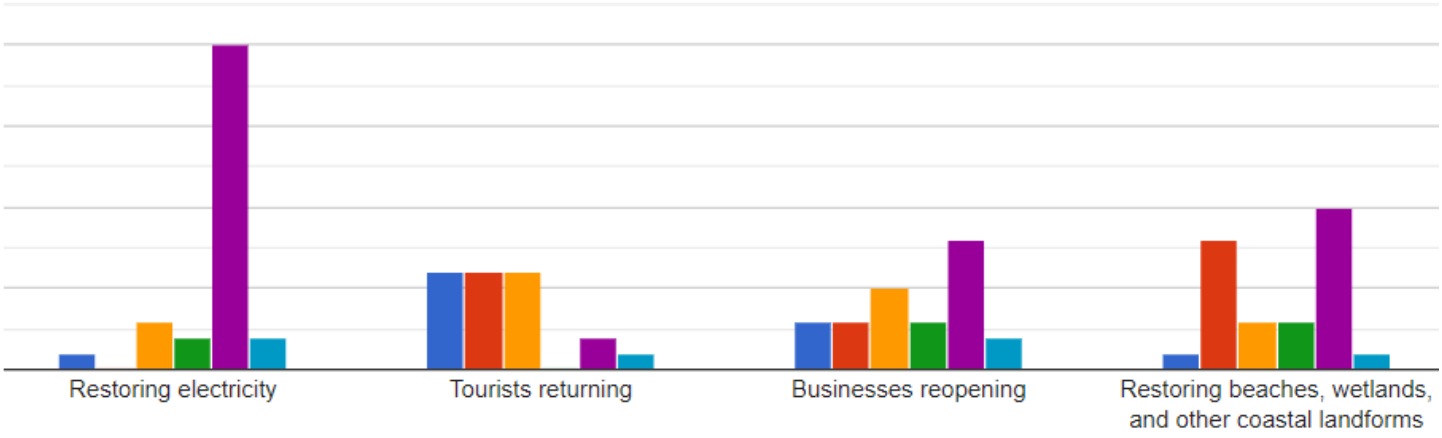
WASHINGTON PARK

Phase 1 Public Survey Summary

Please rank the following activities, intended to restore daily life after a coastal storm.







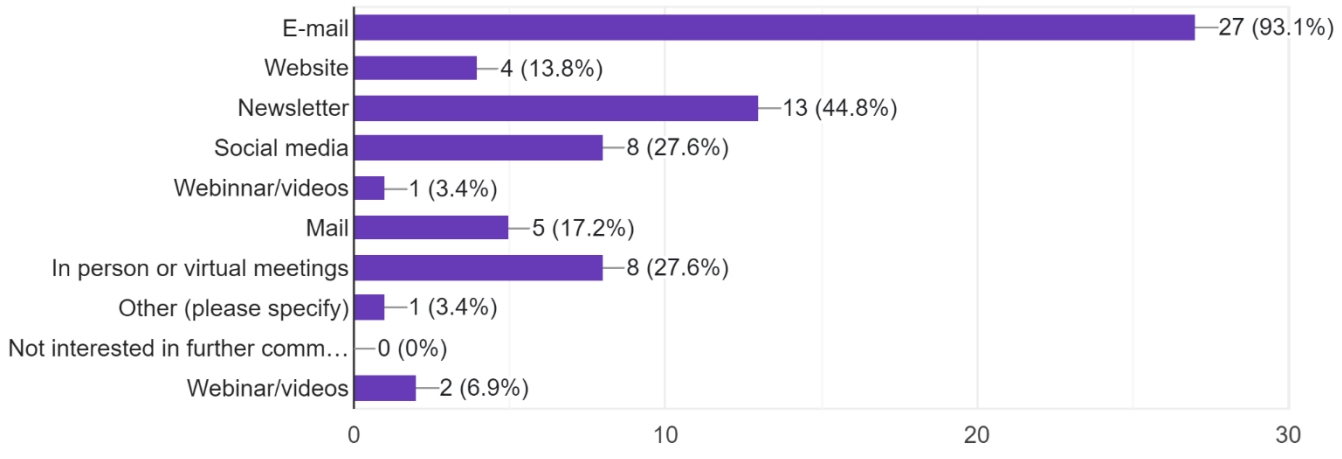
Is there anything else you would like to share with us regarding flooding and coastal resilience in Washington Park? 6 responses

- No (2 responses)
- Regionally, wetlands are under-valued and allowed to be filled. New development does not require drainage ponds. Shrinking storage capacity increases flood risk. City of Washington drainage projects have focused on moving water, which increases flood risk downstream.
- Groundwater management Electric lines too vulnerable to storms
- INSTALLATION OF HARDSCAPE STRUCTURE TO ADDRESS EROSION ALONG THE RIVER IS LEAST DESIRABLE. Seawalls, revetments, bulkheads, groins and breakwaters may reduce erosion in the short-term. They also have very high initial investment costs. However, over time, they can have adverse impacts on the coastline.
- The drainage systems in the Park need an overhaul. Even in a heavy rain we see water collecting like never before.

Stakeholder Engagement

How would you like the Town of Washington Park to communicate with you and/or your community regarding this program or on similar programs in the future?

29 responses



Comment field. Complete if "Other (please specify)" was checked in previous question.4 responses

- This is a MAJOR problem which has existed forever. It is not acceptable that the only way we can communicate is to call the town manager or go to the town office. There is no way whatsoever that citizens can share ideas and solutions. The town's response of the town this is that you can always come to a town meeting but that does little to encourage discussion among the citizens. The five minutes we are given is quite often taken up by lengthy responses by the board or mayor. Communication in one way and that needs to be fixed.
- HAVING LOOKED AT OTHER WAYS GOVERNING BODIES OF SMALL TOWNS COMMUNICATE WITH THEIR CONSITUENTS WP HAS ROOM FOR IMPROVEMENT. THERE IS NO WAY TO HAVE 2-WAY COMMUNICATION. MANY TIMES I HAVE NEEDED ASSISTANCE AND PHONE NUMBERS HAVE NOT BEEN ADEQUATE. SOCIAL MEDIA HAS BEEN A SOLUTION BUT THAT IS NOT HOW IT SHOULD BE DONE. BETTER COMMUNICATION IS ESSENTIAL. CALLING THE TOWN CLERK DURING OFFICE HOURS MAY HAVE WORKED 30 YRS AGO BUT THAT IS WOEFULLY OUTDATED. THE WP WEB SITE NEEDS MAJOR IMPROVEMENT.
- atbaxter23@gmail.com
- The Washington Park Facebook group is a great way to alert residents of meetings and action to mitigate flooding.

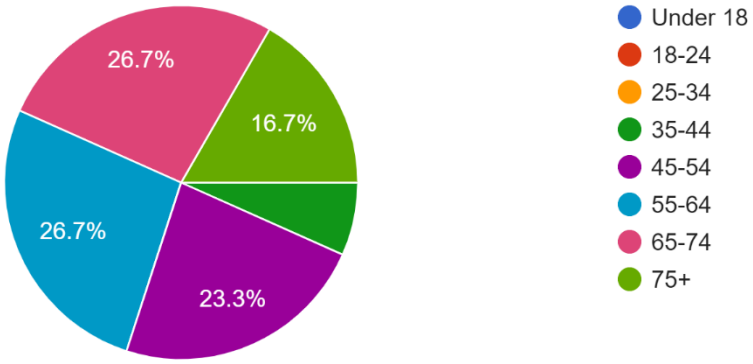
Are there any local or community groups or organizations you feel we should coordinate with to create awareness of this program or similar programs in the future? If yes, please provide their name, website, and contact information if possible.9 responses

- Sound Rivers (3 responses)
- The coastal management people at ECU and Sound Rivers.
- no
- Wash. Park Neighbors
- SOUND RIVERS IS LOCAL AND SHOULD BE A PARTNER. Steve Trowell CRC Beaufort & HYDE Cty water management living shoreline designer N.C. Division of Soil and Water Conservation Community Conservation Assistance Program (CCAP) https://www.deq.nc.gov/about/divisions/coastal-management/estuarine-shorelines/estuarine-shoreline-stabilization/resources-homeowners-and-professionals?fbclid=IwAR3K-xiXzXysy8JClepQNrxTH9sCT23P_QUNm85O0AQZnOHe4_Xl3IYdbrU#:~:text=In%202000%2C%20volunteer%20staff%20from,shell%20seaward%20of%20the%20marsh
- newspaper, TV, co-op w/City of Wash., local civic clubs, senior center
- See above.

Demographic Information (optional)

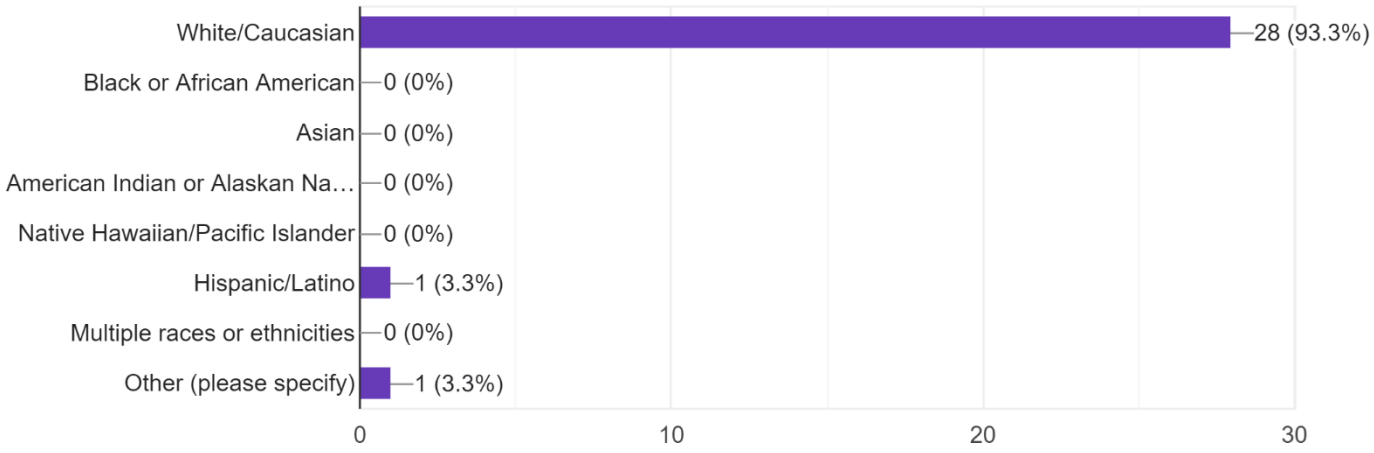
Tell us your age.

30 responses



What race/ethnicity best describes you? Check all that apply.

30 responses



Comment field. Complete if "Other (please specify)" was checked in previous question.1 response

not pertinent

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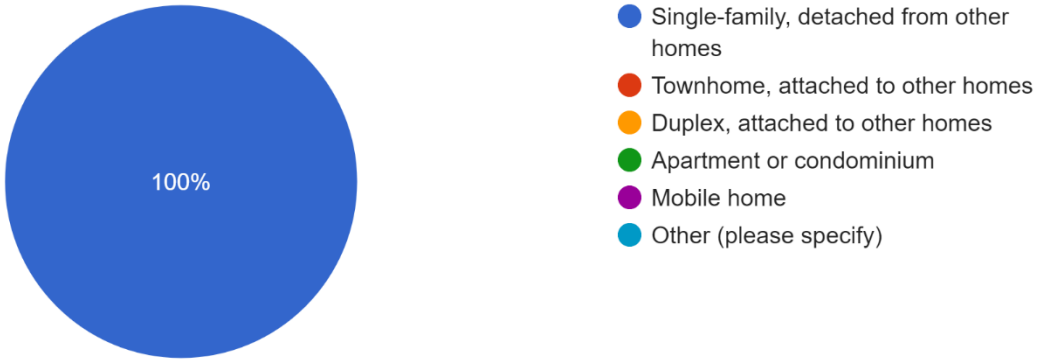
WASHINGTON PARK

Phase 1 Public Survey Summary

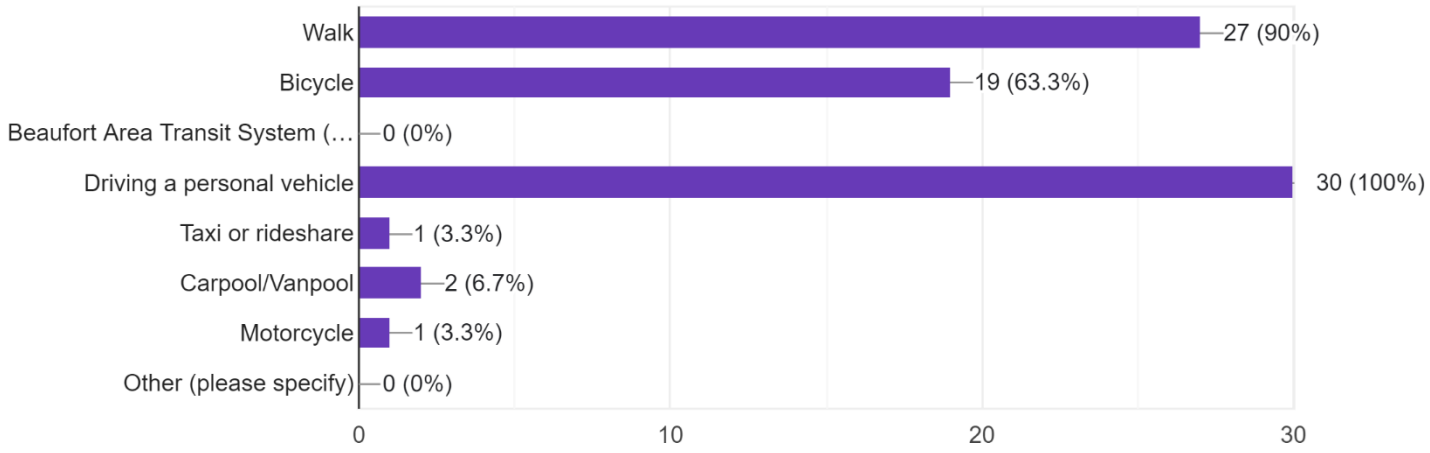
Which type of housing best describes your home?

30 responses



How do you travel in Washington Park? Select all that apply.

30 responses



North Carolina
RESILIENT
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COMMUNITIES
PROGRAM

WASHINGTON PARK

Phase 1 Open House Summary

PHASE 1 OPEN HOUSE

THURSDAY, DECEMBER 14, 2023, 4:00 PM – 6:30 PM; WASHINGTON PARK MUNICIPAL BUILDING

Attendees:

- Seth Laughlin, Mid-East Commission
- Kasen Wally, NC Division of Coastal Management
- Sarah Spiegler, NC Sea Grant
- Kathleen Taylor, Washington Park resident
- Jeff Peacock, CAT member and Washington Park Commissioner
- Derek Cooper, Washington Park resident
- Pamela Klinger, Washington Park resident
- Peter A. Farrell, Washington Park resident
- Paul Kennedy, Washington Park resident
- Blane Rumley, Washington Park resident
- Vail Rumley, Washington Park resident
- R. Wade Dale, CAT member and Washington Park Commissioner
- Dennie Dale, CAT member and Washington Park Town Clerk/Finance Officer
- Tom Richter, CAT member and Washington Park Mayor

Meeting Purpose:

The Phase 1 Open House is the culmination of Phase 1 activities and was held to present information from the process to stakeholders such as critical asset and natural infrastructure inventories, defined community vision and goals, and risk and vulnerability assessment results, for additional comment and input. Hardcopies of the public surveys were made available and team members were available to answer questions. Open house materials also included various displays such as an overview of the RCCP and a board defining resiliency with Beaufort County/Washington Park flooding related facts and demographic data, existing hazard mapping, critical assets and natural infrastructure lists, and FEMA and DCM informational handouts. Stakeholders were asked to rank vision and goals on the displays from 'no support' (1) to 'fully support (5), identify additional hazards on displayed maps using stickers, and define what resilience means to them. A PowerPoint slide show was also prepared that contained additional information on the RCCP, the CDC SVI, and the risk and vulnerability assessment steps.

North Carolina
RESILIENT COASTAL COMMUNITIES PROGRAM

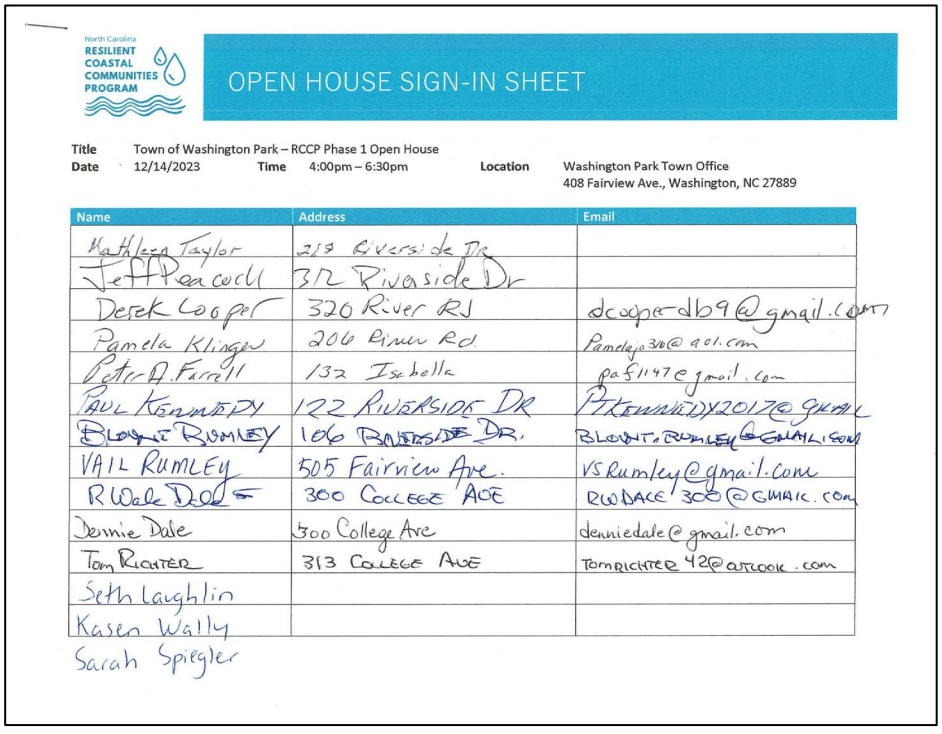
WASHINGTON PARK

Phase 1 Open House Summary

Notes:

- The public open house was well attended. Residents and CAT members were engaged in conversation. Conversations centered around specific coastal erosion and flooding problems the town is facing. Nature based solutions and the need for public education was discussed.
- Flooding, storm surge, and coastal erosion problems areas were depicted by participants through the use of stickers placed on the hazard area identification map.
- Most participants supported the vision and goals of the Resilience Strategy, depicted by stickers placed on the vision and goals posters.
- There was also a spot for comments on the vision and goals posters. Comments received include the following:
    - We need sewer service.
    - Need to plan long term [to reduce the most harmful impacts of climate change].
    - Education is needed. Moving water is short sighted. Need to allow water to drain slowly.
    - Maintain riparian buffer. 25 feet: no activity. 25 feet moved 2x/year.
    - Set aside natural areas. Allow -level growth (plants, shrubs, trees).
    - With who [to develop partnerships]?

Copy of event sign-in sheet



North Carolina RESILIENT COASTAL COMMUNITIES PROGRAM

OPEN HOUSE SIGN-IN SHEET

Title: Town of Washington Park – RCCP Phase 1 Open House
Date: 12/14/2023 Time: 4:00pm – 6:30pm Location: Washington Park Town Office, 408 Fairview Ave., Washington, NC 27889

Name	Address	Email
Kathleen Taylor	213 Riverside Dr	
Jeff Peacock	312 Riverside Dr	
Derek Cooper	320 River Rd	dcooper-db9@gmail.com
Pamela Klinger	206 River Rd	Pamelajo306@aol.com
Peter A. Farrell	132 Isabella	pafarrell47@gmail.com
Paul Kennedy	122 Riverside Dr	PKennedy2017@gmail
Blount Rumley	106 Riverside Dr.	Blount.Rumley@gmail.com
Vail Rumley	505 Fairview Ave.	VSRumley@gmail.com
R Wade Dail	300 College Ave	RWDACE300@gmail.com
Dennie Dale	300 College Ave	denniedale@gmail.com
Tom Richter	313 College Ave	Tomrichter42@outlook.com
Seth Laughlin		
Kasen Wally		
Sarah Spiegler		

WASHINGTON PARK

Phase 1 Open House Summary

Hazard area identification exercise results:

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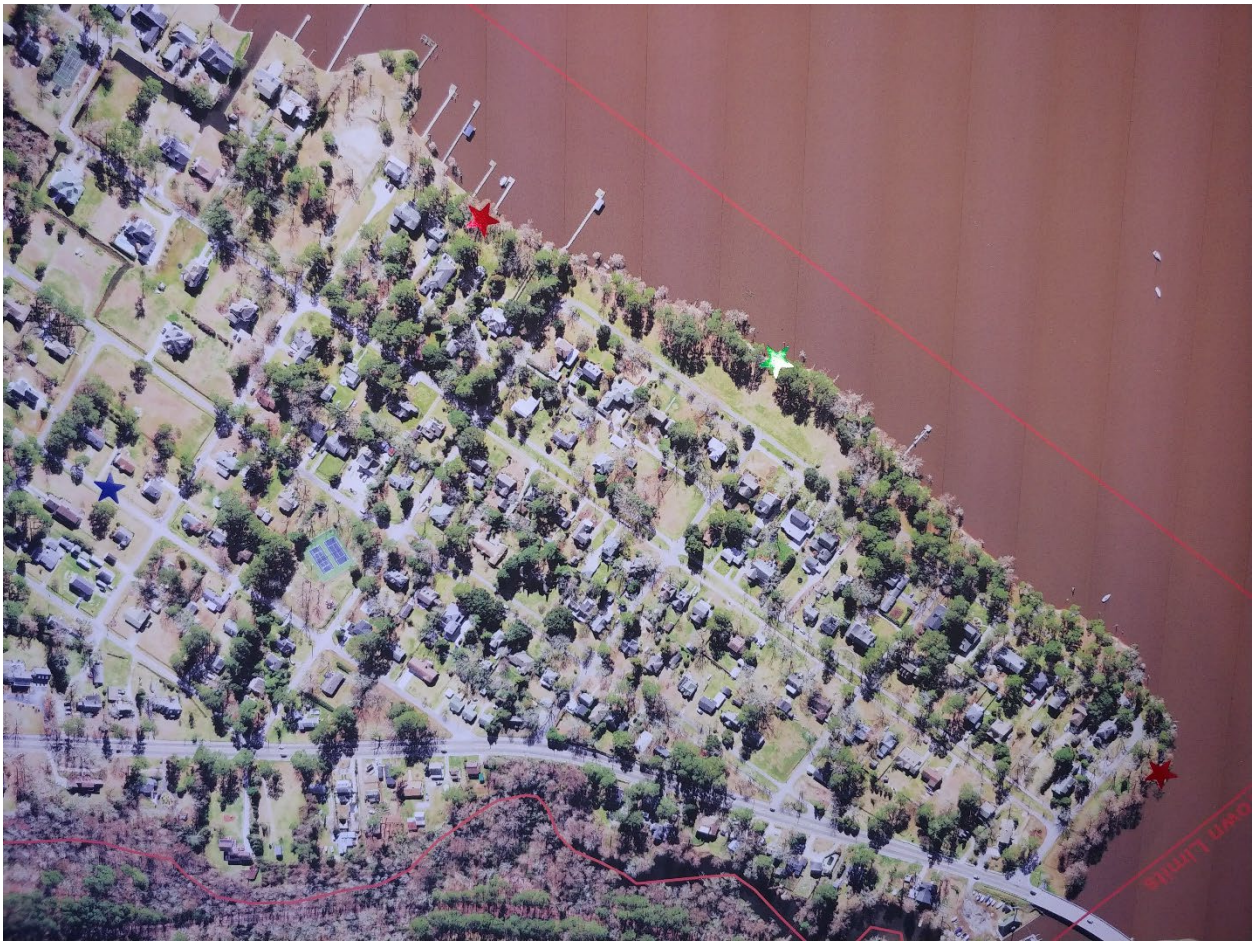
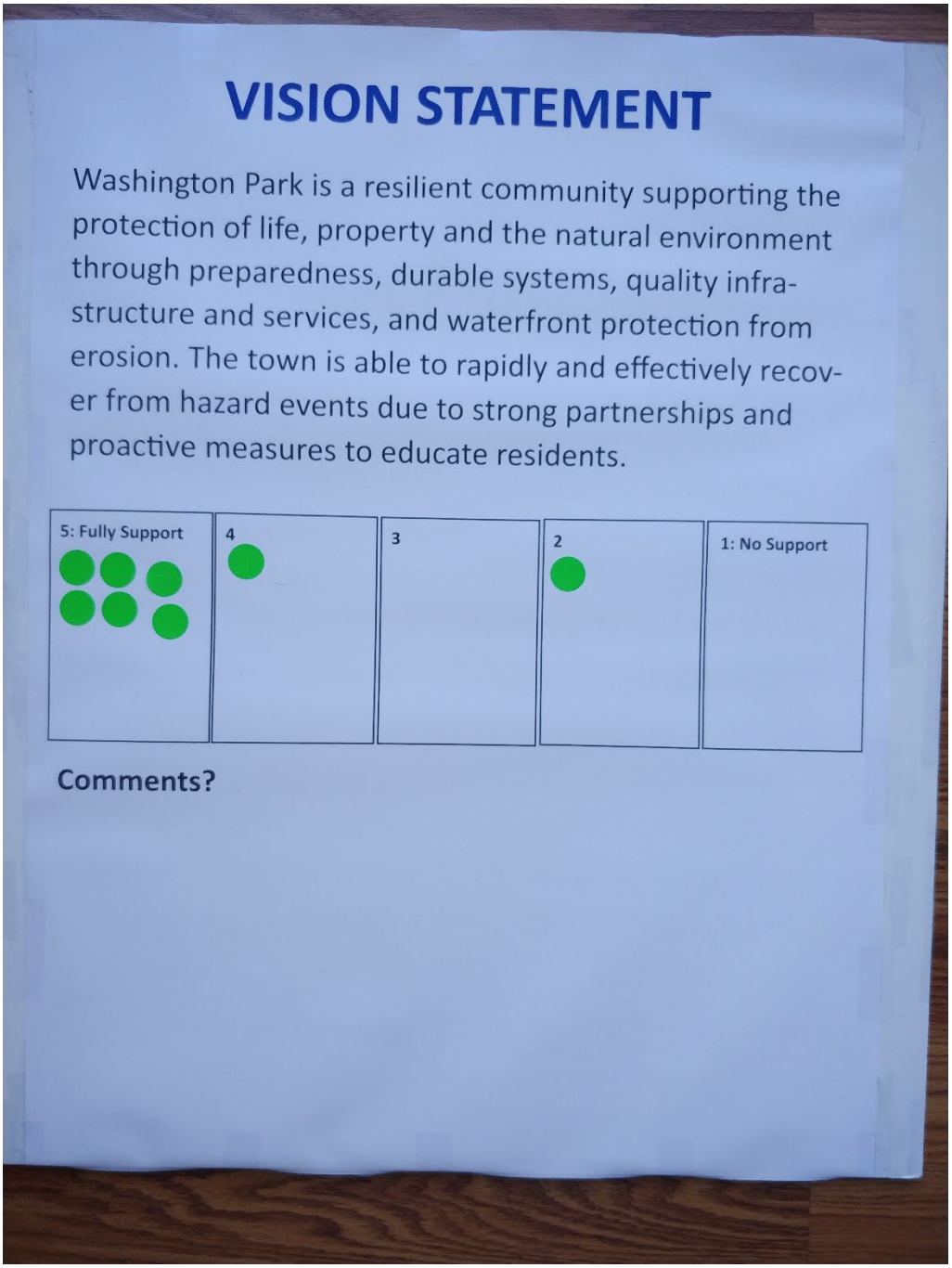
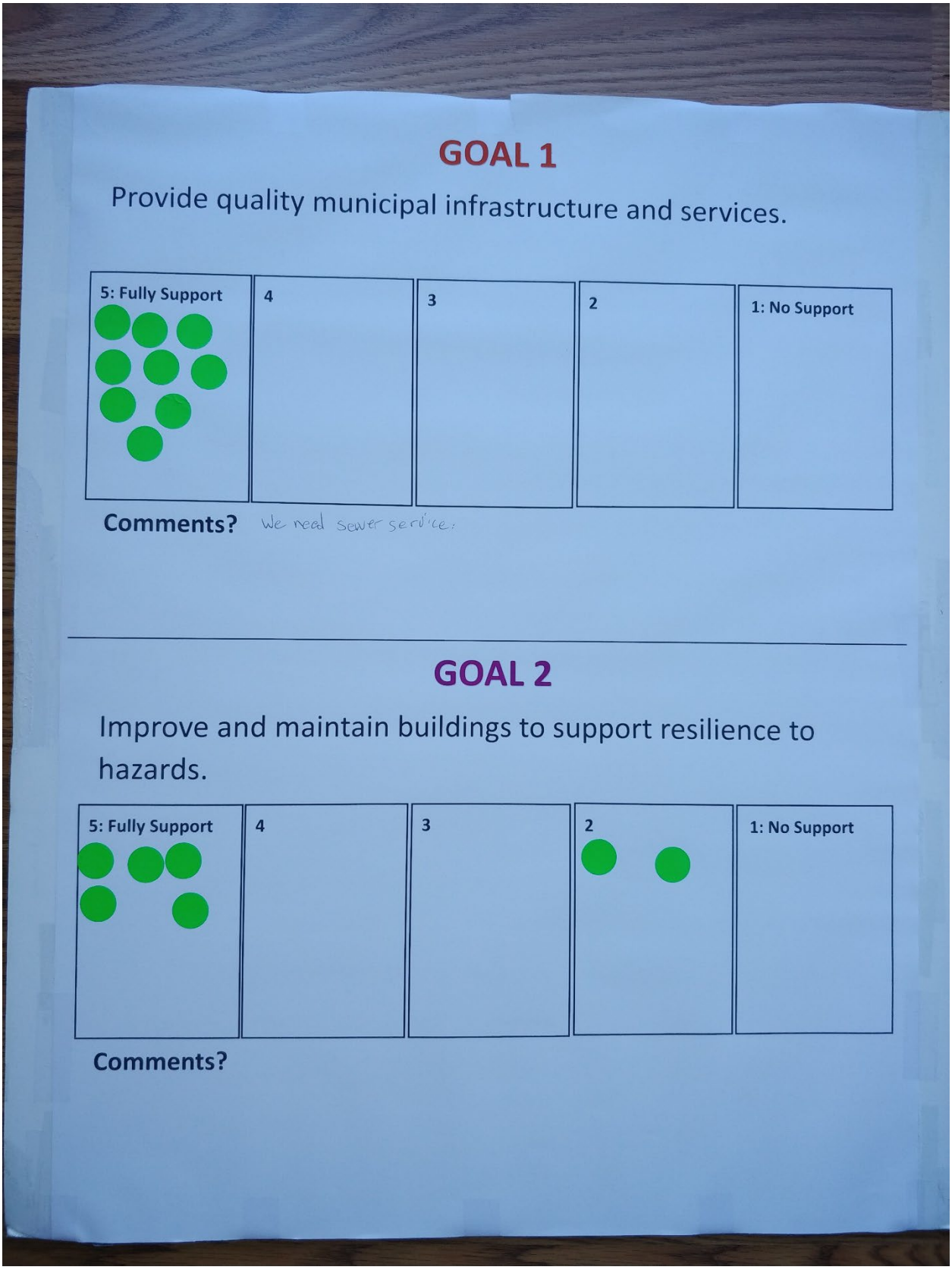
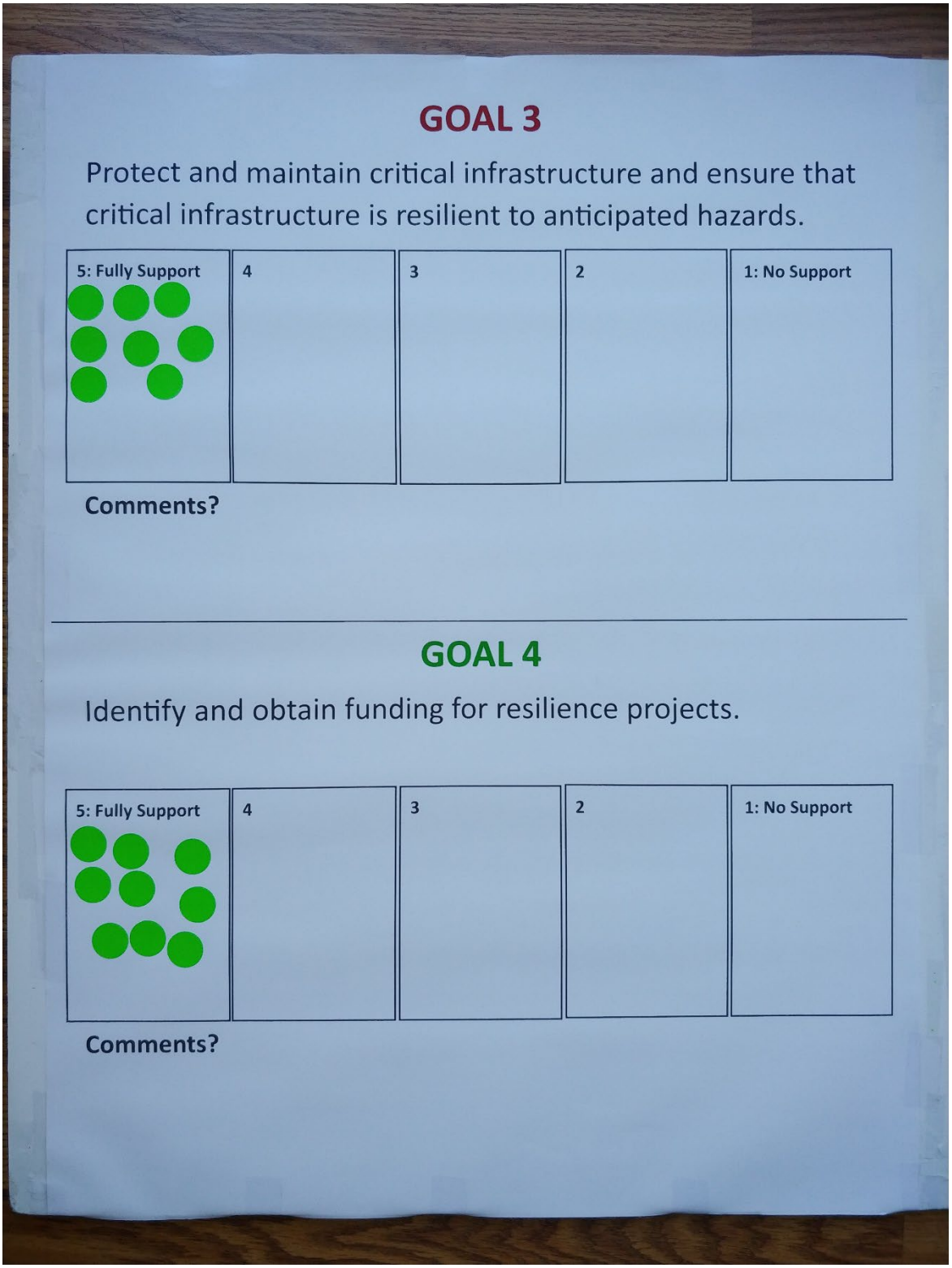
Phase 1 Open House Summary

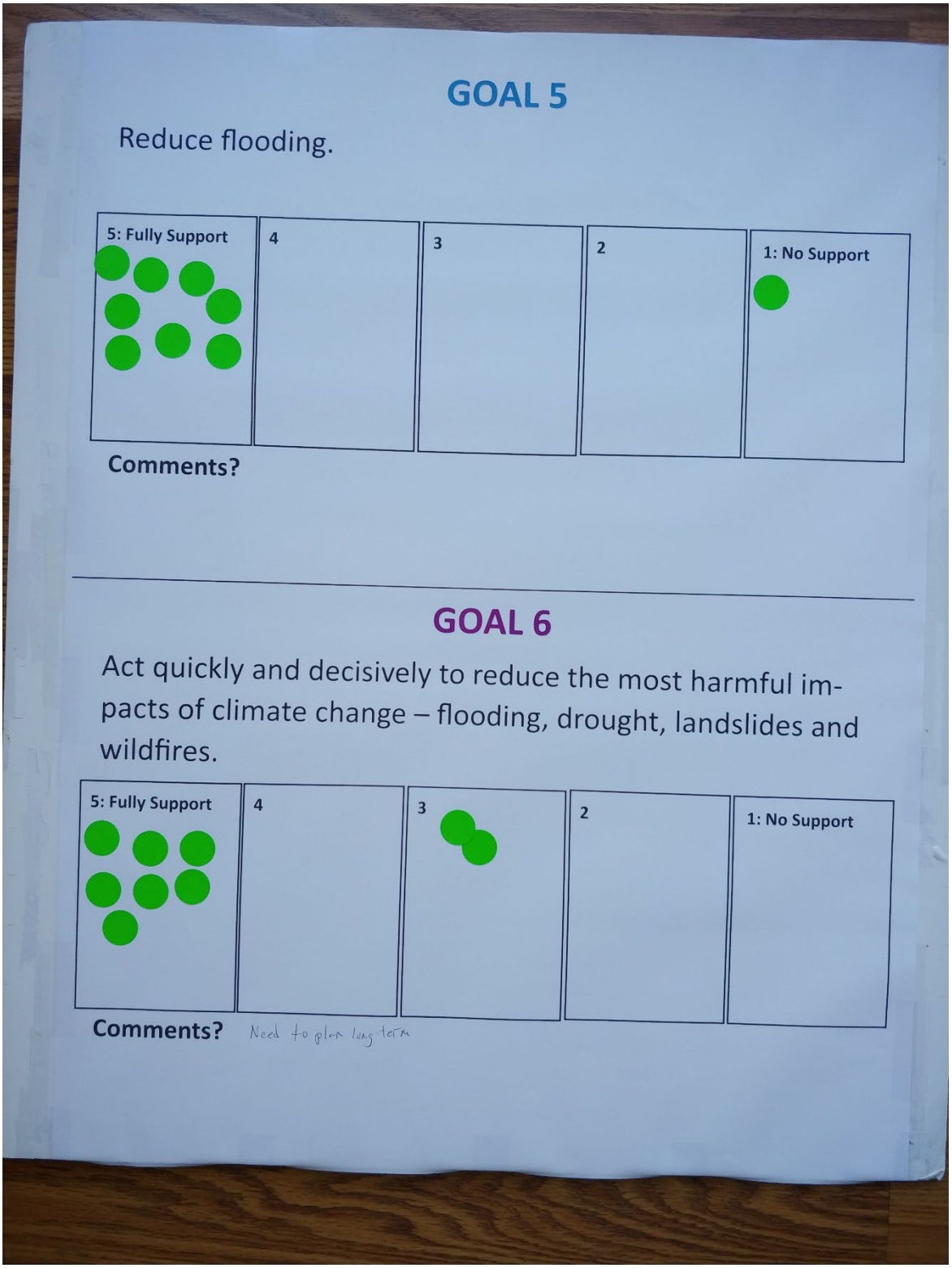


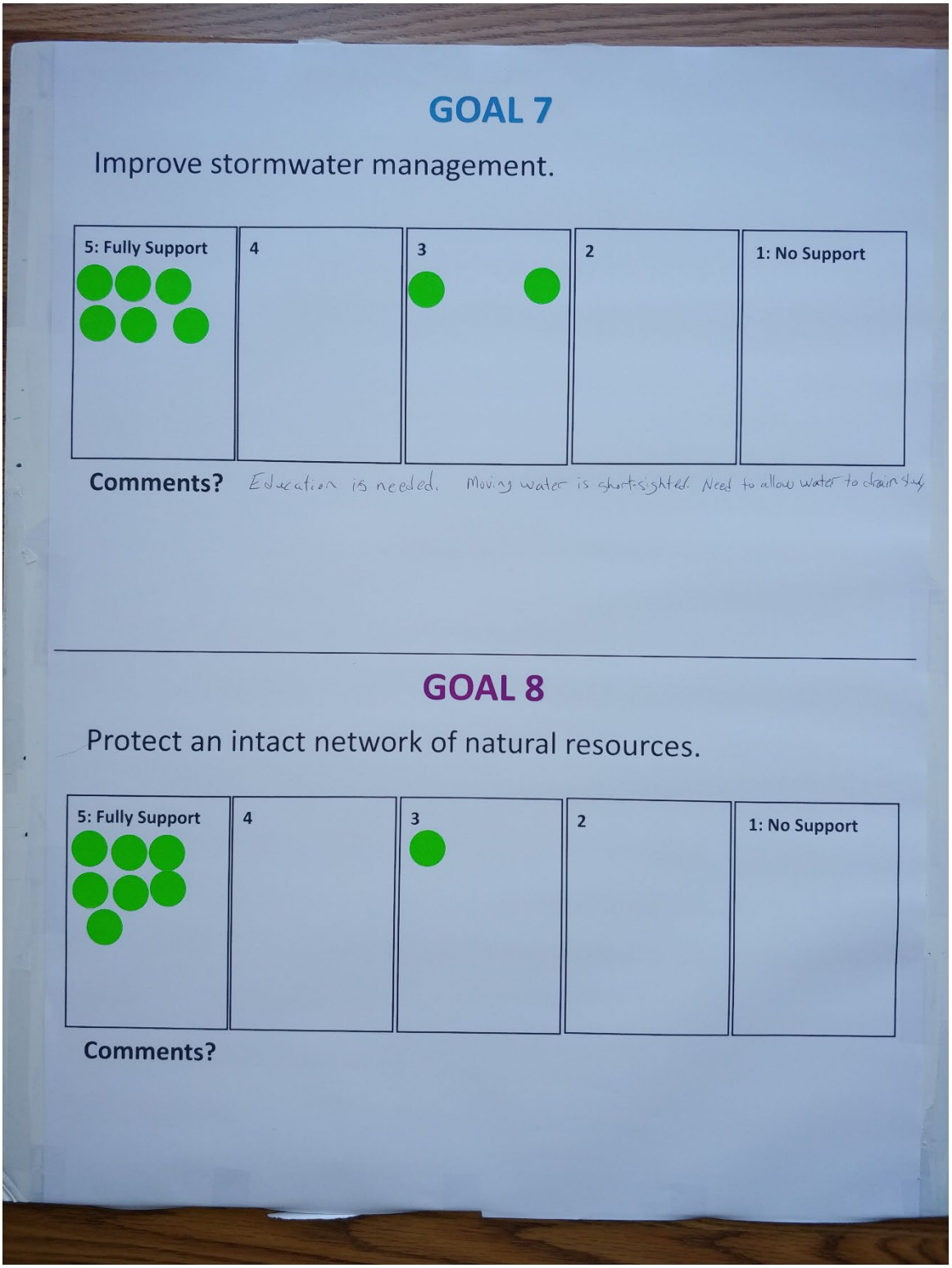
Vision and Goals Exercise Results:

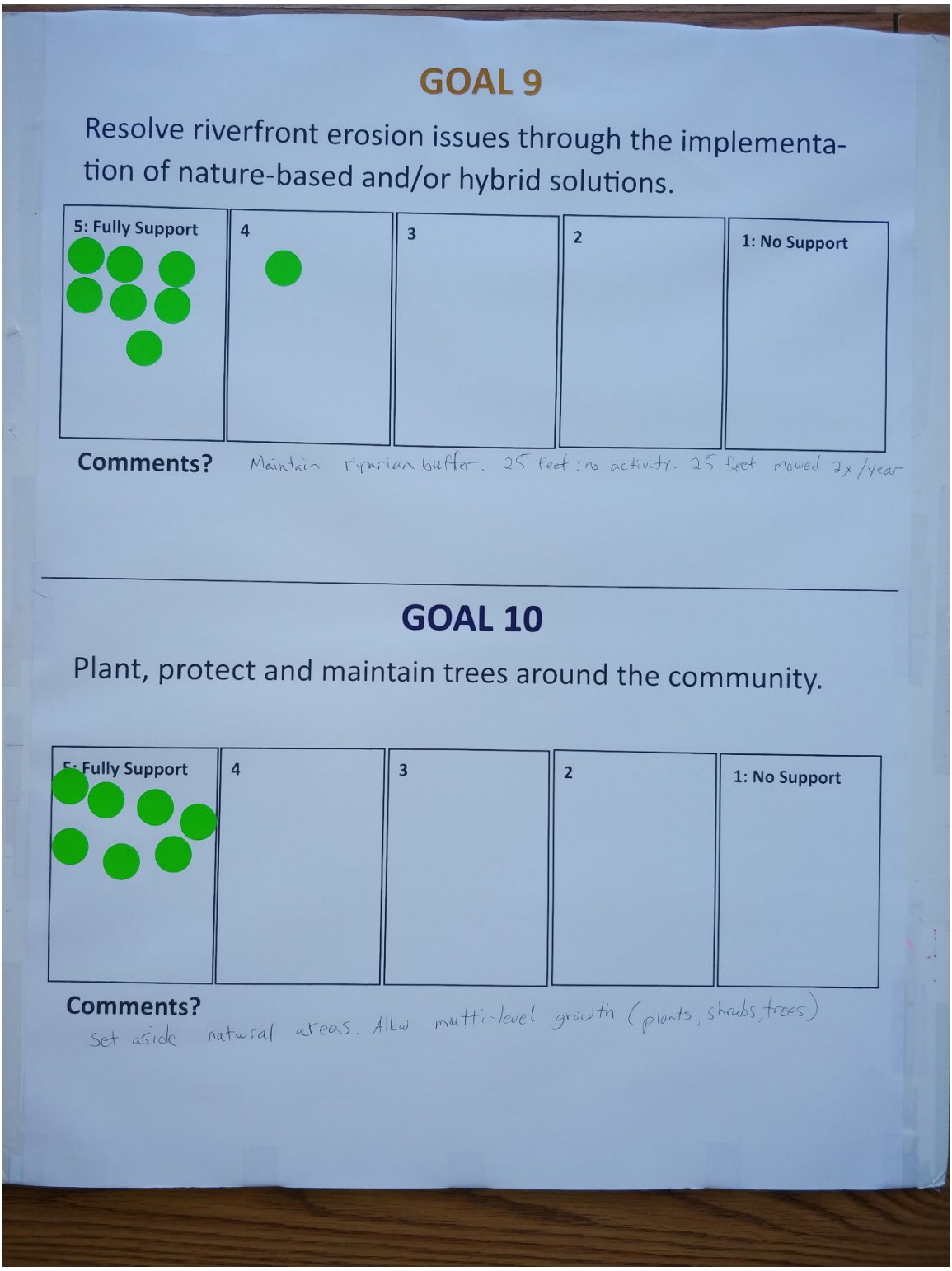



GOAL 1
Provide quality municipal infrastructure and services.
5: Fully Support
4
3
2
1: No Support
Comments?
We need sewer service.
GOAL 2
Improve and maintain buildings to support resilience to hazards.
5: Fully Support
4
3
2
1: No Support
Comments?

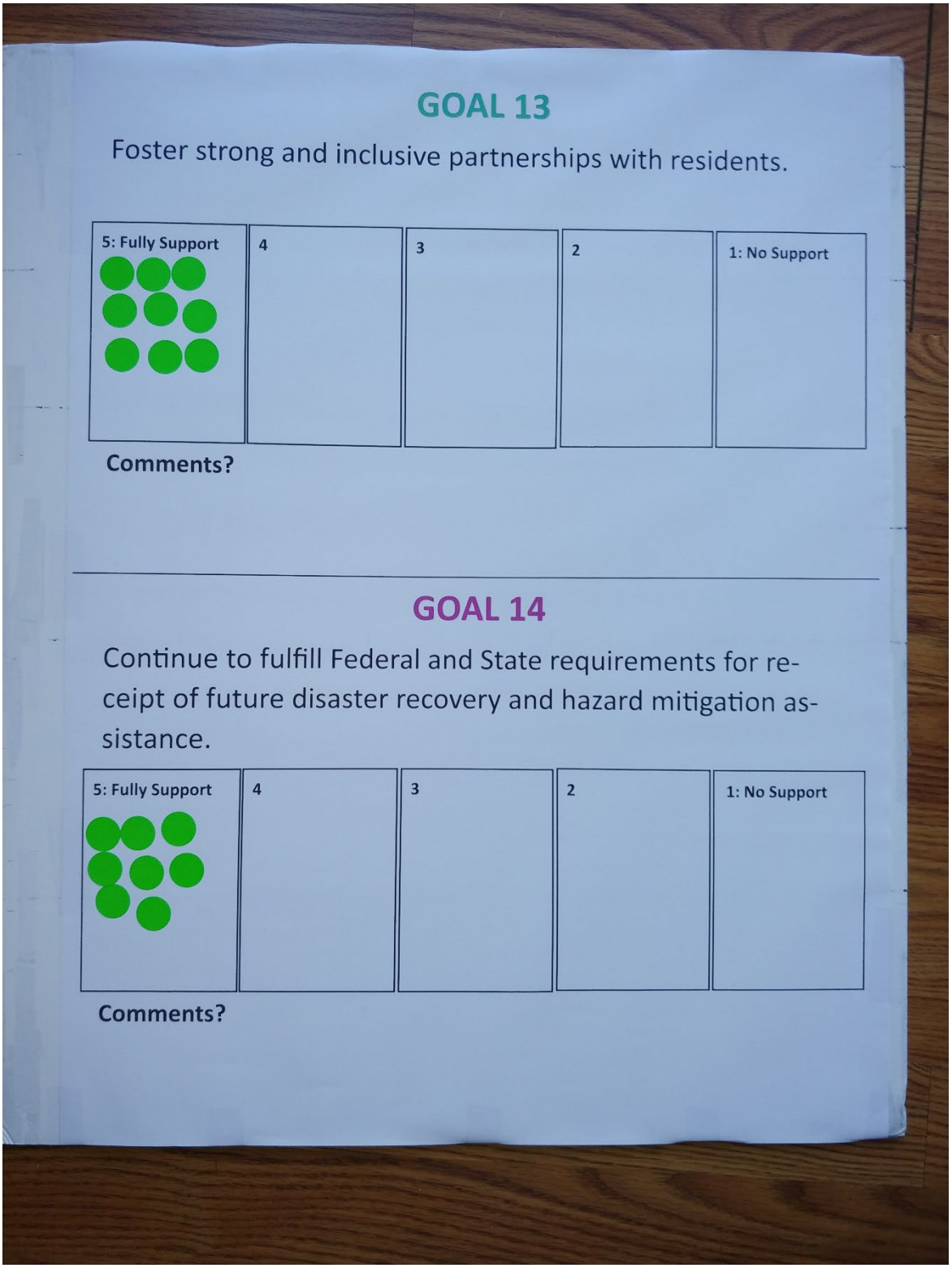

GOAL 3
Protect and maintain critical infrastructure and ensure that critical infrastructure is resilient to anticipated hazards.
5: Fully Support
4
3
2
1: No Support
Comments?
GOAL 4
Identify and obtain funding for resilience projects.
5: Fully Support
4
3
2
1: No Support
Comments?


GOAL 5
Reduce flooding.
5: Fully Support
4
3
2
1: No Support
Comments?
GOAL 6
Act quickly and decisively to reduce the most harmful impacts of climate change – flooding, drought, landslides and wildfires.
5: Fully Support
4
3
2
1: No Support
Comments?
Need to plan long-term


GOAL 7
Improve stormwater management.
5: Fully Support
4
3
2
1: No Support
Comments?
Education is needed.
Moving water is short-sighted. Need to allow water to drain slowly
GOAL 8
Protect an intact network of natural resources.
5: Fully Support
4
3
2
1: No Support
Comments?


GOAL 9
Resolve riverfront erosion issues through the implementation of nature-based and/or hybrid solutions.
5: Fully Support
4
3
2
1: No Support
Comments?
Maintain riparian buffer. 25 feet: no activity. 25 feet mowed 2x/year
GOAL 10
Plant, protect and maintain trees around the community.
5: Fully Support
4
3
2
1: No Support
Comments?
Set aside natural areas. Allow multi-level growth (plants, shrubs, trees)


GOAL 11
Develop effective hazard response and recovery.
5: Fully Support
4
3
2
1: No Support
Comments?
GOAL 12
Foster beneficial partnerships.
5: Fully Support
4
3
2
1: No Support
Comments?
With who?


GOAL 13
Foster strong and inclusive partnerships with residents.
5: Fully Support
4
3
2
1: No Support
Comments?
GOAL 14
Continue to fulfill Federal and State requirements for receipt of future disaster recovery and hazard mitigation assistance.
5: Fully Support
4
3
2
1: No Support
Comments?

Photos from event:

North Carolina
RESILIENT COASTAL COMMUNITIES PROGRAM

WASHINGTON PARK

Phase 1 Open House Summary

North Carolina
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WASHINGTON PARK

Phase 1 Open House Summary

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WASHINGTON PARK

Phase 2 Open House Summary

PHASE 2 OPEN HOUSE

WEDNESDAY, MARCH 20, 2024, 4:00 PM – 6:30 PM; WASHINGTON PARK TOWN OFFICE

Attendees:

- Jamie Heath, Mid-East Commission
- Gordon Marsh, RK&K
- Seth Laughlin, Mid-East Commission
- Kasen Wally, NC Division of Coastal Management
- Tom Richter, Washington Park CAT member and Mayor
- Wade Dale, Washington Park CAT member and Commissioner
- April Alligood, Washington Park CAT member and Town Clerk
- Chris Tkach, Washington Park resident
- Carl Biedinger, Washington Park resident
- Margaret Biedinger, Washington Park resident
- Helene Wetherington, NC Office of Recovery and Resiliency
- Belinda Cowell, Washington Park CAT member and Commissioner
- Paul Kennedy, Washington Park CAT member
- Holly White, NC Office of Recovery and Resiliency
- David Cowell, Washington Park resident
- Lee Bowen, Washington Park CAT member and Commissioner
- Vail Rumley, Washington Park CAT member and Commissioner

Meeting Purpose:

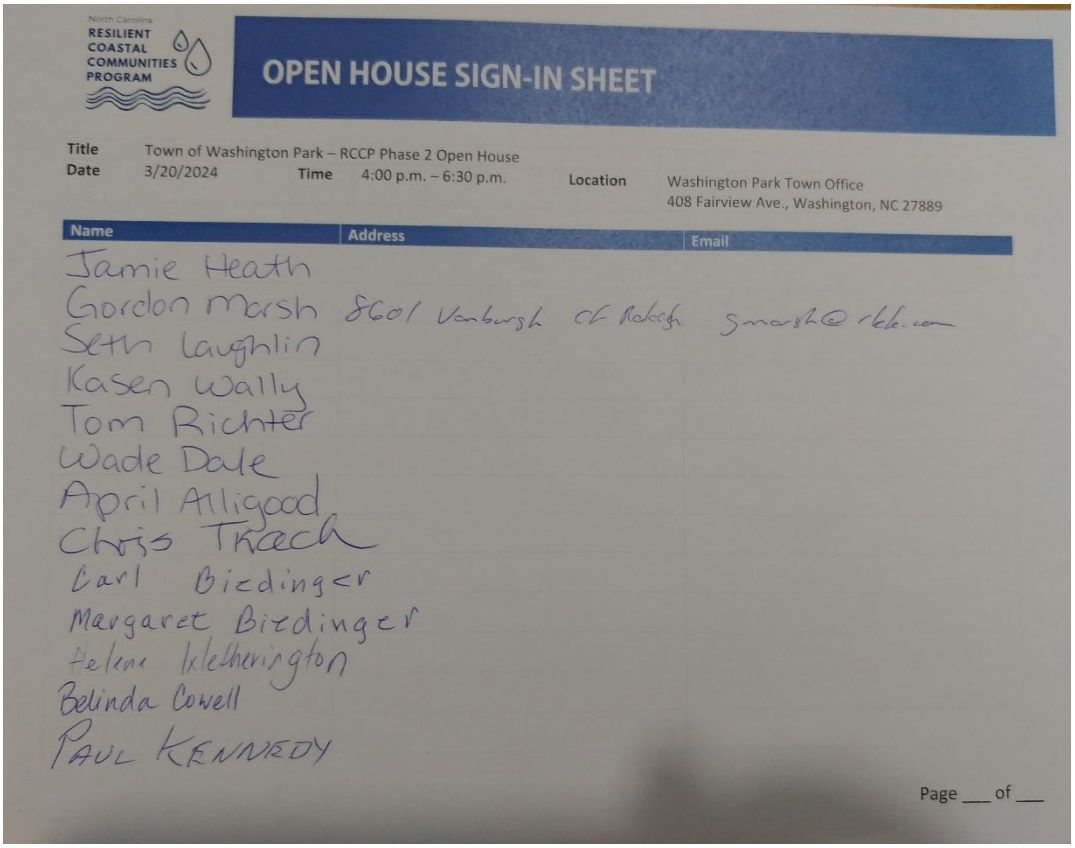
The Phase 2 Open House is the culmination of Phase 2 activities and was held to present draft projects to the community. Attendees were asked to vote on projects to determine community priorities and assist the CAT with the final round of project prioritization. Voting was conducted by placing stickers on project posters. Participants were also able to suggest additional projects. Education on the RCCP and on the various project types were also presented through posters, handouts, and an online Story Map, including education on green/nature-based solutions.

Notes:

- In addition to contractors and Community Action Team members, resident stakeholders participated in the Phase 2 open house (at least 4 according to sign in sheet).

- Draft priority projects were presented on posters and participants placed stickers on the posters to vote for their favorite projects. Participants were given six stickers labeled 1-6 and instructed to prioritize projects with the #1 sticker being their top project.
- Draft projects received the following number of votes:
    - Stormwater Action Plan: 5 votes (Sticker numbers: 1, 2, 3, 6, plus one sticker with no number)
    - Stormwater Personnel Training: 0 votes
    - Tributary Improvements East of Isabella Ave.: 5 votes (Sticker numbers: 3, 5, 5, plus two stickers with no number)
    - Green Stormwater Infrastructure on West Side of Isabella Ave.: 4 votes (Sticker numbers: 2, 3, 6, plus one sticker with no number)
    - Riverside Dr. Flood Attenuation Park: 5 votes (Sticker numbers: 1, 3, 3, 4, plus one sticker with no number)
    - Upgrade the Stormwater System: 7 votes (Sticker numbers: 2, 3, 4, 4, 4, 4, 5)
    - Living Shoreline at Public Shoreline Areas: 7 votes (Sticker numbers: 1, 1, 1, 1, 2, 2, plus one sticker with no number)
    - Green Stormwater Infrastructure at Riverside Drive: 6 votes (Sticker numbers: 2, 2, 3, 5, 5, 5)
    - Bioretention Cells in Highly Flooded Areas: 6 votes (Sticker numbers: 4, 4, 6, 6, 6, 6)
- Additional suggested projects include the following:
    - Empty lot at the end of Spruce needs cleaning up. Possible location for ditch or other stormwater project. Series of French drains is a possibility.
    - No wake zone at Edgewater Dr. (Runyon Creek)
    - Shoreline restoration at Edgewater Dr.
    - Duck valves on stormwater system.

Copy of event sign-in sheet:



North Carolina
RESILIENT COASTAL COMMUNITIES PROGRAM

OPEN HOUSE SIGN-IN SHEET

Title Town of Washington Park – RCCP Phase 2 Open House
Date 3/20/2024 Time 4:00 p.m. – 6:30 p.m. Location Washington Park Town Office
408 Fairview Ave., Washington, NC 27889

Name	Address	Email
Jamie Heath		
Gordon Marsh	8601 Vanburgh Ct Raleigh	gmarsh@rkk.com
Seth Laughlin		
Kasen Wally		
Tom Richter		
Wade Dale		
April Alligood		
Chris Treach		
Carl Bizdinger		
Margaret Bizdinger		
Helene Ickelhington		
Belinda Cowell		
PAUL KENNEDY		

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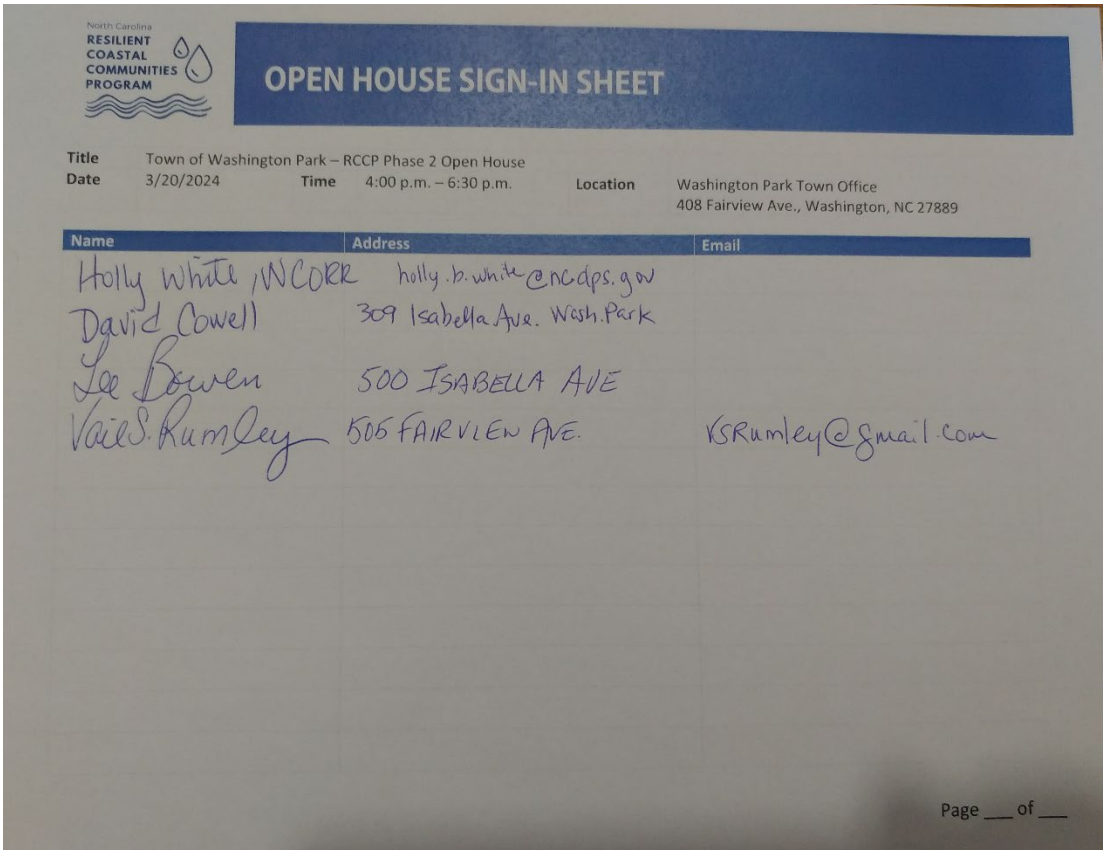


North Carolina RESILIENT COASTAL COMMUNITIES PROGRAM

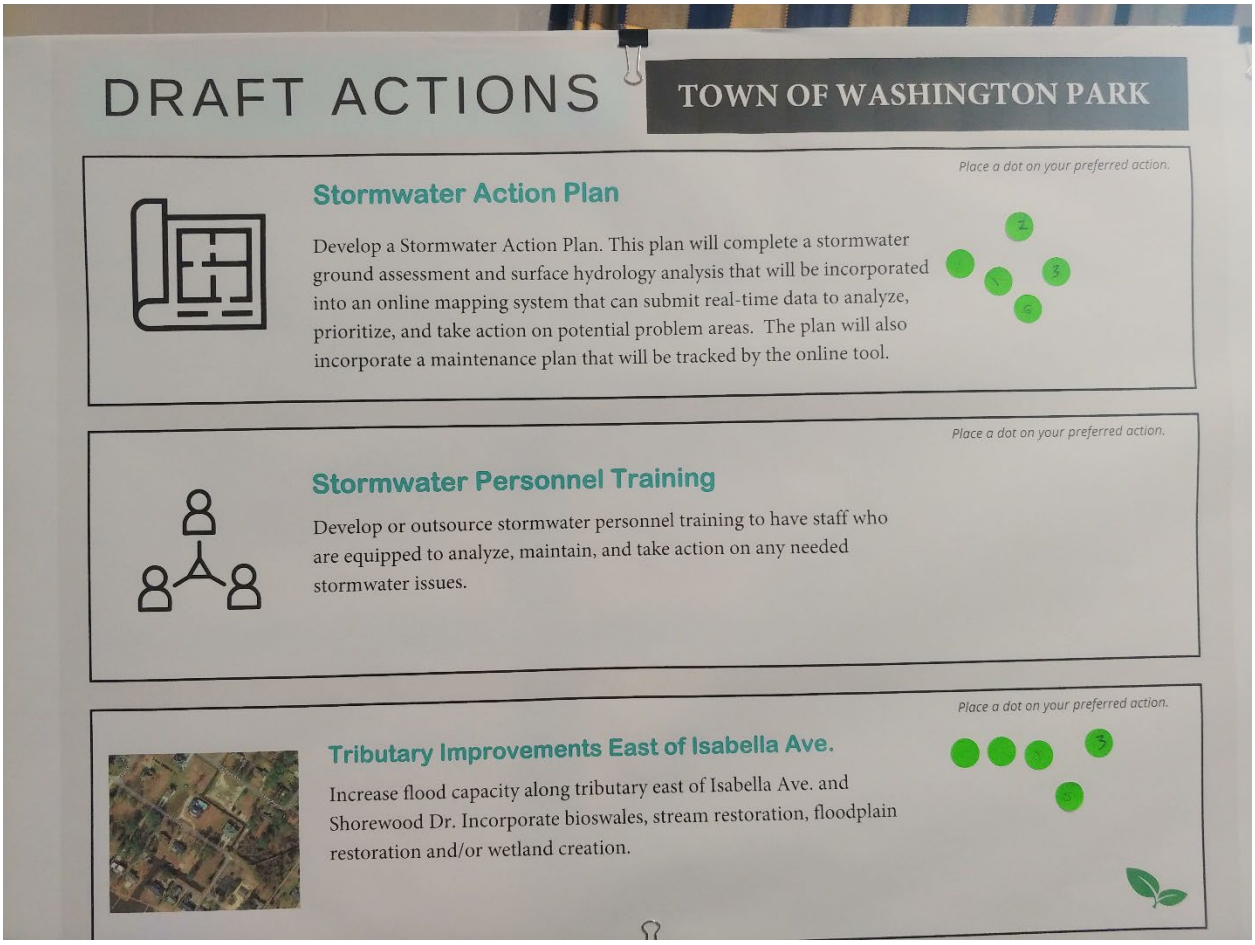
OPEN HOUSE SIGN-IN SHEET

Title Town of Washington Park – RCCP Phase 2 Open House
Date 3/20/2024 **Time** 4:00 p.m. – 6:30 p.m. **Location** Washington Park Town Office, 408 Fairview Ave., Washington, NC 27889

Name	Address	Email
Holly White, NCORR	holly.b.white@ncdps.gov	
David Cowell	309 Isabella Ave. Wash. Park	
Lee Bowen	500 ISABELLA AVE	
Vail S. Rumley	505 FAIRVIEW AVE.	VSRumley@gmail.com

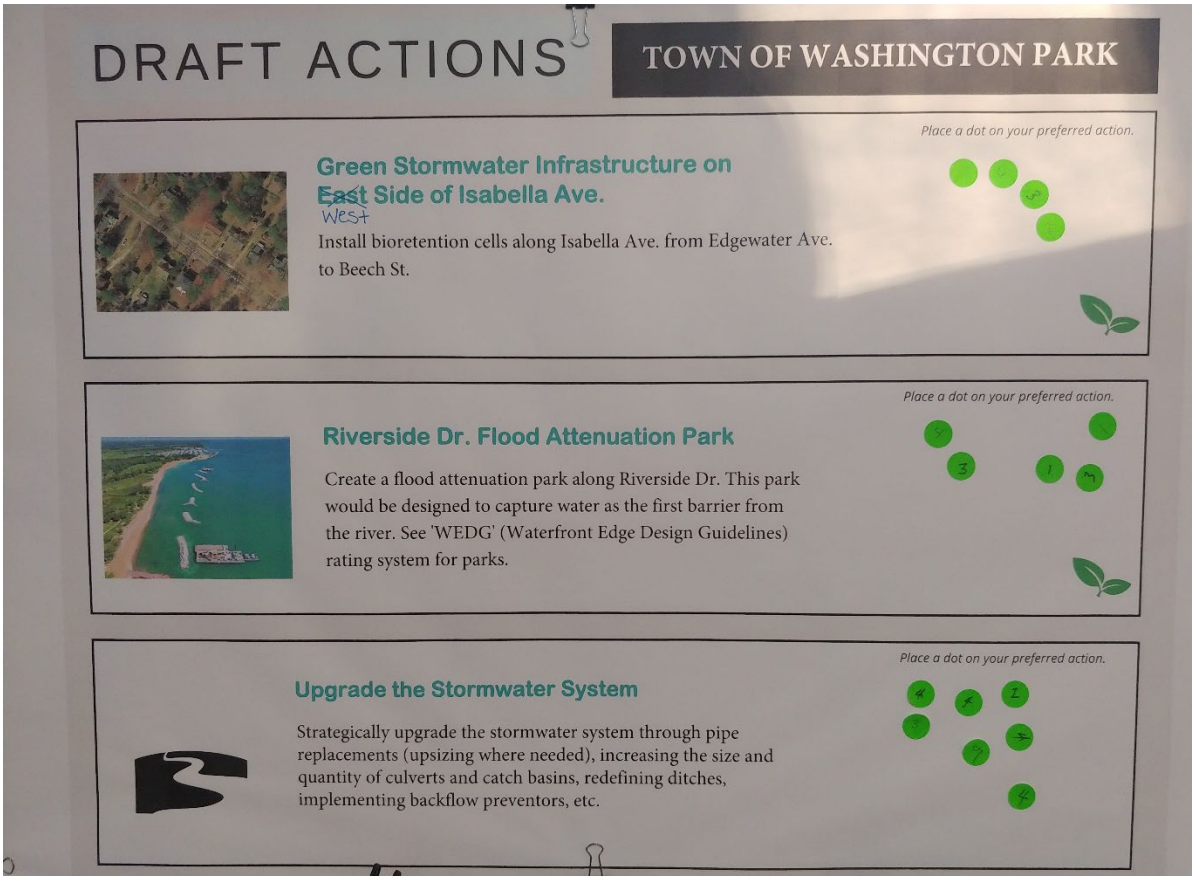
Page ___ of ___

Project vote results:



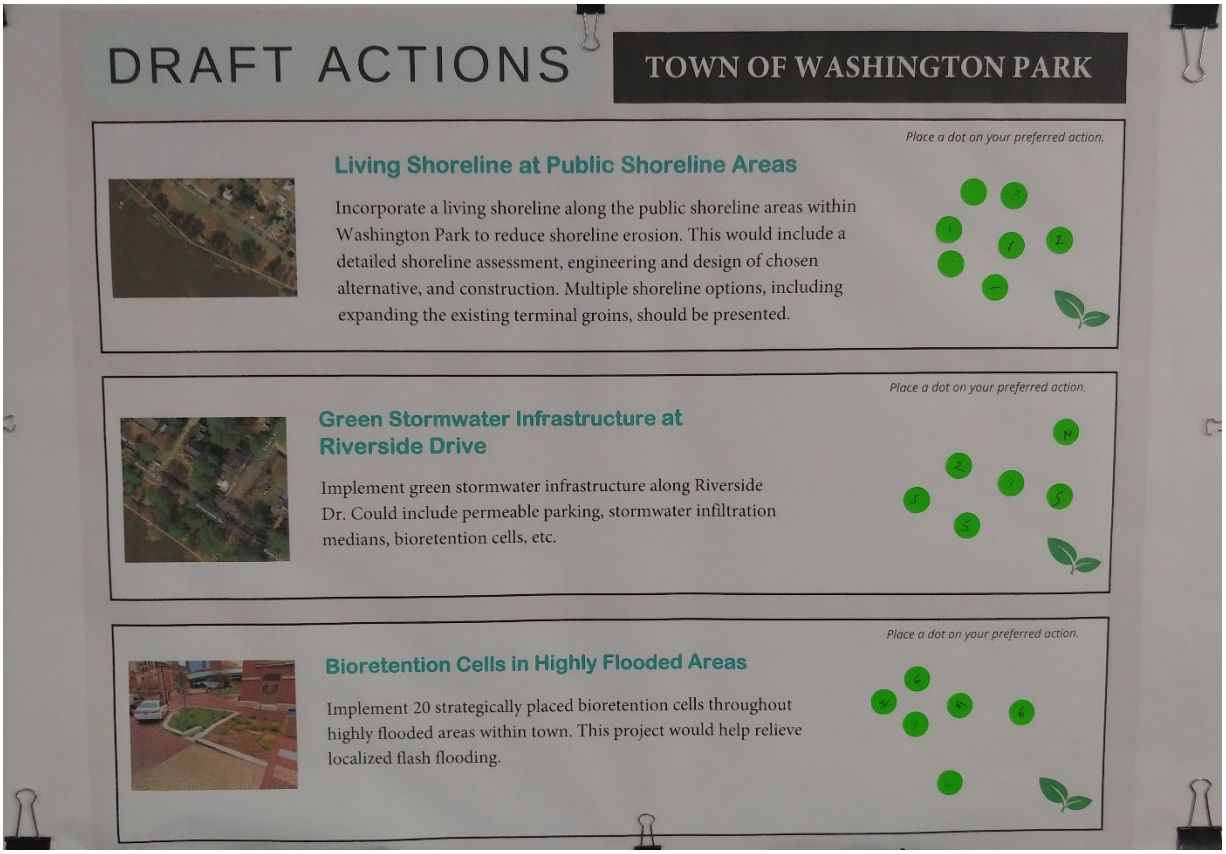
WASHINGTON PARK

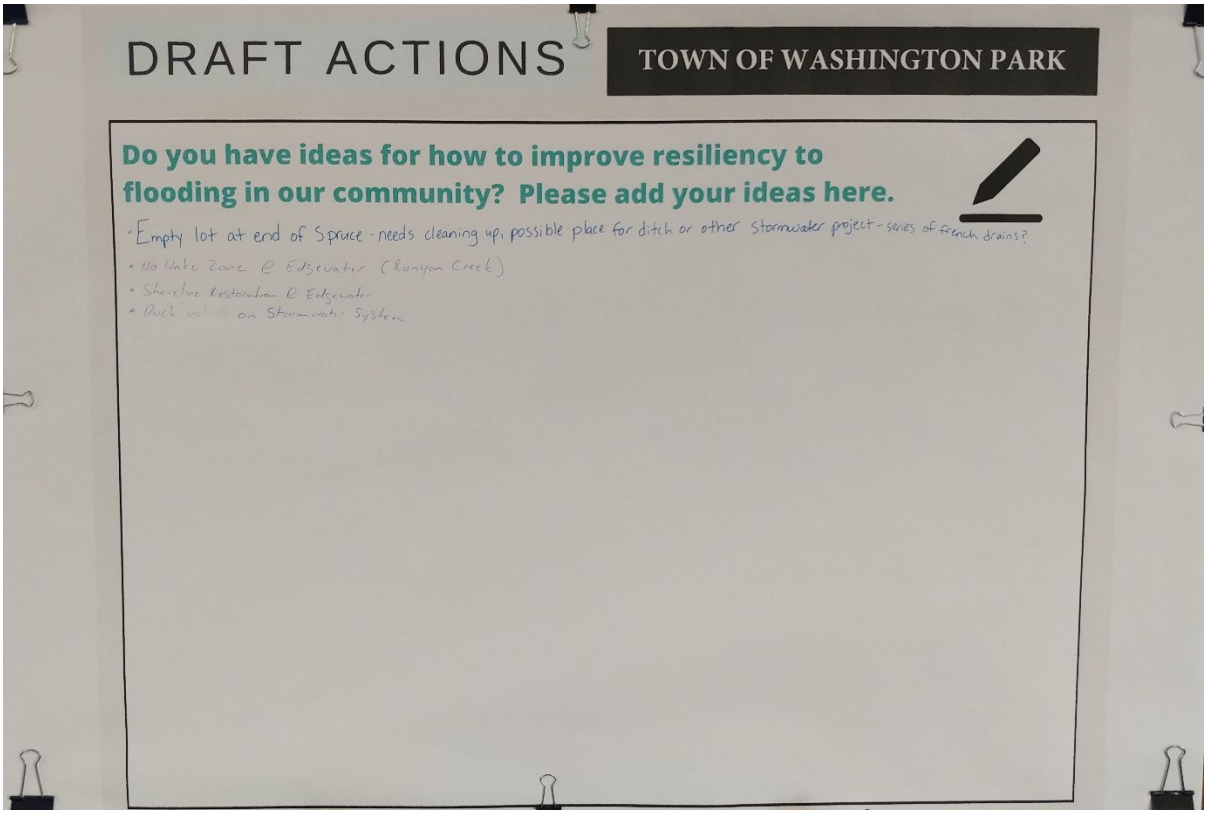
Phase 2 Open House Summary



WASHINGTON PARK

Phase 2 Open House Summary




DRAFT ACTIONS
TOWN OF WASHINGTON PARK
Do you have ideas for how to improve resiliency to flooding in our community? Please add your ideas here.
• Empty lot at end of Spruce - needs cleaning up, possible place for ditch or other stormwater project - series of french drains?
• No Wake Zone @ Edgewater (Runyon Creek)
• Shoreline Restoration @ Edgewater
• Duck valves on Stormwater System

Photos from event:

North Carolina
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WASHINGTON PARK

Phase 2 Open House Summary

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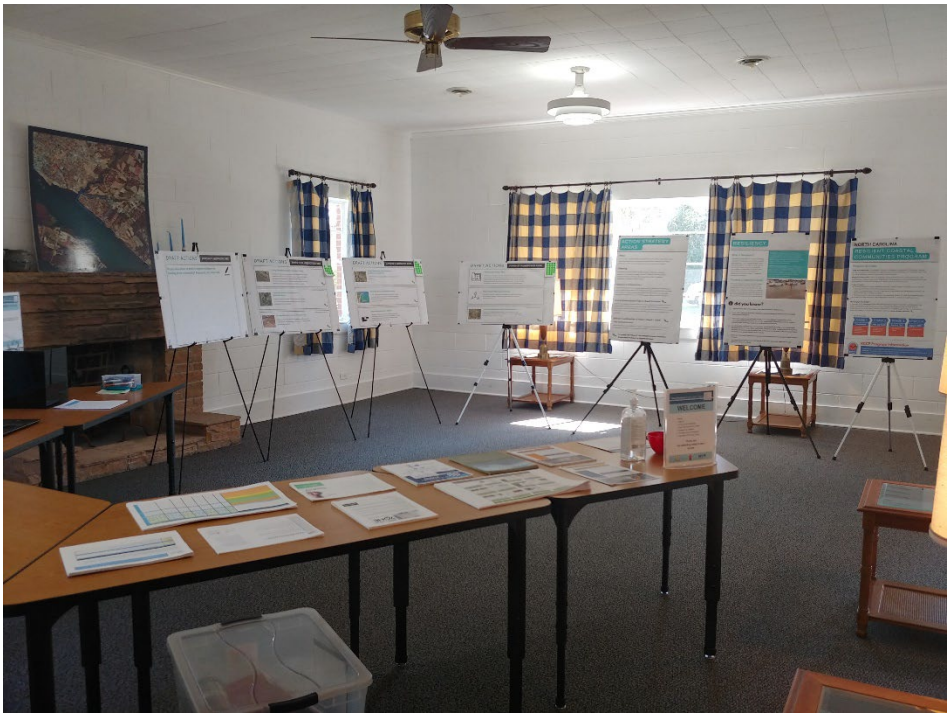
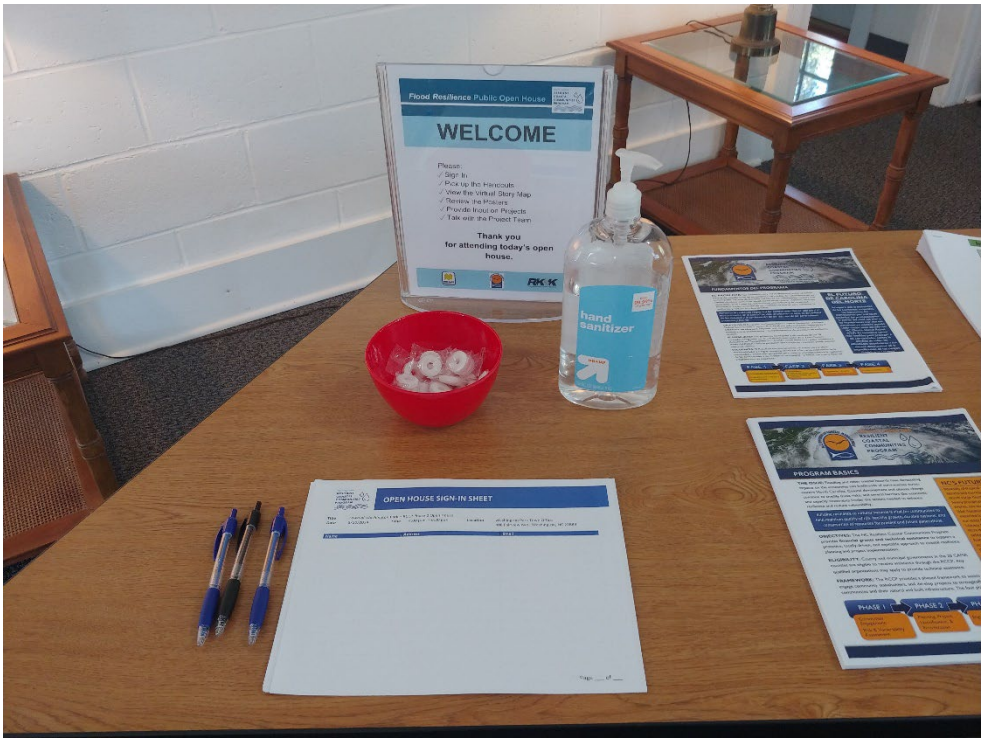
Phase 2 Open House Summary



North Carolina
RESILIENT COASTAL COMMUNITIES PROGRAM

WASHINGTON PARK

Phase 2 Open House Summary



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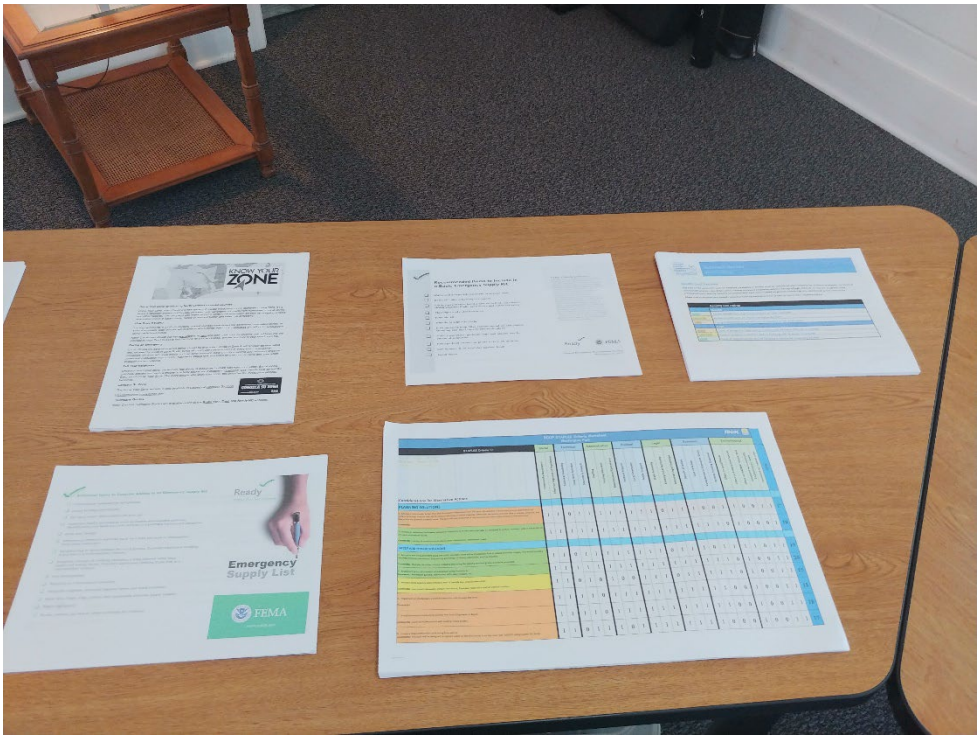
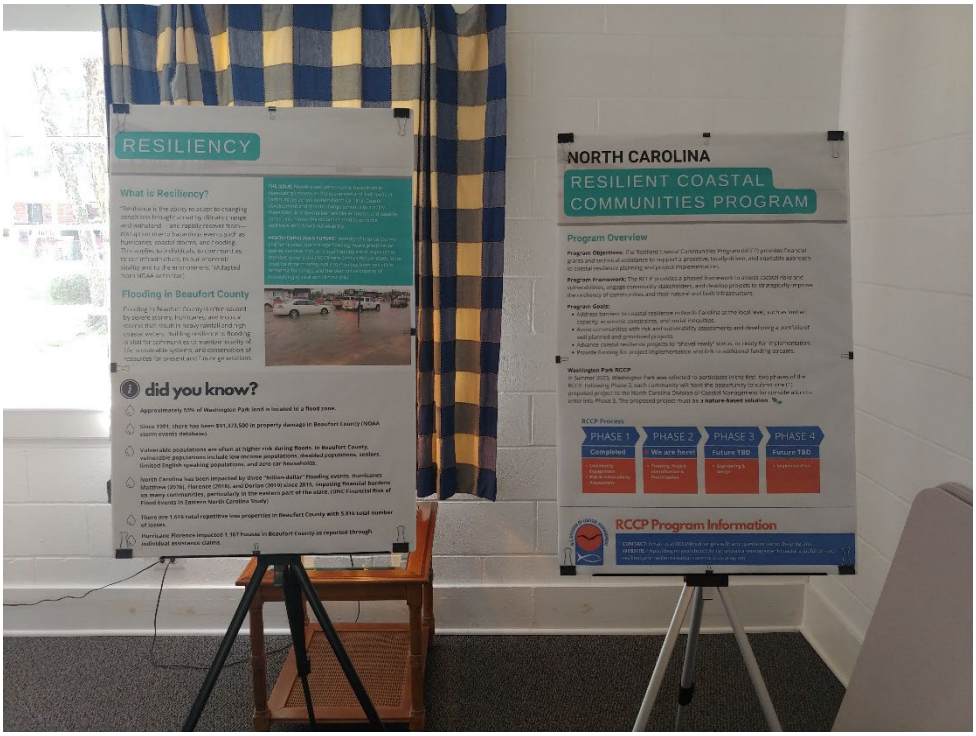
Phase 2 Open House Summary



North Carolina
RESILIENT COASTAL COMMUNITIES PROGRAM

WASHINGTON PARK

Phase 2 Open House Summary



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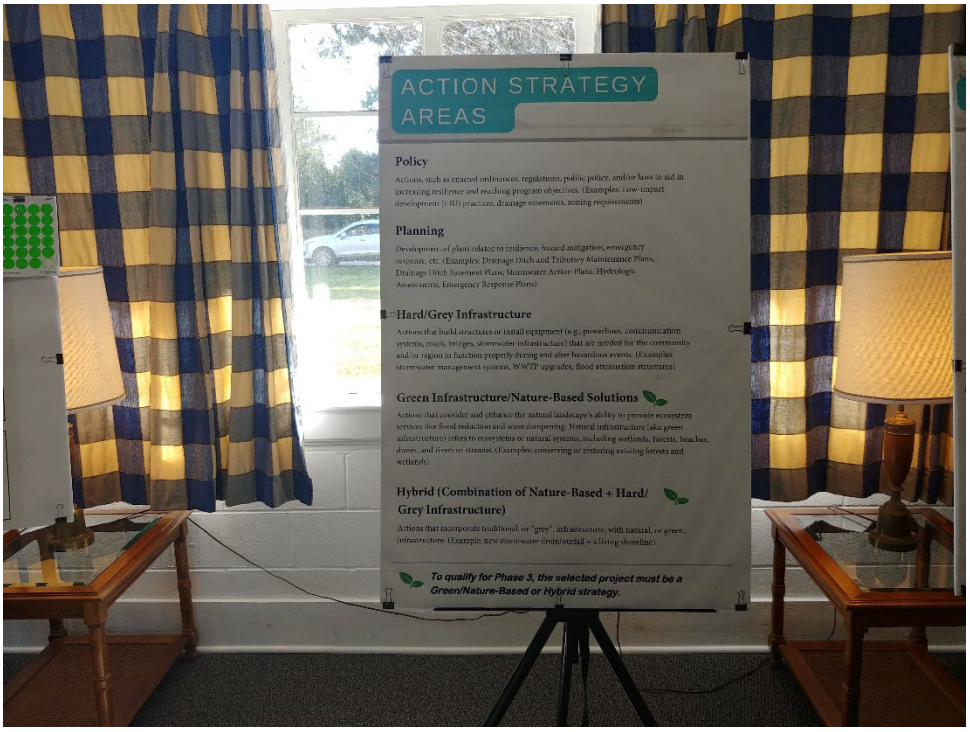
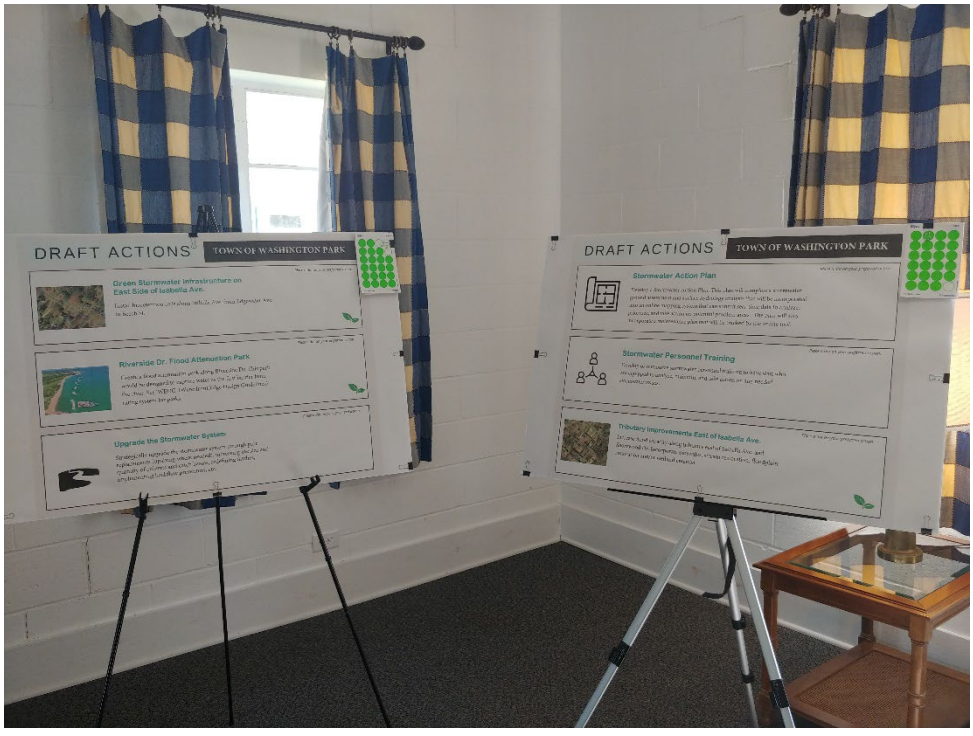
Phase 2 Open House Summary





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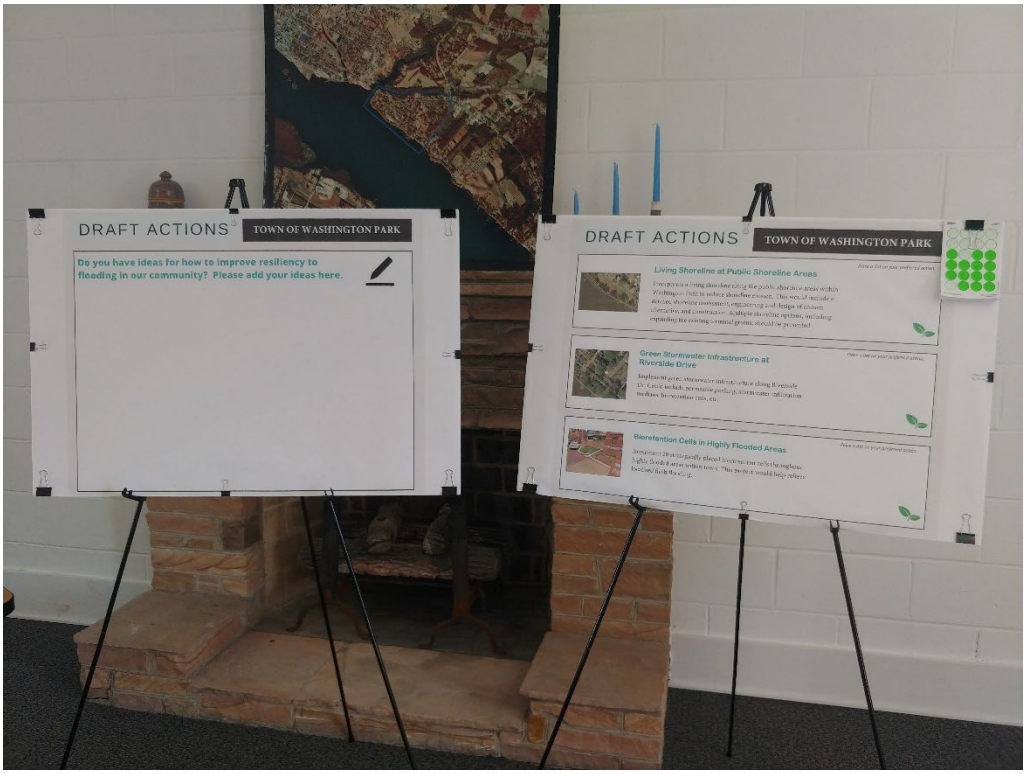
Phase 2 Open House Summary



Appendix C

Risk and Vulnerability Assessment Materials

Critical Assets

Emergency Management

- None in town. (Approximately 2.1 miles distance.)
  Served by:
  Beaufort County Emergency Management
  1420 Highland Dr.
  Washington, NC 27889

Law Enforcement

- None in town. (Approximately 1.6 miles distance.)
  Served by:
  Beaufort County Sheriff's Office
  210 N Market St.
  Washington, NC 27889

Fire and EMS Stations

- None in town. (Approximately 1.7 miles distance.)
  Served by:
  City of Washington Fire-Rescue-EMS Station 1
  410 N Market St.
  Washington, NC 27889

911 Dispatch

- None in town. (Approximately 1.6 miles distance.)
  Served by:
  Beaufort County 911 Communications Center
  210 N Market St.
  Washington, NC 27889

Government Services

- Washington Park Town Office
  408 Fairview Ave.
  Washington, NC 27889
- Washington Park Public Works
  Banks St. (behind Town Office)
  Washington, NC 27889

Food

- No grocery stores or other food stores in town. No food pantries in town. (Nearest grocery store approximately 0.7 miles distance.)
  Charlie C's IGA
  626 River Rd.
  Washington, NC 27889

Water/Wastewater

- Water service is provided by Beaufort County. There are no wells, lift stations, or elevated tanks located in town. Water service lines run throughout town.
- There is no sewer service in town. Private septic tanks only.

Electric Power Grid

- Electric service provided by City of Washington.

Fuel Stations

- No fuel stations in town. (Nearest fuel station is approximately 0.7 miles distance.)
  Waterfront Mini-Mart
  1000 Park Dr.
  Washington, NC 27889

Propane Suppliers

- No propane suppliers in town. (Nearest propane supplier is approximately 2.1 miles distance.)
  Suburban Propane
  8507 US-264
  Washington, NC27889

Transportation

- Road network (Beaufort County data)
  - NC-32/River Rd. is a NCDOT designated essential coastal evacuation route.
  - 4.1 miles of town-owned roads.
- Bridges (NCDOT data)
  - NC-32 bridge is a NCDOT designated essential coastal evacuation route.
- Rail (NCDOT data)
  - No railroads in town limits. An active railroad runs just north of the town limits line.
- Ferry terminals
  - No ferry terminals in town limits.
- Public docks
  - No public docks in town limits.
- Airports/Airfields
  - No airports or airfields in town limits.

- Public transportation
    - No public transportation facilities in town limits. The town is served by Beaufort Area Transit System (BATS), an on demand rural public transportation system.

Medical

- No medical providers or pharmacies in town. (Several options in nearby Washington including a hospital approximately 1.7 miles distance.)
  ECU Health Beaufort Hospital
  628 E 12th St.
  Washington, NC 27889

Schools

- No schools in town. (Options in nearby Washington.)
  Eastern Elementary School (Approximately 1.3 miles distance.)
  947 Hudnell St.
  Washington, NC 27889
- Washington High School (Approximately 3.3 miles distance.)
  400 Slatestone Dr.
  Washington, NC 27889
- Beaufort County Community College (Approximately 4.9 miles distance.)
  5337 US-264
  Washington, NC 27889

Libraries

- No libraries in town. (Options in nearby Washington.)
  Brown Library (Approximately 2.0 miles distance.)
  122 Van Norden St.
  Washington, NC 27889
- Beaufort-Hyde-Martin Regional Library Headquarters (Approximately 1.6 miles distance.)
  158 N Market St.
  Washington, NC 27889

Churches

- None located in town. (Several options in nearby Washington.)

Community Buildings

- None located in town. (Options in nearby Washington.)
  Grace Martin Harwell Senior Center (Approximately 2.2 miles distance.)
  310 W Main St.
  Washington, NC 27889

Natural Infrastructure

Parks/Public Land

- Municipal Park
  Fairview Ave. and Walnut St.
  - Includes tennis courts, playground and picnic area. 1.5 acres in size.
- Public Natural Space
  Isabella Ave.
  - Includes a natural wooded area. 1.1 acres in size.
- Public Waterfront Open Space
  - The town owns approximately 5.6 acres of land along the Pamlico River (2.4 acres on one parcel and 3.2 acres on another, separated by 4 privately owned lots). The town owned waterfront has been maintained as open space and a public access area for residents and guests. The 3.2-acre lot is cleared (except for the riparian buffer area), while the 2.4-acre lot remains in a mostly natural state.
- Public Shoreline
  - Located at public waterfront open space. Approximately 2,191 linear feet of shoreline on the Pamlico River. (823 linear feet on one parcel and 1,368 linear feet on the other parcel.)

Public Boat Ramps

- No public boat ramps in town. Haven's Garden public boat ramp is just west of the municipal limits.

Wetlands

- Wetlands (NC CREWS data)
  - 14.7 acres identified in the town limits. North of River Rd.

Forests

- Working forest lands (NC Natural Heritage Program data)
  - Area identified just north of town limits.
- Rural forest landscape (NC Natural Heritage Program data)
  - Area identified just north of town limits.
- Urban forest landscape (NC Natural Heritage Program data)
  - The majority of the town is identified as priority for conserving urban forests.

Floodplains

- 100-year floodplain (FEMA data)
  - 112.9 acres identified in the town limits.
- 500-year floodplain (FEMA data)
  - 34.6 acres identified in the town limits.

Surface Water Hydrology

- Rivers and streams (NC DEQ data)
- High Quality Waters (NC DEQ data)
    - None identified in Washinton Park area.
- 303(d) listed waters (EPA data)
    - None identified in Washington Park area but the Pamlico River is 303(d) listed south of town.
- Fishery Nursery Areas (NC DEQ data)
    - Primary and secondary
        - No primary fish nursery areas near Washington Park.
        - The Pamlico River at Washington Park is a secondary fish nursery area.

Natural Areas

- Managed Areas (NC Natural Heritage Program data)
    - Includes nature preserves, registered heritage areas, conservation easements, other protected areas, and lands under federal ownership, state ownership, or local government ownership
        - Includes town owned waterfront property (5.6 acres) and a 1.1 acre parcel owned by the town at the east end of Isabella Ave.
- Natural Areas (NC Natural Heritage Program data)
    - Sites that are of special biodiversity significance. A natural area's significance may be due to the presence of rare species, exemplary natural communities, or important animal assemblages, referred to collectively as "elements" of biodiversity.
        - None identified in Washington Park.

Biodiversity and Wildlife Habitat Assessment

- Biodiversity and Wildlife Habitat Assessment (NC Natural Heritage Program data)
    - The Biodiversity and Wildlife Habitat Assessment was developed by the N.C. Natural Heritage Program. It provides information about the relative priority of aquatic and terrestrial habitat, landscape function and connectivity.

ASSET NAME	EXPOSURE SCORE 0-3	SENSITIVITY SCORE 0-3	ADAPTATION SCORE 0-3	VULNERABLITY SCORE 0-6
Asset Name	*0 = no exposure 1 = low 2 = medium 3 = high*	*0 = no sensitivity 1 = low 2 = medium 3 = high*	*0 = no adaptation 1 = low 2 = medium 3 = high*	*0-2 = low 3-4 = medium 5-6 = high*
Government Services				
Washington Park Public Works Building	3	3	1	High
Washington Park Town Office	3	3	1	High
OVERALL	**3**	**3**	**1**	**High**
Transportation				
Bridges				
Bridge	3	3	2	Med
Rail (NCDOT data)				
Rail	3	2	2	Med
Highly vulnerable Roads				
Edgewater Drive	3	3	1	High
Edgewater Drive	3	3	1	High
Honey Pod Farm Road	3	3	1	High
Isabella Avenue	3	3	1	High
Isabella Avenue	3	3	1	High
Isabella Avenue	3	3	1	High
Isabella Avenue	3	3	1	High
Isabella Avenue	3	3	1	High
Isabella Avenue	3	3	1	High
River Road	3	3	1	High
River Road	3	3	1	High
River Road	3	3	1	High
River Road	3	3	1	High
River Road	3	3	1	High
River Road	3	3	1	High
River Road	3	3	1	High
River Road	3	3	1	High
River Road	3	3	1	High
Riverside Drive	3	3	1	High
Riverside Drive	3	3	1	High
Riverside Drive	3	3	1	High
Shorewood Drive	3	3	1	High
Walnut Street	3	3	1	High
Walnut Street	3	3	1	High
Walnut Street	3	3	1	High
Walnut Street	3	3	1	High
Spruce Street	3	2	1	Med
Spruce Street	3	2	1	Med
Spruce Street	3	2	1	Med

ASSET NAME	EXPOSURE SCORE	SENSITIVITY SCORE	ADAPTATION SCORE	VULNERABLITY SCORE
Transportation				
Overall Road Vulnerability	**3**	**3**	**1**	**High**
Water				
Water System	4	3	2	Med
Natural Resources				
Surface Water Hydrology				
Pamlico River	3	2	1	Med
Wetlands				
Wetlands	3	2	1	Med
Parks/Public Land				
RIVERSIDE DR	3	2	1	Med
RIVERSIDE DR	3	2	1	Med
WALNUT ST	3	2	1	Med
SPRUCE ST	3	2	1	Med
OVERALL	**3**	**2**	**1**	**Med**
Managed Areas				
Town of Washington Park Open Space	3	2	1	Med
Town of Washington Park Open Space	3	2	1	Med
OVERALL	**3**	**2**	**1**	**Med**
Fish Nursery				
Secondary Nursery Areas	3	2	2	Med
Shoreline Erosion				
Public Shoreline	3	3	1	High

Assess Vulnerability

This assessment explores the vulnerability of critical assets, natural infrastructure, and social systems. Use your team's judgement and any available data to estimate each asset's vulnerability to combined hazards.

Critical Asset & Natural Infrastructure Vulnerability

Vulnerability of critical assets and natural infrastructure to a hazard is a function of the exposure, sensitivity, and adaptive capacity:

Exposure refers to the probability of physical contact between an asset and a hazard.
Sensitivity is the degree to which an asset is impacted by a hazard.
Adaptive Capacity is the ability of an asset to change its characteristics or behavior in response to a hazard.

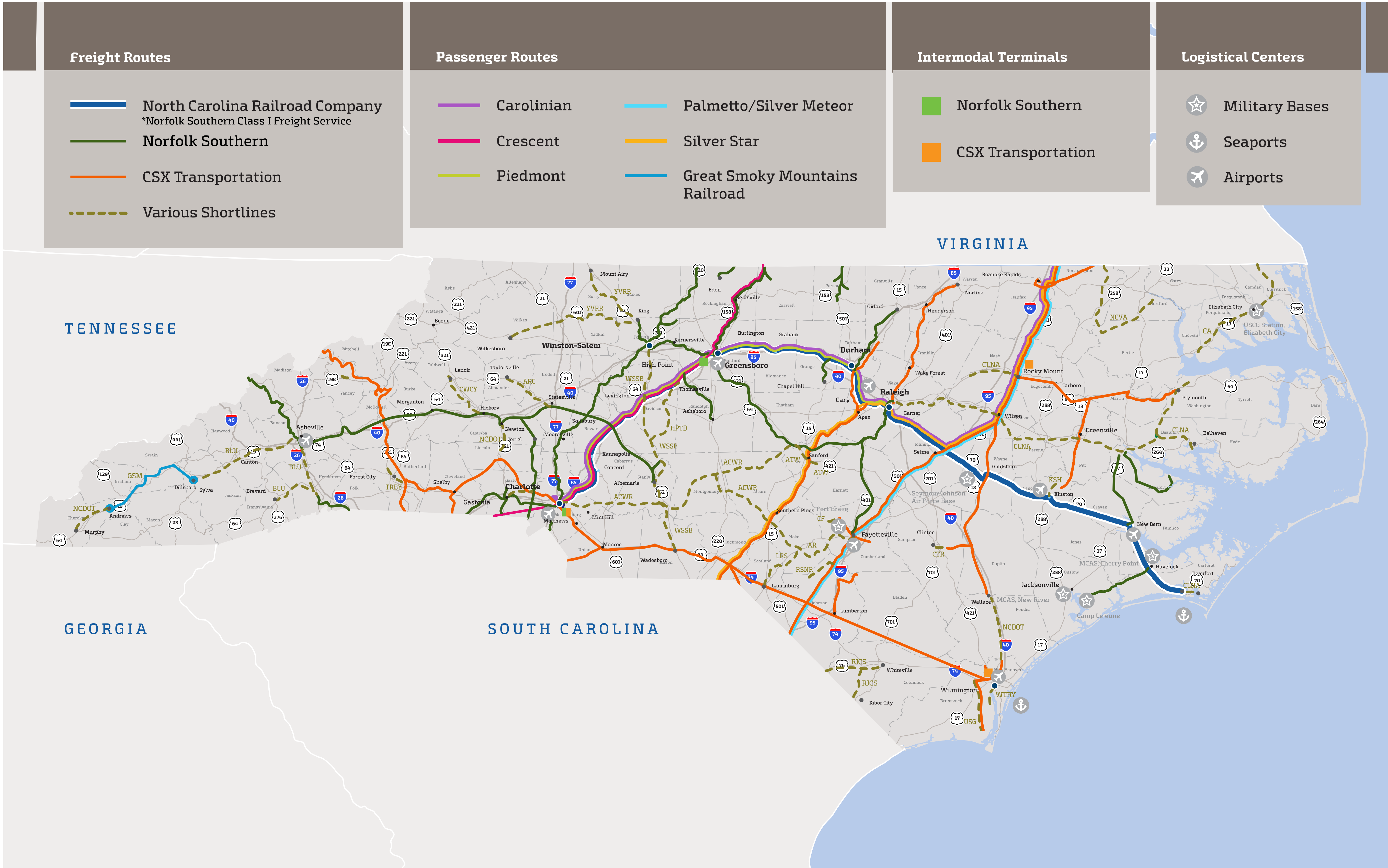
Vulnerability = Exposure + Sensitivity - Adaptive Capacity

North Carolina Hurricane Evacuation Routes

Designated Evacuation Route

NORTH CAROLINA
Emergency Management

NORTH CAROLINA RAILROAD COMPANY



Washington Park, NC Resilient Coastal Communities Program

Critical Assets

Legend

- Washington Park Public Works Building
- Washington Park Town Office
- Bridges
- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

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Washington Park, NC Resilient Coastal Communities Program

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Washington Park, NC Resilient Coastal Communities Program

Water Lines

Legend

- Water Lines
- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

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Runyon Creek

Edgewater Drive

1,368 linear ft. public shoreline

Beech Street

Pine Street

NC-32/River Road

Small Street

Bank Street

Fairview Avenue

Riverside Drive

Walnut Street

Oak Street

Hickory Street

Spruce Street

College Avenue

823 linear ft. public shoreline

Isabella Avenue

Shorewood Drive

Pamlico River

Washington Park, NC Resilient Coastal Communities Program

Natural Infrastructure
Public Parks and
Open Spaces

Legend

- Public Boat Ramps
- Public Shorelines
- Railroads
- Public Parks and Open Spaces
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

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Washington Park, NC Resilient Coastal Communities Program

Natural Infrastructure Managed Areas, Fish Nursery Areas, and Wetlands

Runyon Creek

Pamlico River

NC-32/River Road

Edgewater Drive

Beech Street

Pine Street

Riverside Drive

Walnut Street

Oak Street

Fairview Avenue

College Avenue

Isabella Avenue

Bank Street

Hickory Street

Small Street

Spruce Street

Shorewood Drive

Legend

- Fish Nursery Areas
- Wetlands
- Managed Areas
- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

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Washington Park, NC Resilient Coastal Communities Program

Natural Infrastructure Priority Forest Lands

Runyon Creek

Pamlico River

NC-32/River Road

Edgewater Drive

Beech Street

Pine Street

Riverside Drive

Walnut Street

Oak Street

Fairview Avenue

College Avenue

Hickory Street

Bank Street

Small Street

Spruce Street

Isabella Avenue

Shorewood Drive

Legend

- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water
- Priority Working Forests
- Priority Rural Forests
- Priority Urban Forests

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Washington Park, NC Resilient Coastal Communities Program

Natural Infrastructure Floodplains

Runyon Creek

Pamlico River

NC-32/River Road

Edgewater Drive

Beech Street

Pine Street

Riverside Drive

Walnut Street

Fairview Avenue

Bank Street

Small Street

Oak street

College Avenue

Hickory Street

Spruce Street

Isabella Avenue

Shorewood Drive

Legend

- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water
- 100-year Floodplain (1% annual chance flood)
- 500-year Floodplain (0.2% annual chance flood)

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Washington Park, NC Resilient Coastal Communities Program

Natural Infrastructure Biodiversity and Wildlife Habitat Assessment

Runyon Creek

Edgewater Drive

Beech Street

Pine Street

NC-32/River Road

Riverside Drive

Walnut Street

Oak Street

Fairview Avenue

Hickory Street

Bank Street

Small Street

College Avenue

Spruce Street

Isabella Avenue

Shorewood Drive

Pamlico River

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Legend

- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

Biodiversity/Wildlife Habitat

Relative Conservation Value

- 9-10 (Maximum)
- 8
- 7
- 6
- 5
- 2-4
- 1 (Moderate)
- 0 (Unrated)
- Impervious surface >20%

0 200 400 800 Feet

Washington Park, NC Resilient Coastal Communities Program

Critical Assets & 1 ft. Sea Level Rise Scenario (30-year Projection)

Legend

- Washington Park Public Works Building
- Washington Park Town Office
- Bridges
- 1 ft. sea level rise scenario
- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

0 200 400 800 Feet

Washington Park, NC Resilient Coastal Communities Program

Critical Assets & Floodplains

Legend

- Washington Park Public Works Building
- Washington Park Town Office
- 100-year Floodplain (1% annual chance flood)
- 500-year Floodplain (0.2% annual chance flood)
- Bridges
- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

0 200 400 800 Feet

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Runyon Creek

Pamlico River

Edgewater Drive

Beech Street

Riverside Drive

Pine Street

Walnut Street

NC-32/River Road

Fairview Avenue

Oak street

College Avenue

Isabella Avenue

Shorewood Drive

Bank Street

Small Street

Hickory Street

Spruce Street

Washington Park, NC Resilient Coastal Communities Program

Critical Assets & Cat. 1 Hurricane Potential Storm Surge

Legend

- Washington Park Public Works Building
- Washington Park Town Office
- Bridges
- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

Cat. 1 Hurricane Potential Storm Surge

Feet Above Ground

- 0 to 1 ft.
- 1 to 2 ft.
- 2 to 3 ft.
- 3 to 4 ft.
- 4 to 5 ft.

0 200 400 800 Feet

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Washington Park, NC Resilient Coastal Communities Program

Critical Assets &
Cat. 2 Hurricane
Potential Storm Surge

Legend

- Washington Park Public Works Building
- Washington Park Town Office
- Bridges
- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

Cat. 2 Hurricane Potential Storm Surge

Feet Above Ground

- 0 to 1 ft.
- 1 to 2 ft.
- 2 to 3 ft.
- 3 to 4 ft.
- 4 to 5 ft.
- 5 to 6 ft.
- 6 to 7 ft.
- 7 to 8 ft.
- 8 to 9 ft.
- 9 to 10 ft.

0 200 400 800 Feet

Runyon Creek
Edgewater Drive
Beech Street
Pine Street
Riverside Drive
Walnut Street
Oak Street
College Avenue
Isabella Avenue
Shorewood Drive
Fairview Avenue
Hickory Street
Spruce Street
Bank Street
Small Street
NC-32/River Road
Pamlico River
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Washington Park, NC
Resilient Coastal Communities Program

Critical Assets &
Cat. 3 Hurricane
Potential Storm Surge

Legend

- Washington Park Public Works Building
- Washington Park Town Office
- Bridges
- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

Cat. 3 Hurricane Potential Storm Surge

Feet Above Ground

- 0 to 1 ft.
- 1 to 2 ft.
- 2 to 3 ft.
- 3 to 4 ft.
- 4 to 5 ft.
- 5 to 6 ft.
- 6 to 7 ft.
- 7 to 8 ft.
- 8 to 9 ft.
- 9 to 10 ft.
- 10 to 11 ft.
- 11 to 12 ft.
- 12 to 13 ft.
- 13 to 14 ft.

0 200 400 800 Feet

Runyon Creek

Pamlico River

Edgewater Drive

Beech Street

Pine Street

Riverside Drive

Walnut Street

Oak Street

Fairview Avenue

College Avenue

Isabella Avenue

Shorewood Drive

Bank Street

Hickory Street

Spruce Street

Small Street

NC-32/River Road

N W E S

Washington Park, NC Resilient Coastal Communities Program

Critical Assets & Hurricane Florence Recorded Storm Surge

Runyon Creek

Pamlico River

NC-32/River Road

Edgewater Drive

Beech Street

Pine Street

Riverside Drive

Walnut Street

Fairview Avenue

Bank Street

Small Street

Oak Street

Hickory Street

College Avenue

Spruce Street

Isabella Avenue

Sprewood Drive

Legend

- Washington Park Public Works Building
- Washington Park Town Office
- Bridges
- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

Hurricane Florence Recorded Storm Surge, 2018

- Greater than 1 ft. above ground
- Greater than 3 ft. above ground
- Greater than 6 ft. above ground
- Greater than 9 ft. above ground

N W E S

0 200 400 800 Feet

Washington Park, NC Resilient Coastal Communities Program

Natural Infrastructure Managed Areas, Wetlands, and 1 ft. Sea Level Rise Scenario (30-year projection)

Runyon Creek

Pamlico River

NC-32/River Road

Edgewater Drive

Beech Street

Pine Street

Walnut Street

Riverside Drive

Oak Street

Fairview Avenue

College Avenue

Hickory Street

Bank Street

Spruce Street

Small Street

Isabella Avenue

Shorewood Drive

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Legend

- Managed Areas
- Wetlands
- 1 ft. Sea Level Rise Scenario (30-year projection)
- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

0 200 400 800 Feet

Washington Park, NC Resilient Coastal Communities Program

Natural Infrastructure
Public Parks and
Open Spaces &
1 ft. Sea Level Rise
Scenario
(30-year projection)

Legend

- Public Boat Ramps
- Public Shorelines
- Public Parks and Open Spaces
- 1 ft. Sea Level Rise Scenario (30-year projection)
- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

0 200 400 800 Feet

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Washington Park, NC Resilient Coastal Communities Program Public Shoreline and 1 ft. Sea Level Rise Scenario

Legend

- Public Parks and Open Spaces
- 1 ft. Sea Level Rise Scenario (30-year Projection)

N

0 225 450 900 Feet

Washington Park, NC Resilient Coastal Communities Program Public Shoreline and 1 ft. Sea Level Rise Scenario Inset Map 1

Legend

- Public Parks and Open Spaces
- 1 ft. Sea Level Rise Scenario (30-year Projection)

N

0 75 150 300 Feet

Washington Park, NC Resilient Coastal Communities Program Public Shoreline and 1 ft. Sea Level Rise Scenario Inset Map 2

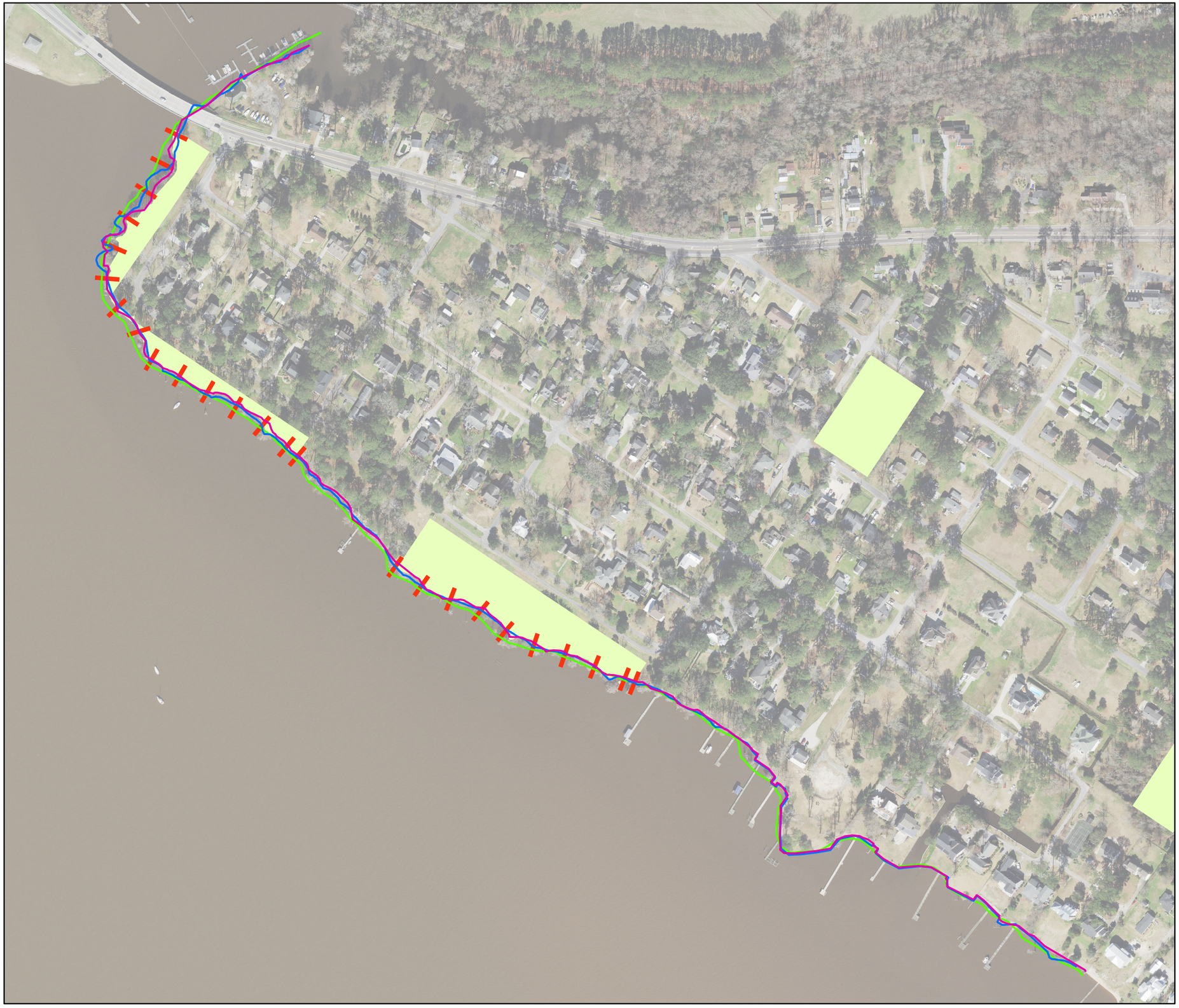
Legend

- Public Parks and Open Spaces
- 1 ft. Sea Level Rise Scenario (30-year Projection)

N

0 50 100 200 Feet

Washington Park, NC Resilient Coastal Communities Program Shoreline History



Legend

- Shoreline Transects
- 1993 Shoreline
- 2007 Shoreline
- 2019 Shoreline
- Public Parks and Open Spaces

N

0 225 450 900 Feet

Washington Park, NC Resilient Coastal Communities Program Shoreline History Inset Map 1

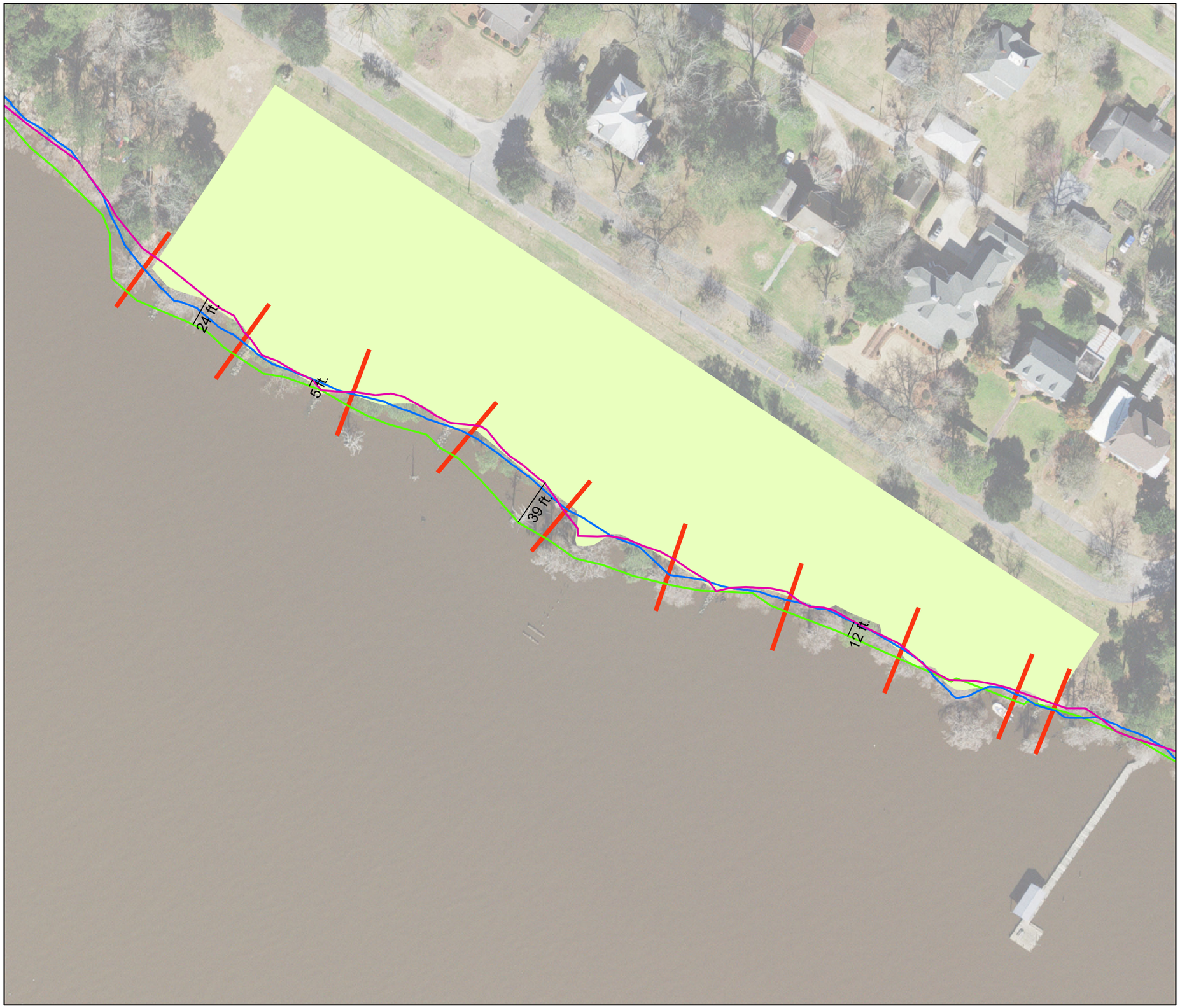
Legend

- Shoreline Transects
- 1993 Shoreline
- 2007 Shoreline
- 2019 Shoreline
- Public Parks and Open Spaces

N

0 80 160 320 Feet

Washington Park, NC Resilient Coastal Communities Program Shoreline History Inset Map 2



Legend

- Shoreline Transects
- 1993 Shoreline
- 2007 Shoreline
- 2019 Shoreline
- Public Parks and Open Spaces

N

0 55 110 220 Feet

Washington Park, NC Resilient Coastal Communities Program

Potentially Hazardous Sites

Legend

- Leaking Underground Storage Tanks
- Railroads
- Washington Park Roads
- Beaufort County Roads
- Washington Park Town Limits
- Surface Water

0 200 400 800 Feet