



Chatham County Redevelopment Plan

January 2016

CHATHAM COUNTY – REDEVELOPMENT PLAN



Hagerty Consulting, Inc. (“Hagerty”) is pleased to submit this Chatham County Redevelopment Plan (the “Deliverable”) to Chatham County Emergency management Agency (the “Client”). This plan was prepared by Hagerty under grant award #NA13NOS4190114 to the Georgia Department of Natural Resources from the Office for Coastal Management, National Oceanic and Atmospheric Administration. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of DNR, OCM or NOAA. This Deliverable was developed with input from, and in collaboration with, the Client. It is subject to the terms of the contract dated July 22, 2014, between Hagerty and the Client, including any amendments thereto (the “Contract”). The Contract sets forth all the rights and obligations of Hagerty and the Client, and constitutes the entire agreement between them. The Contract includes any and all representations, warranties, indemnifications, and remedies on which the Client may rely. Because of the specialized knowledge of the Client about how this Deliverable is to be used, it should be used only by the Client and its affiliates, in a manner that relies on the Client’s discretion and expertise, and only for the purposes contemplated by the Contract. This Deliverable is not to be used in any other manner, or relied upon by any other person.

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SIGNATURE OF ADOPTION

This document was adopted in accordance with federal, state, and local guidelines regarding disaster recovery and coordination practices. The document was developed to ensure a safe and methodical redevelopment period following incidents affecting populations in Chatham County. By signature, the entities below accept this document as a standard practice for redevelopment post-disaster.

_____ Date _____
Chairman, Chatham County Board of Commissioners

_____ Date _____
Mayor, City of Bloomingdale

_____ Date _____
Mayor, Garden City

_____ Date _____
Mayor, City of Pooler

_____ Date _____
Mayor, City of Port Wentworth

_____ Date _____
Mayor, City of Savannah

_____ Date _____
Mayor, Town of Thunderbolt

_____ Date _____
Mayor, City of Tybee Island

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1 RECORD OF CHANGES

Change Number	Section	Date of Change	Individual Making Change	Description of Change

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2 INTRODUCTION

2.1 BACKGROUND

Chatham County, Georgia, sits along the Atlantic Coast. Between its extensive beaches and historical attractions, the county boasts a large numbers of tourists and a rapidly growing permanent population of residents. It is home to Savannah, Georgia, and is the fifth most populous county and most populous county outside of the Atlanta Metropolitan Region.

Chatham County is vulnerable to a variety of natural hazards, including hurricanes and coastal storms, severe thunderstorms and tornados, coastal and riverine erosion, and floods. In recognition of this vulnerability, Chatham County embarked on a planning process to develop a Disaster Redevelopment Plan (DRP) to help the county address the complications that can arise following a disaster as the community attempts to rebuild. By developing a DRP, Chatham County hopes to be better prepared for the tough long-term recovery and redevelopment period that could face the county following a major disaster.

2.2 PURPOSE

The purpose of this plan is to provide Chatham County with a single reference for guiding action and decision making during the difficult long-term disaster redevelopment period and to detail the actions that can be taken before a disaster occurs to speed the recovery and redevelopment process.

Chatham County officials recognize the importance of the citizens and businesses within the county. Without them, the county cannot function. The Chatham County Redevelopment Plan can be used to ensure that mechanisms, plans, policies, and procedures that facilitate the return of citizens and businesses to the county following a disaster are in place before a disaster occurs. Therefore, Chatham County officials want to make certain that this plan is not perceived as an anti-redevelopment plan intended to take the place of existing planning documents developed by the county. Chatham County officials also want to ensure that the rebuilding that occurs following a disaster is done in a manner consistent with other plans and incorporates hazard mitigation techniques, where possible.

2.3 SCOPE

This plan was developed to cover the unincorporated areas of Chatham County along with the incorporated areas, including:

- Bloomingdale

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- Garden City
- Pooler
- Port Wentworth
- Savannah
- Thunderbolt
- Tybee Island
- Vernonburg

2.4 SUMMARY OF PLAN CONTENTS

The following contents of this plan are designed and organized to be as reader-friendly and functional as possible. While significant background information is included on the process used to develop the plan and studies completed (i.e., Vulnerability Identification and Capacity Assessment), this information is separated from the more strategic planning outcomes or actions (i.e., the Recommendations and Plan Implementation and Maintenance sections).

The **Recommendations** consist of broad goal statements as well as an analysis of priority recovery and redevelopment areas and techniques for Chatham County to consider for its recovery and redevelopment strategies; such techniques include *Build-Back Standards and Policies and Outreach and Coordination*. Together, these sections are designed to make the Redevelopment Plan both strategic, through the identification of long-term goals, and functional, through the identification of short-term and immediate actions that will guide day-to-day decision-making and project implementation.

In addition to the identification and prioritization of recovery and redevelopment actions, emphasis is placed on the use of program and policy alternatives to help make Chatham County better prepared for a long-term recovery and redevelopment period following a disaster. The concept of multi-objective planning was emphasized throughout the planning process, particularly in identifying ways to link recovery and redevelopment policies and programs with complimentary community goals related to land use, housing, economic redevelopment, infrastructure and public facilities, health and social services, environmental, historic property preservation, and finance.

These recommendations feed into **Plan Implementation and Maintenance**, and include the measures that Chatham County will take to ensure the plan's continuous long-term implementation. The procedures identify redevelopment task forces and methods to monitor, evaluate, and enhance the plan, along with ways of continuing public involvement and instituting training and exercising.

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The ***Vulnerability Identification*** section provides an assessment of the potential impact of the various hazards to which Chatham County is vulnerable and evaluates how this vulnerability could impact recovery. The first objective of this section is to identify the natural hazards that could impact the county. The second objective is to identify and analyze those elements within the county that are particularly vulnerable to the identified natural hazards that could impact the breadth and speed of recovery following a disaster. The *Vulnerability Identification* was used by Chatham County officials to determine the post disaster recovery strategy and to identify recovery and redevelopment actions to include in this and the county's recovery plan.

The ***Institutional Capacity Assessment*** provides a comprehensive examination of Chatham County's capacity to implement a meaningful recovery and redevelopment strategy, and identifies existing opportunities to increase and enhance that capacity. Specific capabilities addressed in this section include planning and regulatory capability, staff and organizational (administrative) capability, technical capability, fiscal capability, and political capability. It also incorporates a *Local Plan Integration* section, which includes a review of post-disaster redevelopment-related plans, policies, and programs already in place at the local level. The purpose of this assessment is to identify any existing gaps, weaknesses, or conflicts in programs or activities that may hinder the long-term recovery and redevelopment period for the county.

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3 RECOMMENDATIONS

3.1 INTRODUCTION

This section of the plan provides the blueprint for Chatham County in implementing a successful post disaster recovery and redevelopment strategy. It is based on general consensus of the stakeholders involved in the planning process and the findings of the **Capacity Assessment** and **Vulnerability Identification**. This section consists of the following subsections:

- Redevelopment Goals
- Priority Redevelopment Areas
- Redevelopment Policies for Land Use
- Redevelopment Policies for Financial Capacity
- Recommendations for Building Institutional Capacity
- Outreach and Coordination

3.2 REDEVELOPMENT GOALS

Chatham County is currently developing a list of long-term goals. The goals below are placeholders that may be incorporated into future goals decided upon by the county during necessary revisions of this document. Goals and associated actions are further identified as pre- or post-disaster efforts and priority levels (i.e. “immediate,” or within 12 months, “short-term,” between 13 months and five years, or “long-term,” between six and ten years) to implement actions are further identified for each goal’s actions.

3.2.1 GOAL 1: LAND USE

Work to establish land use policy changes that will help Chatham County take advantage of the opportunities to change previous development decisions in both pre- and post-disaster states.

Table 3.1: Land Use Actions

Action #	Action	Pre- or Post- Disaster Action	Immediate, Short- or Long- Term Goal
LU-1	Create planning/permitting approval process which will expedite approvals for developments which do not increase previously approved densities/intensifies	Pre-Disaster	Short term

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Action #	Action	Pre- or Post-Disaster Action	Immediate, Short- or Long- Term Goal
LU-2	Review current files and document any missing historic structures with detailed descriptions and photographs	Pre-Disaster	Immediate
LU-3	Adopt an emergency/recovery ordinance for expediting the permit process, debris management, right of entry, moratoriums, emergency fee schedules, and other needed recovery actions	Pre-Disaster	Immediate
LU-4	Develop build-back standards, regulations that govern reconstruction following disasters, prior to a disaster, facilitating expeditious rebuilding post-disaster.	Pre-disaster	Immediate
LU-5	Research and indicate County-wide Primary Redevelopment Areas (PRAs) for after a disaster	Pre-disaster	Immediate
LU-6	Implement local Coastal Stormwater Supplement (CSS) low impact development (LID) building and land use incentives (often referred to as Green Infrastructure) using or mimicking natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat (e.g. green roofs, rain gardens, rainwater harvesting). Specific CSS guidance can be accessed here: http://epd.georgia.gov/georgia-epd-coastal-stormwater-supplement-stormwater-management-manual	Pre-disaster Post-disaster	Long-term
LU-7	Enact land use modifications that consider Smart Growth principles during reconstruction, including stormwater management considerations to reduce downstream flooding and/or water quality issues.	Pre-disaster Post-disaster	Short-term

3.2.2 GOAL 2: HOUSING

Work to establish plans and procedures that will ensure timely provision of temporary housing and rapid repair and reconstructions of permanent housing that meets needs of all residents' incomes following a disaster.

Table 3.2: Housing Actions

Action #	Action	Pre- or Post-Disaster Action	Immediate, Short- or Long- Term Goal
H-1	Develop Housing Plan that includes discussions of temporary and long-term smaller homes (i.e. tiny houses, reconditioned storage containers)	Pre-disaster	Short-term
H-2	Establish process for rapid permitting (e.g. repair, rebuilding)	Pre-disaster	Immediate
H-3	Determine pre-approved contractors prior to disaster	Pre-disaster	Immediate

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Action #	Action	Pre- or Post-Disaster Action	Immediate, Short- or Long- Term Goal
H-4	Establish guidelines / initiatives for future mitigation in repair / rebuilding processes	Pre-disaster	Long-term
H-5	Ensure that housing is developed in or around economic activity centers to ease the burden of commuting for citizens and support economic development	Post-disaster	Long-term

3.2.3 GOAL 3: ECONOMIC REDEVELOPMENT

Through partnership with the private sector, work to ensure the ability of the Chatham County economy to rebound following a disaster, including permanent return of jobs, tourism, and capital investments while looking at new opportunities and investment.

Table 3.3: Economic Actions

Action #	Action	Pre- or Post-Disaster Action	Immediate, Short- or Long- Term Goal
E-1	Establish plan to set up “Disaster Recovery Centers” (DRC’s) at locations throughout the county for citizens and homeowners to meet with representatives of the Federal Emergency Management Agency (FEMA), the American Red Cross (ARC), Small Business Association (SBA), and insurance companies, etc.	Pre-disaster	Short-term
E-2	Develop plan for communication with and possible relocation of most vulnerable industries / employers and recovery prioritization	Pre-disaster	Short-term
E-3	Identify components necessary for workforce retention (e.g. reopening school and childcare, grocery stores and banking)	Pre-disaster	Immediate
E-4	Explore funding mechanisms in order to provide more financial support to a more diverse economy and establish action steps that will promote regional innovation so that a disaster does not devastate all sectors of the local economy	Pre-disaster	Immediate
E-5	Identify and advocate for marginalized or isolated groups (location and demographic characteristics) of populations in the County that may need additional assistance and support before, during, and after a disaster	Pre-disaster	Immediate
E-6	Evaluate the unique types and levels of post-disaster assistance and support that may be required for catastrophic hurricanes, tropical storm winds, storm surges, floods, and wildfires	Pre-disaster	Immediate
E-7	Incorporate financial strategies into the Comprehensive Annual Financial Report within each jurisdiction in Chatham County and	Pre-disaster	Short-term

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Action #	Action	Pre- or Post- Disaster Action	Immediate, Short- or Long- Term Goal
	other fiscal reporting mechanisms so that post-disaster financial requirements remain a consideration in planning for Chatham County's future		
E-8	Identify and familiarize County staff and other community resources to assist with post-disaster funding requests and administrative procedures	Pre-disaster	Short-term
E-9	Increase efficiency of permitting and licensing policies for businesses through streamlining procedures, educating about the process, and aligning county and municipality requirements, when possible	Pre-disaster	Short-term
E-10	Increase awareness and consider expansion of policy regarding incentives for start-up of small business, as well as incentives for existing business	Pre-disaster	Short-term
E-11	Coordinate with the Chamber of Commerce and Savannah Economic Development Authority (SEDA) before an event to ensure plans are in place to assist the community in recovery efforts after and event	Pre-disaster	Short-term
E-12	Contact the Small Business Administration (SBA) post disaster to notify them and find out what recovery products are available for the business community (i.e., Disaster Recovery Loans)	Post-disaster	Immediate
E-13	Apply for marketing grants post disaster to spread the word that the County is open for business and to help with economic diversification	Post-disaster	Immediate
E-14	Contact the Small Business Development Center (SBDC) post disaster to notify them and find out what recovery products are available (i.e., Emergency Bridge Loans)	Post-disaster	Immediate
E-5	Educate the business community regarding all available resources to aid them in their recovery	Post-disaster	Short-term

3.2.4 GOAL 4: INFRASTRUCTURE AND PUBLIC FACILITIES

Plan now for post disaster restoration of infrastructure and public facilities (including upgrading, mitigating, and relocating as needed) based on principles of Smart Growth, as their successful restorations are prerequisites for successful recovery.

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Table 3.4: Infrastructure and Public Facilities Actions

Action #	Action	Pre- or Post-Disaster Action	Immediate, Short- or Long- Term Goal
IFP-1	Communicate with infrastructure and public facilities to develop a plan for expansion efforts that ensure facilities are not within high hazard zones	Pre-disaster	Long-term
IFP-2	Ensure there is a public access television channel and radio channel in place before a disaster	Pre-disaster	Long-term
IFP-3	Identify priority transportation routes and development plans for repair/mitigation/improvement and ensure that these routes provide access between residential areas and economic activity centers	Pre-disaster	Long-term
IFP-4	Ensure communication and planning incorporates power, natural gas, and telecom companies for repair/mitigation/improvement	Pre-disaster	Long-term
IFP-5	Develop guidelines for protection of key infrastructure sites from hazards in their current locations (e.g., lift stations, access roads, etc.)	Pre-disaster	Short-term
IFP-6	Identify alternate routes for heavy equipment, trucks and those carrying hazardous materials county-wide	Pre-disaster	Short-term
IFP-7	Implement local Coastal Stormwater Supplement (CSS) LID/green infrastructure guidelines using or mimicking natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat (e.g. bioswales/bioretention cells, detention/retention ponds, and porous pavements). Specific CSS guidance can be accessed here: http://epd.georgia.gov/georgia-epd-coastal-stormwater-supplement-stormwater-management-manual	Pre-disaster Post-disaster	Long-term
IFP-8	Conduct a gap analysis of Chatham County's capacity to carry out plans, ordinances, and programs in place as it relates to the potential impact on post-disaster redevelopment	Pre-disaster	Short-term

3.2.5 GOAL 5: HEALTH AND SOCIAL SERVICES GOAL

Protect socially and economically vulnerable populations by ensuring a smooth transition of health and social services from short-term recovery operations to long-term redevelopment assistance.

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Table 3.5: Health and Social Services Actions

Action #	Action	Pre- or Post-Disaster Action	Immediate, Short- or Long- Term Goal
HSS-1	Increase public / private partnerships for redevelopment	Pre-disaster	Short-term
HSS-2	Develop plan for public transit adaptation to new needs	Pre-disaster	Long-term
HSS-3	Consider movement of vulnerable public safety facilities	Pre-disaster Post-disaster	Long-term
HSS-4	Engage community leaders to communicate directly with marginalized groups to ensure that redevelopment plans meet their needs	Pre-disaster Post-disaster	Short-term
HSS-5	Expand Georgia’s Business Ethics Student Training (GeorgiaBEST) curriculum (incorporation of soft skills, communication, and leadership skills) in all middle and high schools (to arm them with social skills and enhance emotional resilience)	Pre-disaster	Short-term
HSS-6	Offer budgeting and financial management courses to adults (to familiarize them with financial planning and avoid financial hardship following a disaster)	Pre-disaster	Short-term
HSS-7	Create parental support groups within community and faith based organizations	Pre-disaster	Short-term
HSS-8	Increase access to crisis services and increase capacity of service providers for those who lack resources	Pre-disaster	Long-term
HSS-9	Increase human resource awareness and health insurance coverage employee training to facilitate a broad understanding about accessing Employee Assistance Program (EAP) resources	Pre-disaster	Long-term
HSS-10	Advocate increased access to health care through a variety of resources	Pre-disaster	Short-term
HSS-11	Explore policy and funding mechanisms to increase access to produce to various “food deserts” (i.e., an area in which it is difficult to buy affordable or good-quality fresh food) on a rotating schedule	Pre-disaster	Long-term
HSS-12	Create farmer support programs to support and expand community gardens, urban farmers, and educational programming for residential sharing, cooking, learning, etc.	Pre-disaster Post-disaster	Long-term
HSS-13	Encourage local institutions to examine procurement policies to create a long-range plan for buying and using local produce	Pre-disaster	Long-term
HSS-14	Confirm processes are in place to ensure that immediate access to medication refill facilities (i.e. drug stores) are up and running immediately after an event	Pre-disaster	Short-term

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3.2.6 GOAL 6: ENVIRONMENTAL GOAL

Plan for post-disaster protection and restoration of the unique coastal and inland ecosystems of Chatham County to ensure successful long-term recovery and citizens’ quality of life.

Table 3.6: Environmental Goal

Action #	Action	Pre- or Post- Disaster Action	Immediate, Short- or Long-Term Goal
E-1	Develop a plan or procedures for beach access via private property in a post-disaster situation that involves/addresses coordination between homeowners and agencies.	Pre-disaster	Short-term
E-2	Develop guidelines for erosion control across Chatham County	Pre-disaster	Short-term
E-3	Create ordinances for prevention of erosion to and restoration of beaches and dunes	Pre-disaster	Short-term
E-4	Create ordinances for wetland restoration	Pre-disaster	Short-term
E-5	Create ordinances for restoration of urban forests	Pre-disaster	Short-term
E-6	Establish guidelines for disaster debris storage, removal, and recycling	Pre-disaster	Short-term
E-7	Strengthen the planting and tree replacement ordinance to increase green space county-wide, fostering Smart Growth and LID principles to provide open space, natural beauty, and critical environmental areas	Pre-disaster	Short-term
E-8	Update the Open Space Management Plan to aid in the selection of property redevelopment areas (PRAs) and management of open space within the County	Pre-disaster	Short-term
E-9	Update the Chatham County Water Management Plan to establish correlation between the strategies and future development and ensure resiliency of the drinking water, wastewater and stormwater systems	Pre-disaster	Short-term
E-10	Dedicate continued funding to the Chatham County Resource Protection Commission (RPC) to aid in acquiring properties that are critical to the protection of the County’s Natural and Historic Resources.	Pre-disaster	Short-term
E-11	Ensure County-wide Sea Level Rise mapping is completed that indicates the specific areas effected and correlate with the PRA selection process.	Pre-disaster	Immediate
E-12	Ensure County-wide Sea Level Rise mapping is completed and overlaid with critical facilities (water treatment, schools, hospitals, nursing homes, etc.) for possible relocation or mitigation.	Pre-disaster	Immediate
E-13	Chatham County must identify or develop programs that could be considered for post-disaster rebuilding alternatives. For example, determine vulnerable or repetitively damaged properties that are high priority for post-disaster acquisition. These programs often take the form of programs intended to acquire land for environmental preservation or roadway construction.	Pre-disaster	Short-term

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3.2.7 GOAL 7: HISTORIC PROPERTY PRESERVATION

Plan for the protection and post-disaster recovery and restoration of the unique historical structures of Chatham County to ensure continued protection and preservation.

Table 3.7: Historic Preservation Goal

Action #	Action	Pre- or Post-Disaster Action	Immediate, Short- or Long-Term Goal
HP-1	Develop guidelines for historic property preservation	Pre-disaster	Short-term
HP-2	Establish alternative guidelines for demolition, repair, etc. of historic properties	Pre-disaster	Short-term
HP-3	Create guidelines for pre-disaster mitigation of threats to historic structure	Pre-disaster	Short-term
HP-4	Compare the MPC's historical property data to the data the Coastal Georgia Regional Development Center has in order to ensure consistent and complete data.	Pre-disaster	Immediate
HP-5	Inventory and map all of the historic properties throughout Chatham County	Post-disaster	Short-term
HP-6	Continue the use of historic preservation as an economic driver	Post-disaster	Short-term

3.2.8 GOAL 8: FINANCE

Plan for the protection and redevelopment of tax revenues and other county income sources.

Table 3.8: Finance Goals

Action #	Action	Pre- or Post-Disaster Action	Immediate, Short- or Long-Term Goal
FR-1	Establish procedures to coordinate public and private funding to support pre- and post-disaster planning	Pre-disaster	Immediate
FR-2	Evaluate the unique types and levels of post-disaster assistance and support that may be required for catastrophic hurricanes, tropical storm winds, storm surges, floods, and wildfires	Pre-disaster	Short-term
FR-3	Evaluate the governmental impacts to revenue and services as a result of catastrophic hurricanes, tropical storm winds, storm surges, floods, and wildfires and determine "acceptable / realistic levels of service" following these events	Pre-disaster	Short-term

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Action #	Action	Pre- or Post-Disaster Action	Immediate, Short- or Long-Term Goal
FR-4	Develop policies to address the unique financial requirements of post-disaster programs	Pre-disaster	Short-term
FR-5	Incorporate financial strategies into fiscal reporting mechanisms so that post-disaster financial requirements remain a consideration in planning for Chatham County's future	Pre-disaster	Short-term
FR-6	Support blight remediation by creating a revolving fund supported by all municipalities and private funds	Pre-disaster	Long-term
FR-7	In support of Smart Growth principles, make development decisions predictable, fair, and cost effective to the community	Pre-disaster Post-disaster	Short-term
FR-8	Ensure reserve funds are in place for critical facilities and infrastructure rebuild	Pre-disaster	Long-term

3.3 PRIORITY REDEVELOPMENT AREAS

Effective redevelopment is contingent, in part, on the identification and prioritization of priority redevelopment areas (PRAs). PRAs are regional or community centers or critical installations that are essential for disaster recovery. PRAs will receive focused and prioritized attention during the short-term recovery and long-term redevelopment periods.

PRAs may serve one or more redevelopment functions: rapidly restore centers of economic activity and critical facilities, provide a staging area for restoring nearby impacted communities, locate recovery services in efficient and convenient hubs, and facilitate growth into disaster resilient centers. By identifying PRAs in advance of a disaster, Chatham County is able to direct limited resources more effectively after a disaster in order to minimize the impact of the disaster on Chatham County's residents.

In identifying PRAs, the following resilience-oriented criteria should be maintained:

- Areas are not in a floodplain or include minimal flood-prone property that can be addressed through best practice hazard mitigation techniques.
- Areas are not vulnerable to storm surge from a tropical storm or Category 1-3 hurricane.
- Areas include a substantial amount of structures that meet current building code standards and would be less likely to have severe wind damage.
- Areas include infrastructure and services that have been assessed for their ability to

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be rapidly repaired and restored.

3.3.1 IMPROVED PROPERTY

Chatham County will endeavor to enact plans and ordinances focused on ensuring the safety, structural integrity, and continued usage of property. Effective redevelopment of property will be critical in ensuring that property will sustain minimal damage and have minimal impact on the lives of the citizenry.

3.3.2 CRITICAL SITES, CRITICAL INFRASTRUCTURE, AND UTILITIES

Chatham County will strive to manage debris, restore utilities, and repair infrastructure efficiently while considering mitigation during the long-term redevelopment of infrastructure in order to avoid future damages. The county will maintain a constant level of public safety before and after a disaster as well as throughout the redevelopment process.

3.4 REDEVELOPMENT POLICIES FOR LAND USE

Understanding the available tools and programs by which pre and post-disaster planning issues can be addressed will help stakeholders and the public consider options regarding land use. Different planning options and techniques include:

- Zoning regulations and design standards
- Safety codes
- Build-Back Standards
- Education and public outreach programs
- Visioning, charrettes, public workshops, and redevelopment plans
- Financial incentives
- Hazard mitigation grant programs
- Public acquisition programs
- Transfer of development rights/conservation easements
- Deed restrictions and covenants

3.4.1 VISIONING, CHARRETTES, PUBLIC WORKSHOPS, AND REDEVELOPMENT PLANS

Prior to a disaster, visioning and public workshops can be effective tools to develop rebuilding plans for areas that are more susceptible to disasters. Data needs to be gathered on the age

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of structures, provision of utilities (water and sewer), susceptibility to flooding and sea level rise, and intensity of uses to highlight areas that may be more susceptible to disasters. Visioning and planning for various scenarios could better prepare the county, citizens and property owners to help guide rebuilding should a disaster occur.

3.4.2 FINANCIAL INCENTIVES

Incentives developed prior to a disaster such as tax relief, gap financing, or streamlined permits can be used to encourage rebuilding. Post-disaster, gap financing and expedited permits can be used for homeowners or developers who intend to rebuild using best practices for energy-efficient, green and disaster-resistant housing construction (exceeding those requirements of the building code).

3.4.3 ZONING REGULATIONS AND DESIGN STANDARDS

Similar to other landowner incentives, zoning regulations mandate compliance with current standards for setbacks, height, lot and impervious coverage, daylight plane, number of dwelling units, etc. where non-conformities existed previously. All of the jurisdictions within Chatham County have zoning regulations in place. Regulatory approaches have the advantage of being specific, but sometimes lack the flexibility that both the county and property owners may need when working in a post-disaster atmosphere.

3.4.4 HAZARD MITIGATION GRANT PROGRAM

The Hazard Mitigation Grant Program (HMGP) provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Chapter 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

3.4.5 ACQUISITION PROGRAMS

One way to reduce future vulnerability is through post-disaster acquisition programs that target highly vulnerable areas or repetitive flood loss homes, and use these acquired properties for conservation and passive recreation. Through advanced planning, properties that are candidates for both habitat restoration and vulnerability reduction could be prioritized so that limited funds can be wisely used. Chatham County must identify or develop programs that could be considered in acquisition of property under different post-disaster rebuilding alternatives. These programs often take the form of programs intended to acquire land for environmental preservation or roadway construction.

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As part of the pre-disaster planning, the county should consider expanding the criteria to target lands that would be acquired for the purposes of conservation to reduce future risk and vulnerability. For example, the county could evaluate the costs of acquiring privately owned, developed properties, for which the county provides infrastructure that has been severely or repetitively damaged by tropical storms, hurricanes, floods or other natural disasters. The acquisition cost could then be compared against the costs associated with rebuilding the required infrastructure for that property or rebuilding of the property. This planning would be done in advance of a disaster to determine the most cost-effective options for addressing loss, mitigation or prevention.

After a disaster, the Federal HMGP can be a major source of acquisition funding, especially for repetitively damaged properties. Grant funds are eligible for acquisition of real property from willing sellers and demolition or relocation of buildings to convert the property to open-space use. Determining pre-disaster what repetitively damaged or extremely vulnerable properties, if substantially damaged, would be high priorities for post-disaster acquisition would facilitate post-disaster mitigation decisions.

3.4.6 TRANSFER OF DEVELOPMENT RIGHTS/ CONSERVATION EASEMENTS

With the purchase of development rights, ownership of the land remains with the property owner, but development rights of the property are constrained as provided in the contract agreement. Land that is under a conservation easement is privately owned, but the owner has agreed to preserve its natural character as provided in the agreement that conveys the easement. Silviculture, hunting, low-intensity agriculture, and ecotourism are examples of the uses that may be allowed under the conservation easement agreement.

Establishing conservation easements pre-disaster should align with this Redevelopment Plan by targeting highly vulnerable areas. Considerations of these programs should include cost and public access, which can vary greatly. Fee-simple acquisition is generally more expensive than purchase of conservation easements or development rights. Fee-simple purchase gives the government entity control of the property, restricted only by constraints imposed by funding sources and any agreements that were obligated by the purchase. Public access could be allowed. The government agency given responsibility for the property sustains costs of management. This usually involves providing security, exotic pest control, and, for many habitats, prescribed burning. When land remains in private ownership, public access is usually limited, but the private owner may assume management costs.

3.4.7 DEED RESTRICTIONS AND COVENANTS

Real estate deed restrictions place limitations on the use of the property. Restrictive covenants are an example of deed restrictions. Restrictive covenants are not zoning or

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governmental regulations. Deed restrictions are usually initiated by the developers – those who determined what the land would be used for, divided the land into plots, and built homes, office buildings or retail buildings on it. Deed restrictions come with the property and usually cannot be changed or removed by subsequent owners.

Restrictions give a development a more consistent appearance, and control some of the activities that take place within its boundaries. Restrictive covenants nearly always stipulate the minimum size residence allowed, how many homes may be built on one lot, and what type of construction the homes must (or must not) be. Other restrictive covenants may include setbacks, easements, fees for road maintenance or amenities, rules on tree-cutting, pets, fencing and paint colors.

Established properly, covenants established prior to a disaster can be a means for addressing resiliency and redevelopment standards. If a community finds that their neighborhood has been damaged, or has considered ways in which building and design standards could be improved to reduce future hurricane and other hazard risks, amending their current restrictions may be an opportunity for improvement.

3.4.8 EDUCATION AND PUBLIC OUTREACH PROGRAMS

Prior to a disaster, education programs should discuss and/or implement planning issues. Community buy-in and support for issues regarding changes to zoning regulations or other property issues addressed in this Redevelopment Plan will require a thorough understanding of the facts, risks and rationale. Public meetings allow community members to discuss and collaborate on ways in which programs can be most effectively implemented.

3.4.9 BUILDING SAFETY CODES

Given the flooding risks from a variety of hazards in Chatham County, safety codes will be a critical component of effective redevelopment. FEMA has identified an extensive list of resources available to establish safety code best practices, available here: <http://www.fema.gov/building-code-resources>. By creating strong building safety codes, not only will this help avoid repetitive loss after disaster events, it also means that modified older structures and new structures will be more resilient.

3.4.10 BUILD-BACK STANDARDS

The implementation of build-back standards (i.e., the regulations that govern reconstruction following disasters) prior to a disaster facilitates expeditious rebuilding post-disaster because property owners can anticipate and plan for rebuilding requirements prior to a disaster occurring.

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Deciding which standards should be required after a disaster requires careful consideration of the county's needs. Using build-back standards as a means to impose nonessential rebuilding requirements may diminish some citizens' abilities to finance their recovery and/or result in their unintentional relocation.

Build-back standards that incorporate LID and Smart Growth principles further initiate a more resilient community.

Finally, the policies and codes enforced during redevelopment should be revised and simplified beforehand to avoid confusion and to reduce citizens' obstacles to recovery.

3.5 REDEVELOPMENT POLICIES FOR FINANCIAL CAPACITY

Understanding the available tools and programs by which pre and post-disaster planning issues can be addressed will help stakeholders and the public discuss options regarding financial capacity. Different planning options and techniques include:

- Local Reserves, Credit and Insurance
- State and Federal Resources, Grants, and Loans
- Commercial Loans
- Pre-Established Recovery Contracts
- Private, Non Profit, and Other Resources

3.5.1 LOCAL RESERVES, CREDIT AND INSURANCE

Establishing reserve funds and maintaining a strong line of credit are important considerations for post disaster planning. Reserve funds will allow the county to borrow from itself to finance operations and rebuild critical facilities until federal reimbursement funds begin to come in. FEMA's Public Assistance (PA) program requires that local governments first pay for critical facility and infrastructure repairs before they can be reimbursed for those expenses. If establishing a healthy local reserve for this contingency is not a viable option, the county may want to explore other options for funding post disaster expenditures.

The insurance industry also has a significant role in post disaster redevelopment. Local businesses and residents rely on the funds made available from private insurance companies. Working with private insurance companies to process and fund claims can be a cumbersome and difficult experience.

Homeowners often do not realize they are underinsured and do not have appropriate coverage until a disaster has occurred and it is too late.

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Additionally, many residents will not be able to rebuild or relocate within the county without government assistance. FEMA Individual Assistance (IA) program and SBA loans can provide various forms of assistance, but understanding the process and eligibility requirements can be challenging.

Ongoing education and outreach initiatives to residents, businesses, and elected officials before and after a disaster occurs would be a relatively simple and low cost initiative that could address these deficiencies.

3.5.2 STATE AND FEDERAL RESOURCES, GRANTS, AND LOANS

Funding for post-disaster redevelopment projects are available both before and after a disaster occurs. Regardless of the type or quantity of resources considered for a project, it is important to identify all of the potential resources, programs, and stakeholders that may be applicable for use in the post-disaster planning process. Proactive partnering with these funding organizations will provide Chatham County staff with an understanding of the organization's policies, timelines, funding uses and restrictions, types of aid, and recipient and project eligibility.

Many funding programs may have local match requirements, which can include in-kind services. In certain cases, funding organizations might allow waivers of certain criteria or allow creative financing solutions depending on the type or magnitude of the disaster, so it is recommended to ascertain whether these options exist.

There are numerous sources for governmental and non-governmental disaster relief programs and private donations that can support post disaster redevelopment. For example, **Table 2.9** lists available Federal Fiscal Resources.

Chatham County staff should continue to familiarize themselves with potential funding programs, organizations, and requirements. The county should also keep in mind existing staff levels and capabilities and remember that depending on the workload faced following a disaster, extra staff may be needed to help manage grants or loans once received.

Furthermore, the County recommends that each municipality review the pre-disaster funding programs and determine which programs are best suited to their needs (and thus where the municipality will direct their efforts).

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Table 3.9: Federal Fiscal Resources: Pre-disaster

Federal Pre-disaster Funding Programs	
Program	Program Purpose
Pre-Disaster Mitigation (PDM)	To assist communities to implement hazard mitigation programs designed to reduce overall risk to the population and structures before the next disaster occurs.
Community Assistance Program State Support Services Element (CAP-SSSE)	To ensure that communities participating in the National Flood Insurance Program (NFIP) are achieving flood loss reduction measures consistent with program direction. The CAP-SSSEE is intended to identify, prevent and resolve floodplain management issues in participating communities before they develop into problems requiring enforcement action.
Community Development Block Grant (CDBG) (also see post-disaster funding)	Community Development Block Grants (CDBG) provide for long-term needs, such as acquisition, rehabilitation or reconstruction of damaged properties and facilities and redevelopment of disaster-affected areas. Funds may also be used for emergency response activities, such as debris clearance and demolition, extraordinary increases in the level of necessary public services.
Emergency Management Program Assistance (EMPA)	To administer the Emergency Management Preparedness and Assistant Trust Fund, count base grants, and incoming federal, state, or private funding. Within this program is the Municipal Grant Program. Localities can apply for up to \$50,000 worth of grant money. Also included is the Open Competitive Grant Program in which cities, counties, not for profits, etc. can apply for up to \$300,000 in grant money.
The Federal Assistance for Beach Renourishment Program	Provides up to 65% of the costs to renourish beaches and for up to 50 years of periodic maintenance.
Flood Control Projects	To reduce flood damages through projects not specifically authorized by Congress.
Flood Mitigation Assistance	To fund cost effective measures to states and communities that reduce or eliminate the long term risk of flood damage to buildings, manufactured homes, and other insurable structures.
Flood Plain Management Services	To promote appropriate recognition of flood hazards in land and water use planning and development through the provision of flood and flood plain related data, technical services, and guidance.
Flood Prevention, Emergency Advance Measures	To mitigate, before an event, the potential loss of life and damages to property due to floods.
Grants & Loans for Public Works & Development Facilities	To provide financial assistance for the construction of public facilities needed to initiate and encourage the creation or retention of permanent jobs in the private sector in designated areas where economic growth is lagging.

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Federal Pre-disaster Funding Programs	
Program	Program Purpose
Hazardous Materials Training Program - Implementation of the Superfund Amendment and Reauthorization Act (SARA) of 1986	To make funding available to support programs of state, local, and tribal governments, and universities to improve emergency planning, preparedness, mitigation, response, and recovery capabilities. These programs must provide a special emphasis on emergencies associated with hazardous chemicals.
Insurance Program, National Flood (NFIP)	To enable individuals to purchase insurance against losses from physical damage to or loss of buildings and or contents therein caused by floods, mudflow, or flood-related erosion, and to promote wise floodplain management practices in the nation's flood prone areas.
Payments to States in Lieu of Real Estate Taxes	To compensate local taxing units for the loss of taxes from federally acquired lands, 75 percent of all monies received or deposited in the Treasury during any fiscal year for the account of leasing of lands acquired by the United States for flood control, navigation and allied purposes, including the development of hydroelectric power, are paid at the end of each year to the States in which such property is situated.
Protection, Clearing and Straightening Channels	To restore channels for purposes of navigation or flood control.
Protection of Essential Highways, Highway Bridge Approaches, and Public Works	To provide bank protection of highways, highway bridges, essential public works, churches, hospitals, schools, and other nonprofit public services endangered by flood caused erosion.
Public Works Impact Projects Program (PWIP) (11.304)	To provide financial assistance in the construction of public facilities for the purpose of providing immediate useful work to unemployed and underemployed persons in designated project areas.
Snagging and Clearing for Flood Control	To reduce flood damage.

Table 3.10: Federal Fiscal Resources: Post-disaster

Federal Post-disaster Funding Programs		
Program Name	Program Purpose	Approximate Deadline
Community Development Block Grants (CDBG)/Entitlement Grants	To develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low to moderate income individuals.	Pre-disaster.

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Community Development Block Grants Disaster Relief (CDBG-DR)/State’s Program	To develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low to moderate income individuals.	Pre-disaster.
Cora C. Brown Fund	To assist disaster victims for unmet disaster related needs. When Cora C. Brown of Kansas City, Missouri, died in 1977, she left a portion of her estate to the Federal Government as a special fund to be used solely for the relief of human suffering caused by disasters.	No standard application process. Awards are determined by FEMA administrators.
Disaster Emergency Loans – Farmer Programs	To provide financial assistance to eligible applicants to help them overcome the adverse effects of a natural disaster to their farm operations.	90+ Days. Deadlines differ for each disaster declaration. For information, county should contact Farm Service Agency office.
Livestock Forage Program	LFP provides compensation to eligible livestock producers that have suffered grazing losses due to drought or fire on land that is native or improved pastureland with permanent vegetative cover or that is planted specifically for grazing.	Deadlines differ for each disaster declaration and loan type.
Livestock Indemnity Program	LIP provides benefits to livestock producers for livestock deaths in excess of normal mortality caused by adverse weather or by attacks by animals reintroduced into the wild by the federal government.	Deadlines differ for each disaster declaration and loan type.
Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish (ELAP)	ELAP provides emergency assistance to eligible producers of livestock, honeybees and farm-raised fish for losses due to disease (including cattle tick fever), adverse weather, or other conditions, such as blizzards and wildfires, not covered by LFP and LIP.	Deadlines differ for each disaster declaration and loan type.
Tree Assistance Program (TAP)	TAP provides financial assistance to qualifying orchardists and nursery tree growers to replant or rehabilitate eligible trees, bushes, and vines damaged by natural disasters.	Deadlines differ for each disaster declaration and loan type.
Economic Injury Disaster Loans (EIDL) and Physical Disaster Loans (PDL)	EIDL: To assist businesses suffering economic injury as a result of certain	Deadlines differ for each disaster declaration. Contact the State Hazard Mitigation Officer or Small

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	<p>Presidential, Secretary of Agriculture, and/or SBA declared disasters.</p> <p>PDL: To provide loans to businesses affected by declared physical type disasters for uninsured losses.</p>	Business Administration for details.
Emergency Conservation Program	To enable farmers to perform emergency conservation measures to control wind erosion on farmlands, or to rehabilitate farmlands damaged by wind erosion, floods, hurricanes, or other natural disasters and to carry out emergency water conservation or water enhancing measures during period of severe drought.	Deadlines differ. Contact local Farm Service Agency Office.
Emergency Operations Flood Response and Post Flood Response	To provide emergency flood response and post flood response assistance as required to supplement state and local efforts and capabilities in time of flood coastal storm.	Pre-disaster, register via System for Award Management (SAM) online database for post-disaster logistical support from USACE.
Emergency Shelter Grants Program (ESG)	To provide financial assistance to renovate or convert buildings for use as emergency shelters for the homeless. Grant funds may also be used to operate the shelter (excluding staff) and pay for certain support services. Funds can also be used to aid families in relocating from shelters to permanent housing by paying fees associated with moving or deposits on the home.	Yearly application cycle.
Hazard Mitigation Grant Program (HMGP)	To prevent future losses of lives and property due to disaster; to implement State or local hazard mitigation plans; to enable mitigation measures to be implemented during immediate recovery from a disaster; and to provide funding for previously identified mitigation measures to benefit the disaster area.	Deadlines differ for each disaster. Contact the State Hazard Mitigation Officer for details.
Public Assistance Program	To provide supplemental assistance to States, local governments, and certain private nonprofit organizations to alleviate suffering and hardship resulting from major disasters or emergencies declared by the President. Public Assistance (PA) provides funding for the	30 Days.

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	<p>repair, restoration, reconstruction, or replacement of a public facility or infrastructure damaged or destroyed by a disaster. Eligible applicants at the county level include local governments and certain private non-profit (PNP) organizations. Eligible PNP's include educational, emergency, medical, rehabilitation, and temporary or permanent custodial care facilities, utilities, and other PNP facilities which provide essential governmental services to the general public. PA Funds are available for debris removal, emergency protective measures, road systems and bridges, water control facilities, public buildings and contents, public utilities, and parks and recreational facilities. PA funds may not be used when other funding sources are available, such as insurance, to avoid the duplication of benefits.</p>	
<p>Individual Assistance Program</p>	<p>Disaster assistance may be provided as financial or direct assistance to individuals and families whose property has been damaged or destroyed as a result of a federally-declared disaster, and whose losses are not covered by insurance. It is meant to help you with critical expenses that cannot be covered in other ways. This assistance is not intended to restore your damaged property to its condition before the disaster.</p> <p>While some housing assistance funds are available through our Individuals and Households Program, most disaster assistance from the Federal government is provided in the form of loans administered by the Small Business Administration.</p>	<p>Deadlines differ for each disaster declaration.</p>
<p>Federal Transit Administration Emergency Relief (FTA ER) Program</p>	<p>This program helps States and public transportation systems pay for protecting, repairing, and/or replacing equipment and facilities that may suffer or have suffered serious damage as a result of an emergency, including natural</p>	<p>60 Days.</p>

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	<p>disasters such as floods, hurricanes, and tornadoes. The program can fund capital projects to protect, repair, or replace facilities or equipment that are in danger of suffering serious damage, or have suffered serious damage as a result of an emergency. The program can also fund the operating costs of evacuation, rescue operations, temporary public transportation service, or reestablishing, expanding, or relocating service before, during or after an emergency.</p>	
<p>Federal Highway Administration Emergency Relief (FHWA-ER) Program</p>	<p>Congress authorized in Title 23, United States Code, Section 125, a special program from the Highway Trust Fund for the repair or reconstruction of Federal-aid highways and roads on Federal lands which have suffered serious damage as a result of (1) natural disasters or (2) catastrophic failures from an external cause. This program, commonly referred to as the emergency relief or ER program, supplements the commitment of resources by States, their political subdivisions, or other Federal agencies to help pay for unusually heavy expenses resulting from extraordinary conditions.</p>	<p>30-90 Days, depending on method of fund release.</p>

3.5.3 COMMERCIAL LOANS

In addition to the various potential funding sources described above, the county may need to pursue commercial loans to cover all of the disaster costs. These are most often provided through local banks and/or credit unions that have a local stake in the community. Chatham County should consider working with the local banking industry before an event to explore different ways they can work together to further recovery activities following a disaster.

One of the types of assistance that private banks within the county could provide to local businesses following a disaster is the bridge loan program. Bridge loans are short-term loans that can be used for a variety of purposes, but the primary purpose of these loans in a post disaster environment would be to help the county and / or local businesses recover from the disaster until the county or the local businesses could secure a more permanent source of financing.

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3.5.4 PRE-ESTABLISHED RECOVERY CONTRACTS

Pre-established contracts are helpful for expediting the goods and services needed for post disaster recovery. These contracts are more readily executed since they have already been reviewed and approved by the applicable jurisdiction's Finance Department. Although FEMA will reimburse local governments for emergency contracts, reimbursements are typically limited to services provided within the first 72 hours of work. There are cases when sole source contracts are utilized, but there are special requirements that must be adhered to per the Code of Federal Regulations (CFR) Section 13.36.

3.5.5 PRIVATE, NON PROFIT AND OTHER RESOURCES

Non-profit organizations and private foundations are potential resources for funding and other partnerships. The Trust for Public Land, Habitat for Humanity, and community foundations are examples of project partners.

Public and private colleges or universities can be valuable resources for projects. Depending on the project, timing, and location, these organizations could provide technical assistance, project management, funding, research, and project development.

Following a major disaster, Chatham County may become inundated with donations from private entities and non-profit organizations. The county, through Recovery Support Function (RSF) 7 of its Recovery Plan addresses this, but all of the jurisdictions within the county should consider developing a stand-alone donations management plan.

3.6 RECOMMENDATIONS FOR BUILDING INSTITUTIONAL CAPACITY

While the county does have adequate capacity to implement a post disaster recovery and redevelopment strategy, there are ways the county could build institutional capacity. To increase institutional capacity, the following recommendations are offered.

3.6.1 BUILDING THE CAPACITY OF PEOPLE

- Increase the participation of the business community during hazard mitigation, emergency activation, and long-term recovery.
- Continue to build upon the existing efforts of the county and the business community to develop beneficial working partnerships in all stages of hazard mitigation, response, and recovery.
- Assist and encourage the development of hazard mitigation plans for private businesses.
- Encourage the development of Continuity of Operations (COOP) Plans within the business community.

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- Invite key businesses to participate with Emergency Management in training and drills focused on long-term recovery and redevelopment. Increase the knowledge and understanding within the public staff of critical issues for businesses impacted by disaster.
- Encourage the designation of a Business Recovery Liaison during the post disaster time frame to ensure concerns and resources are properly communicated between the business sector and the local governments.
- Encourage the establishment of a local banking consortium to provide gap financing.
- A key to re-establishing businesses is to provide financing that can be quickly obtained. Local banking consortiums have been successful in providing expertise and financing on shorter time frames while larger insurance claims are settled or qualification to government assistance programs are determined.
- Anticipate, solicit, and assist employees with their unmet needs during the redevelopment timeframe.
- Understand that staff will be impacted at home and will need assistance to continue to effectively assist the community. A healthy, focused staff will be a vital component of the redevelopment of the community. Assessing the needs and circumstances of the staff and providing avenues for assistance will allow them to help themselves and in turn help the community.

3.6.2 BUILDING CAPACITY THROUGH POLICY AND PLANS

- Increase clarity of documents.
- Continue to improve the Chatham County Redevelopment Plan, following the standards established by the Emergency Management Accreditation Program (EMAP).
- Finalize / adopt an Economic Development Plan.
- Establish / adopt a Disaster Redevelopment Ordinance.
- This ordinance could address items such as Moratoria, Removal of Hazards, Right of Entry, Vacant Abandoned Property, Authority, and Emergency Planning and Permitting Process. While many of these items are inherent in the authority of the Board of County Commissioners, under emergency circumstances it is best to provide a single consolidated place where authority and limits are clear when addressing emergency actions.
- Continue to encourage each department to maintain COOP plans. CEMA coordinates COOP plans to ensure approach and resources are properly coordinated.

3.6.3 INCREASE INTERGOVERNMENTAL AGREEMENTS

- Formalize various “hand shake” agreements via Memos of Understanding, Joint

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Policies and Procedures, Contracts, and adopted Intergovernmental Agreements between governments. As the county continues to grow, formalization of informal agreements will need to be done to ensure that responsibilities and duties of each party are understood.

- Catalog, maintain, update, and redistribute existing agreements ensuring all parties are aware of existing obligations.
- As staff and elected officials change over time it is important that existing inter-local agreements continue to be reviewed, remain relevant, and properly exercised.

3.7 OUTREACH AND COORDINATION

3.7.1 INTRODUCTION

The purpose of this section is to provide methods and information on how Chatham County will collect and disseminate long-term recovery and redevelopment information before and after a disaster. This section also provides information about how the public will be involved during the redevelopment process through community meetings and the role of regional and state coordination agencies during disaster recovery. Communication is one of the most significant roles of government after a disaster, especially during long-term redevelopment when the media focus has decreased yet the public still has a heightened need for information.

3.7.2 MESSAGE DISTRIBUTION

Methods of distributing information fall into three general categories. Any of the three or a combination of methods could be appropriate communication tools to consider utilizing:

Electronic communications are those that occur via computer, telephone, television, or radio.

Examples include the emergency alert system (EAS), email, internet, intranet, video and webcasts, Community Notification System (CNS) (i.e., Reverse 911), electronic newsletters, podcasts, blogs, wikis, voicemail, conference calls, Short Message Service (SMS) text messaging, screensaver messaging, desktop alert messages, desktop news feeds, radio, television, Really Simple Syndication (RSS) feeds, websites, and social media tools (i.e. Facebook and Twitter).

Printed communications are those that are ink and paper.

Examples include newspapers, magazines, newsletters, brochures, faxes, posters, and fliers.

Face-to-face communications are one-to-one and one-to-many forums where people are physically present.

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Examples include briefings, conferences, town-hall meetings, door-to-door, forums, 'brown bag' lunches, round-table discussions, etc.

3.7.3 INTERNAL COMMUNICATIONS

Internal communications during disaster events are the purview of CEMA. The short-term internal communication processes following an event are outlined in the county's COOP plans. Recovery and redevelopment-related communication to Chatham County staff following a major disaster will be coordinated through the Recovery Public Information Officer (RPIO).

3.7.4 REGIONAL, STATE, AND FEDERAL COMMUNICATIONS

In the aftermath of a disaster, regional, state, and federal representatives will need to be in regular contact with additional county representatives to discuss specific activities or issues. These representatives should be pre-identified by the Emergency Management Agency.

3.7.5 PUBLIC COMMUNICATIONS

Public Information Officers (PIOs) coordinate governmental communications that are to be released to the public. Chatham County has a full-time PIO in the County Manager's Office and within CEMA. Following a disaster, the county's PIOs will work closely with the CEMA Director and relevant departments and agencies to communicate the status of emergency management operations to the community.

The dissemination of public information plays a critical role in the recovery process and it begins the moment a disaster occurs. Consistent communication regarding recovery efforts, even though emergency response activities are still taking place, will reassure the public that government agencies are working together to resolve the situation and to bring assistance to those who need it. Communications from the county's PIO should be updated regularly, occur as often as necessary, and continue until recovery is complete.

As recovery transitions to redevelopment, the responsibility of communicating with the public will transition out of the Emergency Operations Center (EOC) but will still remain the responsibility of the county's PIO. Ensuring that the messages are accurate, complete, and consistent is a critical part of communicating with the public. All forms of communication should be monitored and inaccurate information must be addressed immediately.

The broadcast and print media is a crucial element in gaining community support, especially the support of community members that are not actively involved in the community but keep abreast of current developments. Well developed and coordinated information, education strategies, and communications plans help to ensure that recovery and long-term

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redevelopment information can be disseminated to numerous audiences in a timely, accurate and consistent manner. In an effort to communicate with all of Chatham County’s residents, alternative methods of dissemination should also be pursued. It is critical to establish positive relationships with a variety of media sources and to consider them partners in an ongoing public information campaign (before, during, and after a disaster occurs).

3.7.6 THE WHOLE COMMUNITY

In October of 2011 in a testimony before the House Committee on Homeland Security, Subcommittee on Emergency Preparedness, Response, and Communications, FEMA’s Administrator Craig Fugate introduced a new disaster resilience initiative called “Whole Community.” The basic premise of this concept is to encourage emergency management practitioners to engage with and plan for the needs of their community. This includes people from all socioeconomic backgrounds, people with disabilities and other access and functional needs, and populations that are sometimes underrepresented in civic governance.

Whole Community Themes:

- Understand community complexity;
- Recognize community capabilities and needs;
- Foster relationships with community leaders;
- Build and maintain partnerships;
- Empower local action;
- Leverage and strengthen social infrastructure, networks, and assets.

Developing a whole community will require looking at how social activity is organized on a normal basis (e.g., social patterns, community leaders, points of collective organization and action, and decision-making processes), which will reveal potential sources (e.g., individuals and organizations) of new collective action. A better understanding of the complexity of the community will help the county work with and support the community to meet its true needs. Additionally, the outcomes of this analysis will benefit all aspects of emergency planning, before, during, and after a disaster occurs.

3.7.7 PRE-DISASTER STAKEHOLDER ENGAGEMENT

A few potential emergency management options to consider for improving outreach include:

- Reach out and interact with the Chatham County Community Emergency Response Teams (CERT). These persons have already demonstrated an interest in emergency management.
- Discuss how organizations can have a formal role in the county’s emergency plan and long-term redevelopment, and, when feasible, include them in training activities and exercises.

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- Use the power of social media applications (e.g., Facebook and Twitter) to disseminate messages regarding long-term recovery and redevelopment, create two-way information exchanges, and follow up on communication that is already happening within the community.
- Involve children and youth through educational programs and activities centered on individual, family, and community preparedness and include information about long-term recovery and redevelopment issues.
- Incorporate long-term disaster recovery and redevelopment planning discussions into the existing format of community meetings such as mayoral town-hall, city council, or county commission meetings. Multi-purpose meetings help increase participation, especially in communities where residents must travel long distances to attend such meetings.
- Identify barriers to participation in emergency management meetings (e.g., lack of childcare or access to transportation, and time of the meeting) and provide solutions where feasible (e.g., provide childcare, arrange for the meeting to be held in a location accessible by public transportation, and schedule for after-work hours).
- Consider physical, programmatic, and communication access needs of community members with disabilities when organizing community meetings.
- Promote the availability of key county staff for local radio call-in programs to answer questions about long-term recovery and redevelopment issues and to solicit input from the listeners on what they see as the top priorities for community recovery and resilience.

3.7.8 MEDICAL AND FUNCTIONAL NEEDS

The county should continue to define, identify, and plan for its access and functional needs populations that may be unable to take care of themselves or need special planning considerations before, during, and after a disaster occurs. People with medical and functional needs and their advocacy groups must be involved in all four phases of emergency management: mitigation, preparedness, response, and recovery. The special planning considerations should be based on the hazards identified in the risk assessment, the County’s demographics, and community resources. **Table 2.11** below shows potential data sources that can be used for special need populations planning in Chatham County. Much of this data already exists and has been used for different mapping applications.

Table 3.11: Special Needs Data Sources

Federal
US Census Data
Medicaid

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State and Local
Social Services Listings (dialysis centers, Meals on Wheels, Senior Citizens Inc., Step-Up Savannah, United Way, Savannah Association for the Blind, Department of Family and Children Services, etc.)
Paratransit providers
Bureau of Motor Vehicles (accessible parking permit holders)
Health Departments
Utility Providers
Job access services
Congregate Settings
Group Homes
Nursing Homes
Long-term Care Facilities
Assistive Living Units
Summer camps
Hospice facilities
Schools (with emphasis on those with a significant number of students with disabilities or students enrolled in English as a Second Language programs)
County emergency alert lists and registries
Hospitals
Day care centers (for children or adults)
Places of worship
Homeless Shelters

3.7.9 BUSINESS OUTREACH

Businesses play a key role in disaster development planning for communities. Businesses should be encouraged to develop continuity of operations plans to ensure their viability after a disaster for themselves as well as the community. Involving the business community in the county’s recovery planning assures the businesses that steps are being taken to develop economic resiliency. Likewise, the community is dependent on the services and resources they provide and can continue to provide in the aftermath of a disaster.

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4 PLAN IMPLEMENTATION AND MAINTENANCE

This section of the plan contains information about how the Chatham County Redevelopment Plan will be implemented and subsequently maintained and updated over time. It contains the following subsections:

- Task Force
- Monitoring, Evaluation and Enhancement
- Continued Public Involvement
- Plan Training and Exercising

4.1 TASK FORCE

The Chatham County Redevelopment Task Force is a standing task force that is established in order to provide a coordination mechanism to oversee the recovery and redevelopment process and to serve as an advisory committee to the Chatham County Board of County Commissioners. Some of the major duties of the Redevelopment Task Force are to:

- Establish uniform policies for effective coordination to accomplish Chatham County redevelopment tasks resulting from a natural or man-made hazards
- Recommend and coordinate efforts to restore normalcy to areas adversely impacted by a disaster
- Help identify mitigation opportunities and resources

4.2 MONITORING, EVALUATION, AND ENHANCEMENT

In order to ensure that the Chatham County Redevelopment Plan remains an effective and useful document, the plan should be updated on a regular basis. The plan shall be updated in accordance with the following situations:

- Reviewed at least every five years
- Following after action items resulting training or exercises occurring at least every three years
- Following a disaster event or other events where the plan was used to guide redevelopment operations

The Redevelopment Plan will be reviewed and updated in conjunction with the review of the Recovery Plan. The review will be coordinated by CEMA and the following tasks should be accomplished during the review:

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- Address any membership or leadership changes in the Task Force
- Provide update / status report on the goals and actions and make additions/deletions as necessary
- Prepare a brief Redevelopment Plan status report for the Board of County Commissioners

4.3 CONTINUED PUBLIC INVOLVEMENT

Public participation is an integral component to the disaster redevelopment planning process and will continue to be essential as this plan evolves over time. Other efforts to involve the public in the maintenance, evaluation, and revision process will be made as necessary. These efforts may include:

- Advertising meetings of the Redevelopment Task Force in local newspapers, through social media, public bulletin boards and/or county office buildings
- Designating willing and voluntary citizens and private sector representatives as official members of the Redevelopment Task Force
- Utilizing local media to update the public of any maintenance and/or periodic review activities taking place
- Utilizing the Chatham County and Metropolitan Planning Commission (MPC) websites to advertise any maintenance and/or periodic review activities taking place, and
- Keeping copies of the plan in public libraries

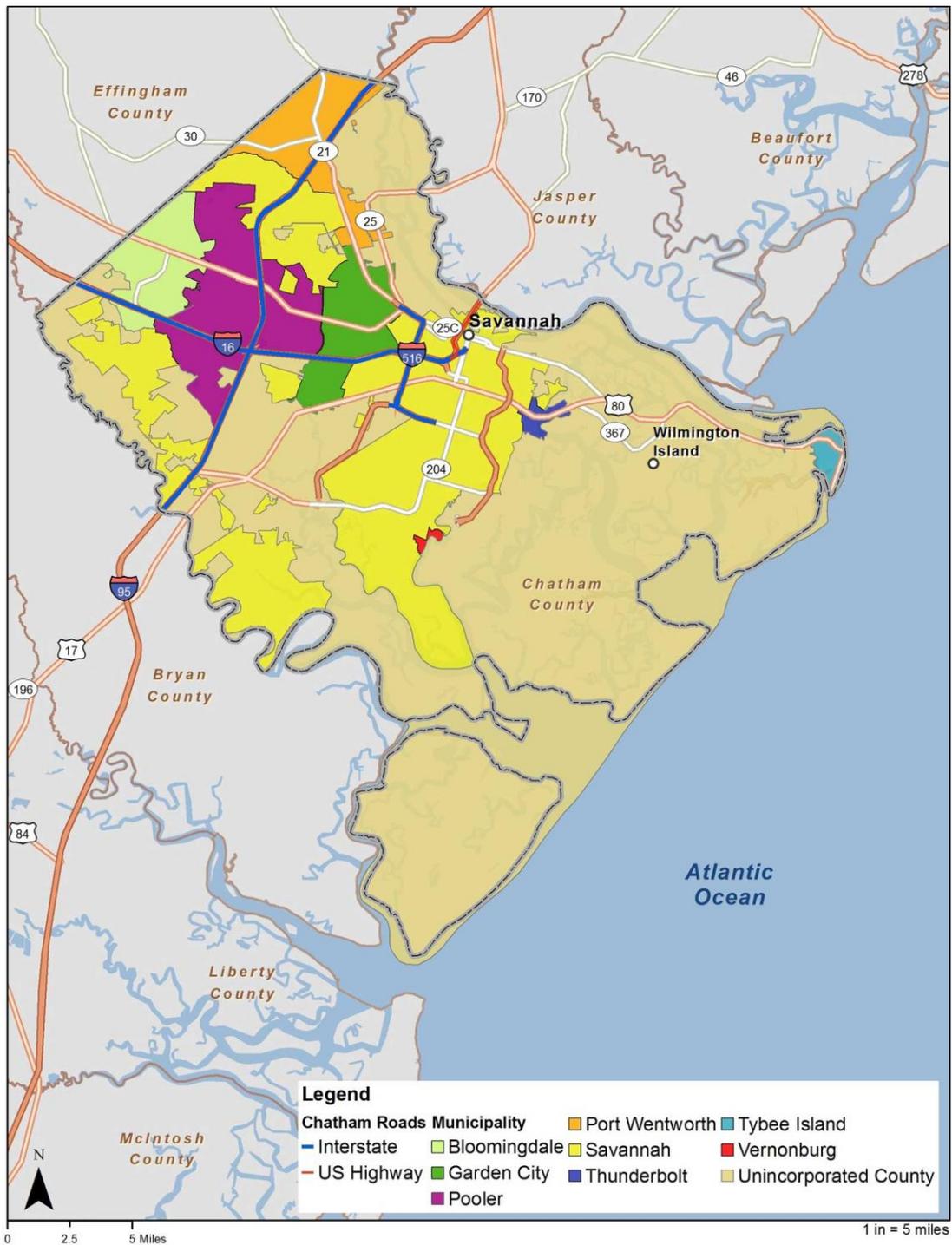
4.4 PLAN TRAINING AND EXERCISING

The Chatham County Redevelopment Plan is a complex plan that involves the participation and coordination of many different organizations and agencies, county and municipal departments, and other stakeholders. Because of this complexity, it is imperative that the plan be trained on and exercised on a regular basis so that all of those tasked with implementing the plan are familiar with their duties and responsibilities.

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5 VULNERABILITY IDENTIFICATION

Figure 5.1: Map of Chatham County



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This section provides an assessment of the potential impact of the various hazards to which Chatham County is vulnerable. The first objective of this section is to identify the natural hazards that could impact the county. The second objective is to identify and analyze the elements within the county that are particularly vulnerable to the identified natural hazards that could impact the breadth and speed of recovery following a disaster. By completing these objectives, Chatham County officials may be better prepared to evaluate and prioritize specific post-disaster recovery and redevelopment actions. This section contains the following subsections:

- Hazard Risk Overview
- Assessment Methodology
 - Geographic Information Systems (GIS)-Based Approach
- Asset Inventory
 - Improved Property
 - Critical Facilities and Areas Containing Vulnerable Populations
 - Critical Infrastructure and Utilities
- GIS Analysis Results

The vulnerability identification was conducted using best available data and technology and it includes a quantitative summary of current exposure to known hazards, such as the number, type and value of existing buildings, critical facilities, and areas containing vulnerable populations throughout the county. It also includes the estimation of potential losses for varying magnitudes of the known hazard events. The section concludes with a general summary of assessment findings for further review and consideration in the development of Chatham County's post disaster redevelopment goals, objectives and actions.

5.1 HAZARD RISK OVERVIEW

Chatham County is vulnerable to a variety of natural and man-made hazards. The county is adjacent to the Atlantic Ocean (**Figure 4.1**). This Eastern portion of the county borders the Atlantic Ocean and contains beautiful beaches and large forested areas. These natural and historical assets attract visitors and new residents. The county is the fifth largest in the state and second largest outside of the Atlanta Metropolitan Area.

Primary

- Hurricanes / Tropical Storms / Storm Surge
- Sea Level Rise
- Thunderstorms / Tornadoes
- Flooding
- Wildfires

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- Coastal Erosion
- Extreme Temperatures
- Drought
- Hazardous Materials Incident
- Major Transportation Incident

Secondary

- Domestic Terrorism / Civil Disturbances / Weapons of Mass Destruction
- Disease / Pandemic Outbreaks
- Sink Holes (No history in the County to date)
- Dam Failure
- Earthquakes

Since 1953, Chatham County has been impacted by seven hazard events that were designated Presidential Disaster Declarations. Presidential Disaster Declarations are requested by state governments on behalf of local governments when disasters overwhelm local response and recovery resources. Once the declaration is made by the President, several different forms of federal assistance, such as the HMGP, PA Program and IA Program, become available from the federal government. The FEMA is the federal agency tasked with coordinating federal assistance.

Table 4.1 provides a listing of the Presidential Disaster Declarations received by Chatham County.

Table 5.1: Table of Presidential Disaster Declarations

Year	Event (Disaster Number)
1977	Drought (3044)
1977	Shrimp loss due to cold weather (536)
1993	Severe Snowfall, Winter Storm (3097)
1994	Heavy rains, tornados, flooding, high winds (1042)
1998	Severe storms and flooding (1209)
1999	Hurricane Floyd Emergency Declarations (3144)
2005	Hurricane Katrina Evacuation (3218)

Based on the history of hazards and other concerns, the hazards that will be evaluated in this assessment are: hurricane and tropical storm surge, flooding, and sea level rise.

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5.2 ASSESSMENT METHODOLOGY

The vulnerability identification was conducted utilizing a GIS analysis where possible. Where GIS technology could not be employed, a qualitative analysis was completed instead.

5.2.1 GIS BASED APPROACH

GIS can be defined as a collection of computer hardware and software tools used to enter, edit, store, analyze and display geographically referenced information. GIS tools allow users to conduct interactive queries, analyze spatial information, edit data, create maps and present the results of all these operations in a consolidated report.

The GIS-based parcel analysis approach provides estimates for the potential impact of hazards by using a common, systematic framework for evaluation. To perform the assessment, digital data was collected from Chatham County as well as regional, state and national sources as needed. ESRI® ArcGIS™ was used to assess the county’s vulnerability by utilizing digital data including local tax records for individual parcels, georeferenced point locations for critical facilities and areas containing vulnerable populations (including a comprehensive range of facilities, infrastructure, and utilities) as well as economic criteria. In addition, GIS was used to bolster the discussion of social vulnerability. Using these data layers, vulnerability was assessed by identifying the number of assets within each hazard area with delineable geographic boundaries. When data permitted, vulnerability was further evaluated by estimating the assessed building value associated with the parcels determined to be located in identified hazard areas.

5.3 ASSET INVENTORY

An inventory of Chatham County’s georeferenced assets was used in order to identify and characterize the properties potentially at risk to natural hazards. By understanding the type and number of assets that exist and where they are located in relation to known hazard areas, the relative risk and vulnerability of such assets can be assessed. For this assessment, two categories of assets, “improved property,” and “critical facilities,” were created and then further evaluated through GIS analysis. Note: While potentially not all-inclusive for Chatham County, “georeferenced” assets include those assets for which specific location data is readily available to connect the asset to a specific geographic location for GIS analysis purposes.

5.3.1 IMPROVED PROPERTY

Improved property is considered any parcel where the "Building Value" was greater than zero. This includes all improved properties in Chatham County according to local parcel data provided by the County. The information has been expressed in terms of the number of

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parcels, number of buildings, and total assessed value of improvements (buildings and accessory structures) that may be exposed to the identified hazards.

5.3.2 CRITICAL FACILITIES AND AREAS CONTAINING VULNERABLE POPULATIONS

CEMA has defined the following facilities as critical to the county’s ability to function:

- Police Departments
- Fire Departments
- Hospitals
- Government offices
- Schools
- Wastewater/Sewage Lift Stations
- Wells

Additionally, considerations for facilities and areas containing vulnerable populations include:

- Child care facilities
- Nursing homes
- Other medical services (clinics, emergency medical services (EMS))
- Stormwater facilities
- Homeless shelters
- Mobile home parks
- Animal-related facilities
- Churches

5.4 GIS ANALYSIS RESULTS

5.4.1 VULNERABILITY OF IMPROVED PROPERTY

Tables 4.2 and 4.3 list the number of parcels, the estimated number of buildings and the total assessed value of improvements for all of Chatham County.

Table 5.2: Table of Improved Property in Chatham County

Jurisdiction	Estimated Number of Parcels	Estimated Number of Buildings	Number of Improved Parcels	Total Real Estate Value
Chatham County	114,195	134,783	96,950	\$28,229,753,281
Bloomingtondale	1,418	2,865	964	\$138,540,298
Garden City	3,547	7,334	2,601	\$753,237,751
Pooler	8,520	8,949	7,102	\$2,704,316,188
Port Wentworth	4,387	3,967	3,117	\$644,755,010

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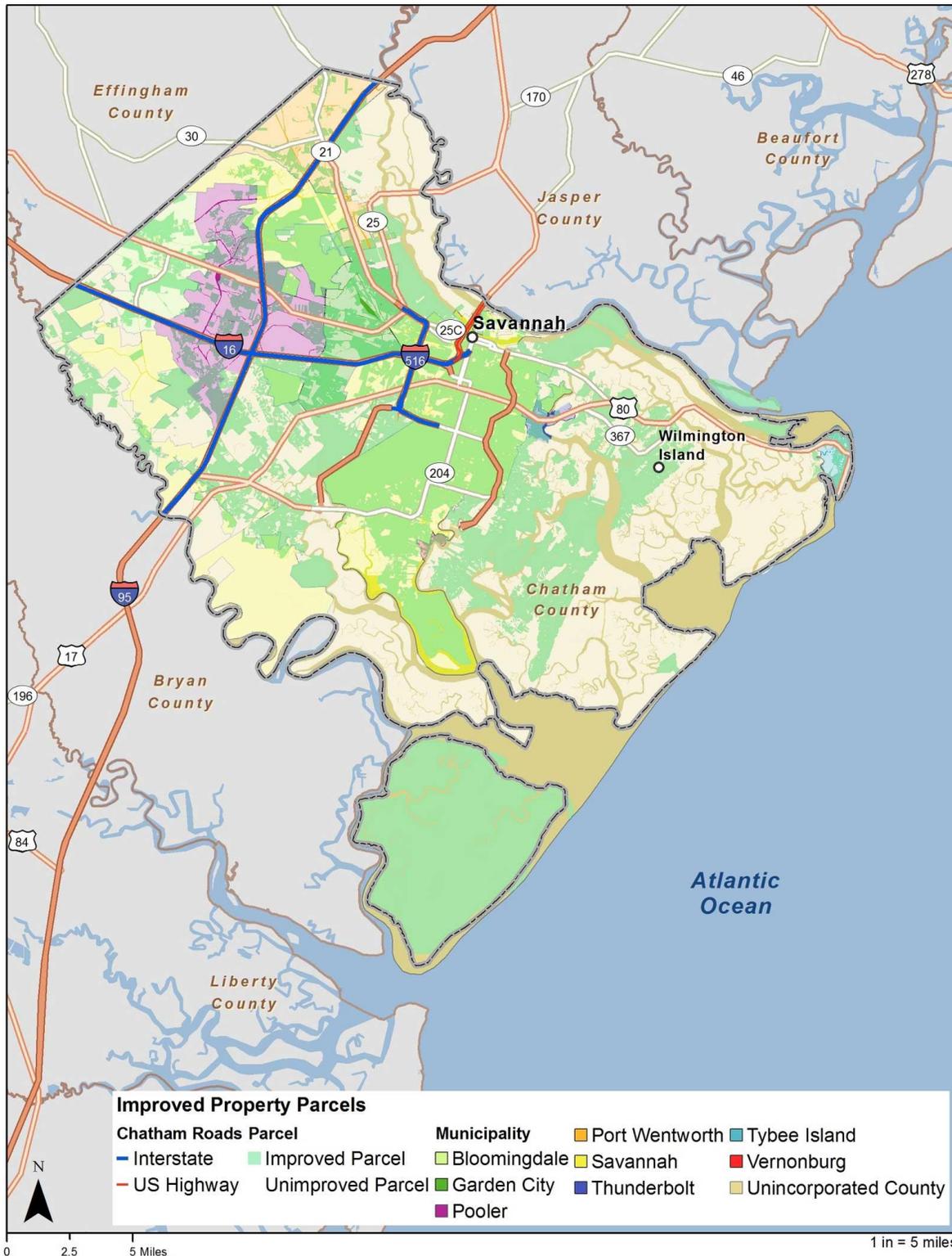
Jurisdiction	Estimated Number of Parcels	Estimated Number of Buildings	Number of Improved Parcels	Total Real Estate Value
Savannah	55,062	62,121	47,284	\$12,482,798,199
Thunderbolt	1,260	1,530	1,005	\$255,453,852
Tybee Island	3,869	2,856	3,289	\$1,270,368,184
Vernonburg	94	136	71	\$58,465,900
Unincorporated County	36,038	45,025	31,517	\$9,921,817,899

Table 5.3: Table of Improved Property in Chatham County

Jurisdiction	Total Land Value	Total Building Value	Total Assessed Value of Improved Parcels
Chatham County	\$7,137,492,744	\$21,092,260,537	\$11,291,901,302
Bloomington	\$41,393,240	\$97,147,058	\$55,416,119
Garden City	\$227,157,984	\$526,079,767	\$301,295,100
Pooler	\$456,534,047	\$2,247,782,141	\$1,081,726,477
Port Wentworth	\$143,376,146	\$501,378,864	\$257,902,003
Savannah	\$2,584,015,003	\$9,898,783,196	\$4,993,119,275
Thunderbolt	\$59,969,160	\$195,484,692	\$102,181,541
Tybee Island	\$594,585,613	\$675,782,571	\$508,147,272
Vernonburg	\$40,242,794	\$18,223,106	\$23,386,360
Unincorporated County	\$2,990,218,757	\$6,931,599,142	\$3,968,727,155

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Figure 5.2: Map of Improved Property Parcels



The building vulnerability assessment was conducted using a GIS analysis process in which

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hazards with a spatial delineation (flood, storm surge, sea level rise, and coastal erosion) were overlaid with local parcel data to determine the approximate number of structures and parcels located in these hazard zones. Chatham County provided data that was then used to determine the assessed value of these at-risk buildings. **Table 4.4** provides an overview of the numbers and values of structures located in identified hazard zones for Chatham County and the participating jurisdictions. **Figures 4.3, 4.4, 4.5, 4.6, and 4.7** map the locations of improved property parcels in comparison to designated disaster events.

Table 5.4: Table of Improved Property Vulnerability

Hazard Zone	Approx. # of Improved Parcels Affected	% of All Improved Parcels Affected	Approx. # of Buildings in Area	% of All Buildings	Approx. Assessed Building Value (Nearest Year)
Chatham County[1]					
100 Year Flood	35,397	36.51%	32,571	24.17%	\$6,687,087,343
500 Year Flood	13,351	13.77%	17,444	12.94%	\$3,308,131,237
Cat 1 Storm Surge	13,650	78.25%	10,919	8.10%	\$5,157,718,047
Cat 2 Storm Surge	28,808	29.71%	30,949	22.96%	\$8,067,417,290
Cat 3 Storm Surge	36,770	37.93%	48,967	36.33%	\$9,368,976,081
Cat 4 Storm Surge	21,906	22.60%	27,430	20.35%	\$6,205,001,453
Cat 5 Storm Surge	6,447	6.65%	7,769	5.76%	\$2,658,194,689
Years of Sea Level Rise					
2025	4,515	4.66%	390	0.29%	\$4,192,803,052
2050	5,042	5.20%	574	0.43%	\$4,424,265,469
2100	8,245	8.50%	1,909	1.42%	\$5,231,057,814

[1] These figures include parcel data for Chatham County and all participating jurisdictions.

Improved Parcel means any parcel where "Building Value" was greater than zero.

"Building" identified by spatial analysis of buildings file to hazard. "Building Value" was taken from Parcel file where "Building Value" was greater than zero.

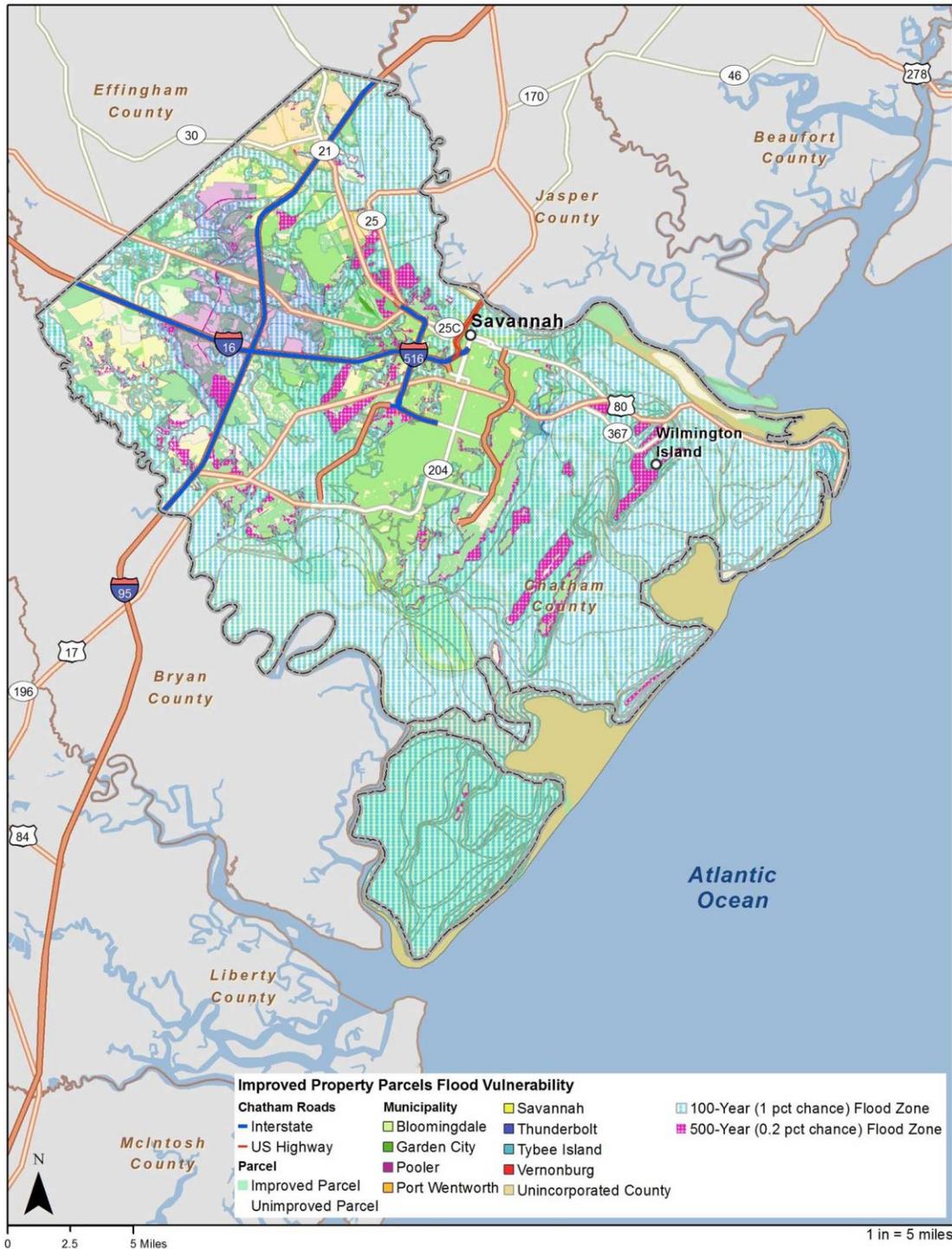
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Table 5.5: Improved Parcel Storm Surge Exposure

Municipality	Exposed Improved Parcel Acres	Value of Improved Parcels	# Improved Parcels	Municipality	Exposed Improved Parcel Acres	Value of Improved Parcels	# Improved Parcels
BLOOMINGDALE	5,609.22	\$117,766,528.00	1,145	SAVANNAH	85,384.90	\$13,044,795,156.00	45,955
Category 1	40.60	\$33,900.00	1	Category 1	16,734.22	\$1,202,527,610.00	1,753
Category 2	40.60	\$33,900.00	1	Category 2	17,752.72	\$2,468,031,733.00	8,323
Category 3	1,294.81	\$9,160,030.00	79	Category 3	20,992.22	\$4,725,742,862.00	20,373
Category 4	2,831.06	\$88,818,958.00	898	Category 4	17,348.28	\$3,278,738,371.00	11,167
Category 5	1,402.16	\$19,719,740.00	166	Category 5	12,557.46	\$1,369,754,580.00	4,339
GARDEN CITY	18,921.35	\$1,024,179,833.00	3,762	THUNDERBOLT	1,564.12	\$362,422,458.00	1,333
Category 1	3,596.64	\$93,055,227.00	252	Category 1	437.09	\$99,580,132.00	255
Category 2	4,560.64	\$219,421,764.00	748	Category 2	376.16	\$90,454,718.00	269
Category 3	5,229.14	\$348,229,273.00	1,331	Category 3	379.43	\$89,646,666.00	433
Category 4	3,781.15	\$256,251,805.00	1,077	Category 4	315.74	\$69,155,952.00	375
Category 5	1,753.78	\$107,221,764.00	354	Category 5	55.70	\$13,584,990.00	1
POOLER	28,182.67	\$4,950,662,315.00	8,546	TYBEE ISLAND	643.28	\$714,728,154.00	3,109
Category 1	3,616.32	\$467,032,910.00	21	Category 1	390.54	\$364,018,265.00	1,801
Category 2	5,648.35	\$640,100,633.00	458	Category 2	224.24	\$300,150,189.00	1,113
Category 3	7,431.96	\$1,307,611,085.00	2,233	Category 3	28.50	\$50,559,700.00	195
Category 4	7,456.95	\$1,738,448,033.00	5,066	UNINCORP	147,148.31	\$10,314,044,269.00	39,693
Category 5	4,029.09	\$797,469,654.00	768	Category 1	46,519.81	\$2,822,883,201.00	9,457
PORT WENTWORTH	5,814.17	\$887,483,479.00	3,905	Category 2	50,871.08	\$4,174,235,867.00	17,437
Category 1	897.22	\$92,359,296.00	50	Category 3	41,641.22	\$2,567,958,546.00	11,127
Category 2	1,361.98	\$158,233,480.00	394	Category 4	5,888.06	\$461,001,753.00	1,335
Category 3	1,682.48	\$261,825,063.00	961	Category 5	2,228.13	\$287,964,902.00	337
Category 4	1,521.56	\$312,586,581.00	1,988	VERNONBURG	359.90	\$41,225,368.00	163
Category 5	350.92	\$62,479,059.00	512	Category 1	134.96	\$16,227,506.00	60
				Category 2	149.19	\$16,755,006.00	65
				Category 3	75.75	\$8,242,856.00	38
				Grand Total	293,627.93	\$31,457,307,560.00	107,611

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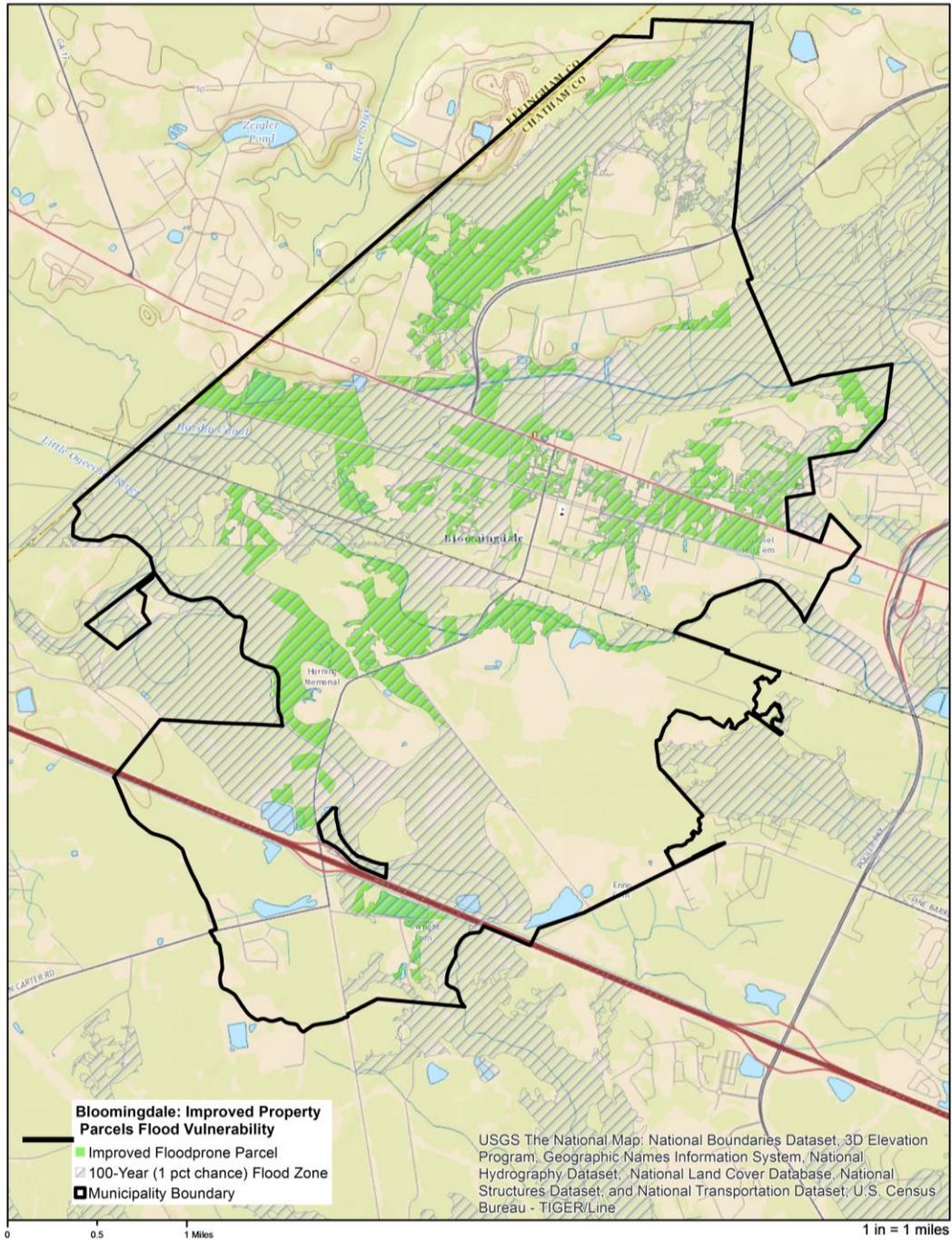
Figure 5.3: Map of Improved Property Flood Vulnerability



Vulnerability assessment is based on each risk item touching any parcel or building, meaning they may appear in more than one total.

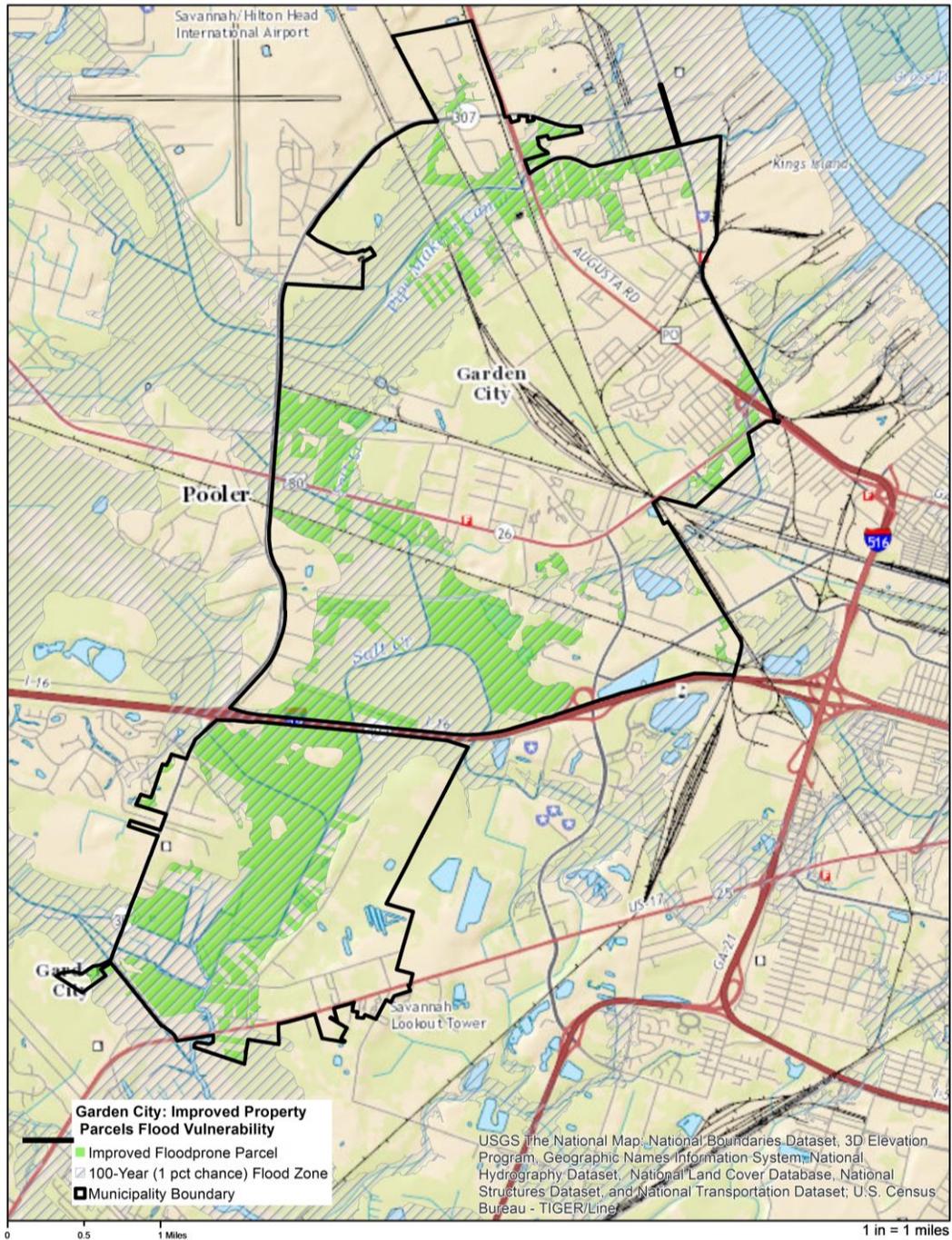
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Figure 5.4: Map of Improved Property Flood Vulnerability - Bloomingdale



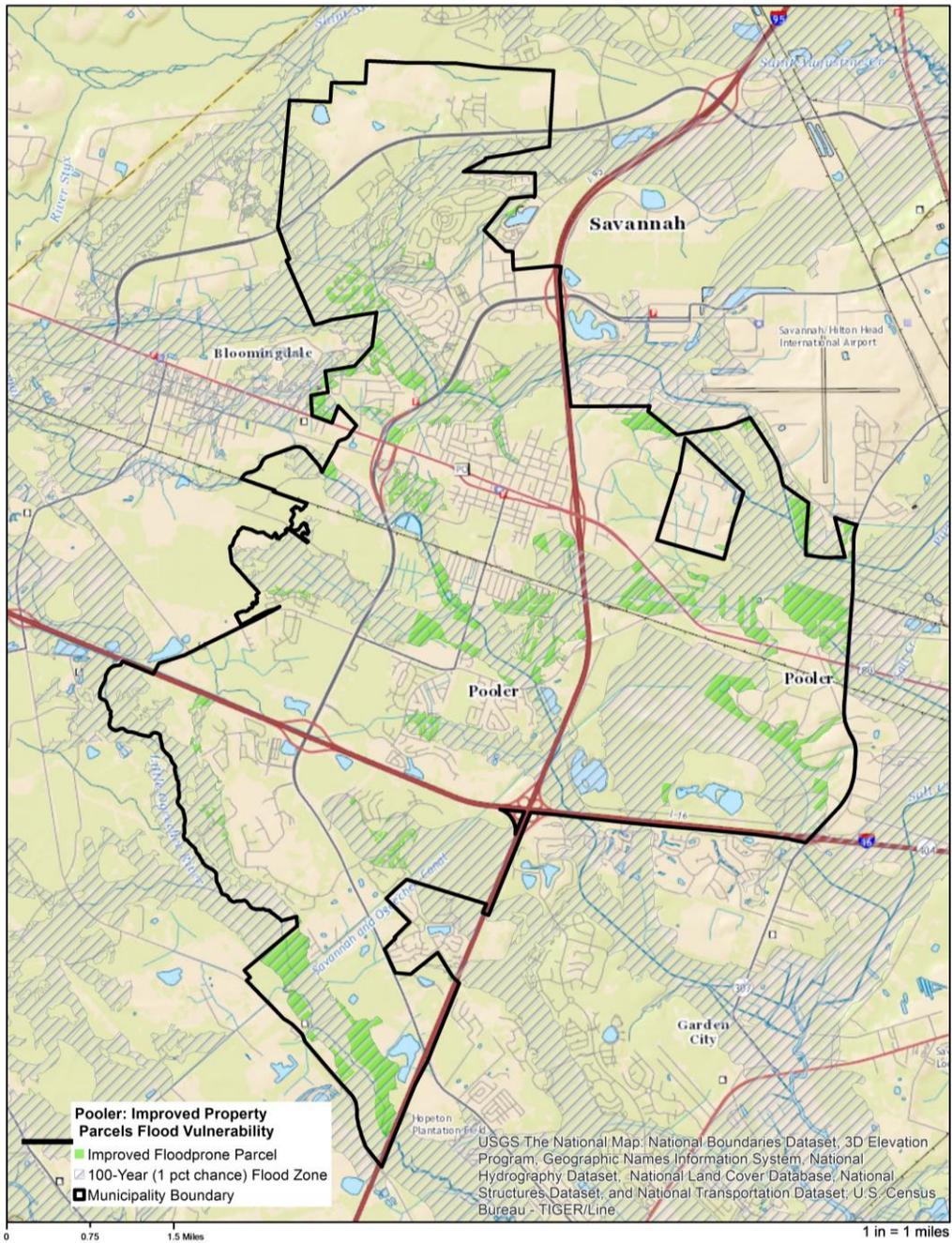
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Figure 5.5: Map of Improved Property Flood Vulnerability – Garden City



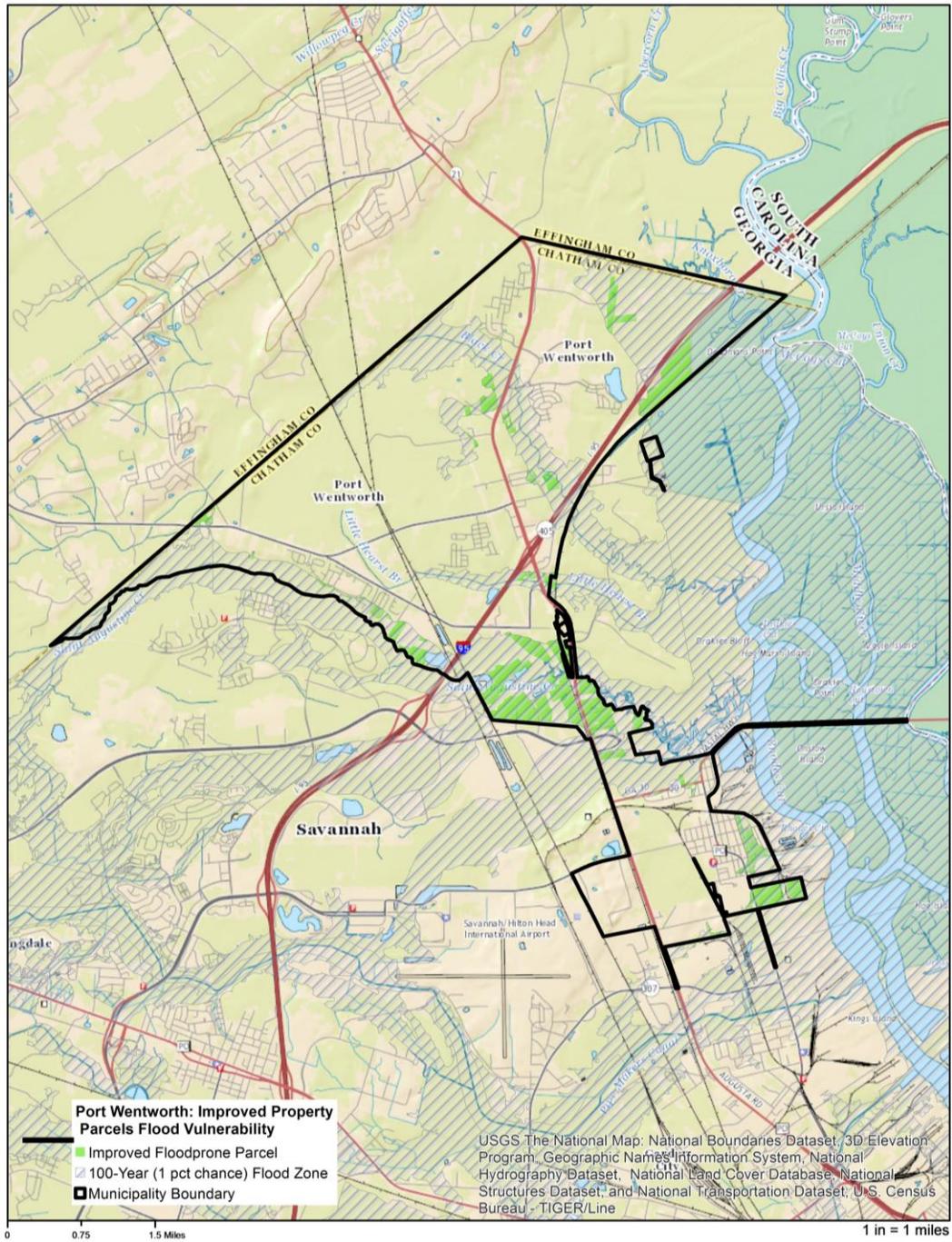
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Figure 5.6: Map of Improved Property Flood Vulnerability - Pooler



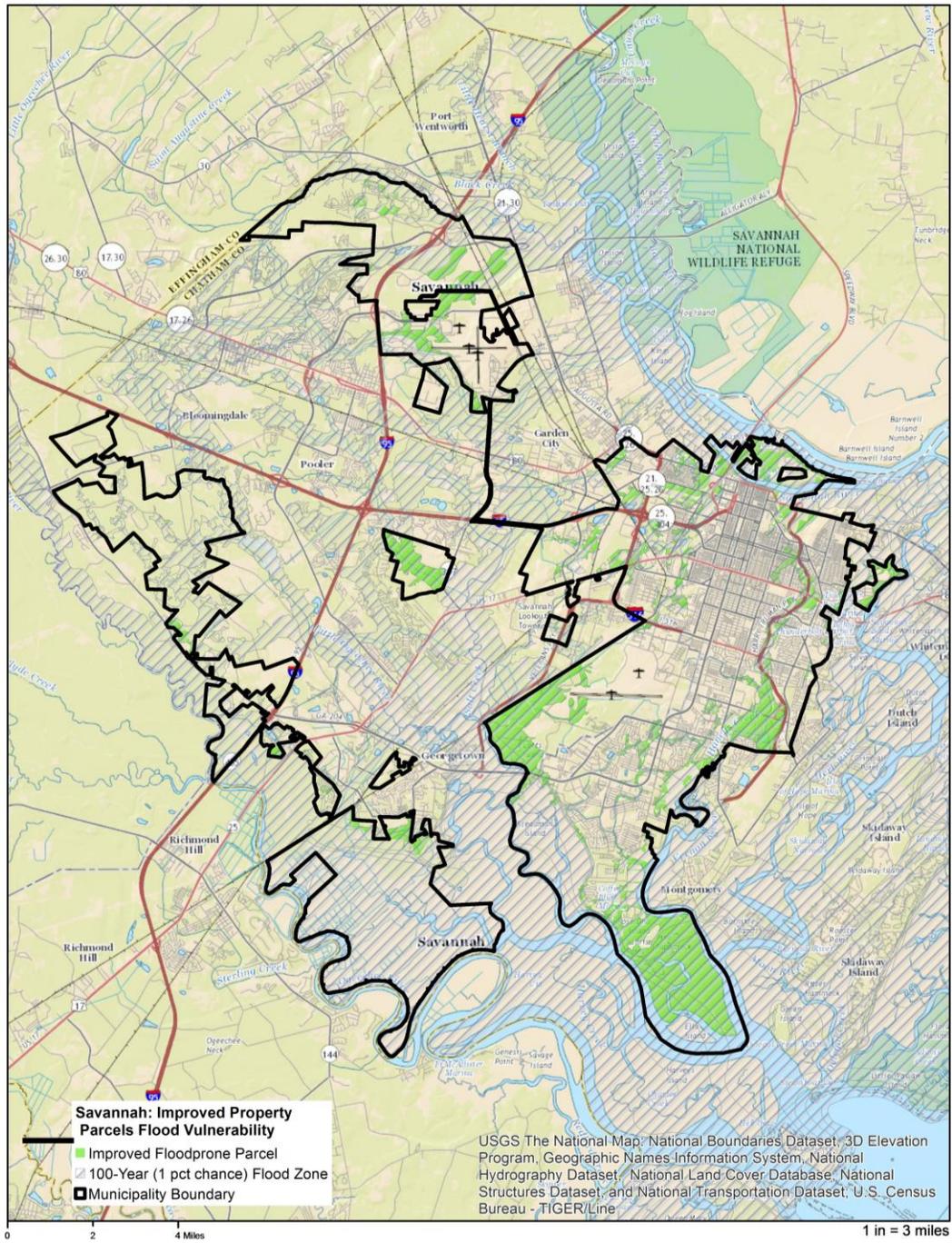
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Figure 5.7: Map of Improved Property Vulnerability – Port Wentworth



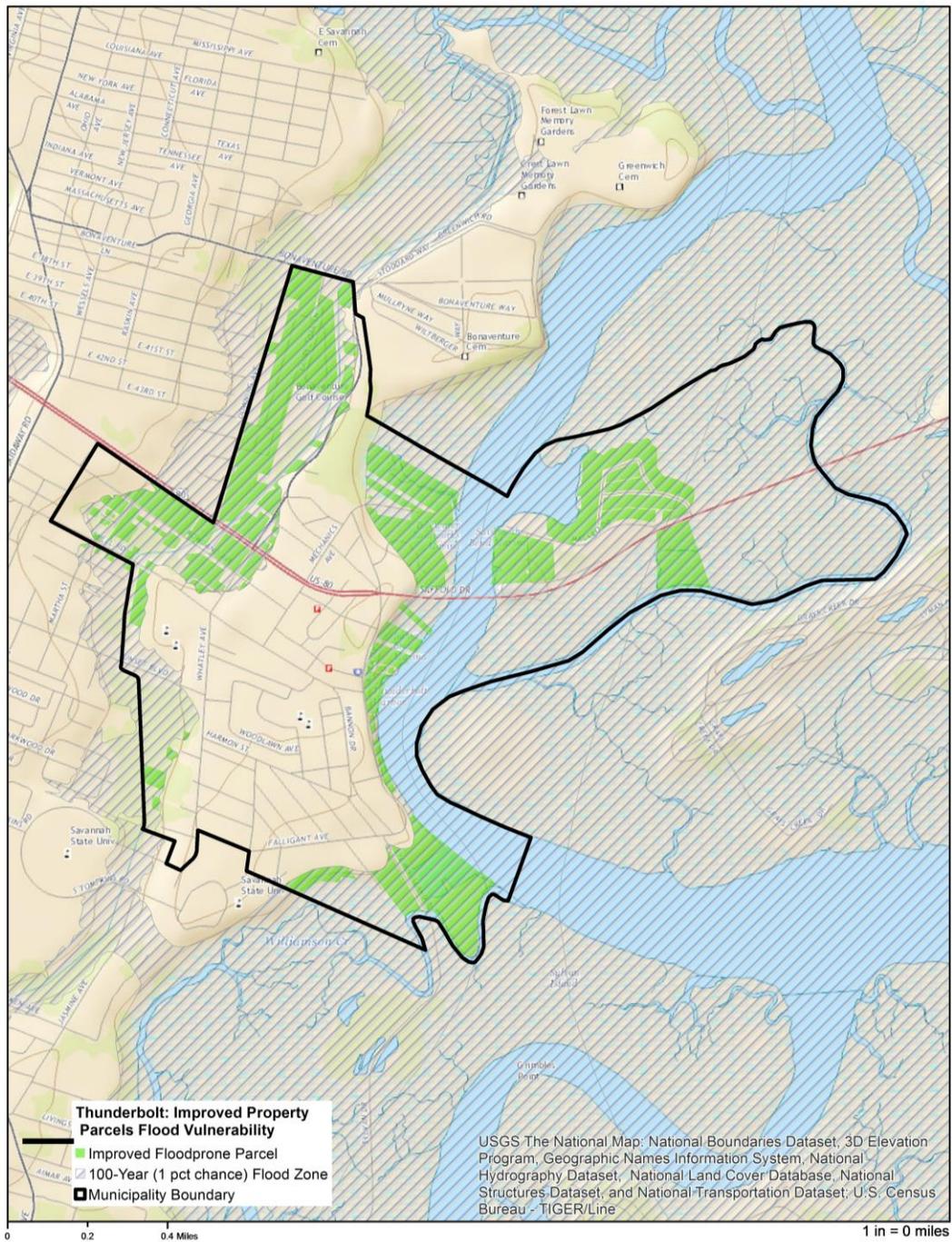
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Figure 5.8: Map of Improved Property Flood Vulnerability - Savannah



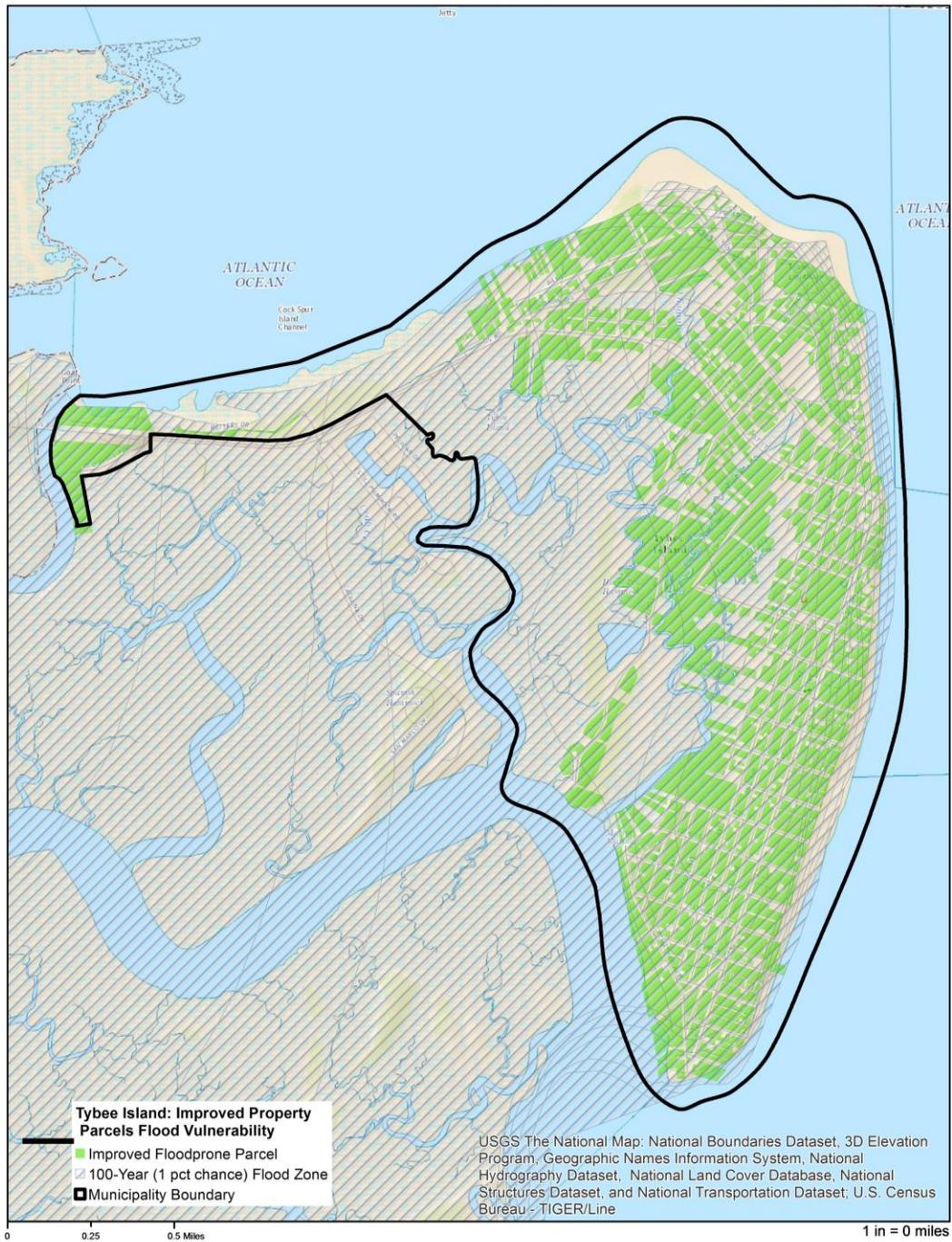
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Figure 5.9: Map of Improved Property Flood Vulnerability - Thunderbolt



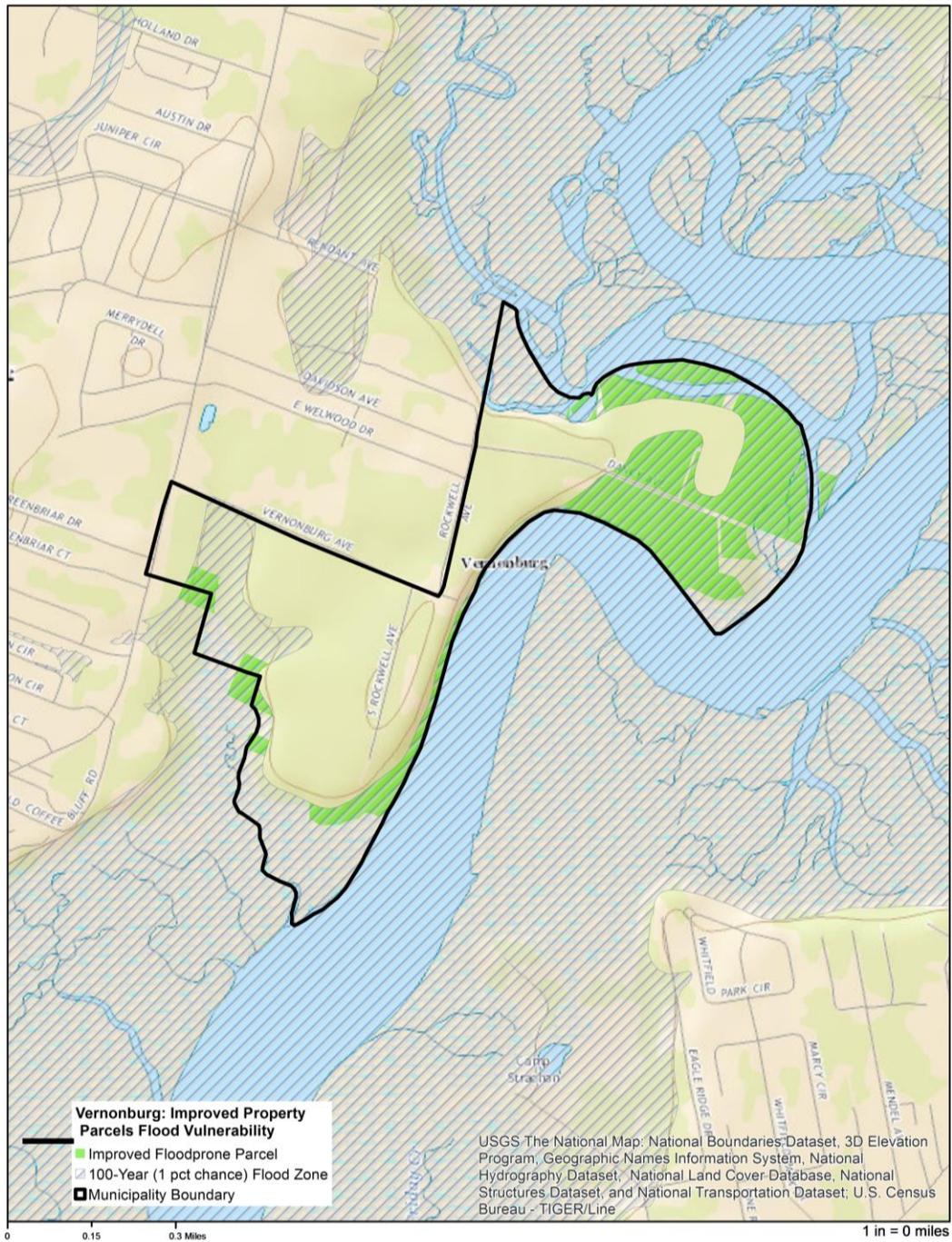
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Figure 5.10: Map of Improved Property Flood Vulnerability – Tybee Island



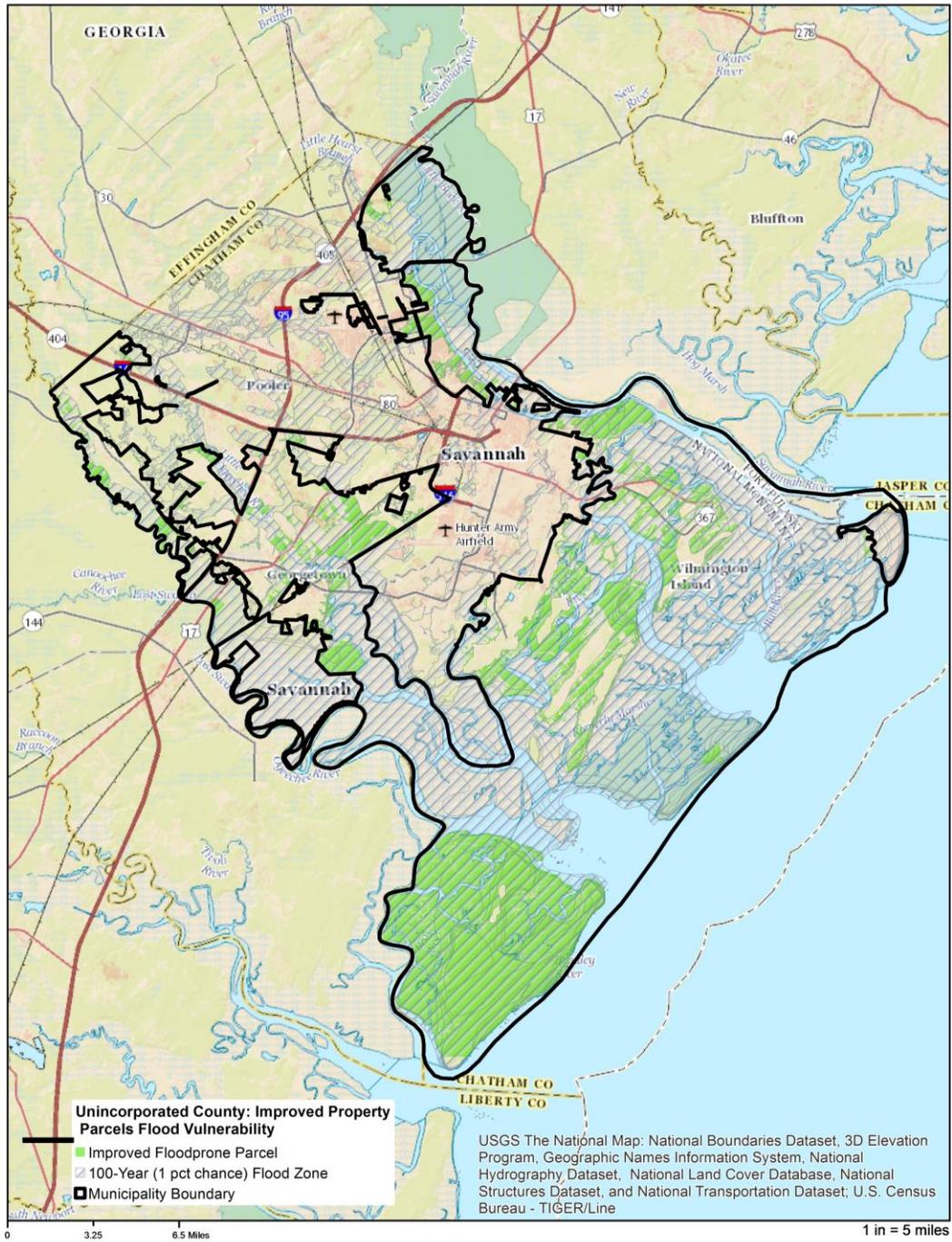
CHATHAM COUNTY – REDEVELOPMENT PLAN

Figure 5.11: Map of Improved Property Flood Vulnerability - Vernonburg



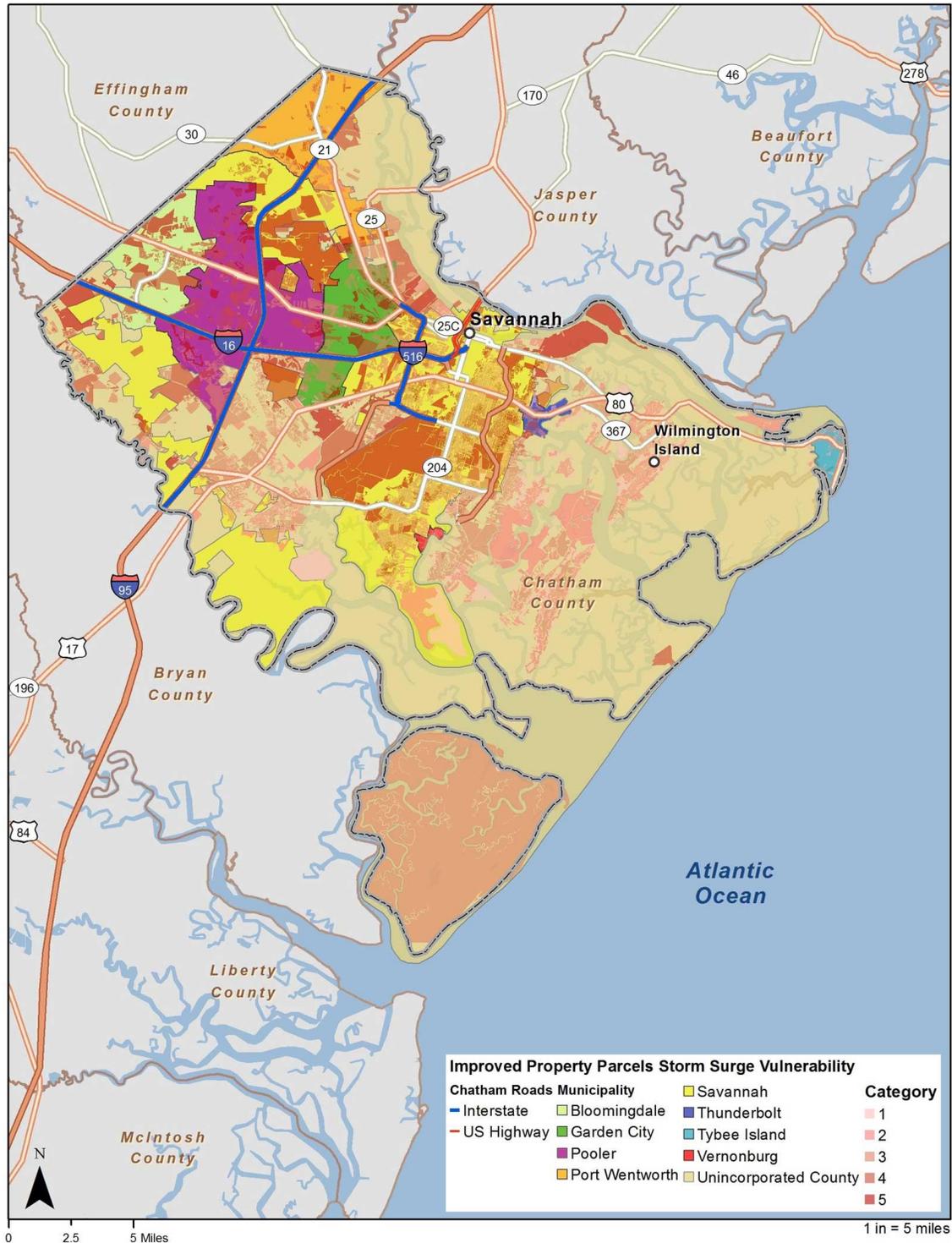
CHATHAM COUNTY – REDEVELOPMENT PLAN

Figure 5.12: Map of Improved Property Flood Vulnerability – Unincorporated County



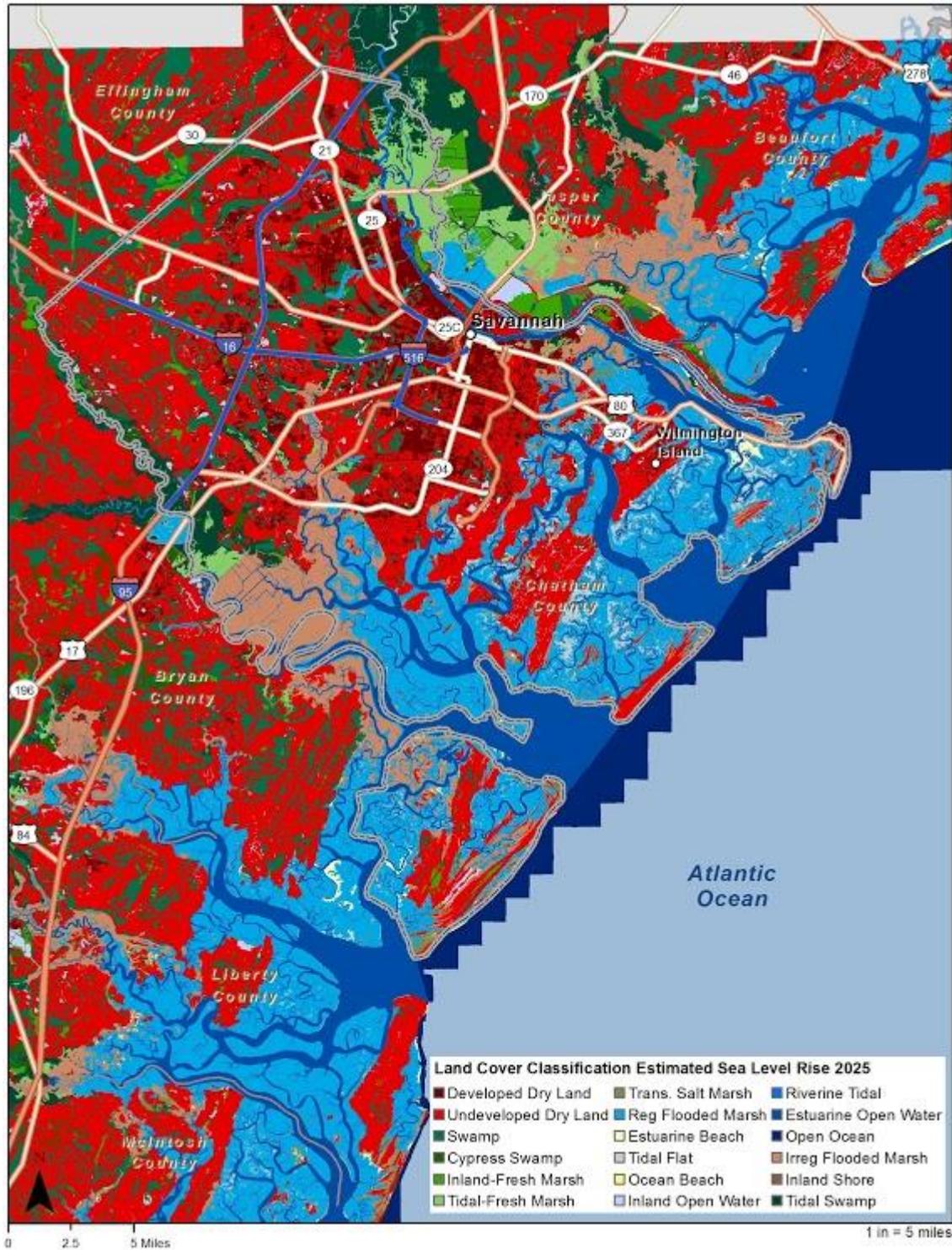
CHATHAM COUNTY – REDEVELOPMENT PLAN

Figure 5.13: Map of Improved Property Storm Surge Vulnerability



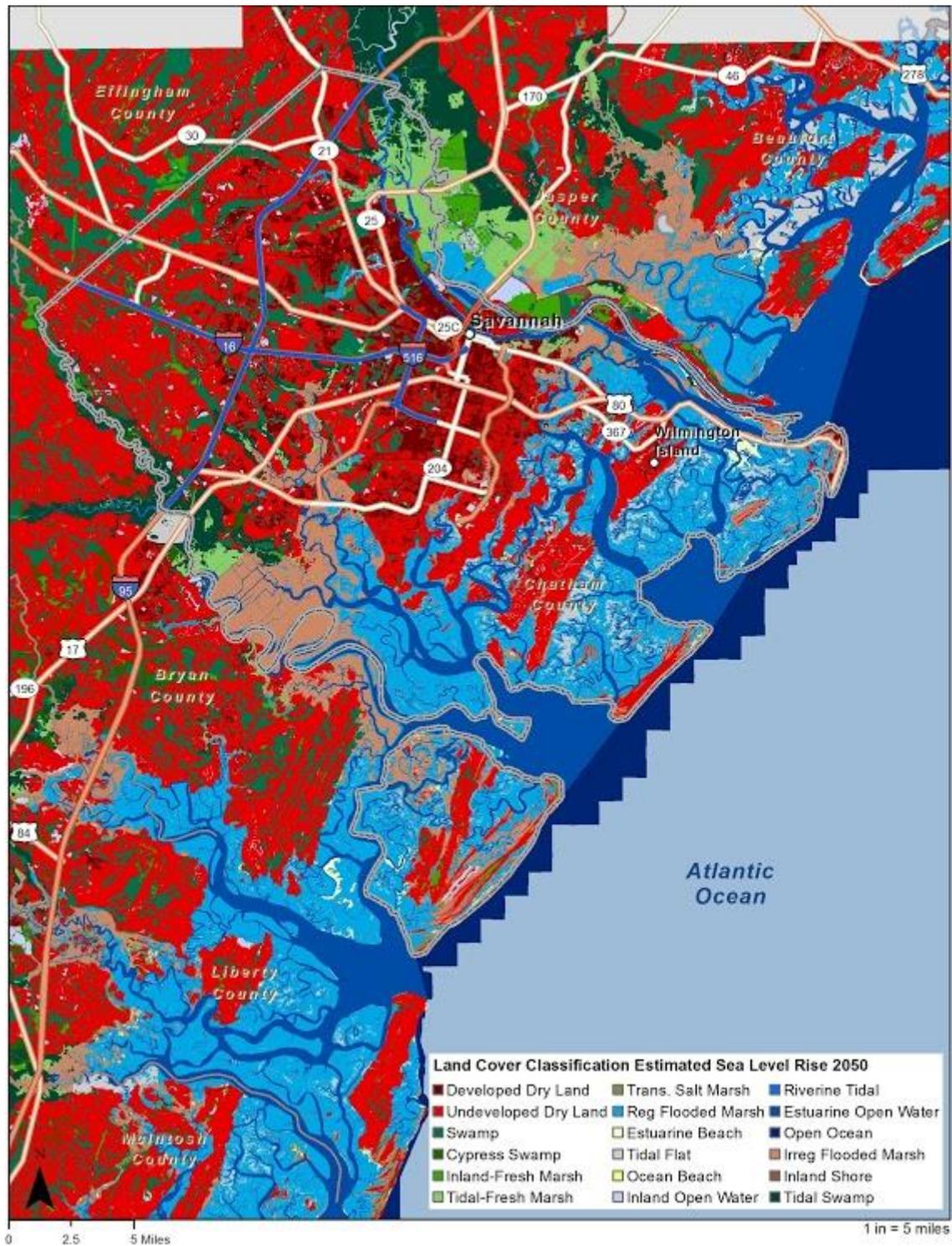
CHATHAM COUNTY – REDEVELOPMENT PLAN

Figure 5.14: Map of Improved Property Sea Level Rise Vulnerability 25 year



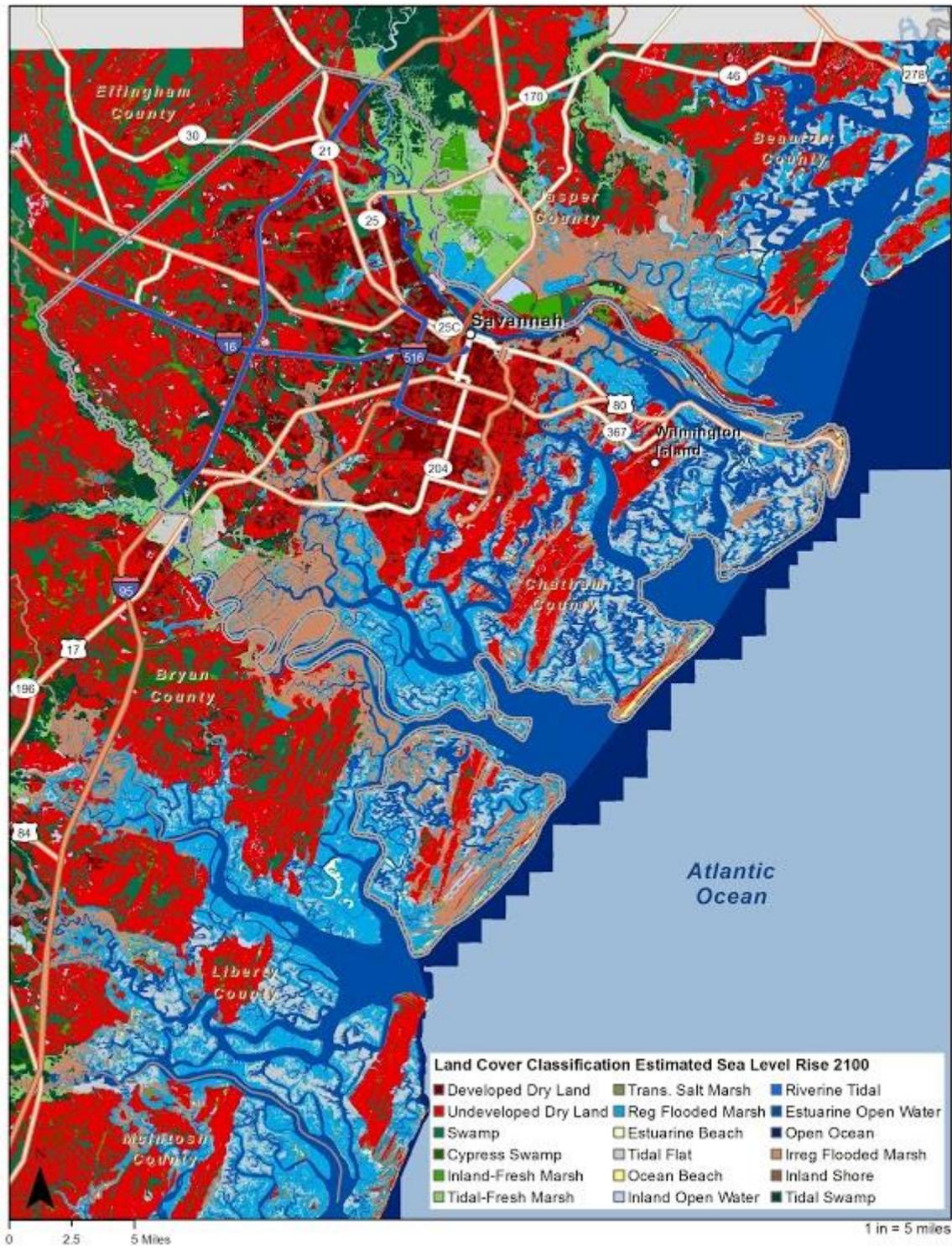
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Figure 5.15: Map of Improved Property Sea Level Rise Vulnerability 50 year



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Figure 5.16: Map of Improved Property Sea Level Rise Vulnerability 100 year



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Table 5.6: Table of Improved Parcel Data by Acreage

Municipality	Building Value of Structures in 500-yr Flood Zone	# Acres in 500-yr Flood Zone	# Parcels in 500-yr Flood Zone
Bloomingtondale	\$20,148,409.00	75.81	215
Garden City	\$281,812,120.00	2,095.38	1,725
Pooler	\$730,967,461.00	1,080.43	860
Port Wentworth	\$139,723,230.00	472.58	822
Savannah	\$1,681,317,259.00	2,763.35	7,175
Thunderbolt	\$39,268,142.00	26.77	160
Unincorp	\$2,099,942,871.00	7,109.39	10,191
Vernonburg	\$10,357,506.00	56.28	58
Grand Total	\$5,003,536,998.00	13,679.99	21,206

5.4.2 VULNERABILITY OF CRITICAL FACILITIES AND AREAS CONTAINING VULNERABLE POPULATIONS

In order to complete the vulnerability assessment for Chatham County’s critical facilities, areas containing vulnerable populations, infrastructure and utilities, geospatial databases were made available through Chatham County’s GIS information. These databases included georeferenced point locations for all of the items listed in the asset inventory.

To determine the vulnerability of infrastructure and public utilities to hazards, an overlay analysis was conducted utilizing GIS. Flood, storm surge, sea level rise, and coastal were overlaid with the critical facilities, infrastructure and utilities to determine vulnerability. **Table 4.4** provides a general summary of the number and type of facilities at risk to the hazard, **Figures 4.17-4.24** show critical facilities vulnerability to flooding by jurisdiction, and **Figures 4.25-4.35** show critical facilities vulnerability to storm surge by jurisdiction.

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Table 5.7: Type and Vulnerability of Critical Facilities and Areas Containing Vulnerable Populations

Critical Facility Category Type	Total Number	Number in 100 Year Flood Zone	Percent in 100 year Flood Zone	Number in 500 Year Flood Zone	Percent in 500 Year Flood Zone
Cultural	64	13	20.31%	4	6.25%
Government Buildings	73	12	16.44%	9	12.33%
Hazmat	4	2	50.00%	0	0.00%
Other	20	2	10.00%	1	5.00%
Safety	72	11	15.28%	7	9.72%
School	59	9	15.25%	13	22.03%
Transportation	22	0	0.00%	0	0.00%
Vulnerable Populations	11	3	27.27%	0	0.00%
Water	432	19	4.40%	13	3.01%
TOTAL	757	71	9.38%	47	6.21%

Critical Facility Category Type	Number in Cat 1 Storm Surge	Percent in Cat 1 Storm Surge	Number in Cat 2 Storm Surge	Percent in Cat 2 Storm Surge	Number in Cat 3 Storm Surge	Percent in Cat 3 Storm Surge
Cultural	8	12.50%	9	14.06%	9	14.06%
Government Buildings	3	4.11%	11	15.07%	19	26.03%
Hazmat	1	25.00%	1	25.00%	0	0.00%
Other	1	5.00%	5	25.00%	7	35.00%
Safety	4	5.56%	12	16.67%	21	29.17%
School	1	1.69%	6	10.17%	24	40.68%
Transportation	1	4.55%	0	0.00%	2	9.09%
Vulnerable Populations	1	9.09%	1	9.09%	5	45.45%
Water	53	12.27%	122	28.24%	120	27.78%
TOTAL	73	9.64%	167	22.06%	207	27.34%

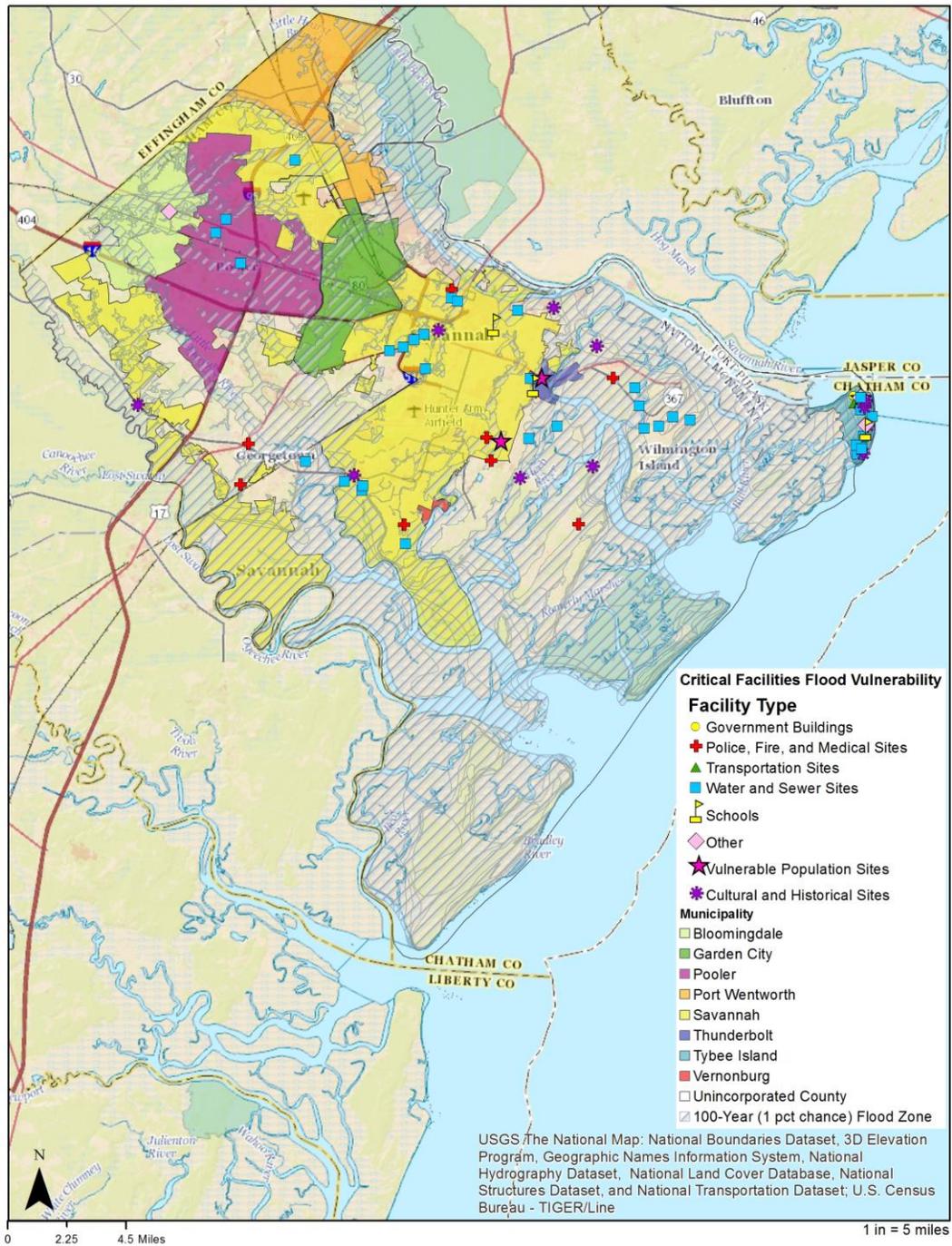
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Critical Facility Category Type	Number in Cat 4 Storm Surge	Percent in Cat 4 Storm Surge	Number in Cat 5 Storm Surge	Percent in Cat 5 Storm Surge
Cultural	4	6.25%	1	1.56%
Government Buildings	18	24.66%	3	4.11%
Hazmat	1	25.00%	0	0.00%
Other	5	25.00%	1	5.00%
Safety	17	23.61%	4	5.56%
School	10	16.95%	8	13.56%
Transportation	6	27.27%	3	13.64%
Vulnerable Populations	3	27.27%	1	9.09%
Water	65	15.05%	11	2.55%
TOTAL	129	17.04%	32	4.23%

Critical Facility Category Type	Number in 2025 Sea Level Rise	Percent in 2025 Sea Level Rise	Number in 2050 Sea Level Rise	Percent in 2050 Sea Level Rise	Number in 2100 Sea Level Rise	Percent in 2100 Sea Level Rise
Cultural	1	1.56%	1	1.56%	4	6.25%
Government Buildings	0	0.00%	0	0.00%	0	0.00%
Hazmat	0	0.00%	0	0.00%	0	0.00%
Other	0	0.00%	0	0.00%	0	0.00%
Safety	0	0.00%	0	0.00%	1	1.39%
School	0	0.00%	0	0.00%	0	0.00%
Transportation	0	0.00%	0	0.00%	0	0.00%
Vulnerable Populations	0	0.00%	0	0.00%	0	0.00%
Water	1	0.23%	2	0.46%	2	0.46%
TOTAL	2	0.26%	3	0.40%	7	0.92%

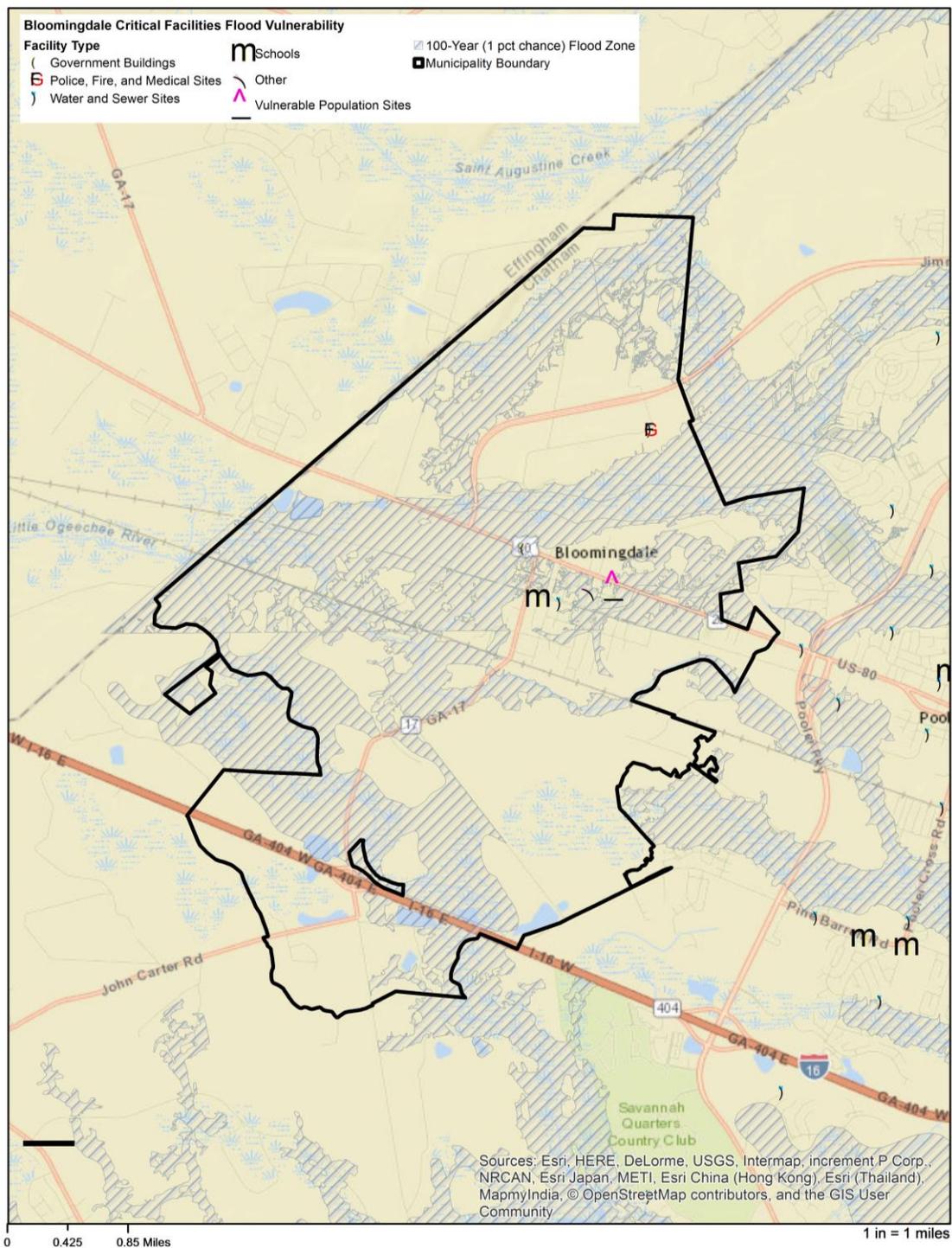
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Figure 5.17: Map of Critical Facility Flood Vulnerability



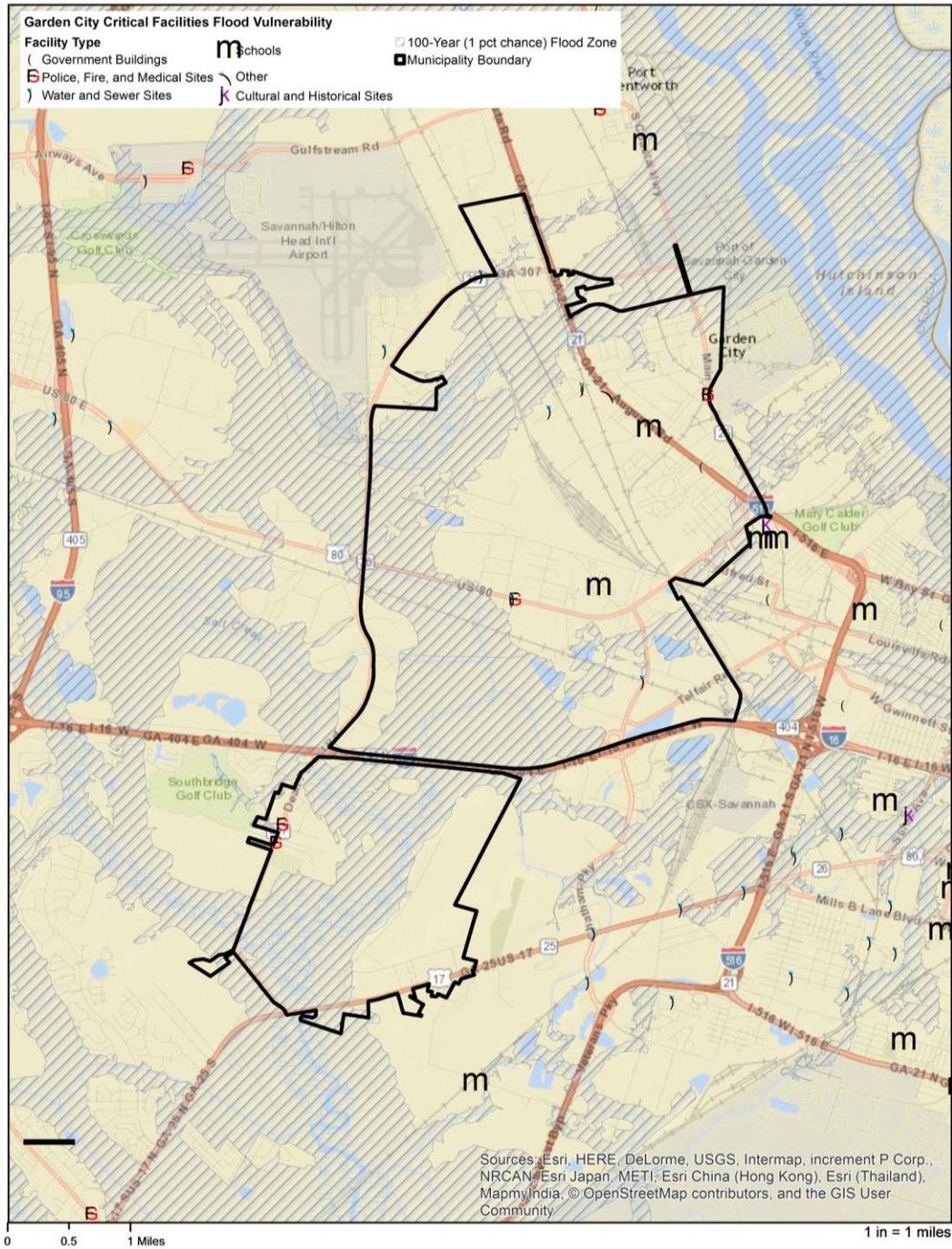
CHATHAM COUNTY – REDEVELOPMENT PLAN

Figure 5.18: Map of Critical Facilities Flood Vulnerability - Bloomingdale



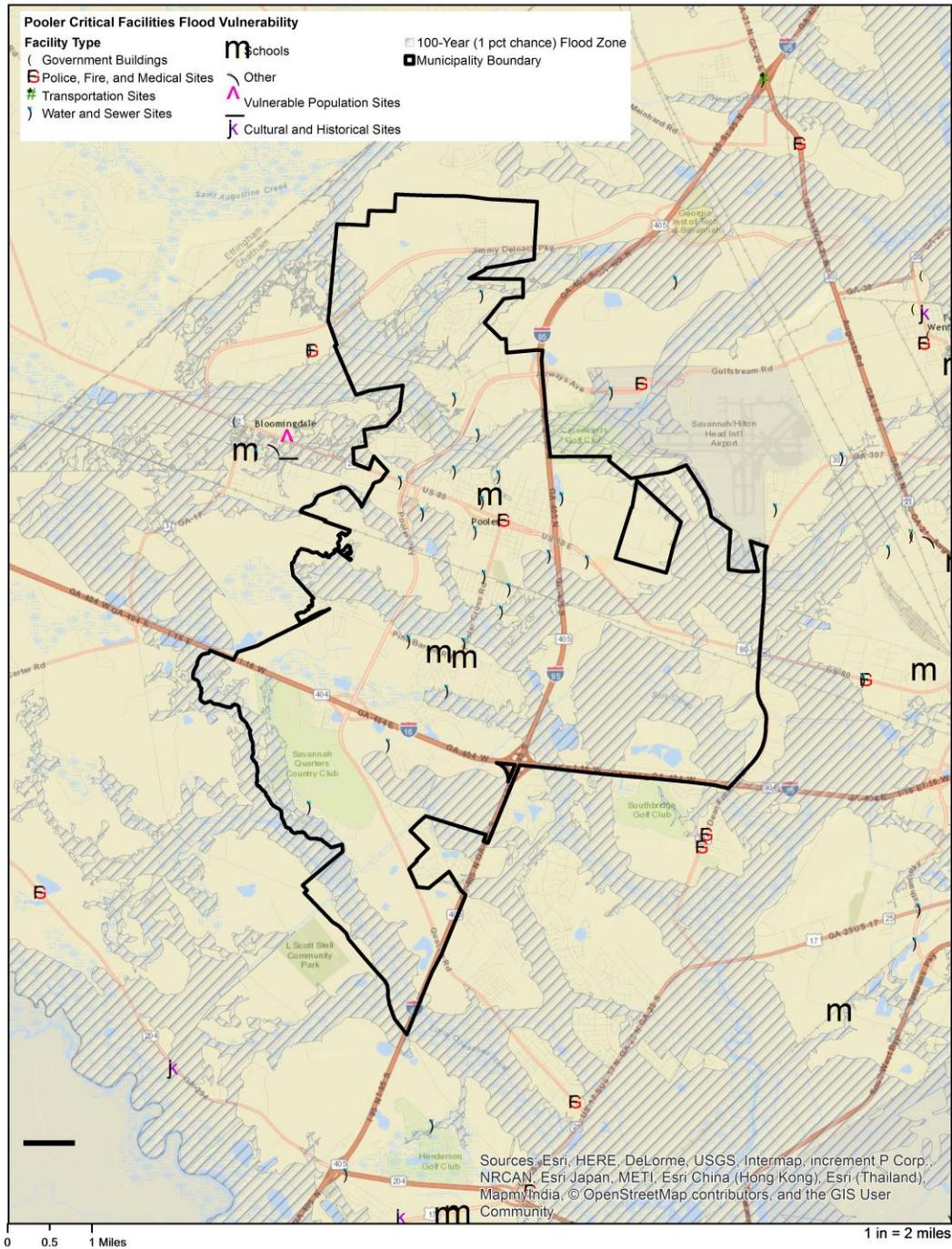
CHATHAM COUNTY – REDEVELOPMENT PLAN

Figure 5.19: Map of Critical Facilities Flood Vulnerability – Garden City



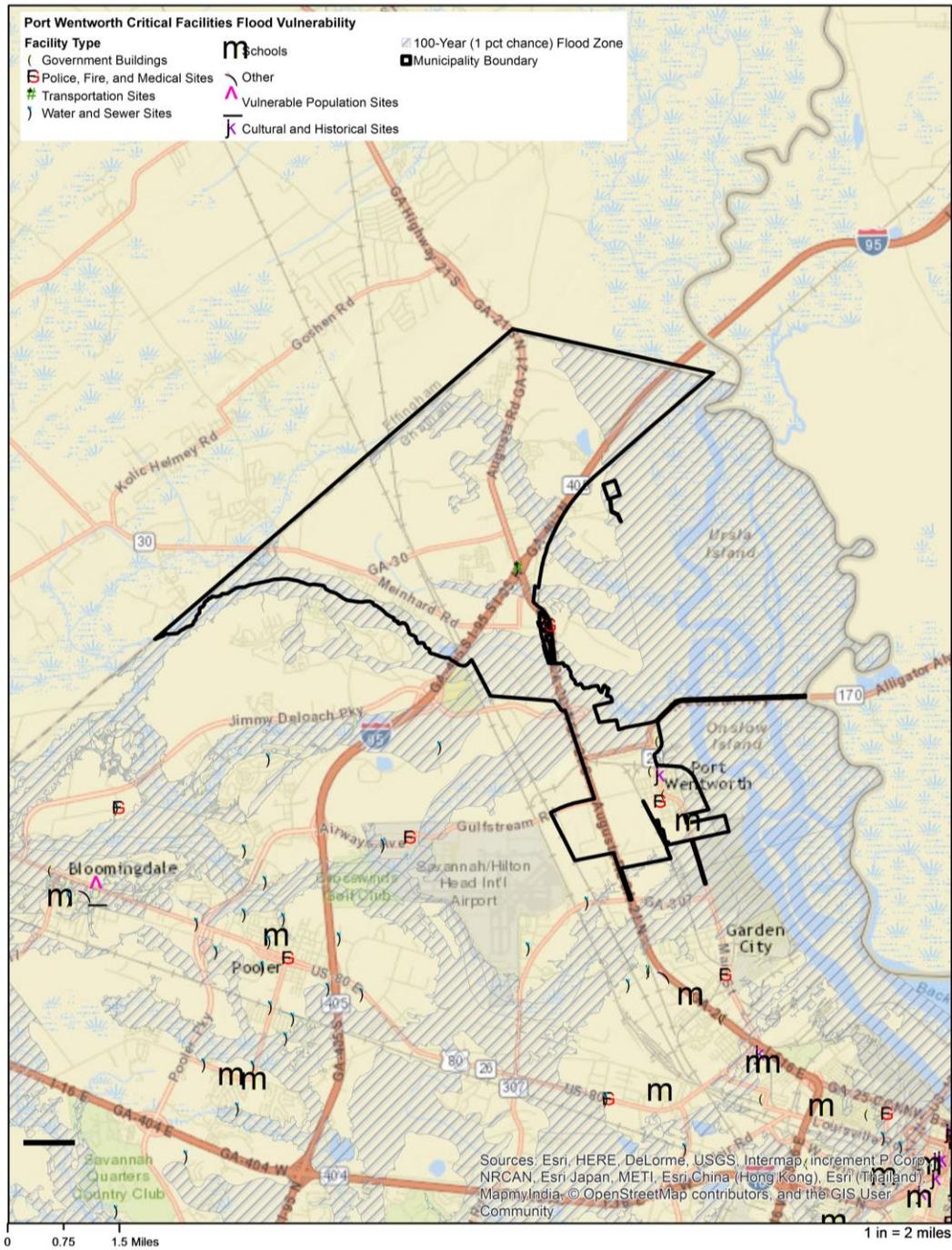
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Figure 5.20: Map of Critical Facilities Flood Vulnerability – Pooler



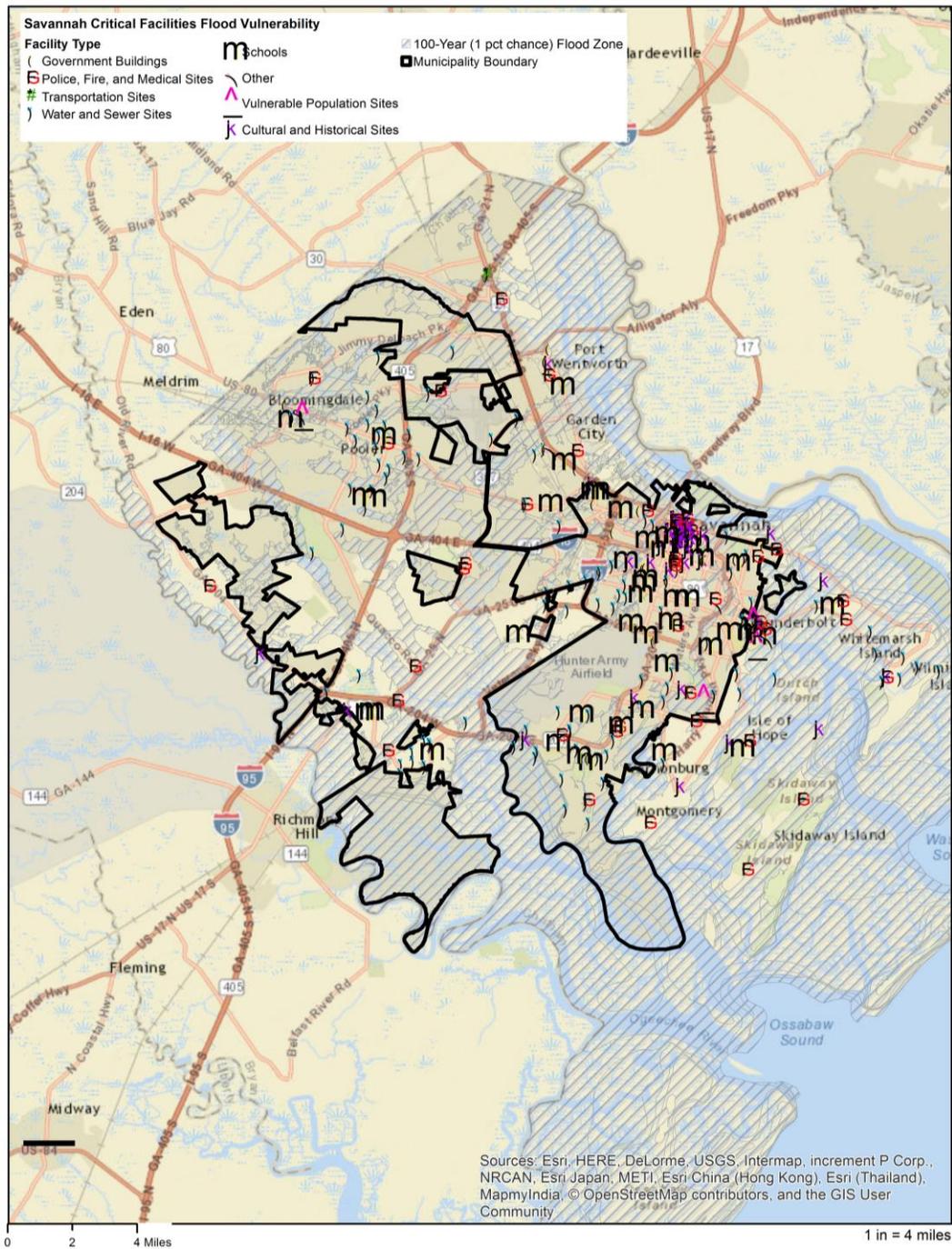
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Figure 5.21: Map of Critical Facility Flood Vulnerability – Port Wentworth



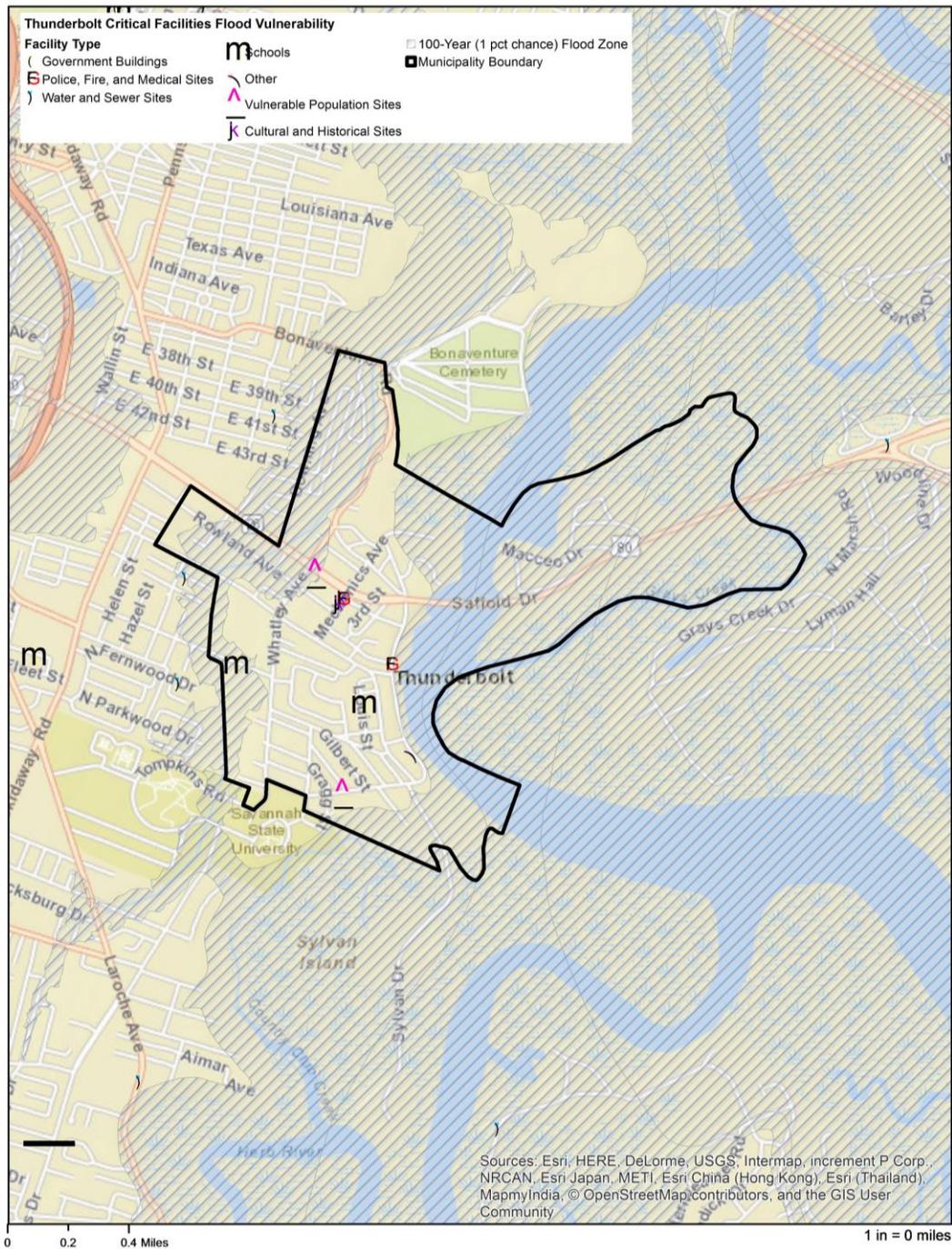
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Figure 5.22: Map of Critical Facilities Flood Vulnerability - Savannah



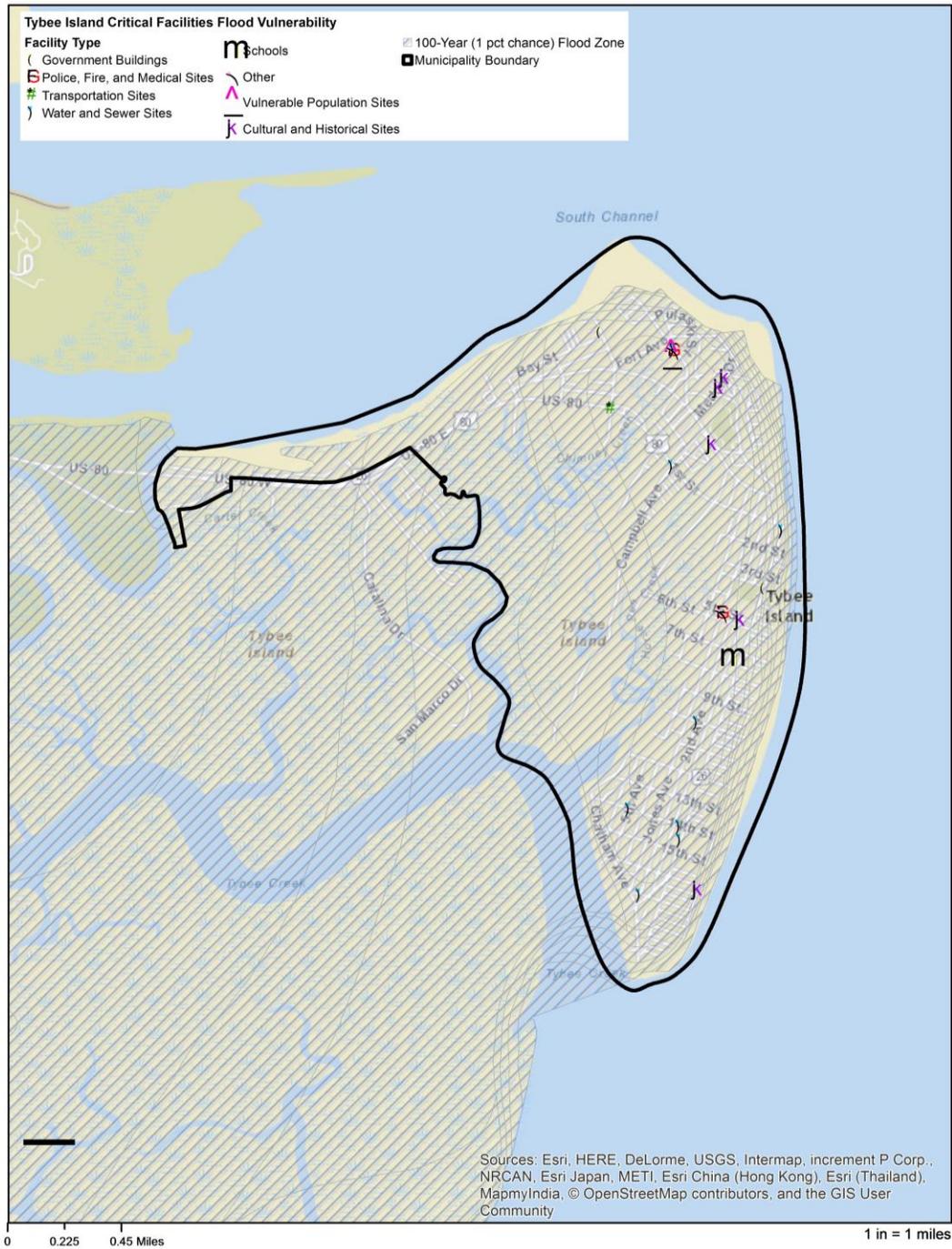
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Figure 5.23: Map of Critical Facilities Flood Vulnerability - Thunderbolt



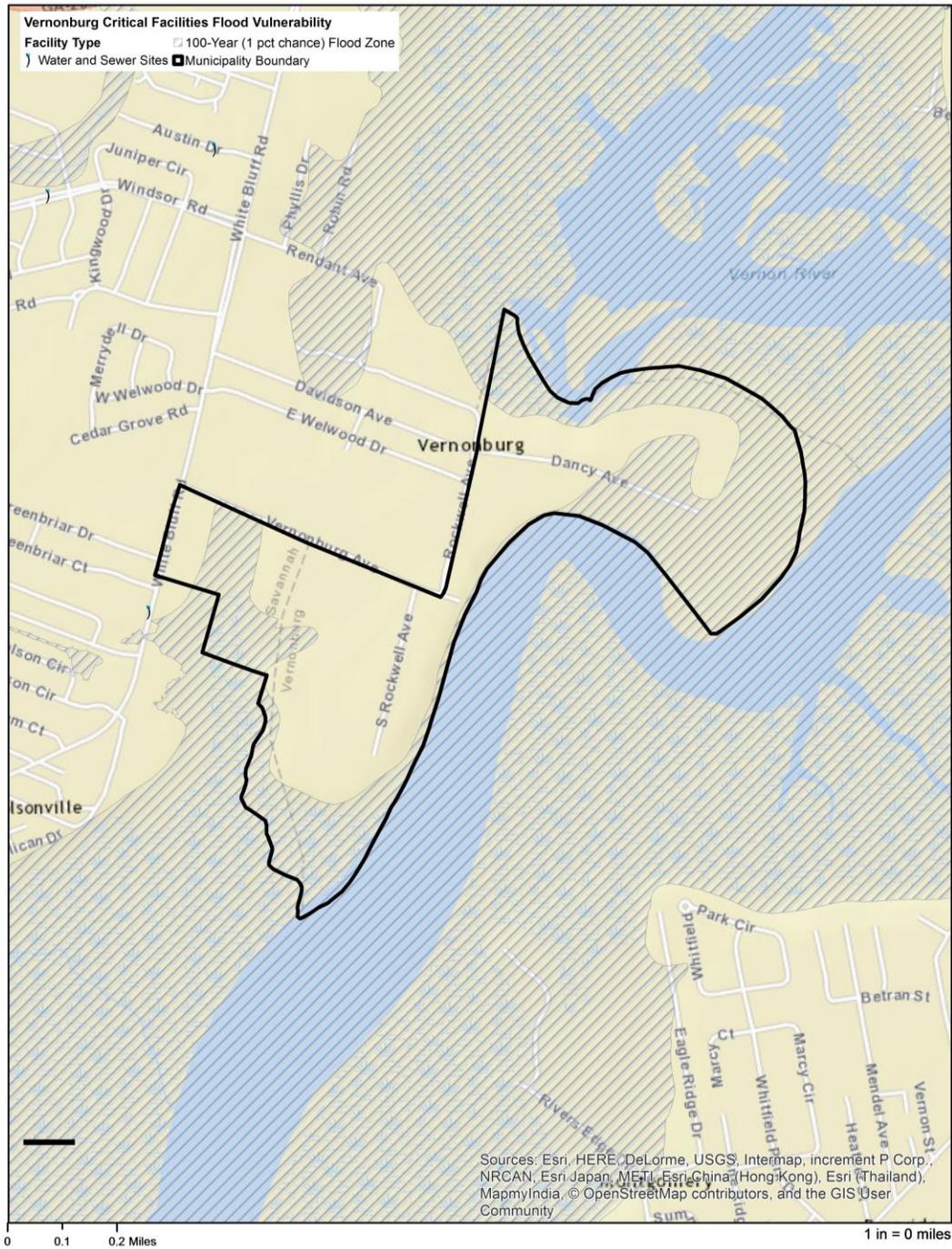
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Figure 5.24: Map of Critical Facilities Flood Vulnerability – Tybee Island



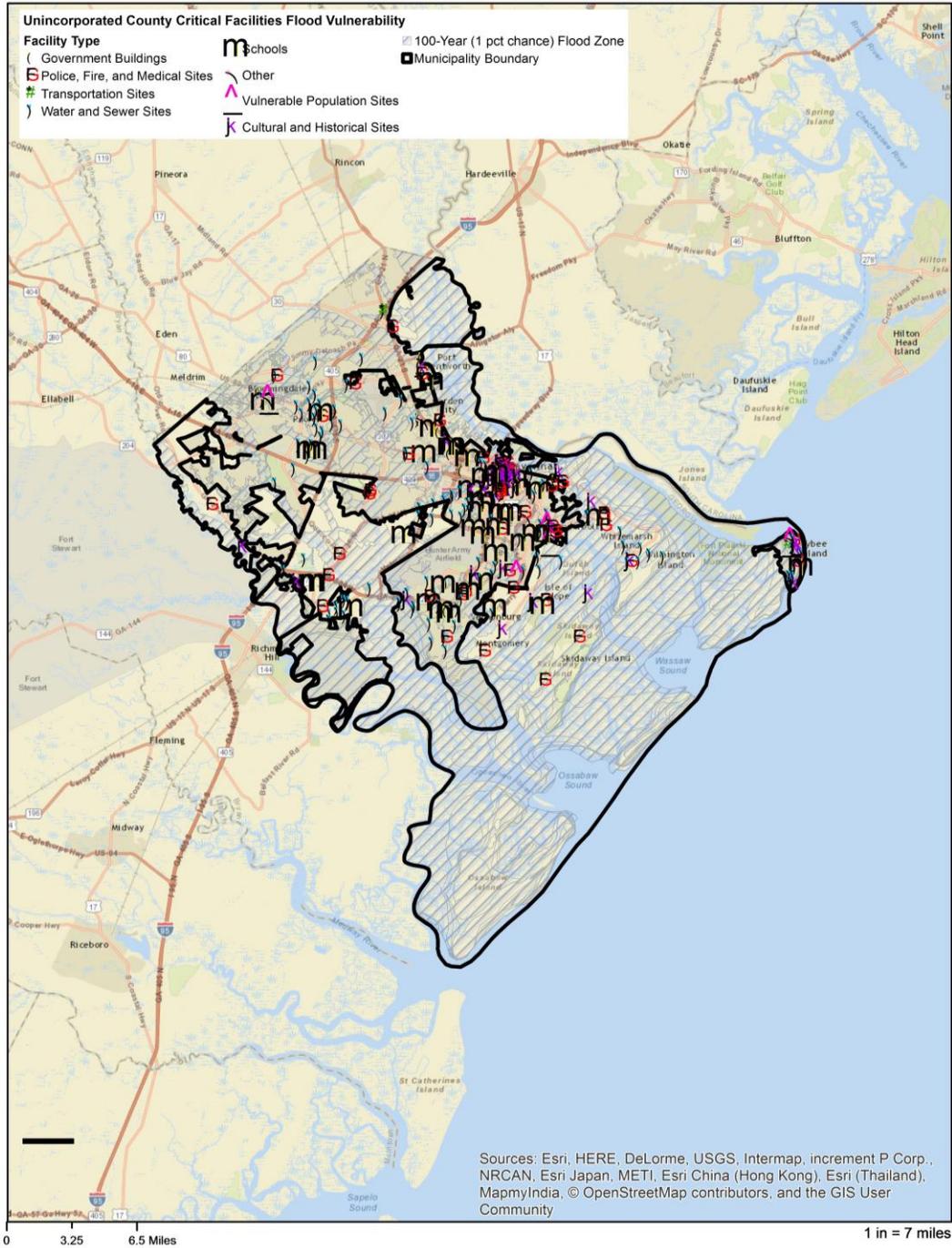
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Figure 5.25: Map of Critical Facilities Flood Vulnerability - Vernonburg



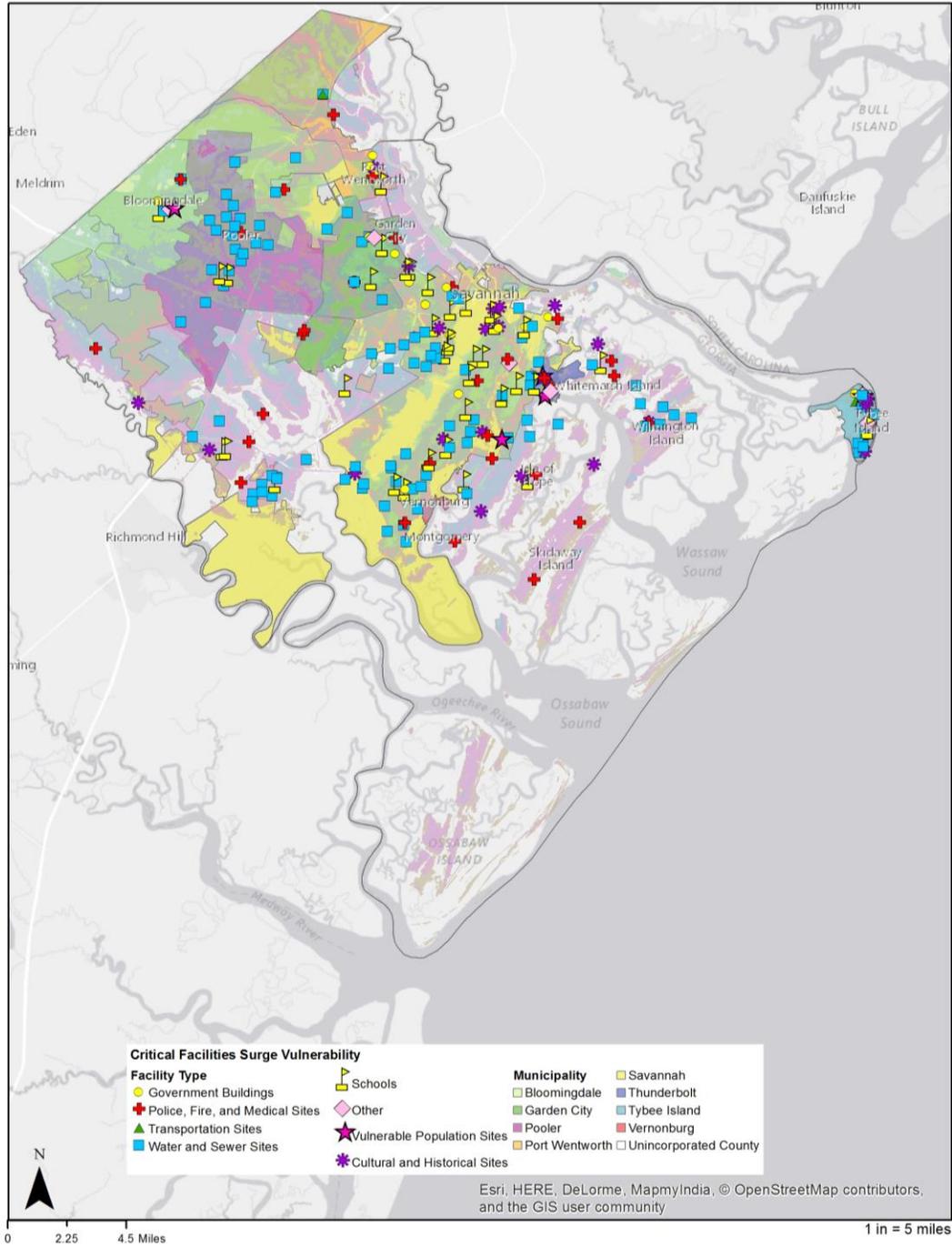
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Figure 5.26: Map of Critical Facilities Flood Vulnerability – Unincorporated County



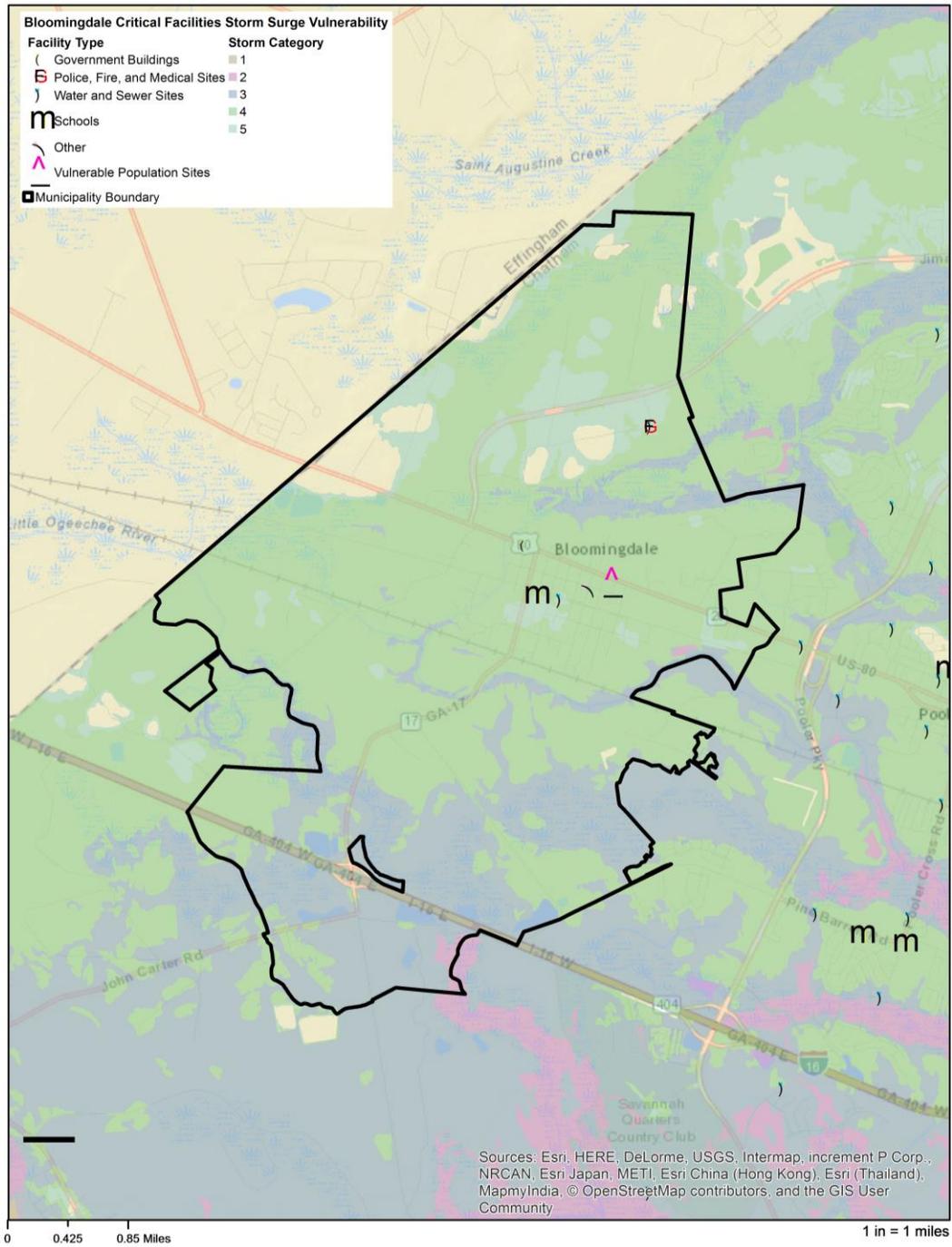
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Figure 5.27: Map of Critical Facilities Storm Surge Vulnerability



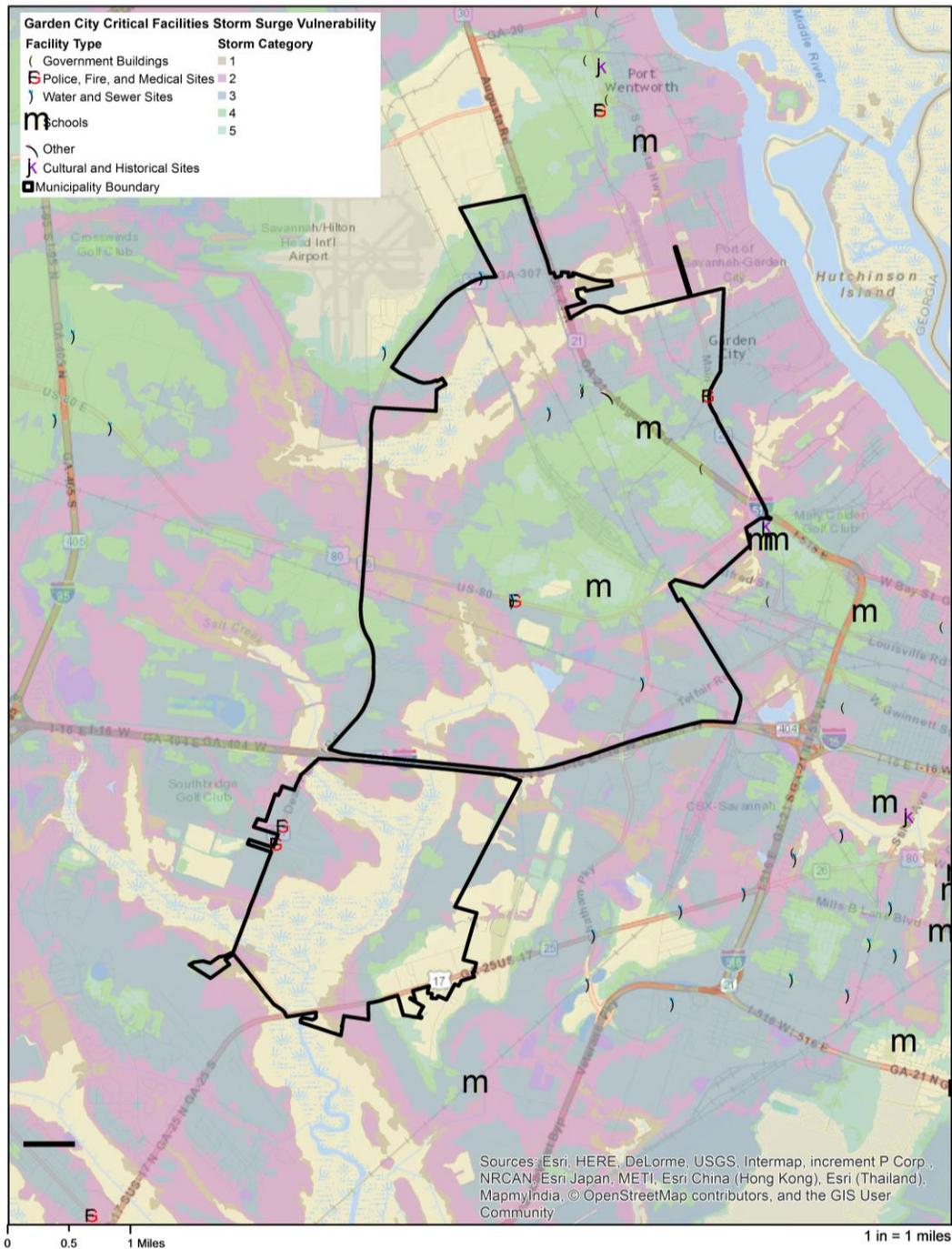
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Figure 5.28: Map of Critical Facilities Storm Surge Vulnerability – Bloomingdale



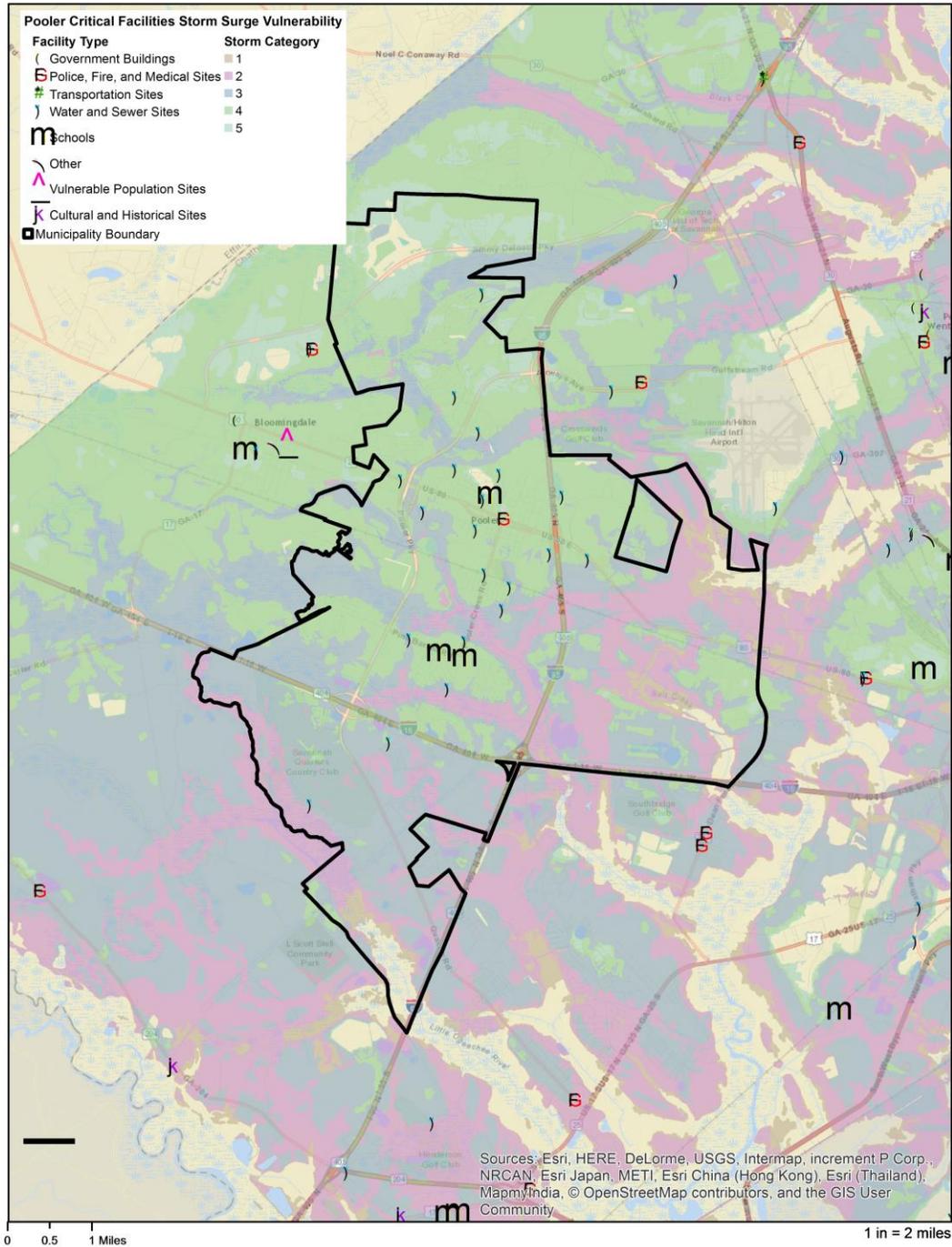
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Figure 5.29: Map of Critical Facilities Storm Surge Vulnerability – Garden City



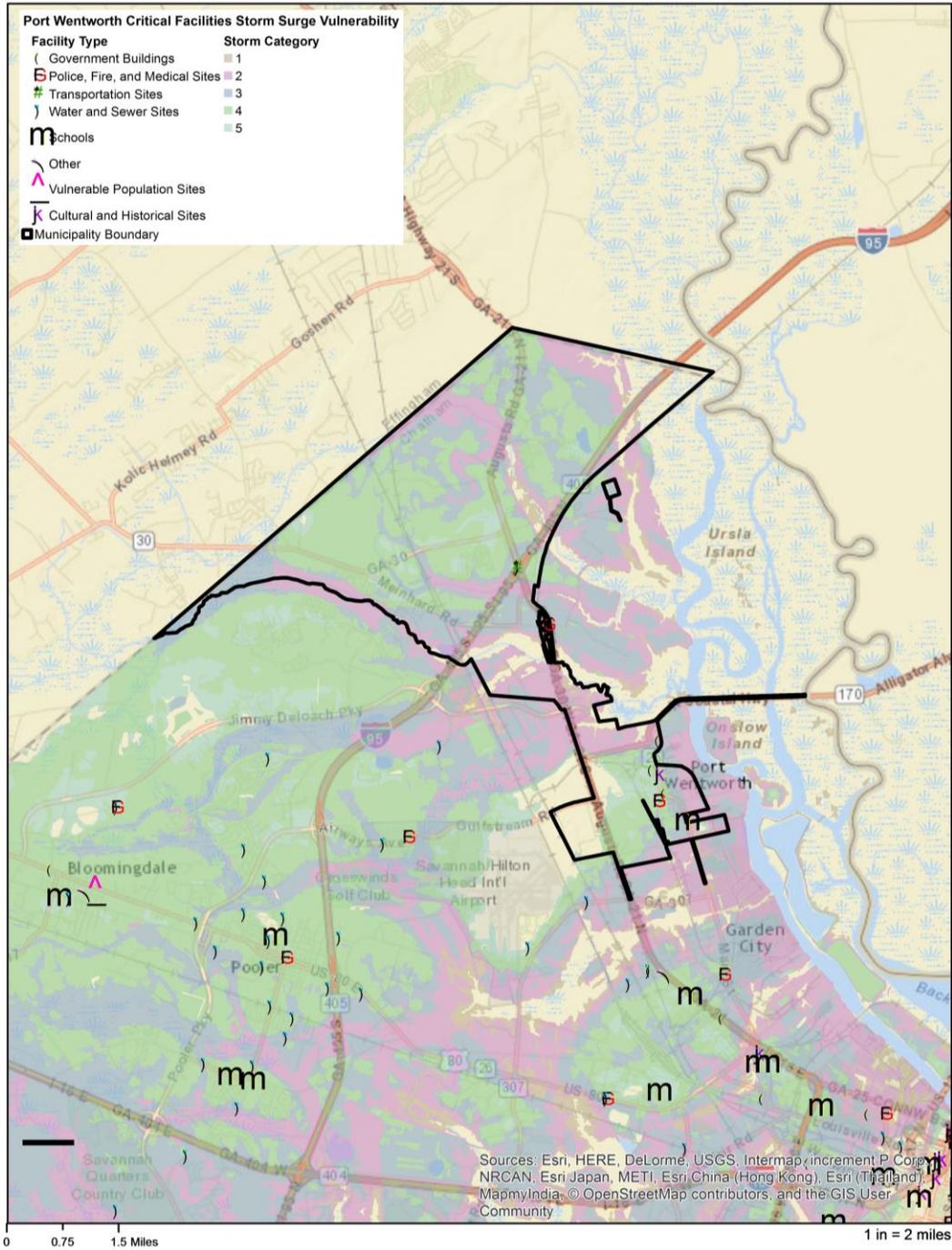
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Figure 5.30: Map of Critical Facilities Storm Surge Vulnerability – Pooler



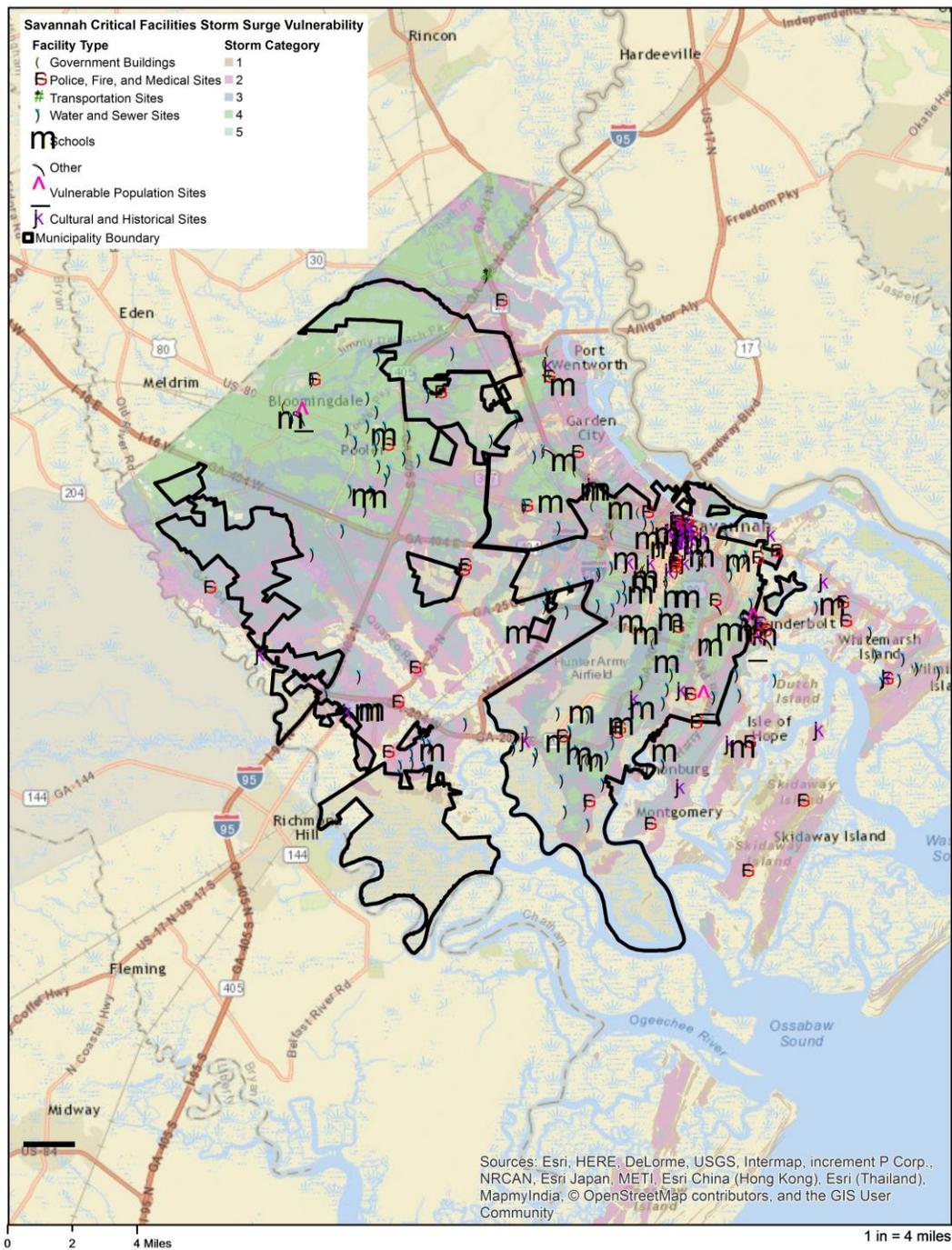
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Figure 5.31: Map of Critical Facilities Storm Surge Vulnerability – Port Wentworth



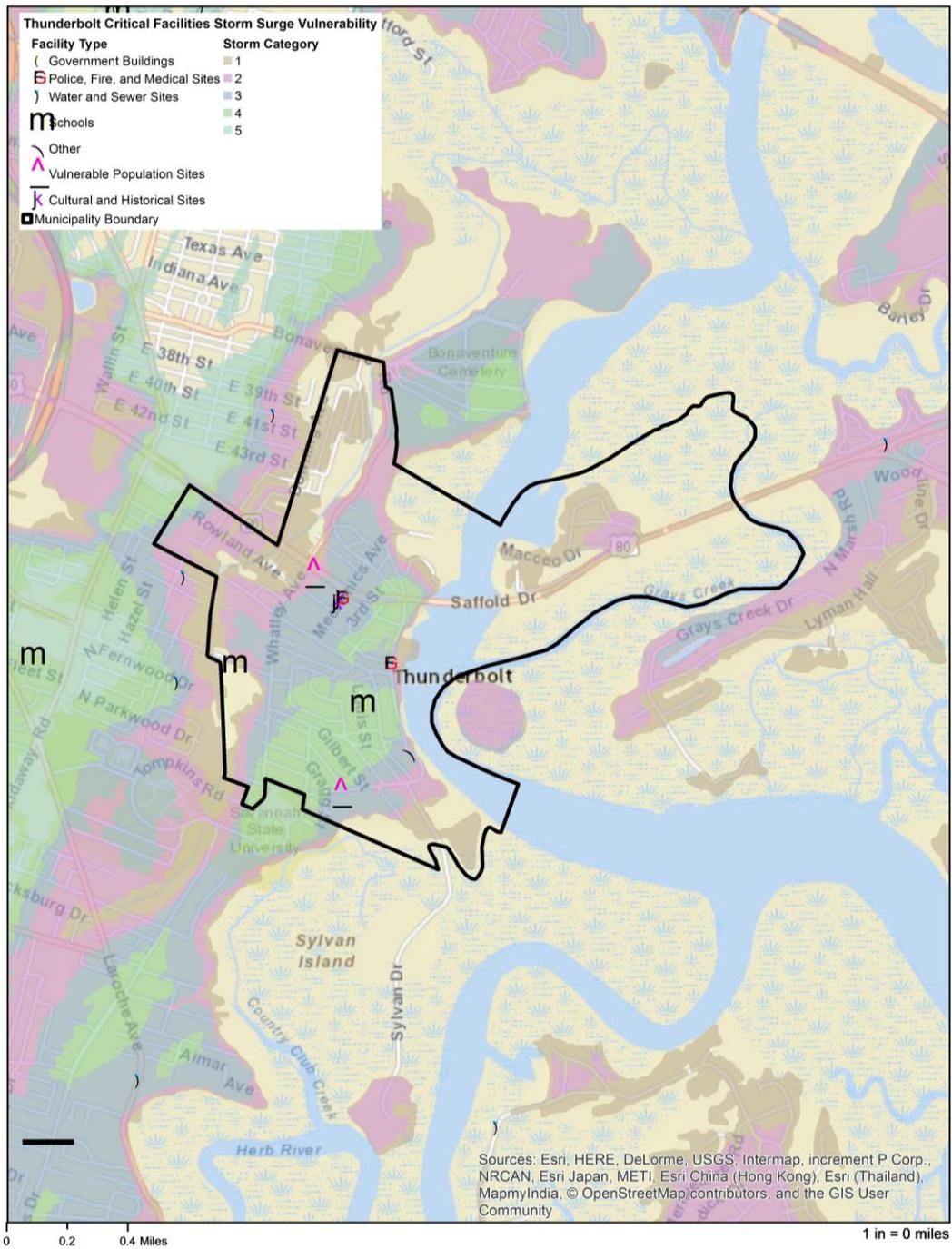
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Figure 5.32: Map of Critical Facilities Storm Surge Vulnerability – Savannah



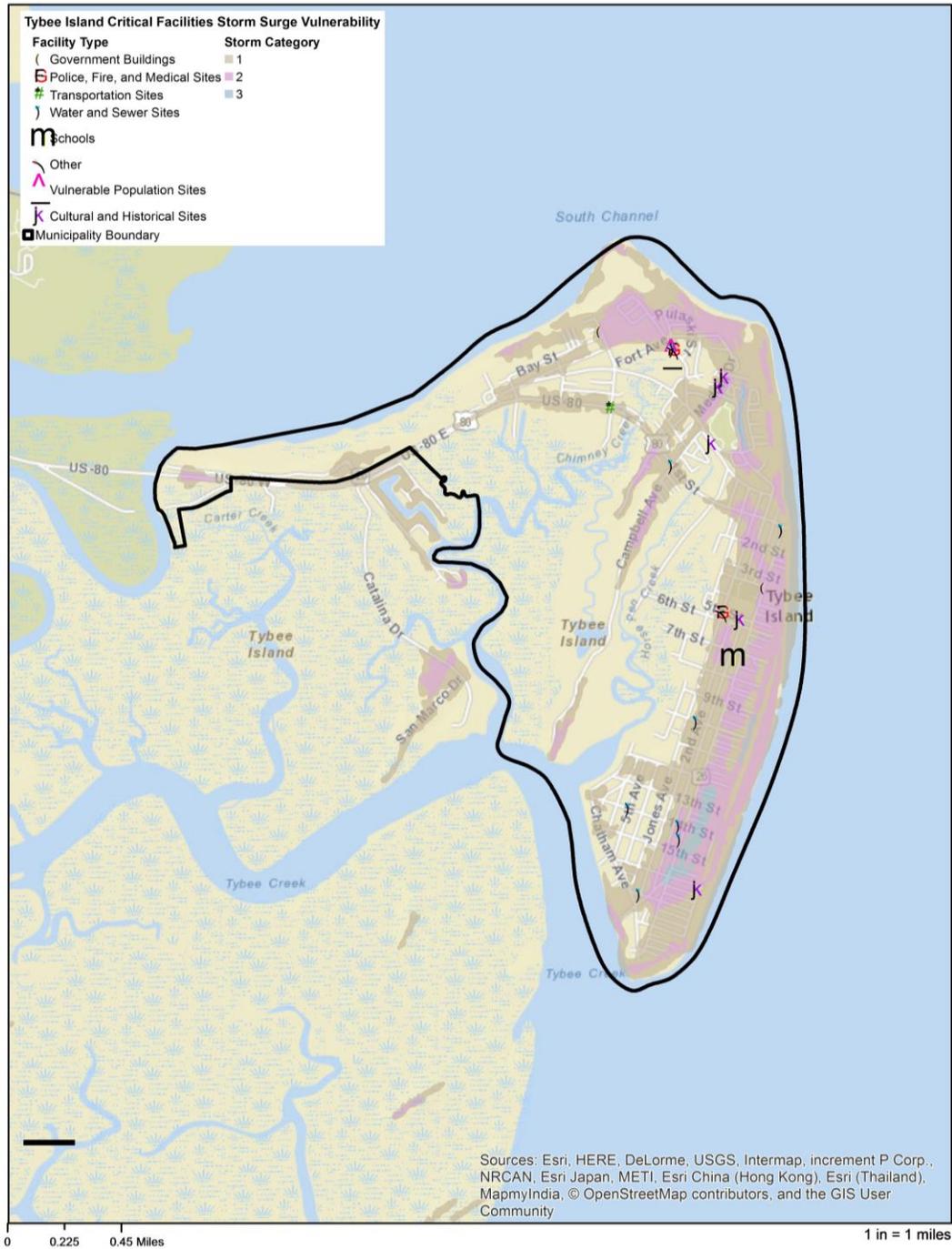
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Figure 5.33: Map of Critical Facilities Storm Surge Vulnerability – Thunderbolt



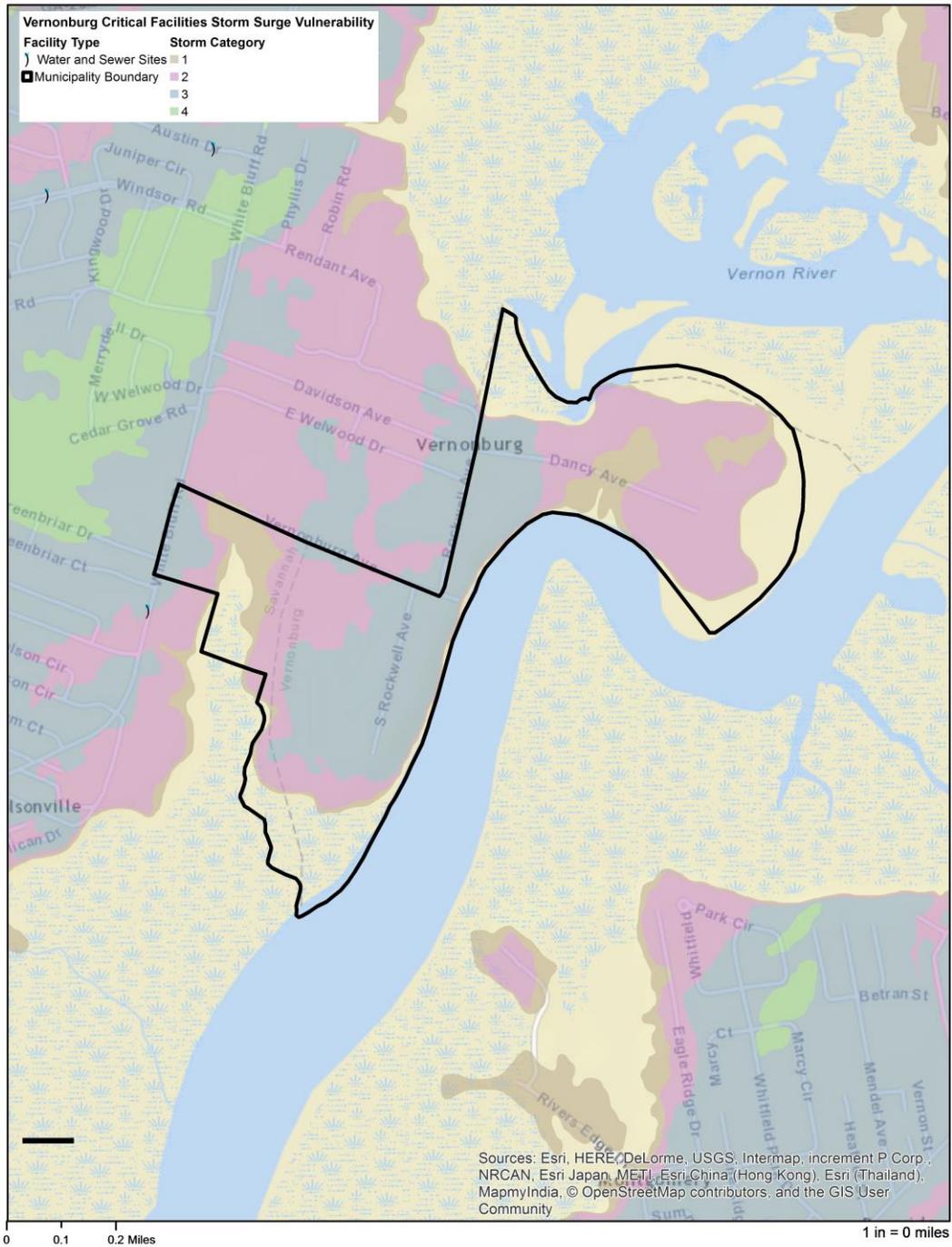
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Figure 5.34: Map of Critical Facilities Storm Surge Vulnerability – Tybee Island



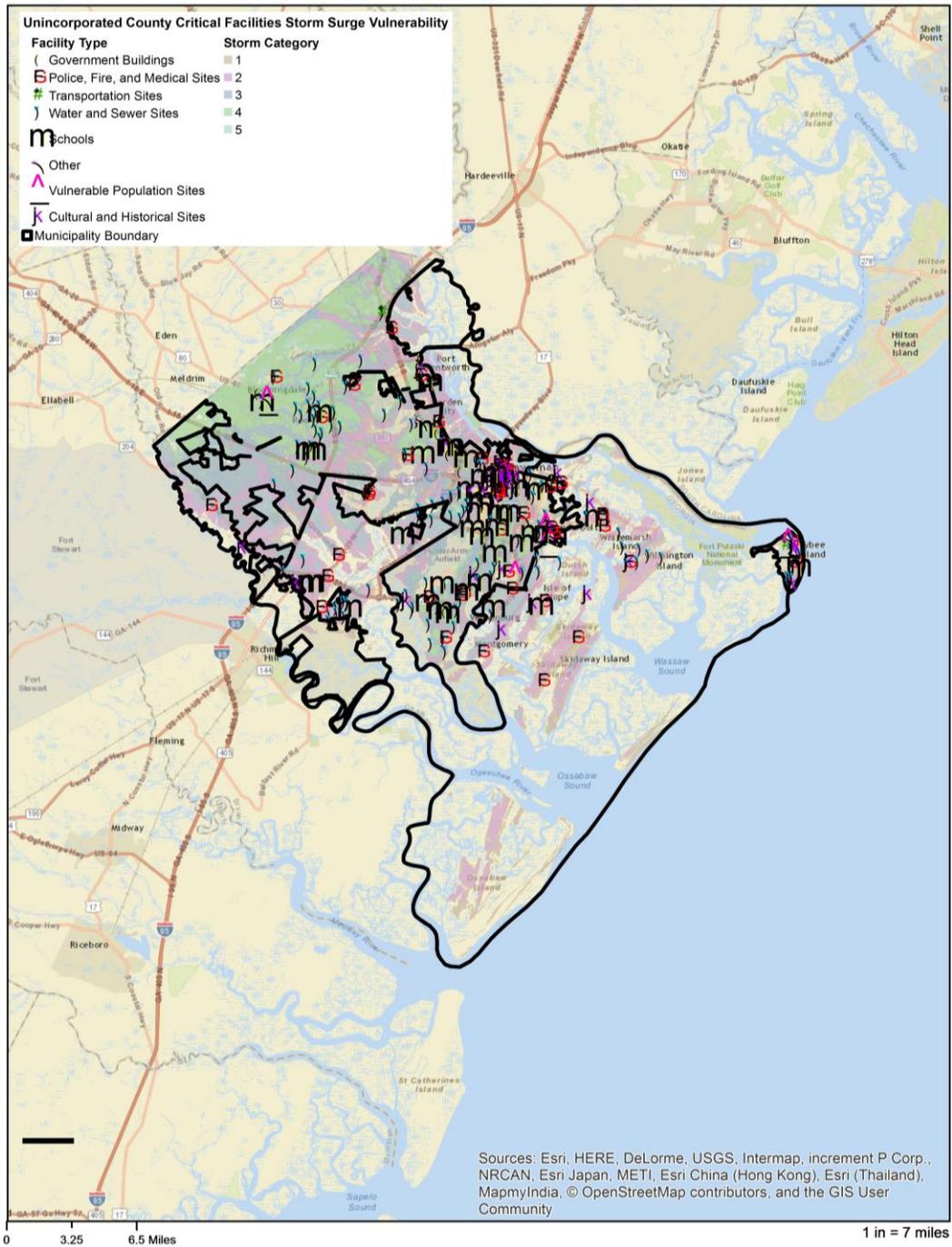
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Figure 5.35: Map of Critical Facilities Storm Surge Vulnerability - Vernonburg



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Figure 5.36: Map of Critical Facilities Storm Surge Vulnerability – Unincorporated County



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5.4.3 ECONOMIC VULNERABILITY

Restoring the economic engine of the county is essential to the successful redevelopment of the community. It is estimated that anywhere from 25% to 40% of small businesses that are impacted by a disaster, never reopen. If this were to occur in Chatham County, it could have a major impact on Chatham County government and the services it provides to its citizens.

Large businesses are often better prepared to recover from a disaster due to the larger network of resources available to the business and the preparation put into planning for a disaster. This planning is often put in writing in the form of a disaster recovery plan for the business. However, large businesses are not completely immune to the impacts of a catastrophic disaster.

5.4.4 SOCIAL VULNERABILITY

The U.S. Census Bureau has estimated that the 2014 population for Chatham County was 283,379, an increase of more than 6.9% over the 265,128 population of 2010. According to 2010 census data from the U.S. Census Bureau, the median age in Chatham County is 34 years old compared to the national average of 37.2 years. The average household size is two people. Several areas were investigated to identify population segments that may potentially be at higher risk in the event of a disaster. In general,

- Seven percent of the population was under the age of five in 2013.
- Eight percent speak a language other than English at home (aged 5 years and older) (2009-2013).
- 13.3 percent of the population was 65 years old or older in 2013.
- 18.2 percent of people held poverty status.
- The median household income (2009-2013) was \$49,179.
- 19.2 percent of residents are food insecure and live in a food desert (The United States Department of Agriculture (USDA) defines food insecurity as limited or uncertain availability of nutritionally adequate foods or uncertain ability to acquire these foods in socially acceptable ways).
- Chatham County had 5.7 percent unemployment rate as of August 2015.
- 18.9 percent of county residents live in conditions with increased exposure to mold, mildew growth, pest infestation, and other environmental hazards.

These factors indicate that low income, elderly, and alternate language speakers are populations that may face a greater vulnerability in the wake of a major disaster and should be taken into account during the pre-disaster timeframe.

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5.4.5 HISTORIC PROPERTY VULNERABILITY

Historic properties are defined for the purposes of this study as any historic district, site, building, structure or object included in, or eligible for inclusion in the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior or any such property recognized by the State Historic Preservation Office (SHPO) as being historically significant. This term may also include artifacts, records and remains that are related to and located within such properties. This subsection provides a summary of those assets potentially at risk. **Table 4.8** identifies the number of historic properties in the county listed on the NRHP as well as those properties considered historically significant by the State and their susceptibility to the identified disaster types. The Chatham County-Savannah Metropolitan Planning Commission also maintains a list of County historic assets that should be reviewed for additional eligibility when determining susceptibility and vulnerability on a county-wide scale.

Table 5.8: Table of Historic Property Vulnerability

	Total Number In County	Number in 100 Year Flood Zone	Percent in 100 Year Flood Zone	Number in 500 Year Flood Zone	Percent in 500 Year Flood Zone	
Historic Properties	217	35	16.13%	10	4.61%	
	Number in Cat 1 Storm Surge	Percent in Cat 1 Storm Surge	Number in Cat 2 Storm Surge	Percent in Cat 2 Storm Surge	Number in Cat 3 Storm Surge	Percent in Cat 3 Storm Surge
Historic Properties	16	7.37%	17	7.83%	26	11.98%
	Number in Cat 4 Storm Surge	Percent in Cat 4 Storm Surge	Number in Cat 5 Storm Surge	Percent in Cat 5 Storm Surge		
Historic Properties	13	5.99%	4	1.84%		
	Number in 2025 Sea Level Rise	Percent in 2025 Sea Level Rise	Number in 2050 Sea Level Rise	Percent in 2050 Sea Level Rise	Number in 2100 Sea Level Rise	Percent in 2100 Sea Level Rise
Historic Properties	5	2.30%	6	2.76%	15	6.91%

The local desire to preserve and protect Chatham County’s heritage is a consideration in analyzing vulnerability and determining the place of historic properties in a redevelopment strategy. There is a high level of community value placed on historic properties and cultural resources in Georgia at the state, regional, and local levels. This extends to historical,

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archaeological, museum, and folk culture resources, as well as other aspects of historic assets. There is a widespread feeling that Georgia’s many historic resources, including those in Chatham County, contribute significantly to the State’s character and economic base and reflect each community’s distinct heritage. This is particularly true in the City of Savannah.

6 CAPACITY ASSESSMENT

This section discusses the capacity of Chatham County government and other critical stakeholders to implement a post disaster redevelopment strategy. It consists of the following ten subsections:

- Planning and Regulatory Organizations
- Plans, Ordinances, and Programs
- Administrative and Technical Capacity
- Fiscal Capacity
- Economic Capacity
- Social Services Capacity
- Political Capacity
- Local Plan Integration

The purpose of conducting a capacity assessment is to determine the ability of a local jurisdiction to implement a post disaster redevelopment strategy, and to identify potential opportunities for establishing or enhancing specific recovery / redevelopment policies, programs or projects.

As in any planning process, it is important to try to establish which goals, objectives and / or actions of a plan are feasible, based on an understanding of the organizational capacity of those agencies or departments tasked with their implementation. A capacity assessment helps to determine which recovery and / or redevelopment actions are practical and likely to be implemented over time, given a local government's planning and regulatory framework, level of administrative and technical support, and amount of fiscal resources.

A capacity assessment has two primary components: 1) an inventory of a local jurisdiction's relevant plans, ordinances or programs already in place and analysis of their potential impact on post-disaster redevelopment; and 2) an analysis of the jurisdiction's capacity to carry them out.

Careful examination of local capacity will detect any existing gaps, shortfalls or weaknesses with ongoing government activities that could hinder proposed recovery / redevelopment activities and possibly exacerbate community recovery / redevelopment efforts. A capacity assessment also highlights the positive steps that have already been taken by the local government to prepare for post-disaster redevelopment, which should continue to be supported and enhanced through future mitigation efforts. The capacity assessment completed for Chatham County serves as a critical planning step and an integral part of the foundation for designing an effective post disaster redevelopment strategy. Coupled with the *Vulnerability Assessment*, the *Capacity Assessment* helps identify and target meaningful

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recovery / redevelopment actions for incorporation in the *Recommendations* section of the Disaster Redevelopment Plan. It not only helps establish the goals and objectives for the county to pursue under this plan, but also ensures that those goals and objectives are realistically achievable under given local conditions.

6.1 PLANNING AND REGULATORY ORGANIZATIONS

The first method in assessing redevelopment capacity began with the identification of planning and regulatory organizations across the county. Within each organization, the lead agency was identified. These findings are identified in **Table 5.1**.

Table 6.1: Table of Planning and Regulatory Organizations

Jurisdiction	Planning Organization
Chatham County	Metropolitan Planning Commission (MPC) County Commission
Bloomingtondale	City Council
Garden City	Department of Planning and Economic Development City Council
Pooler	Planning & Zoning Department City Council
Port Wentworth	Planning and Development Department Planning Commission City Council
Savannah	Development Services Department MPC City Council
Thunderbolt	Planning and Zoning Department Planning and Zoning Commission Town Council
Tybee Island	Planning and Zoning Department City Council
Vernonburg	Town Council

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6.2 PLANS, ORDINANCES, AND PROGRAMS

The second method of assessing capacity was the inventory and review of planning documents at the county and jurisdictional levels. These documents provide insight into the values, principles, goals, objectives, strategies, processes, and functions of the Chatham County community.

Planning and regulatory capacity is based on the implementation of plans, ordinances and programs that demonstrate a local jurisdiction’s commitment to guiding and managing growth, development, and redevelopment in a responsible manner, while maintaining the general welfare of the community. It includes emergency response and mitigation planning, comprehensive land use planning, and transportation planning, in addition to the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed and structures are built, as well as protecting environmental, historic and cultural resources in the community. Although some conflicts can arise, these planning initiatives generally present significant opportunities to integrate recovery and redevelopment principles and practices into the local decision making process.

This assessment is designed to provide a general overview of the key planning and regulatory tools and programs in place or under development for Chatham County, along with their potential effect on recovery and redevelopment. This information will help identify opportunities to address existing gaps, weaknesses or conflicts with other initiatives in addition to integrating the implementation of this plan with existing planning mechanisms where appropriate.

Table 5.2 provides a summary of the relevant local plans, ordinances and programs already in place or under development for Chatham County. Each of these other local plans, ordinances, and programs (identified as “Needs Updating” or “Not Currently Addressed”) should be considered available mechanisms for incorporating certain elements of the Redevelopment Plan. Priority levels (i.e. “immediate,” or within 12 months, “short-term,” between 13 months and five years, or “long-term,” between six and ten years) to implement plans are further identified for each outstanding document.

Table 6.2: Table of County Level Plans Applicable to Redevelopment

<i>Plan</i>	<i>In Place, Under development, Needs Updating, Not Currently Addressed</i>	<i>Immediate, Short- or Long- Term Goal</i>
Redevelopment Plan	In place	n/a
Community Blueprint	In place	n/a

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<i>Plan</i>	<i>In Place, Under development, Needs Updating, Not Currently Addressed</i>	<i>Immediate, Short- or Long- Term Goal</i>
Build-back Standards/ Reconstruction Ordinance	Not currently addressed	Short-term
Comprehensive Land Use Plan	In place, but needs to be updated for October 2016 state review	Immediate
Flood Mitigation Plan	In place (Chatham County has Flood Mitigation Plan; Tybee Island has Sea Level Rise Adaptation Plan, forthcoming)	n/a
Watershed Management Plan	Under development, in funding phase	Immediate
Open Space Plan	1996 Plan needs updating	Short-term
Greenway Master Plan	Under development, due early 2016	Immediate
Stormwater Management Plan	In place	n/a
Comprehensive Water Management Plan	Existing 2006 plan needs updating	Short-term
Natural Resource Protection Plan	Natural Resource Protection Program exists, but no specific plan	Long-term
Flood Response Plan	In place	n/a
Emergency Operations Plan	In place	n/a
Recovery Plan	In place	n/a
Continuity of Operations Plan	In place	n/a
Evacuation Plan	In place	n/a
Hazard Mitigation Plan	In place	n/a
Disaster Resiliency Plan	Not currently addressed in Chatham County, except in Garden City	Short-term
Capital Improvements Plan	In place	n/a
Economic Development Plan	Not currently addressed for Chatham County, however Savannah has a Business Plan for 2015	Long-term
Historic Preservation Plan	In place (Chatham County and City of Savannah have plans and staff in place)	n/a
Zoning Ordinance	In place (Each jurisdiction in the County has an applicable and separate zoning ordinance)	n/a
Subdivision Ordinance	In place (Chatham County, cities of Bloomingdale, Garden City, Pooler, Savannah, Tybee Island and the Town of Thunderbolt)	n/a

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<i>Plan</i>	<i>In Place, Under development, Needs Updating, Not Currently Addressed</i>	<i>Immediate, Short- or Long- Term Goal</i>
Land Development Code	In place (Stormwater, erosion and sedimentation control, and tree and landscape standards are in place for Chatham County, cities of Bloomingdale, Garden City, Pooler, Port Wentworth Savannah, Tybee Island and the Town of Thunderbolt)	n/a
Building Code	In place county-wide (Chatham County follows state building code with some local modifications)	n/a
Shorefront Recovery and Redevelopment	In place (Includes docks, shores, sand dunes, and homes, in place through Georgia Department of Natural Resources)	n/a

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6.2.1 EMERGENCY MANAGEMENT PLANNING

Recovery is recognized as one of the four primary phases of emergency management. The three other phases include preparedness, response and mitigation. In reality each phase is interconnected as **Figure 5.1** suggests.

Figure 6.1: Disaster Cycle



Recovery is generally described as the process of steps following a disaster spent trying to return a community to the condition it was in before the event occurred. There are two general phases of recovery: **short-term** and **long-term**. Short-term recovery activities take place following a disaster and prioritize the return of citizens to their homes. They are typically initiated in the county EOC while in emergency response mode. Short-term recovery activities include such functions as: implementing a curfew; conducting impact assessments; re-establishing the critical infrastructure necessary for community reconstruction; re-establishing critical services that meet the physical and safety needs of the community (e.g., water, food, ice, medicine and medical care, emergency access, and continuity of government operations), and coordinating re-entry procedures. Short-term recovery typically does not include reconstruction of the built environment.

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Long-term recovery (otherwise known as **Redevelopment**) is the process to return the community to the conditions that existed before the disaster or emergency occurred, preferably while taking advantage of opportunities to mitigate against the impacts of future disasters. Long-term recovery activities can last for many years following a disaster. They include activities such as: redevelopment; environmental preservation and restoration; rebuilding; construction; repairs; and restoration. Economic recovery and business assistance are some of the most important long-term recovery activities that must take place in order for a community to fully recover from a disaster.

Planning for each phase of emergency management is a critical part of a local comprehensive emergency management program and a key to the successful implementation of a post disaster recovery and redevelopment strategy.

Disaster Redevelopment Plan: A post-disaster redevelopment plan identifies policies, operational strategies, and roles and responsibilities for implementation that will guide decisions that affect long-term recovery and redevelopment of the community after a disaster. The plan emphasizes seizing opportunities for hazard mitigation and community improvement consistent with the goals of the local comprehensive plan and with full participation of citizens. Recovery topics addressed in the plan should include business resumption and economic redevelopment, housing repair and reconstruction, infrastructure restoration and mitigation, short-term recovery actions that affect long-term redevelopment, sustainable land use, environmental restoration, and financial considerations as well as other long-term recovery issues identified by the community.

- This plan serves as an augmentation of the [Chatham County Disaster Recovery Plan](#).

Hazard Mitigation Plan: The hazard mitigation plan represents a community's blueprint for how it intends to reduce the impact of natural and human caused hazards on people and the built environment. The essential elements of a local mitigation strategy include a risk assessment, capability assessment, and mitigation strategy and the mitigation projects list.

- The Chatham County Multi-Jurisdictional Pre-Disaster Hazard Mitigation Plan was established in December 2010 and last updated in 2015 with a five-year review cycle.

Emergency Operations Plan (EOP): The EOP outlines responsibilities and resource deployment instructions during and following an emergency or disaster. The EOP also establishes command and control of the emergency management program and coordination among municipal, county, state, and federal agencies. Although the EOP is predominantly an operations plan, the following sections contain elements that are highly relevant to post-disaster redevelopment:

- The most recent Chatham County EOP was implemented on March 29, 2012. It

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utilizes an all-hazards approach.

- The EOP also incorporates incident specific annexes addressing a wide variety of hazards including a hurricane annex with relevance to the hazards addressed in this document.
- The EOP incorporates operational coordination strategies, including the Natural, Cultural, and Historic (NCH) Properties Coordination Plan, 2013, which, in part, addresses recovery considerations for NCH properties in Chatham County.

Recovery Plan: This plan establishes the organization and procedures for conducting short and long-term recovery operations.

- The Recovery Plan is currently being developed and a link to it will be included in a subsequent update of this plan.

Continuity of Operations Plan (COOP): A continuity of operations plan establishes a chain of command, line of succession, and plans for backup or alternate emergency facilities in case of an extreme emergency or disaster event.

- Chatham County has a COOP Plan, though access to the document is restricted.

Debris Management Plan: The Debris Management Plan (DMP) provides the operational and coordination activities to remove, collect and dispose of debris following a disaster. The DMP explains the organizational structure, roles and responsibilities and the concept of operations including debris removal priorities. Debris removal is important to expedite recovery efforts in the affected area and reduce the threat to public health and safety. While debris operations are mainly considered short-term recovery, certain elements (including placement of debris reduction sites) can have impacts on long-term recovery.

- [The Debris Management Plan for Chatham County](#) is an appendix to the ESF-03 Annex for the Chatham County EOP. It was implemented in February 2014.

Temporary Disaster Housing Plan: The Temporary Disaster Housing Plan establishes the framework for addressing temporary housing for those that are left homeless following a disaster and identifies the key agencies that can be brought together to identify and activate housing resources. This plan is currently being updated as a result of FEMA's recent change in temporary disaster housing policies. While the temporary disaster housing issues are mainly considered short-term recovery, certain elements (including location of the temporary housing sites) can have impacts on long-term recovery.

- Chatham County has yet to develop a Disaster Housing Plan as an Annex to their Disaster Recovery Plan.

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6.2.2 GENERAL PLANNING

The implementation of post disaster redevelopment activities relies heavily on the local planning department, in this case, the MPC for Chatham County and the City of Savannah and separate planning departments for the other jurisdictions. Other important stakeholders may include public works officials, economic development specialists, and others. In many instances, concurrent local planning efforts will help to achieve or complement recovery and redevelopment goals even though they are not designed as such. Therefore, the analysis includes planning capabilities and the degree to which post disaster recovery and redevelopment planning is integrated into other on-going planning efforts.

Chatham County Community Blueprint: The Community Blueprint is a long-term plan for the community. The Plan identifies goals that will strategically move the county toward the accomplishment of its goals in four areas: economy, education, health, and quality of life. The Blueprint is based on the community’s interests and concerns, which were shared during meetings and surveys conducted in 2014 and 2015. The Blueprint’s purpose is to serve as a catalyst for improvement over the next twenty years by providing a timeline and list of strategies to achieve the Community’s goals.

Chatham County – Savannah Comprehensive Plan: The Chatham County – Savannah Comprehensive Plan establishes the goals and objectives that govern the community’s growth and development and policies for daily land-use and development decision making. The Comprehensive Plan serves as the foundation for land development regulations, zoning, major capital expenditures and other initiatives to accomplish the community’s overall vision. The Comprehensive Plan includes a demographic analysis and addresses future land use, housing transportation, public facilities and services, conservation, recreation and open space, intergovernmental coordination and capital improvements. Given the broad nature of the plan and its regulatory standing, the integration of post-disaster redevelopment policies into the Comprehensive Plan can enhance the likelihood of implementing a successful post-disaster redevelopment strategy following a disaster.

- Chatham County has a comprehensive set of land use plans that include goals addressing preservations of open areas and woodlands, which contribute to hazard mitigation and recovery, though this is not an explicitly stated goal of the plan.

Capital Improvements Plan: A capital improvement plan guides the scheduling of spending on public improvements. A capital improvements plan can serve as an important mechanism for guiding future development away from identified hazard areas. Limiting public spending in hazardous areas is one of the most effective long-term mitigation actions available to local governments and helps to reduce post disaster damage.

- The Chatham County Capital Improvements Plan for 2016-2022 includes budgeting

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for digital data storage off site to increase resiliency of COOP plans.

- No mention is made in the plan of taking into account prospective disaster events and the relevant hazardous areas. This means that the plan may encourage building in unsafe areas.

Historic Preservation Plan: A historic preservation plan is intended to preserve historic structures or districts within a community. An often-overlooked aspect of the historic preservation plan is the assessment of buildings and sites located in areas subject to natural hazards, and the identification of ways to reduce future damages. This may involve retrofitting or relocation techniques that account for the need to protect buildings that do not meet current building standards, or are within a historic district that cannot easily be relocated out of harm's way. These properties provide unique challenges in the post disaster environment.

- Chatham County has a Natural, Cultural, and Historic Properties Coordination plan last updated in September 2013. It contains general guidelines on pre-event planning, hurricane evacuation, damage assessment, recovery and salvage, and funding. It also contains a list of important historic sites.

Zoning Ordinances: Zoning is the primary way of controlling public and private land use by local governments. As part of a community's police power, zoning is used to protect the public health, safety and welfare of those in a given jurisdiction that maintains zoning authority. A zoning ordinance is the mechanism through which zoning is typically implemented. Since zoning regulations enable local governments to limit the type and density of development, it can serve as a powerful tool when applied in identified hazard areas.

- Chatham County's jurisdictions have zoning ordinances that consider the wetlands, though there is no observable direct link to guidance focused on avoiding disasters of wetland areas.

Subdivision Ordinances: A subdivision ordinance is intended to regulate the development of housing, commercial, industrial or other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development. Subdivision design that accounts for natural hazards can dramatically reduce the exposure of future development.

- Chatham County has subdivision ordinances though they do not incorporate hazards as part of their application.

Building Codes, Permitting and Inspections: Building Codes regulate construction standards. In many communities, permits are issued for new construction and inspections of work take place throughout the construction of the building. Decisions regarding the adoption of building codes (that account for hazard risk), the type of permitting process required both before and after a disaster, and the enforcement of inspection protocols all affect the level of hazard risk faced by a community.

- All of Chatham County follows the State of Georgia building codes with limited local

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modifications.

6.2.3 FLOODPLAIN MANAGEMENT PLANS

Flooding represents the greatest natural hazard facing the nation. At the same time the tools available to reduce the impacts associated with flooding are among the most developed. In addition to approaches that cut across hazards, such as education, outreach, and the training of local officials, NFIP contains specific regulatory measures that enable government officials to determine where and how growth occurs relative to flood hazards. These regulations particularly apply to buildings damaged during a disaster through the NFIP's Substantial Damage regulations. These regulations will play an important role in post disaster redevelopment. Therefore, the community's floodplain management program is evaluated as a key indicator for measuring local capacity as part of this assessment.

In order for a community to join the NFIP, they must adopt a local flood damage prevention ordinance that requires jurisdictions to follow established minimum building standards in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by the 100-year flood, and that new floodplain development will not aggregate existing flood problems or increase damage to other properties.

Another key service provided by the NFIP is the mapping of identified flood hazard areas. Once prepared, the Flood Insurance Rate Maps (FIRMs) are used to assess flood hazard risk, regulate construction practices and set flood insurance rates. FIRMs are an important source of information to educate residents, government officials and the private sector about the likelihood of flooding in their community.

- Chatham County and all of the jurisdictions within the County except for Port Wentworth have participated in the NFIP with Flood Maps.
- Chatham County has 12,136 flood insurance policy holders in the Special Flood Hazard Area and 44 repetitive flood loss properties.

An additional indicator of floodplain management capacity is the active participation of local jurisdictions in the Community Rating System (CRS). The CRS is an incentive-based program that encourages counties and municipalities to undertake defined flood mitigation activities that go beyond the minimum requirements of the NFIP, adding extra local measures to provide protection from flooding. All of the 18 creditable CRS mitigation activities are assigned a range of point values. As points are accumulated and reach identified thresholds, communities can apply for an improved CRS class. Class ratings, which run from 10 to 1, are tied to flood insurance premium reductions as shown in **Table 5.3**. As class ratings improve (decrease), the percent reduction in flood insurance premiums for NFIP policy holders in that community increases.

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Table 6.3: CRS Premium Discount

CRS CLASS PREMIUM	Reduction
1	45%
2	40%
3	35%
4	30%
5	25%
6	20%
7	15%
8	10%
9	5%
10	0

Community participation in the CRS is voluntary. Any community that is in full compliance with the rules and regulations of the NFIP may apply to FEMA for a CRS classification better than class 10. The CRS application process has been greatly simplified over the past several years based on community feedback to make the CRS more user-friendly. Extensive technical assistance is also available for communities who request it.

- Chatham County is already a participant in the Community Rating System.

Floodplain Management Plan: A floodplain management plan (or a flood mitigation plan) provides a framework for action regarding the corrective and preventative measures in place to reduce flood related impacts.

- Chatham County currently has a stand-alone Floodplain Mitigation Plan.

Open Space Management Plan: An open space management plan is designed to preserve, protect, and restore largely undeveloped lands in their natural state, and to expand or connect areas in the public domain such as parks, greenways, and other outdoor recreation areas. In many instances open space management practices are consistent with the goals of reducing hazard losses, such as the preservation of wetlands or other flood-prone areas in their natural state in perpetuity.

- Chatham County is currently working from a 1996 Open Space Management Plan that needs updating.

Stormwater Management Plan: A stormwater management plan is designed to address flooding associated with stormwater runoff. The stormwater management plan is typically

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focused on design and construction measures that are intended to reduce the impact of more frequently occurring minor urban flooding.

- All of the jurisdictions within Chatham County currently have Stormwater Management Plans. Chatham County has also implemented the Georgia Coastal Stormwater Supplement and the Georgia Stormwater Management Manual.

6.3 ADMINISTRATIVE AND TECHNICAL CAPACITY

The ability of a local government to develop and implement a post disaster redevelopment strategy through projects, policies, and programs is directly tied to its ability to direct staff time and resources for that purpose. Administrative capacity can be evaluated by determining how post disaster redevelopment-related activities are assigned to local departments and if there are adequate personnel resources to complete these activities.

The degree of intergovernmental coordination among departments will also affect administrative capacity for the implementation and success of proposed post disaster redevelopment activities.

Technical capacity can generally be evaluated by assessing the level of knowledge and technical expertise of local government employees, such as personnel skilled in using GIS to analyze and assess community hazard vulnerability.

The Capacity Assessment was used to capture information on administrative and technical capacity through the identification of available staff and personnel resources.

Table 5.4 provides a summary of the results for Chatham County with regard to relevant staff and personnel resources. An 'X' indicates that the given local staff member(s) is maintained through the county's local government resources.

Table 6.4: Relevant Staff / Personnel Resources

Relevant Staff / Personnel Resources		
Staff / Personnel Resources	In Place	Department
Planners with knowledge of land development and land management practices	X	Metropolitan Planning Commission
Engineers or professionals trained in construction practices related to buildings and / or infrastructure	X	Department of Engineering Savannah Development Services Bureau Building Safety and Regulatory Services Department

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Relevant Staff / Personnel Resources		
Staff / Personnel Resources	In Place	Department
Planners or engineers with an understanding of natural and / or human-caused hazards	X	Chatham Emergency Management Agency
Emergency manager	X	Chatham Emergency Management Agency
Floodplain manager	X	Department of Engineering Savannah Development Department City of Port Wentworth Department of Development Services, Tybee Island Planning, Zoning & Economic Development Department City of Pooler Zoning
Land surveyors	X	Department of Engineering
Scientist familiar with the hazards of the community	X	Savannah State University Skidaway Institute of Oceanography Georgia Southern University Georgia Institute of Technology
Staff with education or expertise to assess the community's vulnerability to hazards	X	Chatham Emergency Management Agency Savannah State University Skidaway Institute of Oceanography Georgia Southern University Georgia Institute of Technology
Personnel skilled in Geographic Information Systems (GIS) and / or FEMA's HAZUS program	X	Savannah Area Geographic Information System Skidaway Institute of Oceanography Georgia Southern University
Resources development staff or grant writers	X	Department of Finance
Public Information Officer	X	County Manager Chatham Emergency Management Agency City of Savannah

6.4 FISCAL CAPACITY

The ability of a local government to implement a successful post disaster redevelopment strategy is often closely associated with the amount of money available to implement policies

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and projects. This may take the form of outside grant funding awards or locally-based revenue and financing. The costs associated with recovery / redevelopment policy and project implementation vary widely. In some cases, policies are tied primarily to staff time or administrative costs associated with the creation and monitoring of a given program. In other cases, direct expenses are linked to actual projects which can require a substantial commitment from local, state and federal funding sources.

The Capacity Assessment Survey was used to capture information on Chatham County’s fiscal capacity through the identification of locally available financial resources.

Table 5.5 provides a summary of the results for Chatham County with regard to relevant fiscal resources. An X indicates that the given fiscal resource is locally available.

Table 6.5: Relevant Fiscal Resources

Relevant Fiscal Resources		
Fiscal Resources	Available	Department
Capital Improvement Programming	X	Each jurisdiction within the County
Community Development Block Grants (CDBG)	X	City of Savannah
Special Purpose Taxes (or taxing district)	X	Each jurisdiction within the County
Gas / Electric Utility Fees		
Water / Sewer Fees	X	Restricted fees
Stormwater Utility Fees		Only Garden City
Development Impact Fees	X	
General Obligation, revenue and / or Special Tax bonds	X	Available to each jurisdiction within the County
Partnering arrangements or intergovernmental agreements	X	Available to each jurisdiction within the County
Tourism taxes or fees (hotel/motel)	X	Overseen by Chamber of Commerce

6.5 ECONOMIC CAPACITY

The EOP for Chatham County has a section that briefly addresses growth and development trends. It supplies information on major businesses and manufacturers that influence the county’s economy. It also provides information on grants available to the county that may be used at various points throughout the disaster cycle. Chatham County’s Disaster Recovery Plan includes RSF 2: Economic Recovery, which details a strategy to support business recovery.

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6.6 SOCIAL SERVICES CAPACITY

Chatham County has designated social services for populations with medical and functional needs, and CEMA has undergone specific planning to best support these individuals. Without such planning, vulnerable populations can be critically underserved following an emergency or disaster event. There is opportunity to ensure that as the county grows and social services are developed, the systems created consider future incorporation of services for individuals with medical and functional needs in the wake of emergencies / disasters.

The county has documents from the EOP identifying at risk populations and an evacuation plan for those with medical and functional needs. These will be critical in ensuring life safety in the wake of an event. This proves the commitment of the county to serving those in need, something that will be critical in the development of future documents assisting these populations.

6.7 POLITICAL CAPACITY

One of the most difficult capacities to assess is the political will of a jurisdiction to enact meaningful policies and projects designed to improve disaster recovery or manage redevelopment activities following a disaster. Redevelopment can often be faced with tremendous political pressure and the community's goals for post disaster recovery and redevelopment may be seen as an impediment to other goals of the community, such as growth and economic development. Therefore, the local political climate must be considered in designing the recovery and redevelopment strategy, as it could be the most difficult hurdle to overcome in accomplishing its implementation.

Various efforts in Chatham County highlight political commitment to resilient redevelopment:

- Commission of the Chatham County Redevelopment Plan
- A Strategic Plan was completed in December of 2015
- The county understands the need for a Local Disaster Recovery Manager, which would lead this effort
- The City of Savannah has hired a Sustainability Manager and there is a Sustainability Department
- The City of Savannah applied for Rockefeller 100 Resilient Cities
- Chatham County drafted and presented its Community Blueprint to the Board of Commissioners in November of 2015, which outlines goals and strategies to enhance life in the county for all residents

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6.8 LOCAL PLAN INTEGRATION AND EVALUATION

An important aspect in determining a community’s capacity to implement a successful post-disaster redevelopment strategy is to obtain a thorough understanding of the community’s post-disaster redevelopment-related plans, policies, and programs already in place. This Local Plan Integration analysis describes the process that was conducted to review Chatham County’s plans and associated goals, objectives, and policies that contribute to the County’s ability to implement a post-disaster redevelopment strategy. The analysis also served as a means of identifying existing gaps, shortfalls, or weaknesses, if any, within the county’s regulatory framework that may hinder a successful post-disaster redevelopment operation. Any identified gaps, shortfalls, or weaknesses can become actions to be implemented in Chatham County’s Post-Disaster Redevelopment Strategy.

Chatham County has a solid set of policies, plans, and regulations guiding the actions for disaster mitigation, preparedness, response, and recovery. This conclusion was derived from a comprehensive review and analysis of those policies, plans, and regulations conducted by the consulting team that worked with Chatham County to develop this plan. The review focused on the following Primary documents:

- Chatham County Hazard Mitigation Plan
- Chatham County Strategic Plan
- Chatham County Disaster Recovery Plan
- Chatham County Emergency Operations Plan
- Chatham County Community Blueprint

These five plans will have the most impact during any disaster response and recovery, as well as addressing mitigation of hazards during “blue skies.”

In addition to maintenance of the above documents, it is recommended that Chatham County focus on development or completion of:

- Post Disaster Redevelopment / Reconstruction Ordinance
- Floodplain Management Plan
- Watershed Management Plan
- Natural Resource Protection Plan
- Disaster Resiliency Plan
- Economic Development Plan

Each of these plans should be developed by incorporating the analysis in this document to ensure that redevelopment is not hindered by other policies or actions.

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7 ACRONYMS AND DEFINITIONS

7.1 ACRONYMS

Table 7.1: Table of Acronyms

Table of Acronyms	
ARC	American Red Cross
BEST	Business Ethics Student Training, referring to GeorgiaBEST
CAP-SSSE	Community Assistance Program State Support Services Element
CEMA	Chatham County Emergency Management Agency
CERT	Community Emergency Response Team
CDBG	Community Development Block Grant
CFR	Code of Federal Regulations
CNS	Community Notification System
CRS	Community Rating System
CSS	Coastal Stormwater Supplement
COOP	Continuity of Operations Plan
DMP	Debris Management Plan
DRC	Disaster Recovery Center
DRP	Disaster Redevelopment Plan
EAP	Employee Assistance Program
EAS	Emergency Alert System
EIDL	Economic Injury Disaster Loans
EMAP	Emergency Management Accreditation Program
EMPA	Emergency Management Program Assistance
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
ESG	Emergency Shelter Grants
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map

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GEOP	Georgia Emergency Operations Plan
GDRRP	Georgia Disaster Recovery and Redevelopment Plan
GIS	Geographic Information Systems
HazMat	Hazardous Materials
HMGP	Hazard Mitigation Grant Program
IA	Individual Assistance
LID	Low Impact Development
MPC	Chatham County – Savannah Metropolitan Planning Commission
NCH	Natural, Cultural, and Historic
NFIP	National Flood Insurance Program
NIMS	National Incident Management System
NPG	National Preparedness Goal
NRHP	National Register of Historic Places
PA	Public Assistance
PDM	Pre-Disaster Mitigation
PIO	Public Information Officer
PPD	Presidential Policy Directive
PWIP	Public Works Impact Projects Program
RPIO	Recovery Public Information Officer
RSF	Recovery Support Function
RSS	Really Simple Syndication
SARA	Superfund Amendment and Reauthorization Act
SBA	Small Business Administration
SHPO	State Historic Preservation Office
SMS	Short Message Service

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7.2 DEFINITIONS

Table 7.2: Table of Definitions

Table of Definitions	
Bioretention Cells	A bioretention cell is a stormwater best management practice (BMP) designed to capture and treat the first flush of runoff from impermeable surfaces. It is well documented that this first flush contains a large portion of the pollutants that leave an impermeable area
Bioswale	Bioswales are landscape elements designed to remove silt and pollution from surface runoff water. They consist of a swaled drainage course with gently sloped sides (less than six percent) and filled with vegetation, compost and/or riprap
Blight Remediation	Strategies/policies/guidelines set forth to reduce areas of neglect or vacancy
Bridge Loans	Short-term loans awarded to assist the county and/or local businesses recover from a disaster until the county or businesses secure a more permanent source of funding
Build-Back Standards	The regulations and codes governing rebuilding/reconstruction following a disaster
Conservation Easement	Conservation easements are voluntary legal agreements between a landowner and a land trust (or other qualified organization) that places restrictions on the use of the landowner’s property, in order to protect the natural values of the land
Deed Restrictions/Restrictive Covenants	Real estate deed restrictions place limitations on the use of the property. Restrictive covenants are an example of deed restrictions. Deed restrictions are usually initiated by the developers, come with the property, and usually cannot be changed or removed by subsequent owners. Restrictive

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Table of Definitions	
	covenants may include setbacks, easements, fees for road maintenance or amenities, rules on tree-cutting, pets, fencing and paint colors
Disaster Recovery Center	A Disaster Recovery Center is a readily accessible facility or mobile office where survivors may go for information about disaster assistance programs
Ecotourism	Environmentally responsible travel to natural areas, in order to enjoy and appreciate nature (and accompanying cultural features, both past and present) that promote conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local peoples
Food Desert	An area in which it is difficult to buy affordable or good-quality fresh food
Food Insecurity	Limited or uncertain availability of nutritionally adequate foods or uncertain ability to acquire these foods in socially acceptable ways
GeorgiaBEST Curriculum	A program developed by Georgia's Department of Labor to teach students the skills required for success in the workforce, such as punctuality, communication, teamwork, and attitude.
Improved Parcel	Improved Parcel means any parcel where "Building Value" was greater than zero.

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Table of Definitions	
Low Impact Development	Building and land use guidelines and incentives (often referred to as Green Infrastructure) using or mimicking natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat (e.g. green roofs, rain gardens, rainwater harvesting).
Low Intensity Agriculture	The application of sustainable farming techniques to support biodiversity
Priority Goal – Immediate	An immediate Priority Goal is one set to occur within 12 months of the enacted date of this Redevelopment Plan
Priority Goal – Long-term	A long-term Priority Goal is one set to occur between 6 and 10 years of the enacted date of this Redevelopment Plan
Priority Goal – Short-term	A short-term Priority Goal is one set to occur between 13 months and 5 years of the enacted date of this Redevelopment Plan
Priority Redevelopment Areas	Areas identified as critical to the recovery process; areas that should be restored prior to other sites due to their effect on the county’s ability to restore functionality
Silviculture	The practice of controlling the establishment, growth, composition, health, and quality of forests to meet diverse needs and values
Smart Growth Principles	The practice of building urban, suburban, and rural communities with housing and transportation choices near jobs, shops, and schools. This approach supports local economies and protects the environment

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8 AUTHORITIES AND REFERENCES

8.1 FEDERAL

1. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (P.L.93-288, as amended)
2. The Disaster Mitigation Act of 2000 (P.L. 106-390)
3. The Sandy Recovery Improvement Act of 2013 (P.L. 113-2) (SRIA)
4. The Post Katrina Emergency Management Reform Act of 2006 (P.L.109-295)
5. National Response Framework, as amended
6. National Disaster Recovery Framework, as amended
7. National Preparedness Goal (NPG), September 2011
8. The Single Audit Act of 1984 (P.L. 98-502, as amended)
9. 2 CFR Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (The Super Circular)
10. 13 CFR Part 123, Small Business Administration Disaster Loan Program
11. 44 CFR Part 13, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments
12. 44 CFR Part 14, Administration of Grants: Audits of State and Local Governments
13. 44 CFR Part 206, Federal Disaster Assistance for Disasters Declared on or Disaster Recovery Plan after November 23, 1988
14. Presidential Decision Directive - 63, United States Policy on Protecting America's Critical Infrastructure
15. Homeland Security Presidential Directive – 5 – National Incident Management System (NIMS)
16. Homeland Security Presidential Directive – 7 – Critical Infrastructure Identification, Prioritization and Protection
17. Homeland Security Presidential Directive – 8 – National Preparedness
18. Presidential Policy Directive/PPD-8: National Preparedness
19. Presidential Executive Order 12148- Federal Emergency Management Agency (FEMA)
20. ADA Best Practices Tool Kit for State and Local Governments, Chapter 7, Emergency Management under Title II of the ADA (2007), Addenda 1-3, and the Introduction to Appendices 1 and 2 (Attached as Exhibit 1); Titles II, III, and V of the Americans with Disabilities Act of 1990, 42 U.S.C. §§ 12101-12103, 12131-12134, 12181-12188, and 12201-12213, as amended by the ADA Amendments Act of 2008. Nondiscrimination on the Basis of Disability in State and Local Government Services, 28 C.F.R. pt. 35. Nondiscrimination on the Basis of Disability by Public

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Accommodations and in Commercial Facilities, 28 C.F.R. pt. 36. The Americans with Disabilities Act Title II Technical Assistance Manual (1993) and Supplement (1994). The Americans with Disabilities Act Title III Technical Assistance Manual (1993) and Supplement (1994).

21. Section 504 of the Rehabilitation Act of 1973, 29 U.S.C. §§ 794, as amended. Enforcement of Nondiscrimination on the Basis of Handicap in Programs or Activities Conducted by the Federal Emergency Management Agency, 44 C.F.R. pt. 16. Enforcement of Nondiscrimination on the Basis of Handicap in Programs or Activities Conducted by the Department of Justice, 28 C.F.R. pt. 39. Nondiscrimination on the Basis of Handicap in Programs or Activities Receiving Federal Financial Assistance, 45 C.F.R. pt. 84 (Department of Health and Human Services). Nondiscrimination on the Basis of Handicap in Programs or Activities Receiving Federal Financial Assistance, 34 C.F.R. pt. 104 (Department of Education). Nondiscrimination Based on Handicap in Federally Assisted Programs and Activities of the Department of Housing and Urban Development, 24 C.F.R. pt. 8.
22. Title VIII of the Civil Rights Act of 1968 (“Fair Housing Act”), as amended, 42 U.S.C. §§ 3601-3631. Discriminatory Conduct Under the Fair Housing Act, 24 C.F.R. pt. 100. x The Architectural Barriers Act of 1968, as amended, 42 U.S.C. §§ 4151-4157. Construction and Alteration of Public Buildings, 41 C.F.R. pt. 101-19
23. Age Discrimination Act of 1975
24. Health Insurance Portability and Accountability Act (HIPAA)
25. The Small Business Act, 15 U.S.C. §§ 631-651e (2007)

8.2 STATE

1. Georgia Emergency Management Act of 1981. As Amended, December 1992
2. Georgia Disaster Recovery and Redevelopment Plan (GDRRP)
3. Georgia Emergency Operations Plan (GEOP)
4. Coastal Stormwater Supplement to the Georgia Stormwater Management Manual, 2009.
5. Georgia Stormwater Management Manual, 2001.

8.3 COUNTY

- The Code of Chatham County, 2012. Chapter 4, Administration, Article III, Emergency Management.
- Chatham County Strategic Plan, 2013.
- Chatham County Hazard Mitigation Plan, 2015.
- Chatham County Community Blueprint, 2015. Summary.
- Chatham County COOP Plan
- Chatham County Debris Management Plan, 2012.

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- Chatham County Emergency Operations Plan, 2012.
- Chatham County Disaster Recovery Plan, 2015.
- Chatham County Comprehensive Land Use Plan
- Chatham County Capital Improvements Plan for 2016-2022
- Natural, Cultural, and Historic Properties Coordination Plan. Revised, September 2013.
- Zoning Ordinances of Chatham County
- Chatham County Floodplain Mitigation Plan
- 1996 Open Space Management Plan
- Stormwater Management Plan

8.4 OTHER GUIDANCE

1. National Mitigation Framework, May 2013
2. National Prevention Framework, May 2013
3. National Protection Framework, July 2014
4. National Recovery Framework, September 2011
5. National Response Framework, May 2013
6. Digest of Federal Disaster Assistance Programs, FEMA 322
7. Public Assistance, Public Assistant Guide, Federal Emergency Management Agency, FEMA 322
8. Comprehensive Preparedness Guide (CPG) 101, Version 2.0 Developing and Maintaining Emergency Operations Plans, Nov. 2010
9. Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning, FEMA 386-6, 2005
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