



CITY OF KINGSLAND, GEORGIA
CITY COUNCIL
AGENDA • FEBRUARY 23, 2026

Regular Meeting

City Council Chamber
107 South Lee Street - City Hall, Kingsland, GA 31548

6:00 PM

I. CALL TO ORDER AND WELCOME GUESTS

II. ROLL CALL

Charles Grayson Day Jr., Mayor
Paul Chamberlin, Councilman
Farran Fullilove, Councilman
Kristy Chance, Councilwoman
Alex Blount, Mayor Pro Tem

III. INVOCATION AND PLEDGE TO THE FLAG

IV. CONSENT DOCKET

1. Approve the Council Minutes of the last regular Council Meeting
2. Approve the Agenda as Presented
3. Approve the Payments of Accounts Payable as Due and Funds Available

V. RECOGNITION

1. Proclamation recognizing Georgia Government Finance Professionals Week

VI. GRANTING AUDIENCE TO THE PUBLIC

VII. OLD BUSINESS

VIII. NEW BUSINESS

1. Approval and Acceptance of: Resolution 2026-05 Permanent Utility Easement from First Baptist Church Kingsland

Acceptance of a 10 ft. permanent utility easement needed for the Laurel Island Pump Station and Forced Main improvements project.

Staff recommends approval.
2. Approval of: Resolution 2026-06 - Camden County Multi-Jurisdictional Hazard Mitigation Plan 2026-2031

Adoption of the plan ensures continued eligibility for hazard mitigation grant funding through the Federal Emergency Management Agency and compliance with planning requirements coordinated with the Georgia Emergency Management and Homeland Security Agency. The plan outlines strategies to reduce risks to life, property, and public safety from natural and

human-caused hazards.

Staff recommends approval.

3. Approval of: Ordinance 2026-02 to amend Section 8-30 of the Code of Ordinances

An ordinance to amend section 8-30 of the code of ordinances of the city of Kingsland, Georgia; to update rules and regulations for outdoor and open burning.

Staff recommends approval.

4. Approval of: Recommendation to Advance Haddock Road P3 Project to Competitive Bid Phase

The review committee unanimously recommends that the City Council authorize staff to proceed to the competitive bid phase for the Haddock Road P3 project in accordance with applicable procurement policies. Moving to a competitive RFP will validate pricing and confirm the best value for the City.

Staff recommends approval.

IX. MAYOR AND COUNCIL ANNOUNCEMENT

X. ADJOURNED



City of Kingsland, Georgia

Government Finance Professionals Week

March 16-20, 2026

WHEREAS, government finance professionals perform essential services that ensure the effective, transparent, and responsible management of public funds for the benefits of residents throughout the State of Georgia; and

WHEREAS, government finance professionals serve their communities through their expertise in budgeting, accounting, treasury management, procurement, debt administration, auditing, fiscal reporting, and long-range financial planning, thereby supporting the lawful and efficient operation of state, county, and municipal governments; and

WHEREAS, these dedicated professionals uphold the highest standards of ethics, integrity, accuracy, and accountability, fostering public trust and safeguarding the fiscal health of local government institutions; and

WHEREAS, the Georgia Government Finance Officers Association (GGFOA) represents finance professionals statewide and advances excellence in government financial management through education, training, and leadership development; and

WHEREAS, GGFOA and its member jurisdictions have established and sponsored Government Finance Professionals Week to acknowledge and celebrate the contributions of public finance professionals, and to increase awareness of the vital financial services they provide that benefits all Georgians; and

WHEREAS, it is fitting and proper to recognize, honor, and express appreciation for the dedication, professionalism, and public service of government finance professionals whose expertise supports the fiscal stability and long-term success of Georgia's local governments;

NOW, THEREFORE, I, **Dr. C. Grayson Day, Jr., Mayor of Kingsland**, do hereby proclaim the **third week of March** as:

GOVERNMENT FINANCE PROFESSIONALS WEEK

in the City of Kingsland, and encourage all residents, elected officials, and community organizations to join in recognizing and expressing appreciation for the dedicated government finance professionals across our community and the state of Georgia.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the City of Kingsland to be affixed this 23rd day of February, 2026.

Grayson Day
Mayor of Kingsland, Georgia

RESOLUTION NO. 2026-05

**A RESOLUTION OF THE MAYOR AND CITY COUNCIL OF THE CITY OF KINGSLAND, GEORGIA, ACCEPTING
A PERMANENT UTILITY EASEMENT FROM FIRST BAPTIST CHURCH KINGSLAND GEORGIA, INC.;
AUTHORIZING EXECUTION AND RECORDATION; AND FOR OTHER PURPOSES.**

WHEREAS, **First Baptist Church Kingsland Georgia, Inc.**, et al. (“Grantor”), is the owner of certain real property located in Camden County, Georgia, with a mailing address of 295 East Chester Street, Kingsland, Georgia 31548; and

WHEREAS, the **City of Kingsland, Georgia** (“City”) has determined that the acquisition of a permanent utility easement is necessary and in the public interest to support municipal infrastructure, public utilities, and essential services; and

WHEREAS, Grantor has agreed to convey to the City a perpetual, non-exclusive Permanent Utility Easement for the purpose of constructing, installing, operating, maintaining, repairing, replacing, and upgrading water, sewer, and other public utility facilities; and

WHEREAS, the Permanent Utility Easement affects a portion of property located in the 1606th Georgia Militia District, Camden County, Georgia, more particularly described in Exhibit A attached hereto and incorporated herein by reference, and depicted on a survey attached as Exhibit B; and

WHEREAS, the Permanent Utility Easement is memorialized in a written instrument entitled “Permanent Utility Easement”, dated _____, 2026, between First Baptist Church Kingsland Georgia, Inc., et al., as Grantor, and the City of Kingsland, Georgia, as Grantee (the “Easement Agreement”); and

WHEREAS, acceptance of said easement serves a valid public purpose and is consistent with the City’s responsibility to provide reliable public utility services to its residents.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF KINGSLAND, GEORGIA, AS FOLLOWS:

Section 1. Acceptance of Easement

The Mayor and City Council hereby accept the Permanent Utility Easement from First Baptist Church Kingsland Georgia, Inc., et al., as set forth in the Easement Agreement, for public utility purposes.

Section 2. Authorization to Execute

The Mayor, City Manager, or other authorized official is hereby authorized and directed to execute the Permanent Utility Easement and any related documents necessary to effectuate acceptance of the easement on behalf of the City.

Section 3. Recordation

The City Clerk is hereby authorized and directed to cause the executed Permanent Utility Easement, together with all exhibits, to be recorded in the office of the Clerk of Superior Court of Camden County, Georgia.

Section 4. Incorporation of Exhibits

The legal description of the easement area attached hereto as Exhibit A and the sketch or plat attached as Exhibit B are hereby adopted and incorporated into this Resolution by reference as if fully set forth herein.

Section 5. Effective Date

This Resolution shall become effective immediately upon adoption by the Mayor and City Council of the City of Kingsland, Georgia.

SO RESOLVED, this ___ day of _____, 2026.

CITY OF KINGSLAND, GEORGIA

By: _____
Mayor

ATTEST:

City Clerk

(SEAL)

PERMANENT UTILITY EASEMENT

THIS PERMANENT UTILITY EASEMENT ("Easement") is made this ____ day of _____, **2026**, by and between First Baptist Church Kingsland Georgia, Inc., et al ("Grantor"), whose address is 295 East Chester Street, Kingsland, GA 31548 and the **CITY OF KINGSLAND, GEORGIA** ("Grantee"), a municipal corporation with its principal office at 107 South Lee Street, Kingsland, GA 31548.

WITNESSETH:

WHEREAS, Grantor is the owner of certain real property located in Camden County, Georgia, as more particularly described in **Exhibit A** (the "Property"); and

WHEREAS, Grantee desires to obtain a permanent easement for the purpose of constructing, installing, operating, maintaining, repairing, replacing, and upgrading utility infrastructure, including but not limited to water, sewer, and other public utility lines and associated facilities (collectively, the "Utility Facilities"); and

WHEREAS, Grantor agrees to grant such an easement to Grantee for the benefit of the public and municipal infrastructure.

NOW, THEREFORE, for and in consideration of the sum of One Dollar (\$1.00) and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Grantor does hereby grant, bargain, sell, and convey unto Grantee, its successors and assigns, a **perpetual, non-exclusive utility easement** (the "Easement") upon, over, under, across, and through the Easement Area described below.

1. Easement Area

The Easement granted herein covers that portion of the Property described in **Exhibit A** (the "Easement Area"). A survey or sketch of the Easement Area is attached as **Exhibit B**.

2. Purpose and Use

Grantee shall have the right to enter upon the Easement Area at all reasonable times to install, operate, maintain, inspect, repair, replace, relocate, and remove Utility Facilities as necessary to provide public services. This includes the right to trim or remove vegetation, trees, or other obstructions that may interfere with the Utility Facilities.

3. Access Rights

Grantee shall have the right of reasonable ingress and egress over the Property for access to the Easement Area. Grantor shall not erect or place any structure, fence, wall, or other obstruction within the Easement Area that would impede or interfere with Grantee's rights.

4. Maintenance and Restoration

Grantee shall restore any portion of the Easement Area disturbed by its activities to as near its original condition as is reasonably practicable. However, Grantee is not responsible for the replacement of trees, shrubs, or structures within the Easement Area.

5. Indemnification

Grantee shall indemnify and hold harmless Grantor from and against any claims, damages, or liabilities arising from Grantee's negligent acts or omissions in the exercise of its rights under this Easement, except to the extent caused by the negligence or willful misconduct of Grantor.

6. Binding Effect

This Easement shall run with the land and be binding upon and inure to the benefit of Grantor and Grantee, and their respective successors and assigns.

7. Governing Law

This Easement shall be governed by and construed in accordance with the laws of the State of Georgia.

IN WITNESS WHEREOF, the parties hereto have executed this Easement as of the day and year first above written.

GRANTOR:

First Baptist Church Kingsland Georgia, Inc.

295 East Chester Street

Kingsland, GA 31548

By: _____
(Signature)

Printed Name: _____

Title (if applicable): _____

GRANTEE:

CITY OF KINGSLAND, GEORGIA

By: _____
Authorized Representative

Title: _____

ATTEST:

By: _____
City Clerk

(SEAL)

EXHIBIT A – LEGAL DESCRIPTION

Proposed 10' Permanent Easement

All that lot, parcel or tract of land, lying and being in the 1606th Georgia Militia District, Camden County, Georgia, being shown as Proposed 10' Permanent Easement, on a plat prepared by Shupe Surveying Company, P.C., titled "A Boundary Retracement and Easement Survey of: 4.728 Acres On Colerain Road", dated 12/22/2025, being recorded in the office of the clerk of superior court in plat book xx, page xxxx and being more particularly described as follows:

COMMENCING at an capped iron rebar set on the westerly right-of-way line of Colerain Road (right-of-way varies), said point having Georgia State Plane, East Zone, NAD83 coordinates N:294056.19, E:826276.38; thence leave said right-of-way S 66°26'05" W a distance of 10.00' to the POINT OF BEGINNING; thence S 66°26'05" W a distance of 10.00' to a point; thence N 23°34'34" W a distance of 299.98' to a point; thence N 66°27'37" E a distance of 10.00' to a point; thence S 23°34'34" E a distance of 299.98' to the POINT OF BEGINNING; all that lot, parcel or tract of land having an area of 3000 square feet more or less.

RESOLUTION 2026-06 BY CITY OF KINGSLAND, GEORGIA

**TO ADOPT THE CAMDEN COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION
PLAN 2026–2031**

WHEREAS, the citizens and property within City of Kingsland, Georgia are subject to the effects of natural and human-caused hazards which may result in loss of life, property damage, economic hardship, and threats to public health and safety; and

WHEREAS, Section 322 of the Federal Disaster Mitigation Act of 2000 requires local governments to develop and adopt an All-Hazards Mitigation Plan in order to be eligible to receive future Hazard Mitigation Grant Program funds and other disaster-related assistance funding, and further requires that such plan be updated and adopted within a five-year cycle; and

WHEREAS, Camden County and its municipal governments have completed a comprehensive review and update of the previously approved Hazard Mitigation Plan in accordance with 44 CFR Part 201 and guidance issued by the Federal Emergency Management Agency and the Georgia Emergency Management and Homeland Security Agency; and

WHEREAS, the Camden County Multi-Jurisdictional Hazard Mitigation Plan 2026–2031 Update was submitted to the Federal Emergency Management Agency on January 20, 2026, for review and approval; and

WHEREAS, it is the intent of the City Council of Kingsland, Georgia to fulfill its obligations under federal and state law to maintain eligibility for hazard mitigation and disaster assistance funding; and

WHEREAS, City of Kingsland desires to seek ways to mitigate the impact of identified hazard risks and the Camden County Multi-Jurisdictional Hazard

Mitigation Plan recommends mitigation activities that will reduce losses to life and property from hazards affecting the jurisdiction;

NOW, THEREFORE, BE IT RESOLVED by the City Council of Kingsland, Georgia as follows:

1. The Camden County Multi-Jurisdictional Hazard Mitigation Plan 2026–2031 Update, submitted to the Federal Emergency Management Agency on January 20, 2026 (current final version), including any minor revisions required by the Federal Emergency Management Agency for final Plan approval, is hereby adopted.

2. The jurisdiction agrees to take such other official action as may be reasonably necessary to carry out the objectives and actions identified in the Plan.

BE IT FURTHER RESOLVED, that this Resolution shall become effective upon its approval by the governing authority.

PASSED AND RESOLVED this _____ day of _____, 2026.

CITY COUNCIL OF KINGSLAND, GEORGIA

By: _____

Mayor

ATTEST: _____

City Clerk

[Affix Seal]

CAMDEN COUNTY, GEORGIA

MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

2026 UPDATE

PARTICIPATING JURISDICTIONS:

CAMDEN COUNTY
CITY OF KINGSLAND
CITY OF ST. MARYS
CITY OF WOODBINE

PHOTO CREDIT: TERRI KING



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Acronyms

Acronym	Full Word
ACS	American Community Survey
BCEGS	Building Code Effectiveness Grading Schedule
CAD	Cold Air Damming
CAO	Chief Administrative Officer
CCG	Coastal Georgia Greenway
CCTV	Closed Circuit Television
CDC	Center Disease Control and Prevention
CHAMP	Coordinated Highway Assistance and Maintenance Program
CO-OPS	The Center for Operational Oceanographic Products and Services
CoC	Continuum of Care
COG	Continuity of Government
COOP	Continuity of Operations Programs
CRC	Coastal Regional Commission
CRS	Community Rating System
CVI	Coastal Vulnerability Index
DCA	Defense Comissary Agent
DMA 2000	Disaster Mitigation Act of 2000
DNR	Department of Natural Resources
DPS	Department of Public Safety
EF	Enhanced Fujita
EMA	Camden County Emergency Management Agency
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EPZ	Emergency Planning Zone
F	Fujita
FAS	Floridan Aquifer System
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map

Acronym	Full Word
FIS	Flood Insurance Study
FMA	Flood Mitigation Assistance
GDOL	Georgia Department of Labor
GDOT	Georgia Department of Transportation
GEMA	Georgia Emergency Management Agency
GFC	Georgia Forestry Commission
GIS	Geographical Information System
GMIS	Georgia Mitigation Information System
GOBP	Georgia Governor's Office of Planning and Budget
GTA	Georgia Technology Authority
HM	Hazardous Materials
HMGP	Hazard Mitigation Grant Program
HMPC	Hazard Mitigation Planning Committee
HUD	Department of Housing and Urban Development
IAEA	International Atomic Energy Association
IBC	International Building Code
ICC	International Code Council
IPCC	Intergovernmental Panel on Climate Change
IPZ	Ingestion Pathway Zone
IRC	International Residential Code
ISO	Insurance Services Office, Inc
JAX	Jacksonville International Airport
JLUS	Joint Land Use Study
KBDI	Keetch-Byram Drought Index
KSSI	Mckinnon St. Simons Island Airport
LAL	Lightning Activity Level
LIDAR	Light Detection and Ranging
MEOW	Maximum Envelope of Water
MIRR	Military Installation Resilience Review
MMI	Modified Mercalli Intensity

Acronym	Full Word
MOM	Maximum of Maximums
MPH	Miles per Hour
NASA	National Aeronautics and Space Administration
NCEI	National Center for Environmental Information
NFIP	National Flood Insurance Program
NHC	National Hurricane Center
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRC	National Research Council
NRHP	National Register of Historic Places
NSB Kings Bay	Naval Submarine Base Kings Bay
NWS	National Weather Service
OSHA	Occupational Safety and Health Administration
PAG	Protective Action Guides
PD	Police Department
PDM	Pre-Disaster Mitigation
PDSI	Palmer Drought Severity Index
PHMSA	Pipeline and Hazardous Materials Safety Administration
PIT	Point in Time
PRI	Priority Risk Index
ROW	Right of Way
RPO	Recovery Point Objective
RSI	Regional Snowfall Index
RTK NET	Right to Know Network
RTO	Recovery Time Objective
SFHA	Special Flood Hazard Areas
SLOSH	Sea, Lake, and Overland Surges from Hurricanes
SPC	Storm Prediction Center
SPI	Standardized Precipitation Index

Acronym	Full Word
SPLOST	Special Purpose Local Option Sales Tax
SUBASE	Submarine Base
SVI	Social Vulnerability Index
SWRA	Southern Wildfire Risk Assessment
TRI	Toxics Release Inventory
UGA	The University of Georgia
USACE	US Army Corps of Engineers
USDM	United States Drought Monitor
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
WUI	Wildland Urban Interface

Resolution – Camden County, Georgia

Camden County Multi-Jurisdictional Hazard Mitigation Plan 2026 to 2031

WHEREAS, the citizens and property within Camden County and its municipal governments are subjects to the effects of natural and human-caused hazards which may result in loss of life, property loss, economic hardship and threats to public health and safety; and

WHEREAS, Section 322 of the Federal Disaster Mitigation Act of 2000 states that local governments must develop an All-Hazards Mitigation Plan in order to be eligible to receive future Hazard Mitigation Grant Program Funds and other disaster-related assistance funding and that said Plan must be updated and adopted within a five year cycle; and

WHEREAS, it is the intent of the Board of Commissioners of Camden County to fulfill this obligation in order that the County will be eligible for federal and state assistance in the event that a state of disaster is declared for a hazard event affecting the County; and

WHEREAS, Camden County and its municipal governments have completed a comprehensive review of the previously approved Hazard Mitigation Plan and have updated said Plan as required under regulations at 44 CFR Part 201 and according to guidance issued by the Federal Emergency Management Agency and the Georgia Emergency Management and Homeland Security Agency; and

WHEREAS, the County desires to seek ways to mitigate the impact of identified hazard risks and the Camden County Multi-Jurisdictional Hazard Mitigation Plan recommends the mitigation activities that will reduce losses to life and property affected by both natural and human-caused hazards that may affect the County;

NOW, THEREFORE, BE IT RESOLVED that the Board of Commissioners of Camden County hereby:

1. Adopts the Camden County Multi-Jurisdictional Hazard Mitigation Plan.
2. Agrees to take such other official action as may be reasonably necessary to carry out objectives of the Plan.

Adopted this _____ day of _____, 2026.

Board Chair

County Clerk

Resolution – City of Kingsland, Georgia

Camden County Multi-Jurisdictional Hazard Mitigation Plan 2026 to 2031

WHEREAS, the citizens and property within Camden County and its municipal governments are subjects to the effects of natural and human-caused hazards which may result in loss of life, property loss, economic hardship and threats to public health and safety; and

WHEREAS, Section 322 of the Federal Disaster Mitigation Act of 2000 states that local governments must develop an All-Hazards Mitigation Plan in order to be eligible to receive future Hazard Mitigation Grant Program Funds and other disaster-related assistance funding and that said Plan must be updated and adopted within a five year cycle; and

WHEREAS, it is the intent of the City Council of Kingsland to fulfill this obligation in order that the City will be eligible for federal and state assistance in the event that a state of disaster is declared for a hazard event affecting the County; and

WHEREAS, Camden County and its municipal governments have completed a comprehensive review of the previously approved Hazard Mitigation Plan and have updated said Plan as required under regulations at 44 CFR Part 201 and according to guidance issued by the Federal Emergency Management Agency and the Georgia Emergency Management and Homeland Security Agency; and

WHEREAS, the City of Kingsland desires to seek ways to mitigate the impact of identified hazard risks and the Camden County Multi-Jurisdictional Hazard Mitigation Plan recommends the mitigation activities that will reduce losses to life and property affected by both natural and human-caused hazards that may affect the City;

NOW, THEREFORE, BE IT RESOLVED that the City of Kingsland hereby:

1. Adopts the Camden County Multi-Jurisdictional Hazard Mitigation Plan.
2. Agrees to take such other official action as may be reasonably necessary to carry out objectives of the Plan.

Adopted this _____ day of _____, 2026.

Mayor

City Clerk

Resolution – City of St. Marys, Georgia

Camden County Multi-Jurisdictional Hazard Mitigation Plan 2026 to 2031

WHEREAS, the citizens and property within Camden County and its municipal governments are subjects to the effects of natural and human-caused hazards which may result in loss of life, property loss, economic hardship and threats to public health and safety; and

WHEREAS, Section 322 of the Federal Disaster Mitigation Act of 2000 states that local governments must develop an All-Hazards Mitigation Plan in order to be eligible to receive future Hazard Mitigation Grant Program Funds and other disaster-related assistance funding and that said Plan must be updated and adopted within a five year cycle; and

WHEREAS, it is the intent of the Mayor and Council of St. Marys to fulfill this obligation in order that the City will be eligible for federal and state assistance in the event that a state of disaster is declared for a hazard event affecting the County; and

WHEREAS, Camden County and its municipal governments have completed a comprehensive review of the previously approved Hazard Mitigation Plan and have updated said Plan as required under regulations at 44 CFR Part 201 and according to guidance issued by the Federal Emergency Management Agency and the Georgia Emergency Management and Homeland Security Agency; and

WHEREAS, the City of St. Marys desires to seek ways to mitigate the impact of identified hazard risks and the Camden County Multi-Jurisdictional Hazard Mitigation Plan recommends the mitigation activities that will reduce losses to life and property affected by both natural and human-caused hazards that may affect the City;

NOW, THEREFORE, BE IT RESOLVED that the Mayor and County of the City of St. Marys hereby:

1. Adopts the Camden County Multi-Jurisdictional Hazard Mitigation Plan.
2. Agrees to take such other official action as may be reasonably necessary to carry out objectives of the Plan.

Adopted this _____ day of _____, 2026.

Mayor

City Clerk

Resolution – City of Woodbine, Georgia

Camden County Multi-Jurisdictional Hazard Mitigation Plan 2026 to 2031

WHEREAS, the citizens and property within Camden County and its municipal governments are subjects to the effects of natural and human-caused hazards which may result in loss of life, property loss, economic hardship and threats to public health and safety; and

WHEREAS, Section 322 of the Federal Disaster Mitigation Act of 2000 states that local governments must develop an All-Hazards Mitigation Plan in order to be eligible to receive future Hazard Mitigation Grant Program Funds and other disaster-related assistance funding and that said Plan must be updated and adopted within a five year cycle; and

WHEREAS, it is the intent of the City Council of Woodbine to fulfill this obligation in order that the City will be eligible for federal and state assistance in the event that a state of disaster is declared for a hazard event affecting the County; and

WHEREAS, Camden County and its municipal governments have completed a comprehensive review of the previously approved Hazard Mitigation Plan and have updated said Plan as required under regulations at 44 CFR Part 201 and according to guidance issued by the Federal Emergency Management Agency and the Georgia Emergency Management and Homeland Security Agency; and

WHEREAS, the City of Woodbine desires to seek ways to mitigate the impact of identified hazard risks and the Camden County Multi-Jurisdictional Hazard Mitigation Plan recommends the mitigation activities that will reduce losses to life and property affected by both natural and human-caused hazards that may affect the City;

NOW, THEREFORE, BE IT RESOLVED that the City of Woodbine hereby:

1. Adopts the Camden County Multi-Jurisdictional Hazard Mitigation Plan.
2. Agrees to take such other official action as may be reasonably necessary to carry out objectives of the Plan.

Adopted this _____ day of _____, 2026.

Mayor

City Clerk

Chapter 1 Planning Process

1.1 Summary of Updates for Chapter 1

The following table provides a description of each section of this chapter and a summary of the changes that have been made to the Camden County Multi-Jurisdictional Hazard Mitigation Plan 2021.

Chapter 1 Section	Updates
Introduction	Renamed from "Purpose and Need, Authority, and Statement Of Problem" to "Introduction"
Methodology, Planning Process and Participation	Restructured section (previous sub-sections included "Preparing the Plan", "Hazard Mitigation Planning Committee", "Involving the Public", "Outreach Efforts", "Involving Stakeholders") Revised to match the 2025 planning process
Updates and Revisions to the Plan	Removed due to redundancy – each Chapter includes a summary of key updates
Plan Organization	Removed due to redundancy – a table of contents is already provided at the beginning of the Plan
Hazard, Risk, and Vulnerability Summary	Removed due to redundancy – included in Chapter 2: Hazard Identification and Risk Assessment
Multi-Jurisdictional Participation and Special Considerations	Verbiage updated – multi-jurisdictional considerations were revised to be incorporated throughout the Plan as opposed to in annexes
Adoption, Implementation, Monitoring, and Evaluation	No changes
Community Profile	Revised outdated information and incorporated the most recent data – including updated figures, tables, and other relevant content to ensure the Plan reflects current conditions and priorities

1.2 Introduction

1.2.1 Purpose and Need

Hazards are a natural part of our environment that will inevitably continue to occur, but there is much we can do to minimize their impacts on our communities and prevent them from resulting in disasters. Every community faces different hazards, has different resources available to combat

problems, and has different interests that influence the solutions to those problems. Because there are many ways to deal with hazards and many agencies that can help, there is no one solution for managing or mitigating their effects. Planning is one of the best ways to develop a customized program that will mitigate the impacts of hazards while taking into account the unique character of a community.

As defined by FEMA, “hazard mitigation” means any sustained action taken to reduce or eliminate the long-term risk to life and property from a hazard event. Hazard mitigation planning is the process through which hazards are identified, likely impacts determined, mitigation goals set, and appropriate mitigation strategies determined, prioritized, and implemented.

The purpose of the Camden County Multi-Jurisdictional Hazard Mitigation Plan is to identify, assess, and mitigate hazard risk to better protect the people and property within Camden County from the effects of natural and human-caused hazards. This plan documents progress on existing hazard mitigation planning efforts, updates the previous plan to reflect current conditions in the planning area including relevant hazards and vulnerabilities, increases public education and awareness about the plan and planning process, maintains grant eligibility for participating jurisdictions, maintains compliance with state and federal requirements for local hazard mitigation plans, and identifies and outlines strategies the County and participating jurisdictions will use to decrease vulnerability and increase resiliency.

A well-prepared hazard mitigation plan will ensure that all possible activities are reviewed and implemented so that the problem is addressed by the most appropriate and efficient solutions. It can also ensure that activities are coordinated with each other and with other goals and activities, preventing conflicts and reducing the costs of implementing each individual activity. This plan provides a framework for all interested parties to work together toward mitigation. It establishes the vision and guiding principles for reducing hazard risk and proposes specific mitigation actions to eliminate or reduce identified vulnerabilities.

1.2.2 Authority

In an effort to reduce the nation's mounting natural disaster losses, the U.S. Congress passed the Disaster Mitigation Act of 2000 (DMA 2000) to invoke new and revitalized approaches to mitigation planning. Section 322 of DMA 2000 emphasizes the need for state and local government entities to closely coordinate on mitigation planning activities and makes the development of a hazard mitigation plan a specific eligibility requirement for any local government applying for federal mitigation grant funds. These funds include the Hazard Mitigation Grant Program (HMGP) and the Flood Mitigation Assistance (FMA) Program, all of which are administered by the Federal Emergency Management Agency (FEMA) under the Department of Homeland Security. Communities with an adopted and federally approved hazard mitigation plan thereby become pre-positioned and more apt to receive available mitigation funds before and after the next disaster strikes.

The Georgia Emergency Management Act of 1981 authorizes local emergency management agencies to conduct emergency management activities for the County. This plan was prepared in coordination with FEMA Region IV and the Georgia Emergency Management Agency (GEMA) to ensure that it meets all applicable federal and state planning requirements. This plan has been prepared in compliance with Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5165, enacted under Section 104 of DMA 2000, Public Law 106-390 of October 30, 2000, as implemented at CFR 201.6 and 201.7 dated October 2007.

This plan was developed in a joint and cooperative manner by members of a Hazard Mitigation Planning Committee (HMPC) which included representatives of County, City, and Town departments, federal and state agencies, citizens, and other stakeholders. This plan will ensure that Camden County and its incorporated municipalities remain eligible for federal disaster assistance including FEMA's HMGP and FMA programs.

1.2.3 Statement of Problem

Each year in the United States, natural and human-caused hazards take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. These monies only partially reflect the true cost of disasters because additional expenses incurred by insurance companies and nongovernmental organizations are not reimbursed by tax dollars. Many natural disasters are predictable, and much of the damage caused by these events can be reduced or even eliminated.

Camden County previously developed a Multi-Jurisdictional Hazard Mitigation Plan in 2021 and has remained committed to mitigation and the planning process, which enables regular review of the changing exposure, vulnerability, and risk in the planning area.

As did the 2021 Plan, the planning area of this Multi-Jurisdictional Hazard Mitigation Plan update includes unincorporated Camden County and three incorporated municipalities. All participating jurisdictions are listed below:

- Camden County
- City of Kingsland
- City of St Marys
- City of Woodbine

The above participating jurisdictions will adopt this plan in accordance with standard local procedures. Copies of adoption resolutions are provided in this Plan.

The focus of this Plan update is on those hazards deemed “high” or “moderate” priority hazards for the planning area, as determined through the risk and vulnerability assessments. Lower priority hazards will continue to be evaluated but may not be prioritized for mitigation in the action plan.

1.3 Methodology, Planning Process and Participation

The development of this Plan was guided by a collaborative, inclusive planning process that prioritizes broad community engagement and interagency coordination. Hazard mitigation planning is most effective when it reflects the diverse needs, capacities, and insights of the entire community, including local government staff and emergency managers, neighboring jurisdictions, private sector partners, nonprofit organizations, and the public.

This Plan recognizes that successful mitigation depends on understanding local risks, identifying shared vulnerabilities, and building partnerships that can carry mitigation actions forward before, during, and after disasters. To that end, the planning team made deliberate efforts to include a wide range of stakeholders in the planning process, drawing on local expertise and promoting transparency and trust. The contractor, iParametrics, had the primary responsibility for organizing and managing the Plan update as well as incorporating updates into the Plan document. The insights and content were primarily gathered through a series of meetings with the Camden County project management team, the HMPC, and the public.

1.3.1 Project Kick-Off Meeting

On February 25, 2025, the consultant, iParametrics, met with the Camden County project management team to initiate the project kick-off. During the meeting, the attendees formally introduced themselves, reviewed the project scope, and discussed the project plan and timeline. A Hazard Mitigation Planning Specialist, Michaela Schiesser, from GEMA also attended as a resource for State requirements and expectations. The attendees also discussed the formulation of the HMPC.

1.3.2 Hazard Mitigation Planning Committee

As with the previous Plan, this Hazard Mitigation Plan was developed under the guidance of a HMPC. The HMPC membership included representatives of County and City departments; local, regional, and state agencies; citizens, and other stakeholders. To convene the planning committee, the Camden County project management team created a list of relevant stakeholders and an invitation was sent via email to the contacts. A sample invitation is included in Appendix A as well as the list of invitees.

The HMPC served as the core advisory body responsible for guiding the development of this Plan update. Comprised of representatives from various organizations, the HMPC brought together a diverse set of expertise and perspectives. Members provided valuable input on hazard identification, vulnerability assessments, and the selection and prioritization of mitigation actions.

The HMPC played a critical role in ensuring that the planning process was inclusive, data-driven, and aligned with the community's goals and regulatory frameworks. Table 1-1 below lists the members that served on the 2025 Camden County HMPC.

Table 1-1. Members of the 2025 Camden County Hazard Mitigation Planning Committee

Representative	Agency	Position
Alison Shores	Camden Chamber of Commerce	CEO and President
Andrew Medders	Camden County Emergency Management Agency	EM Mission Specialist
Ashby Worley	The Nature Conservancy	Coastal Climate Adaptation Director
Ben Casey	Camden County Board of Commissioners	District 5, County Commissioner
Bill Coleman	City of Kingsland Public Works	Director
Bobby Marr	City of St. Marys Public Works	Director
C Grayson Day	City of Kingsland	Mayor
Cassie Turpin	Camden County Planning and Development	Floodplain and Soil and Erosion Inspector
Chip Keene	Pineland Bank	Commercial Loan Officer
Chris Amos	City of St. Marys Public Works	Engineer
Chuck White	Camden County Emergency Management Agency	Director
Dan Falcitelli	City of Kingsland Police Department	Captain
Emily Floore	St. Marys Riverkeeper	Executive Director
Filiz Morrow	City of Kingsland	Finance Director
Geraldine Rimi	City of St Marys Community Development Department	Senior Planner
Glenn Gann	Southeast Georgia Health System - Camden Campus	Vice President and Administrator
Gregory Lockhart	City of St. Marys	Mayor
James Coughlin	Camden County Joint Development Authority	Executive Director
Joey A. Yacobacci	Camden County Planning and Development	Director
Julie Haigler	Camden County Board of Commissioners	Grants Manager
Kayla Oliver	Camden County Information Technology Department	Systems Administrator
Kelly Crane	American Red Cross of Georgia	Senior Community Disaster Program Manager
Kizzi Knight	City of Woodbine	Mayor
Lee Spell	City of Kingsland	City Manager

Lisa Boyett	Camden County Fire Rescue	Deputy Chief
Lisa Mastone	SUBASE Kings Bay Fleet and Family Support	Director
Michael T. Mazih	Camden County Planning and Development	GIS Manager
Nicole Sullivan	Naval Submarine Base Kings Bay	Emergency Manager
Robbie Cheek	Camden County Board of Commissioners	District 1, County Commissioner
Robert Horton	City of St. Marys	City Manager
Royce Proctor	Okefenoke EMC	Marketing/Member Service Representative
Samantha Young	City of Woodbine	City Administrator
Scott Kimball	City of Kingsland Planning and Zoning	Director
Seth Collins	Camden County	Deputy County Administrator
Shannon Gregory	Satilla Riverkeeper	Executive Director
Shawn Boatright	Camden County	County Administrator
Tage McMann	City of St Marys Community Development Department	Assistant Director
Terry Smith	Camden County Fire Rescue	Fire Chief
Tom Lackner	City of St. Marys Fire Department	Fire Chief and Building Official
Tonya Harvey	City of Kingsland Convention and Visitors Bureau	Executive Director
Troy Johnson	Camden County Planning and Development	GIS
William Carreira	Camden County Emergency Management Agency	Deputy Director
Willie Chain	Camden County Board of Commissioners	Chief Information Officer

The HMPC met regularly throughout the planning process to provide input, review materials, and ensure alignment with local priorities. Key meetings and topics included (sign-in sheets are provided in Appendix A):

- July 15, 2025: The first HMPC meeting was conducted to introduce the hazard mitigation planning process, discuss the goals of the Plan, discuss the list of hazards applicable to the planning area, review the community profile and discuss changes since the last Update, and develop a plan for the public involvement strategy.
- September 17, 2025: The second HMPC meeting was conducted to review the initial findings from the hazard profiles and discuss the Priority Risk Index and problem statements for the vulnerability assessment, review the County's capabilities, and begin reviewing the statuses of the last Plan's mitigation actions.

- October 22, 2025: The third HMPC meeting was conducted to continue reviewing the statuses of the last Plan's mitigation actions, present the findings of the public survey, and discuss new mitigation actions for the Plan update.

1.3.3 Public Participation

An important component of any mitigation planning process is public participation. Individual citizen and community-based input provides the entire planning team with a greater understanding of local concerns and increases the likelihood of successfully implementing mitigation actions by developing community "buy-in" from those directly affected by the decisions of public officials. As citizens become more involved in decisions that affect their safety, they are more likely to gain a greater appreciation of the hazards present in their community and take the steps necessary to reduce their impact. Public awareness is a key component of any community's overall mitigation strategy aimed at making a home, neighborhood, school, business, or entire planning area safer from the potential effects of hazards.

Public involvement in the development of the Plan was sought using various methods with a list of public outreach initiatives listed below:

- August 12, 2025 to October 1, 2025: Camden County shared a public survey on Facebook and on its official website to collect residents' perspectives on local hazards and mitigation needs. The survey served as the primary tool for community feedback. The survey received 96 responses. The survey results were presented to the HMPC during the September 17, 2-25 meeting for incorporation into the risk assessment and during the October 22, 2025 meeting for incorporation into the mitigation strategy. The survey questions and results are provided in Appendix B with a summary provided below:
 - Most respondents were homeowners who identified extreme heat, flooding, hurricanes, sea level rise, severe winter weather, and infrastructure failure as the community's most pressing hazards. Participants expressed feeling noticeably less prepared for hazardous materials releases, radiological incidents, sea level rise, earthquakes, and erosion.
 - Residents emphasized the need to address flooding above all, along with improvements to roads, storm impacts, and drainage systems. They also highlighted the importance of both preventative mitigation efforts and strengthened emergency services, noting a desire for support from departments such as Planning and Zoning.
 - Many respondents reported that they are already taking personal steps to increase their resilience, including maintaining generators, purchasing flood insurance, and storing water and food supplies for emergencies.
 - Residents primarily rely on social media, local government webpages, text alerts, and news outlets for information leading up to a hazard event.
- **INSERT DATE:** After completion of the initial draft, the Plan was opened for public comment. The Plan was posted to the Camden County website with an overview of hazard mitigation

planning and a solicitation for feedback (**INSERT FIGURE**). A flyer was also created to market the public comment period and was distributed in the following ways:

- **INSERT WAYS**

Associated materials are included in Appendix A.

- **INSERT DATE:** During the public comment period, the draft Plan was also forwarded to neighboring jurisdictions for comment with an example email provided in Appendix A:

- **INSERT NEIGHBORS**

All comments from the public comment period were incorporated into the Plan.

1.3.4 Incorporation of Existing Plans, Studies, and Resources

Throughout the planning process, this Plan was informed by existing plans, studies, reports, and technical information. The planning team reviewed the resources outlined in Table 1-2. Note that the “Area of Incorporation” column within the table lists the primary area of incorporation, but multiple resources were used for multiple chapters; for example, the OpenFEMA datasets were heavily used throughout the risk assessment, but were also leveraged during the community profile portion of the Plan.

Table 1-2. Resources reviewed during the planning process to inform the Plan

Type	Name	Area of Incorporation
Handbook	Federal Emergency Management Agency Local Mitigation Planning Handbook	Entirety of Plan
Plan	2021 Camden County Hazard Mitigation Plan	Entirety of Plan (baseline for the 2026 Plan)
Plan	State of Georgia 2024 Georgia Hazard Mitigation Strategy	Entirety of Plan
Plan	2021 Camden County Hazard Mitigation Plan	Baseline for the 2026 Plan
Dataset	United States Census Bureau Decennial Census American Community Survey	Community Profile
Dataset	Georgia Governor's Office of Planning and Budget Georgia Residential Population Projections by County: 2015–2050	Community Profile
Dataset	Atlanta Regional Commission County Data Profiles	Community Profile
Dataset	Georgia Department of Labor Area Labor Profile	Community Profile
Report	Georgia Department of Community Affairs Statewide Point in Time Count Homeless Report for 2022	Community Profile
Dataset	United States Fish and Wildlife Service Environmental Conservation Online System	Community Profile
Dataset	Camden County Joint Development Agency	Community Profile

	Top Employers	
Dataset	Camden County Sheriff's Office Inmate Inquiry	Community Profile
Dataset	County Health Rankings and Roadmaps Camden County Population Health and Well-Being	Community Profile
Application	Georgia Department of Natural Resources Flood Map Viewer	Risk Assessment
Dataset	Iowa State University Iowa Environmental Mesonet NWS Watch, Warning, and Advisories	Risk Assessment
Dataset	National Oceanic and Atmospheric Administration Historical Hurricane Tracks National Center for Environmental Information Storm Events Database Coastal Change Analysis Program Land Cover Atlas	Risk Assessment
Report	Coastal Regional Commission Hazard Risk Analyses Supplement to the Camden County Joint Hazard Mitigation Plan	Risk Assessment
Dataset	Federal Emergency Management Agency National Flood Hazard Layer National Flood Insurance Program OpenFEMA Disaster Declarations Summaries OpenFEMA Public Assistance Projects Details	Risk Assessment
Dataset	United States Drought Monitor	Risk Assessment
Dataset	Climate Mapping for Resilience and Adaptation	Risk Assessment
Dataset	The University of Georgia Agriculture Snapshots for Camden County	Risk Assessment
Dataset	United States Department of Agriculture Census of Agriculture Web Soil Survey	Risk Assessment
Dataset	Skidaway Institute of Oceanography and Savannah Area GIS Georgia Coastal Hazards Portal	Risk Assessment
Dataset	United States Geologic Survey Quaternary Faults Database Earthquake Catalog National Seismic Hazard Maps	Risk Assessment
Report	Vaisala 2024 Annual Lightning Report	Risk Assessment
Report	Camden County Community Wildfire Protection Plan	Risk Assessment
Dataset	Southern Group of State Foresters Southern Wildfire Risk Explorer	Risk Assessment
Dataset	Georgia Forestry Commission Georgia Historical State Wildfires Dashboard	Risk Assessment
Dataset	Environmental Protection Agency	Risk Assessment

	Pipeline and Hazardous Materials Safety Administration	
Plan	Joint Camden County Comprehensive Plan 2023 to 2027	Capability Assessment
Plan	St. Marys City Master Plan	Capability Assessment
Code and Ordinances	All Jurisdictions Municode Codification	Capability Assessment
Report	Camden County, Georgia Comprehensive Financial Review	Capability Assessment
Plan	Disaster Recovery and Redevelopment Plan Camden County Board of County Commissioners	Capability Assessment

1.4 Multi-Jurisdictional Participation and Special Considerations

This plan update includes unincorporated Camden County as well as three incorporated municipalities. To satisfy multi-jurisdictional participation requirements, each participating jurisdiction was required to perform the following tasks:

- Designate representatives for the HMPC to participate in mitigation planning meetings;
- Report on the status of existing mitigation projects; and
- Develop their local Mitigation Action Plan.

In developing the Camden County Mitigation Action Plan, stakeholder groups and outside agencies were also involved in the planning effort to support targeted mitigation efforts within their expertise that benefit all jurisdictions, such as protection and back-up power generation for non-County-owned critical facilities and natural resource protection of the County's coastal and riverine shorelines.

As a basis for each jurisdiction creating their own Mitigation Action Plan, jurisdiction-specific information was developed on current conditions, assets and exposure, risk and vulnerability, and capability. Throughout this Plan, the document provides countywide summary data as well as jurisdictional considerations and differences, as they exist.

1.5 Adoption, Implementation, Monitoring, and Evaluation

Upon FEMA approval, this plan will be adopted by Camden County and all participating jurisdictions by passing a resolution. The purpose of formally adopting this plan is to secure buy-in from all participating jurisdictions, raise awareness of the Plan, and formalize the Plan's implementation.

Implementation and maintenance of the Plan is critical to the overall success of hazard mitigation planning. Each jurisdiction participating in this Plan (Camden County, Kingsland, St. Marys, and Woodbine) is responsible for implementation within their jurisdiction. Elected officials, officials appointed to head County and City departments, and community staff are charged with leading

implementation of various activities in the Plan. Each participating jurisdiction will need to decide which action(s) to undertake first based on the priority assigned to the actions in the planning process and the availability of funding and administrative support. Low or no-cost actions are often the easiest way to demonstrate progress toward successful plan implementation.

Camden County Emergency Management Agency (EMA) will be responsible for establishing an annual schedule to monitor, evaluate, and update this Plan with the continued support of the HMPC. The HMPC's primary duty moving forward is to see the plan successfully carried out and report to each local governing body, Camden EMA, GEMA, and the public on the status of plan implementation and mitigation opportunities. Other duties include reviewing and promoting mitigation proposals, considering stakeholder concerns about mitigation, passing concerns on to appropriate entities, and posting relevant information on local websites (and others as appropriate). More details on the procedures for Plan adoption, implementation, monitoring, and evaluation are provided in Chapter 5.

1.6 Community Profile

1.6.1 Location and Services

Camden County located on Georgia's southernmost coast on the Atlantic Ocean, is just north of the Georgia Florida State line in the Lower Coastal Plain region. Figure 1-1 below maps the location of Camden County within the State of Georgia.

Figure 1-1. Location of Camden County in the State of Georgia



Camden County is the 11th largest county in Georgia by land area, the 6th largest county in Georgia by land and water area, and 1 of the 6 coastal counties in the State. The United States Census Bureau reports that Camden County has a total land area of 630.3 square miles. Camden County

is bordered by Glynn County to the north, the state of Florida to the south, Brantley and Charlton counties to the west, and the Atlantic Ocean to the east.

The location map in Figure 1-2 reflects the boundaries of the County as well as the jurisdictions within the County. Three incorporated cities are located in Camden County:

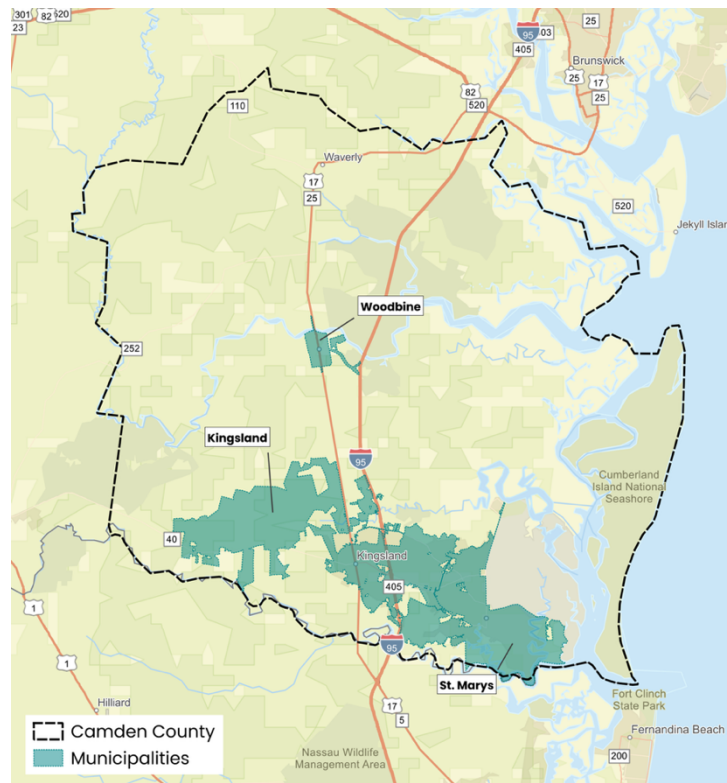
- Kingsland
- St. Marys
- Woodbine (county seat)

Camden County also includes the following unincorporated communities and census-designated places: Waverly, Tarboro, White Oak, Colesburg, Dover Bluff, Harriett's Bluff

Services in Camden County are provided by the following:

- Education (local public schools): Camden County School System
- Higher Education: Brenau University, Coastal Pines Technical College, College of Coastal Georgia, Valdosta State University
- Public Water & Sewer Utilities: Provided by individual jurisdictions, including St. Marys Public Works, City of Woodbine Public Works, City of Kingsland Municipal Utilities
- Power Utilities: Georgia Power Company, Okefenokee Rural Electric
- Transportation Services: Coastal Regional Coaches, provided by the Coastal Regional Commission

Figure 1-2. Location map for Camden County



1.6.2 Geography and Climate

According to the Köppen climate classification system, one of the most widely used methods for categorizing climates around the world, Camden County is classified as subtype Cfa (Humid Subtropical Climate) characterized by relatively high temperatures and evenly distributed precipitation throughout the year.

Figure 1-3 through Figure 1-6 below from the National Oceanic and Atmospheric Administration (NOAA) show the annual average temperature, average maximum temperature, average precipitation, and average minimum temperature for Camden County from 1980 to 2025.

Figure 1-3. Average temperature trends for Camden County (1980 to 2025) (NOAA)

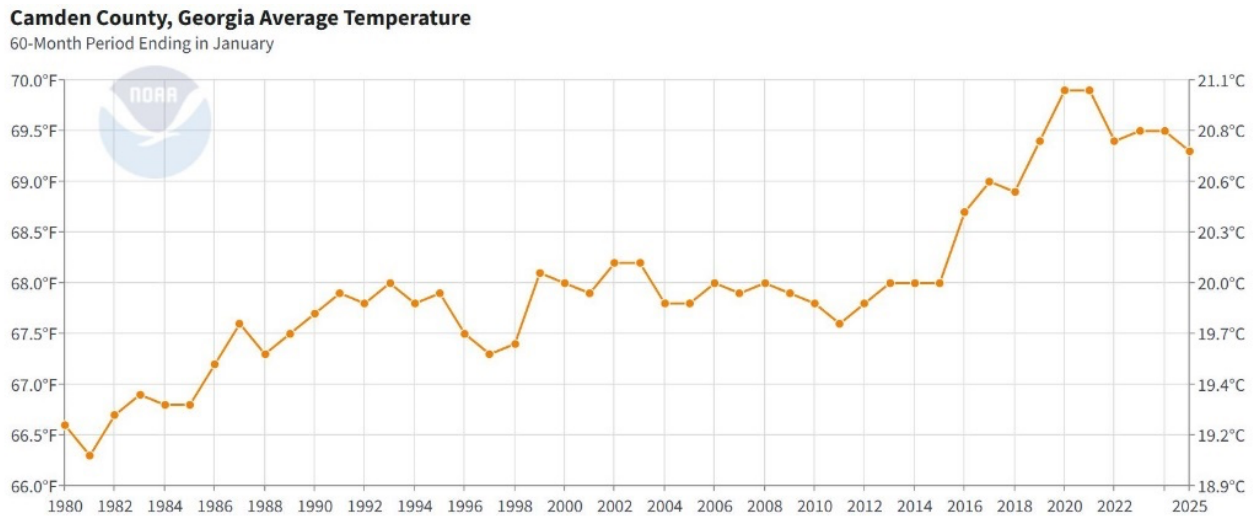


Figure 1-4. Maximum temperature trends for Camden County (1980 to 2025) (NOAA)

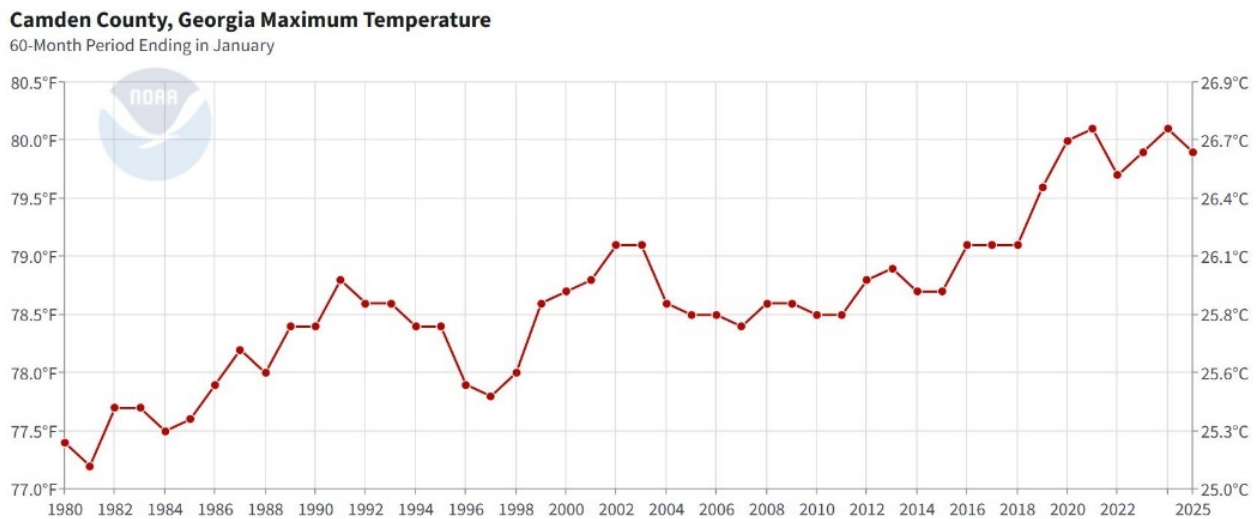


Figure 1-5. Precipitation trends for Camden County (1980 to 2025) (NOAA)

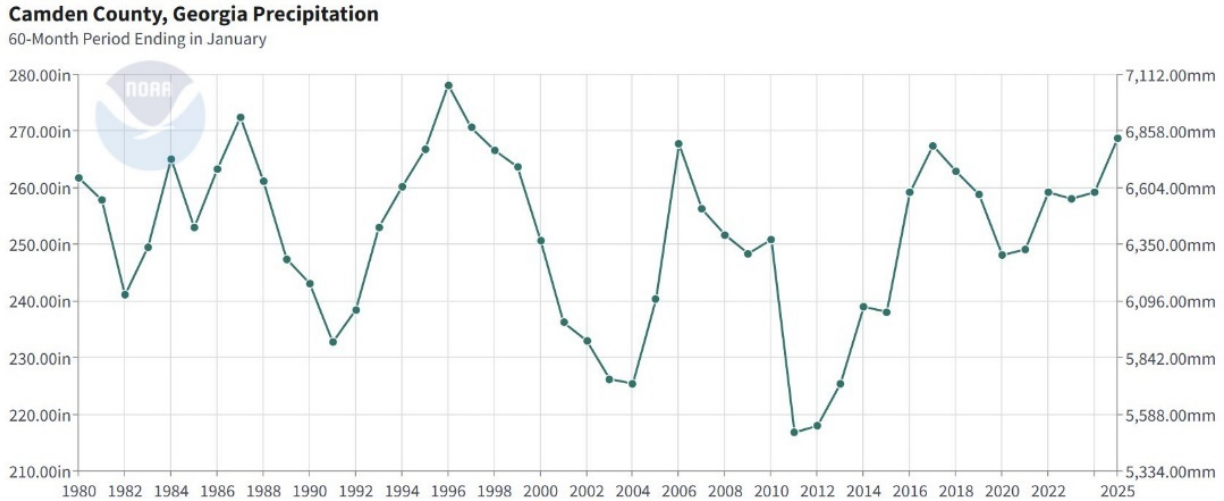
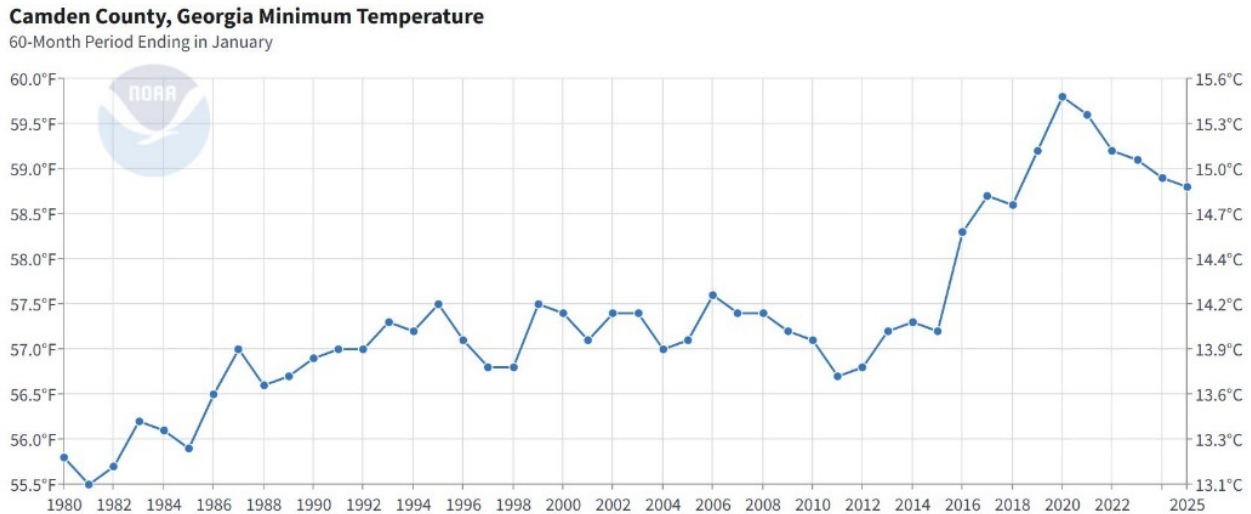


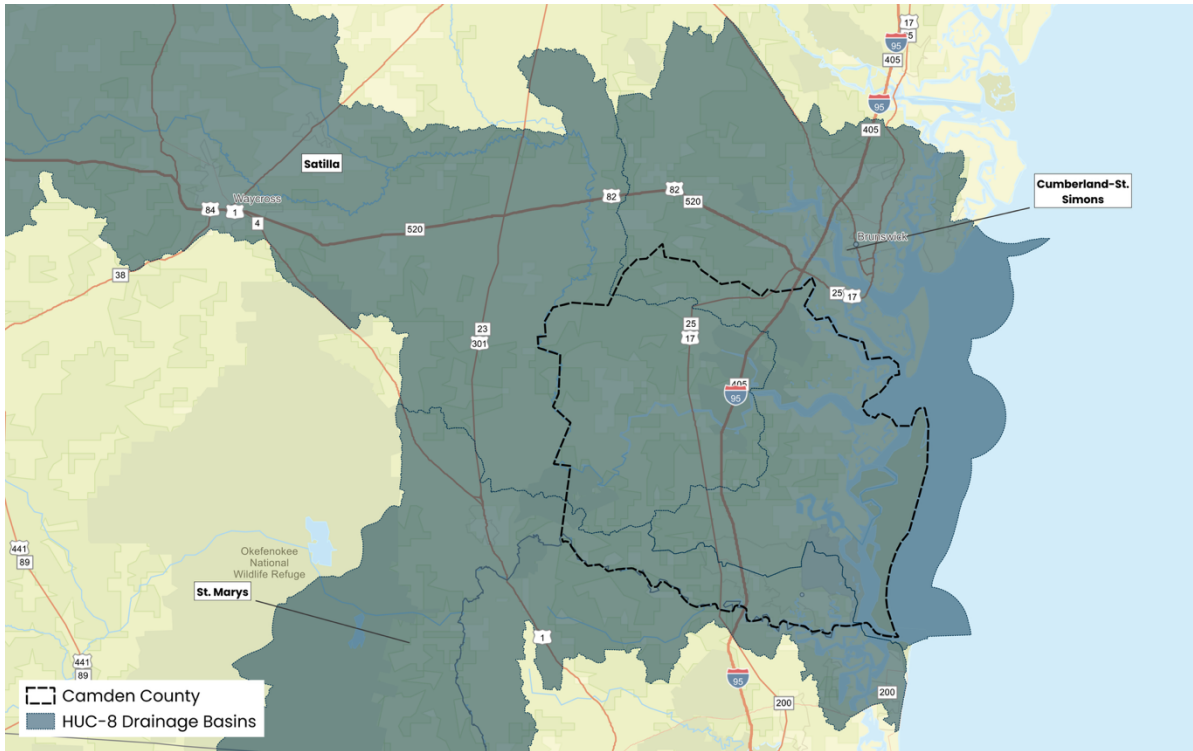
Figure 1-6. Minimum temperature trends for Camden County (1980 to 2025) (NOAA)



Camden County is located within 3 river basins. Most of the County falls within the Cumberland-St. Simons River Basin and the Satilla River Basin, while the remaining area in the southernmost portion of the County falls within the St. Marys River Basin.

Figure 1-7 illustrates these HUC-8 drainage basins and drainage features in and around Camden County.

Figure 1-7. HUC-8 drainage basins (United States Geologic Survey (USGS))



1.6.3 Transportation

1.6.3.1 Major Highways

Primary highway corridors as pictured below in Figure 1-8 in the County include:

- Interstate-95 (I-95)
- US-17

Additional highway routes in the County include:

- SR 25
- SR 40
- SR 110
- SR 252
- SR 259

With 720 miles of public roads in Camden County, I-95 is the principal arterial route that serves as the primary north-south corridor in the County and greater region. I-95 connects Camden County with other counties in the region including, Glynn, McIntosh, Liberty, Bryan and Chatham counties, as well as Florida to the south. I-95 and its 6 interchanges in the County are essential for transportation needs as well as commercial and industrial development. US-17 provides an alternative to using I-95, which is prone to congestion, especially during hurricane evacuations.

None of these routes are registered on the National Hazardous Materials Route Registry; within the entire State of Georgia, Georgia Highway 400 between its origin at I-85 and Exit 2 in Atlanta is the only route registered.

Figure 1-8. Primary highway corridors in Camden County



1.6.3.2 Rail Lines

Camden County is served by 2 active rail lines: CSX Transportation's mainline and St. Marys Railroad (Georgia Coastal Railway):

- The CSX rail line runs parallel to the north-south US-17 corridor. Railroad infrastructure primarily serves the southeastern portion of the County, with spurs extending east into St. Marys as well as into the Naval Submarine Base Kings Bay (NSB Kings Bay). In addition, CSX freight rail lines along US-17 connect Kingsland to Jacksonville, Florida. Since the railroad tracks north of Kingsland have been abandoned, all traffic is now routed into the County from Florida only.
- The St. Marys Railroad is a short spur line that operates rail lines to the east of Kingsland. Since 2007, the rail line has been owned by the Boatwright Companies (also known as Service Rail Group). This 11-mile line from Kingsland to St. Marys primarily transports deliveries to the NSB Kings Bay and other minor customers. In 2013, the St. Marys Railroad began operating as a tourist amenity, offering short train ride tours through historic St. Marys. The rail line is part of the Strategic Rail Corridor Network (STRACNET), which is critical

transportation infrastructure supporting the Base and over 130 other military installations nationwide.

1.6.3.3 Regional Transportation District

Camden County participates in the Coastal Regional Commission's rural transit program called Coastal Regional Coaches. This transit program is a demand-response, advance-reservation service that accommodates all residents including handicapped and wheelchair passengers. The program serves across 10 coastal regional counties in Georgia, including Camden County.

1.6.3.4 Airports

Camden County no longer has a public airport. The formerly open St. Marys Airport is located north of SR 40/Osborne Road adjacent to historic downtown. While this airport was previously available for public use as the only municipal airport in the County, it is now closed permanently due to national security reasons, as identified in the Camden Kings Bay Joint Land Use Study. The City of St. Marys intends to develop a marketing/development plan to determine the best and future use of the airport property. While there are no major airports within Camden County, Jacksonville International Airport is located approximately 32 miles south, and Brunswick Golden Isles Airport is located approximately 37 miles north.

1.6.3.5 Seaports and Harbors

An existing harbor in the County is located near a former paper mill site near the corner of Meeting and Osborne Streets. The County's Joint Comprehensive Plan indicates that this 50-acre site is expected to be turned into a full marina and boat manufacturing plant; the site was sold to a developer from Atlanta, but no progress or updates have been made as of the Plan update. Additionally, the Cumberland Island National Seashore Visitor's Center, located in downtown St. Marys on the St. Marys River, is the base for the St. Marys and Cumberland Island Ferry to Cumberland Island.

The NSB Kings Bay has a port for the movement of military vessels. The channel between this Base and the Atlantic Ocean that traverses the Intracoastal Waterway is critical and requires dredging to maintain. This port upholds stringent security measures as submarines and other vessels transit in and out of the Base.

In addition, nearby ports are located in Brunswick, Georgia to the north, and Fernandina, Florida to the south.

1.6.3.6 Future Transportation Systems and County Transportation Priorities

Local and regional plans recommend a variety of short- and long-range transportation planning initiatives and projects that have not been fully developed or prepared for implementation.

A major necessity that was identified in several local and regional transportation plans was the need to coordinate with GEMA and Georgia Department of Transportation (GDOT) to plan and implement improvements to evacuation routes, including establishing an adequate way-finding signage program; this initiative has started with part of the evacuation route's signage having been updated since the last Plan and is still in progress. With a limited number of corridors to exit the County during an evacuation, evacuation routes are prone to congestion. At this time, there are no specific projects to implement the recommended improvements to evacuation route planning in the County.

The following are the transportation priorities and transportation systems that are currently planned for future service in Camden County:

- **Coastal Georgia Greenway (CCG):** This 155-mile trail system connects South Carolina to Florida through Georgia's 6 coastal counties. The trail network also connects local cities and natural areas. This system is part of the East Coast Greenway, a network of traffic separated trails linking Maine to Key West, Florida. The proposed CCG alignment follows US-17 in Kingsland with a spur known as the "Tabby Trail" connecting to the St. Marys riverfront along Point Peters Road. St Marys is a featured destination along the CCG alignment. Since the last Plan in 2021, the greenway is still under development and not yet fully functioning as a continuous off-road multi-use trail for local users.
- **Highway 17 Boat Ramp:** In coordination with the Georgia Department of Natural Resources (DNR) and GDOT, Camden County developed an implementation strategy to improve the existing US-17 boat ramp site and has allocated \$250,000 for this upgrade. Upgrades will include docking facilities and added parking to improve public use of these facilities. The project was funded through state grants and local SPLOST funds. The project is currently in mediation and has not been completed yet. The completion of this boat ramp will provide enhanced emergency response access for search and rescue teams during floods, hurricanes, and other natural disasters that are water related. Additionally, this ramp will aid in stormwater and erosion control as paved surfaces assist in proper drainage while also reducing sediment runoff into the St. Marys River.

1.6.4 Cultural, Historic and Natural Resources

Camden County is rich in historic, cultural, and natural resources. Notable landmarks include Cumberland Island, the NSB Kings Bay and multiple state and national parks.

The National Register of Historic Places (NRHP) indicates there are 17 properties with this designation in Camden County. These properties and districts are provided in Table 1-3 below.

Table 1-3. Historic property listings in Camden County (NRHP)

Name on the Register	Date Listed	Location	City or Town
----------------------	-------------	----------	--------------

Greyfield Inn	7/24/2003	Cumberland Island	Cumberland Island
Kingsland Commercial Historic District	3/17/1994	Area surrounding S. Lee St., between King and William Streets	Kingsland
Crooked River Site (9CAM118)	12/23/1985	Address Restricted	St. Marys
Duck House	2/13/1984	Cumberland Island	St. Marys
Dungeness Historic District	2/13/1984	Address Restricted; Cumberland Island	St. Marys
High Point-Half Moon Bluff Historic District	12/22/1978	NE of St. Marys on Cumberland Island	St. Marys
Little Cumberland Island Lighthouse	8/28/1989	North end of Little Cumberland Island	St. Marys
Main Road	2/13/1984	Cumberland Island	St. Marys
McIntosh, John Houstoun, Sugarhouse	4/2/1992	Ga. Spur 40, 6 mi. N of St. Marys	St. Marys
Orange Hall	5/7/1973	311 Osborne St.	St. Marys
Plum Orchard Historic District	11/23/1984	Address Restricted; Cumberland Island	St. Marys
Rayfield Archeological District	2/13/1984	Address Restricted; Cumberland Island	St. Marys
St. Marys Historic District	5/13/1976	Roughly bounded by Waterfront Rd., Norris, Alexander, and Oak Grove Cemetery	St. Marys
Stafford Plantation Historic District	11/23/1984	Address Restricted; Cumberland Island	St. Marys
Table Point Archeological District	11/23/1984	Address Restricted; Cumberland Island	St. Marys
Camden County Courthouse	9/18/1980	4th and Camden Avenues	Woodbine
Woodbine Historic District	5/12/1999	Junction of Bedell Avenue and 3rd and 4th Streets	Woodbine

1.6.4.1 Parks, Preserves, and Conservation

The Camden County Parks and Maintenance Department maintains over 28 parks and recreation facilities throughout the County, providing residents a variety of recreation opportunities. Of these park facilities, Kingsland has 4 parks, a recreation complex and sports fields; Woodbine contains 5 parks and nature trails; St Marys contains 7 parks; and the remaining park facilities are located in unincorporated areas of the County.

Aside from the park and recreation facilities maintained by the County, there are also several state and federally owned parks and natural resources located in Camden County, including Crooked River State Park and Cumberland Island National Seashore:

- Crooked River State Park is located north of St. Marys along the Crooked River and is managed by the DNR. Located a few miles from I-95, this 500-acre park offers visitors access to the Intracoastal Waterway. Visitors can use the boat ramp to access the intracoastal waterway and surrounding area, and can utilize campsites, cottages, picnic shelters, and a playground. A nature center in the park features a variety of fish, turtles, snakes, and other animals native to coastal Georgia. In addition, the park offers nature trails and historic ruins that date back to 1825.
- Cumberland Island National Seashore is located just off the mainland portion of the County and, at approximately 17.5 miles long and over 36,000 acres, represents Georgia's largest and southernmost barrier island. It is also one of the most ecologically diverse barrier islands on the Atlantic coast. As 1 of only 10 National Seashores, Cumberland Island contains a variety of cultural, historic and natural resources, including several properties listed on the NRHP. This island is also home to over 9,800 acres of Congressionally Designated Wilderness, as reflected in its primitive, undeveloped character. A significant attraction is the abundance and diversity of wildlife that reside on the island, most notably, wild horses. Only accessible by ferry, Cumberland Island offers a variety of activities for visitors including camping, biking, tours of historic sites and natural areas, walking trails, and beach access. There are a small number of privately-owned residences on Cumberland Island, including the Greyfield Inn, which offers a limited number of accommodations for visitors.

1.6.4.2 Water Bodies and Floodplains

Natural floodplains in the County include wetland areas and low-lying land along the major rivers and coastal areas around the County. Natural floodplains reduce damage by allowing flood waters to spread out over large areas, aiding infiltration into the ground, reducing flow rates and acting as a flood storage area to reduce downstream peaks.

Several major rivers traverse the County, including the Satilla River, Crooked River, Cumberland River, and the St. Marys River. There are also several creeks and streams, lakes, and freshwater ponds located throughout the County. Additional details on the wetland systems associated with these waterbodies are provided below.

Natural and Beneficial Floodplain Functions

Floodplains in riverine areas perform natural functions that cannot be replicated elsewhere. When kept open and free of development, floodplains provide the necessary flood water conveyance and flood water storage needed by a stream or river. When the floodplain can perform its natural function, flood velocities and peak flows are reduced downstream. Natural floodplains reduce wind and wave impacts, and their vegetation stabilizes soils during flooding.

Floodplains in their natural state provide many beneficial functions beyond flood reduction. Water quality is improved in areas where natural cover acts as a filter for runoff and overbank flows; sediment loads and impurities are also minimized. Natural floodplains moderate water temperature, reducing the possibility of adverse impacts on aquatic plants and animals. Floodplains can act as recharge areas for groundwater and reduce the frequency and duration of low flows of surface water. They provide habitat for diverse species of flora and fauna, some of which cannot live anywhere else. They are particularly important as breeding and feeding areas.

Wetlands

Wetlands benefit the ecosystem by storing, changing, and transmitting surface water and groundwater. Through these processes, pollution is removed, nutrients are recycled, groundwater is recharged, and biodiversity is enhanced. Wetland composition varies extensively, with 5 distinct categories for classification: Riverine, Lacustrine, Palustrine, Estuarine, and Marine Systems. All 5 types of wetland systems are present in Camden County.

The Riverine System

The Riverine System includes all wetlands and deep-water habitats contained within a channel with 2 exceptions: (1) wetlands dominated by trees, shrubs, emergent vegetation, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts more than 0.5%. The Riverine System is bounded on the landward side by upland, by the channel bank (including natural and man-made levees), or by wetlands dominated by trees, shrubs, emergent vegetation, emergent mosses, or lichens. In braided streams, the System is bound by the banks forming the outer limits of the depression within which the braiding occurs.

Riverine Systems in Camden County are located along the many rivers, streams and creeks throughout the County and often connect these different types of wetland areas. The western portion of the Satilla River provides the primary riverine habitat, located between Woodbine and the western county boundary.

The Lacustrine System

Lacustrine wetlands are large, open, water-dominated systems (e.g., lakes). This definition also applies to modified systems which possess characteristics similar to Lacustrine Systems (e.g., deep standing or slow-moving waters). The majority of lacustrine wetlands are located around the St. Marys and Kings Bay area, near Woodbine, and along US-17.

The Palustrine System

The Palustrine (freshwater) System includes all non-tidal wetlands dominated by trees, shrubs, persistent emergent plants, emergent mosses or lichens, and all such wetlands that occur in areas where salinity due to ocean-derived salts is below 0.5%. The Palustrine System is bounded upland. Within Camden County, this System includes freshwater emergent wetlands, freshwater

forested/shrub wetlands, and freshwater ponds. Palustrine wetlands are primarily and mostly found along freshwater river and creek corridors. A notable presence of these wetlands is located along the western portion of the Satilla River and St. Marys River. Other palustrine wetlands can be found along small creeks and streams that are located throughout the County. The Palustrine System also includes freshwater ponds which are located throughout the County.

The Estuarine System

The Estuarine System consists of deepwater tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. Salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines, there is appreciable dilution of sea water. Offshore areas with typical estuarine plants and animals, such as red mangroves (*Rhizophora mangle*) and eastern oysters (*Crassostrea virginica*), are also included in the Estuarine System.

Within Camden County, this System includes estuarine and marine wetlands and deepwater habitats. Estuarine wetlands appear to be the most prominent type of wetland in the County, located in the coastal areas and alongside the network of larger waterways that connect to the ocean, extending from the coast inland, just past the areas around US-17. Specifically, this System is located adjacent to coastal waterway corridors and surrounding areas, including the Satilla River, St. Marys River, Cumberland River, Crooked River, and network of smaller waterways that intertwines with these larger waterways.

The Marine System

The Marine System consists of the open ocean overlying the continental shelf and its associated high energy coastline. Marine habitats are exposed to the waves and currents of the open ocean, and the water regimes are determined primarily by the ebb and flow of oceanic tides. Salinities exceed 30 parts per thousand (ppt), with little or no dilution except outside the mouths of estuaries. Shallow coastal indentations or bays without appreciable freshwater inflow, and coasts with exposed rocky islands that provide the mainland with little or no shelter from wind and waves, are also considered part of the Marine System because they generally support typical marine biota.

Within Camden County, this System includes estuarine and marine wetlands. The Atlantic Ocean, Intracoastal Waterway, Cumberland Sound, Cumberland River, St. Marys River, Satilla River, Crooked River and other interconnected waterways comprise the County's Marine System.

Threatened and Endangered Species

The United States Fish and Wildlife Service (USFWS) maintains a regular listing of threatened species, endangered species, species of concern, and candidate species for counties across the

United States. Camden County has 34 species that are listed with the USFWS as opposed to 25 species from the 2021 Plan. Table 1-4 below shows the species identified as threatened, endangered, or other classification for Camden County.

Table 1-4. Threatened and endangered species in Camden County (USFWS)

Scientific Name	Common Name	ESA Listing Status	Lead Office
<i>Plecotus rafinesquii</i>	Rafinesque's big-eared bat	Species of Concern	Mammals
<i>Ammospiza maritima macgillivraii</i>	MacGillivray's Seaside Sparrow	Resolved Taxon	Birds
<i>Notophthalmus perstriatus</i>	Striped newt	Resolved Taxon	Amphibians
<i>Calidris canutus rufa</i>	rufa red knot	Threatened	Birds
<i>Mycteria americana</i>	Wood stork	Threatened	Birds
<i>Lepidochelys kempii</i>	Kemp's ridley sea turtle	Endangered	Reptiles
<i>Clemmys guttata</i>	Spotted turtle	Under Review	Reptiles
<i>Pituophis melanoleucus mugitus</i>	Florida pinesnake	Resolved Taxon	Reptiles
<i>Lithobates capito</i>	Gopher Frog	Under Review	Amphibians
<i>Coreopsis integrifolia</i>	Ciliate-leaf tickseed	Under Review	Flowering Plants
<i>Dermochelys coriacea</i>	Leatherback sea turtle	Endangered	Reptiles
<i>Dermochelys coriacea</i>	Leatherback sea turtle	Endangered	Reptiles
<i>Dryobates borealis</i>	Red-cockaded woodpecker	Threatened	Birds
<i>Charadrius melodus</i>	Piping Plover	Threatened	Birds
<i>Charadrius melodus</i>	Piping Plover	Threatened	Birds
<i>Charadrius melodus</i>	Piping Plover	Threatened	Birds
<i>Crotalus adamanteus</i>	Eastern diamondback rattlesnake	Under Review	Reptiles
<i>Perimyotis subflavus</i>	Tricolored bat	Proposed Endangered	Mammals
<i>Caretta caretta</i>	Loggerhead sea turtle	Threatened	Reptiles
<i>Trichechus manatus</i>	West Indian Manatee	Threatened	Mammals

Trichechus manatus	West Indian Manatee	Threatened	Mammals
Myotis lucifugus	Little brown bat	Under Review	Mammals
Danaus plexippus	Monarch butterfly	Proposed Threatened	Insects
Gopherus polyphemus	Gopher tortoise	Resolved Taxon	Reptiles
Myzomela cardinalis saffordi	Cardinal honey-eater	Resolved Taxon	Birds
Laterallus jamaicensis	Black Rail	Species of Concern	Birds
Eretmochelys imbricata	Hawksbill sea turtle	Endangered	Reptiles
Eretmochelys imbricata	Hawksbill sea turtle	Endangered	Reptiles
Grus americana	Whooping crane	Experimental Population, Non-Essential	Birds
Forestiera godfreyi	Godfrey's privet	Status Undefined	Flowering Plants
Baptisia arachnifera	Hairy rattleweed	Endangered	Flowering Plants
Laterallus jamaicensis ssp. jamaicensis	Eastern Black rail	Threatened	Birds
Drymarchon couperi	Eastern indigo snake	Threatened	Reptiles
Cordulegaster sayi	Say's spiketail	Status Undefined	Insects

1.6.5 Population

Based on 5-year estimates from the American Community Survey (ACS), Camden County had a population of 56,036 in 2023. In comparison to the 2020 Decennial Census, the County experienced an increase of 2.3% with larger increases happening in Kingsland and St. Marys, but a population decrease in Woodbine (Table 1-5). Overall population density in the County increased from 87 persons per square mile in 2020 to 89 persons per square mile in 2023 (Figure 1-9).

Table 1-5. Camden County population estimates (ACS)

Jurisdiction	2010 Census Population	2020 Census Population	2023 ACS Population Estimate	Total Change (2020 to 2023)	Percent Change (2020 to 2023)
Camden County	50,513	54,768	56,036	1,268	2.3%
City of Kingsland	15,946	18,337	19,101	764	4.2%
City of St. Marys	17,121	18,256	18,805	549	3.0%
City of Woodbine	1,412	1,062	1,006	-56	-5.3%

As outlined in the previous Plan, Camden County and its municipalities have experienced continued population growth over the past 2 decades. Further, population projections from the Georgia Governor's Office of Planning and Budget estimate continued growth. Figure 1-10 shows

estimated projections in the County; between 2025 and 2050, the County is estimated to increase by 15.2%.

Figure 1-9 Camden County Population Density 2020 (Joint Camden County Comprehensive Plan)

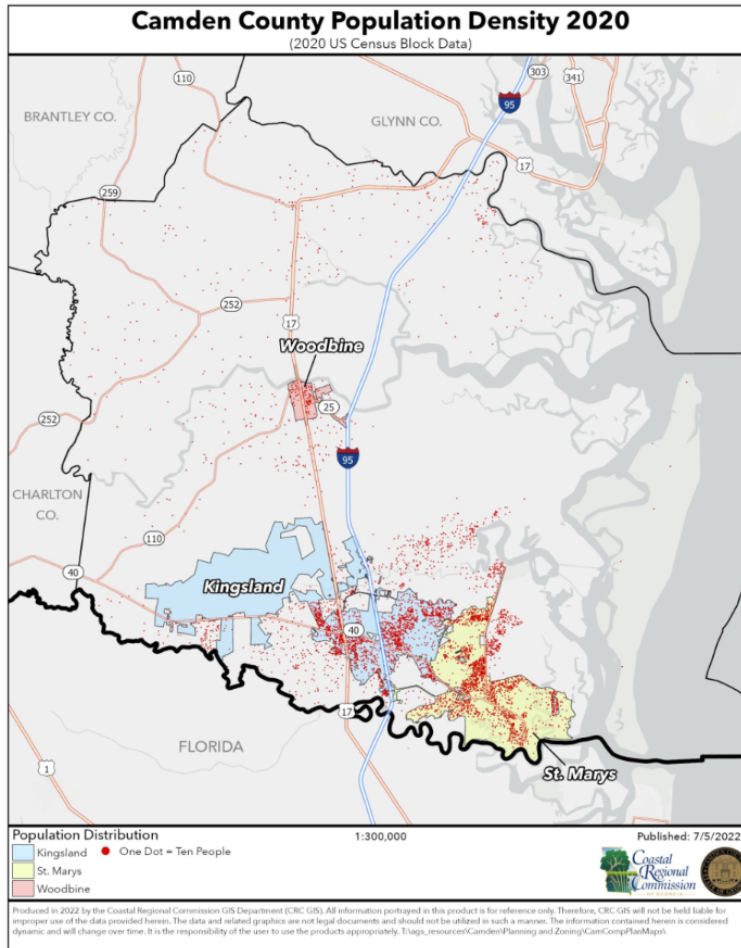
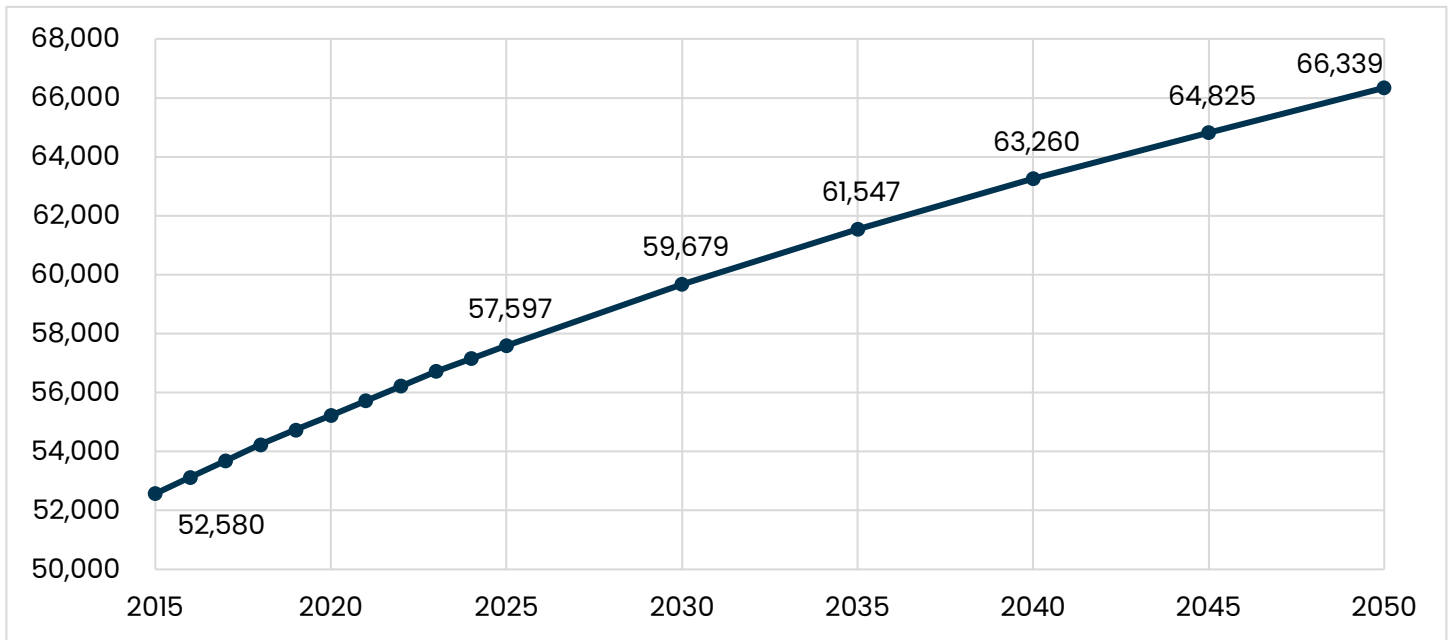
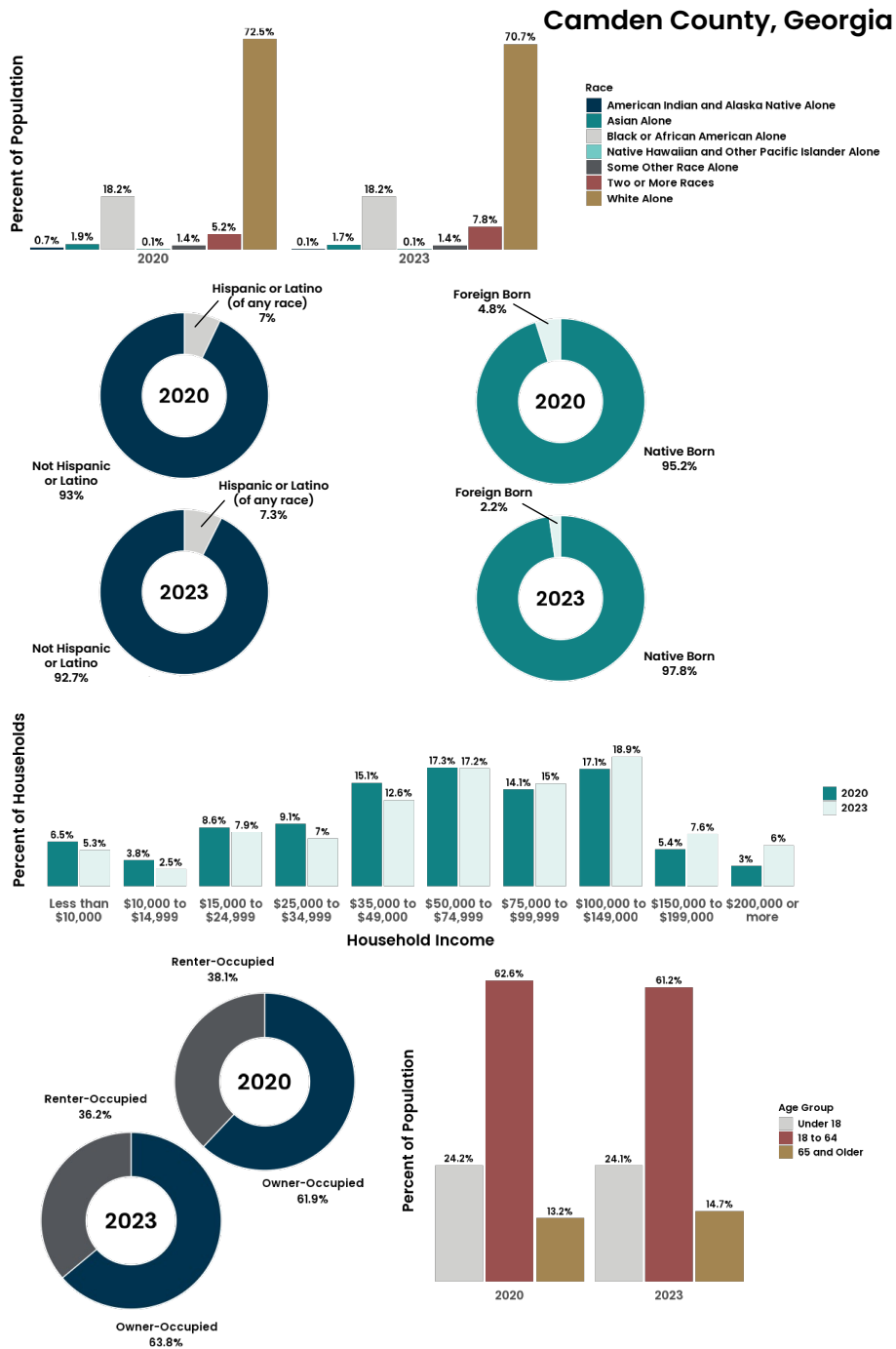


Figure 1-10. Population growth and projections in Camden County (Georgia Governor's Office of Planning and Budget)



Demographic characteristics of the County, and changes between 2020 and 2023 are summarized below in Figure 1-11. The demographics have remained constant between 2020 and 2023. The racial makeup of the County is primarily White, followed by Black or African American. The population's ethnicity is majority not Hispanic or Latino and native born. The median age in Camden County is estimated to be 34.6.

Figure 1-11. Demographics of Camden County (ACS)



1.6.6 Economy

Notable economic drivers for Camden County include the NSB Kings Bay and the diverse presence of natural, cultural, and historic resources that drive tourism in the County and surrounding areas. The location of nearby ports in the region, Brunswick and Fernandina, offer additional benefits to the regional economy.

NSB Kings Bay is home to the most powerful and strategic vessels produced for the United States Navy. Established in 1978, NSB Kings Bay is home to Submarine Group 10, Submarine Squadrons 16 and 20, the Trident Training Facility, the Trident Refit Facility, the Strategic Weapons Facility Atlantic, Naval Support Services Command and other support-providing commands. NSB Kings Bay encompasses 16,994 acres, of which 4,000 acres are protected wetlands. A significant amount of the County's workforce is employed with companies affiliated with operations at the Base.

Wages and Employment

Table 1-6 below provides statistics from the 2019 to 2023 ACS related to wages and employment for the jurisdictions within Camden County and the State of Georgia. The median household income for Camden County is \$72,399 which is slightly lower than that of the State of Georgia, which is \$74,664. At \$80,395, the City of St. Marys has the highest median household income compared to all other jurisdictions in the County, while the City of Woodbine has the lowest median household income at \$43,750. Compared to the State of Georgia, a higher percentage of the population is living below the poverty level in the County, but a lower percentage is unemployed. Further, all jurisdictions in Camden County have a lower percentage of the population without health insurance compared to the State.

Table 1-6. Economic statistics for Camden County (2023) (ACS)

Jurisdiction	Median Household Income	Unemployment Rate (%)	Percent Below Poverty Level	Percent Without Health Insurance
Camden County	\$72,399	4.7%	15.0%	8.8%
City of Kingsland	\$80,395	1.0%	12.7%	10.2%
City of St. Marys	\$67,271	8.6%	20.4%	7.6%
City of Woodbine	\$43,750	4.9%	12.3%	10.6%
State of Georgia	\$74,664	5.1%	13.5%	12.6%

Camden County possesses a steadily evolving and resilient economy, shaped by both goods-producing and service-providing sectors. Based on 2024 data from the Georgia Department of Labor (GDOL) shown in Table 1-7, Camden County's economy, shows a notable tilt toward service-producing industries, which dominate employment and business activity. However, goods-producing sectors, especially construction and manufacturing, continue to serve as vital components of the local economic fabric.

Goods-producing industries comprise 10.3% of employment, with 1,630 workers across 164 firms, and offer an average weekly wage of \$1,477. Within this sector, Manufacturing is the dominant contributor, employing 945 people (6%) at 37 firms, and offering the highest average weekly wage of \$1,677. Construction follows with 663 employees (4.2%) and 124 firms.

Service-providing industries represent the majority of Camden County's workforce, accounting for 56.1% of employment (8,902 employees across 909 firms), though wages vary significantly. Retail

Trade and Accommodation and Food Services are the largest employers within this category, employing 2,125 (13.4%) and 2,118 (13.3%) respectively, though they offer relatively low average weekly wages, \$612 and \$428, respectively. In contrast, Professional, Scientific, and Technical Services and Finance and Insurance provide higher wages—\$1,514 and \$1,444, while collectively employing 1,664 people (10.4%).

The Government sector also plays a critical role in the local economy, employing 5,313 individuals, which constitutes 33.5% of total employment, with an average weekly wage of \$1,335. This substantial government presence is likely influenced by institutions such as NSB Kings Bay.

Table 1-7. Industry mix in Camden County (2024) (GDOL)

Industry	Number of Firms	Employment (Number)	Employment (Percent)	Weekly Wage
Goods-Producing	164	1,630	10.3%	\$1,477
Agriculture, Forestry, Fishing and Hunting	3	22	0.1%	\$847
Mining, Quarrying, and Oil and Gas Extraction	0	-	0%	\$0
Construction	124	663	4.2%	\$1,214
Manufacturing	37	945	6%	\$1,677
Service-Providing	909	8,902	56.1%	\$848
Utilities	2	*	*	*
Wholesale Trade	16	413	2.6%	\$1,379
Retail Trade	169	2,125	13.4%	\$612
Transportation and Warehousing	23	100	0.6%	\$1,129
Information	16	92	0.6%	\$968
Finance and Insurance	59	673	4.2%	\$1,444
Real Estate and Rental and Leasing	52	201	1.3%	\$905
Professional, Scientific, and Technical Services	118	991	6.2%	\$1,514
Management of Companies and Enterprises	5	*	*	*
Administrative and Support and Waste Management and Remediation Services	76	547	3.4%	\$903
Educational Services	15	53	0.3%	\$803
Health Care and Social Assistance	107	1,114	7%	\$923
Arts, Entertainment, and Recreation	9	106	0.7%	\$332
Accommodation and Food Services	146	2,118	13.3%	\$428
Other Services (except Public Administration)	96	314	2%	\$702
Unclassified - Industry Not Assigned	88	34	0.2%	\$1,603
Total - Government	51	5,313	33.5%	\$1,335

Table 1-8 summarizes the largest employers in Camden County. As the County's largest employer with over 9,000 employees, the NSB Kings Bay is 1 of 2 naval bases in Georgia. Each year, hundreds of service members, including nuclear submarine officers and technical staff, re-enter the region's

civilian workforce. According to the Camden County Joint Development Authority, most of these residents remain in Camden County as they transition from the military workforce.

Table 1-8. Major employers in Camden County (Camden County Joint Development Authority)

Employer	Sector	Approximate Employees
NSB Kings Bay	Military Base	9,090
Trident Refit Facility	Military Training Center	1,570
Camden County School System	Public Education	1,210
Southeast Georgia Health System	Hospital System	500
Lockheed Martin	Aerospace and Defense	450
Walmart Supercenter	Retail Grocery Store	300
City of Kingsland	Local Government	200
City of St. Marys	Local Government	140

1.6.7 Housing

Table 1-9 and Table 1-10 below provide details on housing units, values, and characteristics for the County and incorporated jurisdictions as well as a comparison to the State of Georgia.

Table 1-9. Housing units and values in Camden County (ACS)

Jurisdiction	Housing Units (2018)	Housing Units (2023)	Housing Units Percent Change	Percent Occupied Units	Percent Owner-Occupied Units	Percent Renter-Occupied Units	Median Home Value
Camden County	21,837	23,192	6.2%	90.7	63.8	36.2	\$233,900
City of Kingsland	6,544	7,252	10.8%	92.7	66.6	33.4	\$226,800
City of St. Marys	7,904	8,258	4.5%	91.8	55.2	44.8	\$259,300
City of Woodbine	613	584	-4.7%	69.5	57.6	42.4	\$155,400
State of Georgia	4,241,003	4,483,873	5.7%	89.4	65.4	34.6	\$272,900

Table 1-10. Housing characteristics in Camden County (ACS)

Housing Characteristics	Camden County	State of Georgia
Average Household Size	2.58	2.64
Percent of Housing Units with No Vehicles Available	5.0%	5.9%
Percent of Housing Units that are Mobile Homes	9.2%	7.4%

Camden County experienced a 6.2% increase in housing units between 2018 and 2023. Of all the jurisdictions in the County, Kingsland experienced the highest increase in housing units at 10.8%, while Woodbine experienced a decrease of 4.7%. In 2023, there were 23,192 housing units in Camden County, of which 90.7% were occupied. In comparison to the State, occupancy rates were higher in the County and cities of Kingsland and St. Marys, yet lower in Woodbine. Renter-occupied units comprise less than 37% of the housing stock in Camden County. With 33% of its occupied units belonging to renters, Kingsland had the lowest percentage of renter-occupied units of any jurisdiction in the County. In St. Marys and Woodbine, renters occupy 44.8% and 42.4% of occupied units, respectively. A high percentage of renters is an indicator of higher pre- and post-disaster vulnerability as renters often do not have the financial resources of homeowners, are more transient, are less likely to have information about or access to recovery aid following a disaster and are more likely to require temporary shelter following a disaster. Higher rates of home ownership in some jurisdictions, such as Camden County and Kingsland, where owner-occupied housing rates are above 60%, may indicate that more residents in these areas are able to implement certain types of mitigation in their homes.

Mobile homes make up over 9% of the housing stock in Camden County. Mobile home units can be more vulnerable to certain hazards, such as tornadoes and windstorms, especially if they are not properly secured with tie downs. Of the total occupied housing units in Camden County, approximately 5% of householders have no vehicle available, which could cause difficulty in the event of an evacuation, especially considering the lack of alternative transit options available in the County.

1.6.8 Social Vulnerability

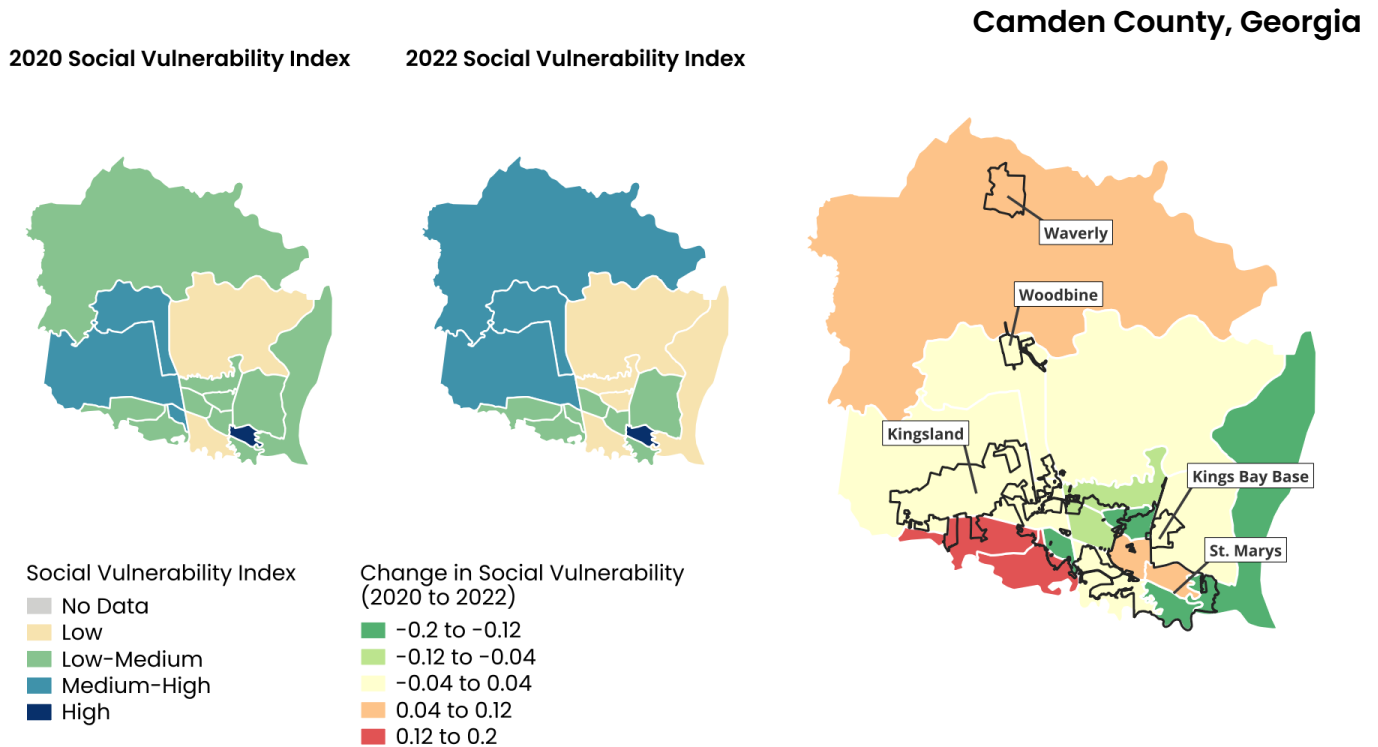
Social vulnerability refers to a community's capacity to prepare for and respond to the stress of hazardous events ranging from natural disasters, such as tornadoes or disease outbreaks, to human-caused threats, such as toxic chemical spills. Social vulnerability considerations were included in this plan update to identify areas across the County that might be more vulnerable to hazard impacts based on a number of factors.

The Center for Disease Control and Prevention (CDC) has developed a social vulnerability index (SVI) as a way to measure the resilience of communities when confronted by external stresses such as natural or human-caused disasters or disease outbreaks. The SVI is broken down to the census tract level and provides insight into particularly vulnerable populations to assist emergency planners and public health officials identify communities more likely to require additional support before, during, and after a hazardous event. The SVI indicates the relative vulnerability within census tracts based on 15 social factors: poverty, unemployment, income, education, age, disability, household composition, minority status, language, housing type, and transportation access. Higher social vulnerability is an indicator that a community may be limited in its ability to respond to and recover from hazard events. Therefore, using this SVI information

can help the County and jurisdictions to prioritize pre-disaster aid, allocate emergency preparedness and response resources, and plan for the provision of recovery support.

Figure 1-12 maps the SVI for Camden County by census tract for 2020 and 2022. Figure 1-12 also highlights the changes in SVI by tract in the County between 2020 and 2022.

Figure 1-12. SVI and changes in SVI (2020 to 2022) mapped throughout Camden County (CDC)



1.6.8.1 Non-English-Speaking Population

Over 4% of the County population speaks a language other than English. Of that population, about 0.9% speak English “less than very well.” The most prominent language spoken other than English is Spanish, with 3% of the non-English speaking population speaking Spanish.

1.6.8.2 Special Needs Population

The Camden County Health Department maintains a “Hurricane Registry” for those with functional, access, or medical needs who need transportation and have no resources such as family, neighbors, or friends to help them evacuate during threat of a hurricane event. In order to receive transportation services, residents must apply in advance, at least 72 hours prior to the arrival of tropical storm force winds.

According to the ACS, over 16% of Camden County’s population, slightly higher than the national average, identify as having some form of disability including hearing, vision, cognitive, ambulatory, self-care, and/or independent living difficulties. The lack of public transportation

options available in the County outside of services provided by the Hurricane Registry programs could pose significant issues for the special needs' population during an emergency or disaster.

1.6.8.3 Homeless Population

The homeless population in Camden County and across the State is monitored and supported by the Department of Community Affairs, which conducts a Point in Time (PIT) count every other January to estimate the number of homeless individuals in counties throughout Georgia through the Continuum of Care (CoC) reports. There are 9 CoC districts in Georgia that report on homelessness in their designated areas. The 7 most urbanized counties have individual CoCs, while the remaining 152 counties are counted in the Balance of State Continuum of Care, which target the relatively less urbanized, more rural counties. The combined results from these reports help to predict the rate of homelessness across the State. These efforts support the requirements by the United States Department of Housing and Urban Development (HUD) for each state to collect and maintain data on their homeless populations.

As of 2024, the CoC reports to HUD reported that Georgia had an estimated 12,290 individuals experiencing homelessness on any given day. The 2024 PIT count for the relatively less urbanized, rural counties, including Camden County, indicated that there were 6,673 individuals characterized as literally homeless, as defined by HUD. Over half (54%) of this homeless population were found to be living in unsheltered conditions, while the other 46% were in emergency or transitional housing. Approximately 17% of this population was children (under age 18) or youth (under age 24). The 2022 PIT Count Homeless Report cites that 38 individuals were found to be unsheltered and 24 in emergency shelters in Camden County, a relatively low number consistent with the largely rural environment of the County and the absence of major cities.

1.6.8.4 Inmates

The Camden County Sheriff's Office indicates that there are approximately 145 inmates in the Camden County Jail System. This incarcerated population could require special planning during a flood event depending on the location of jail facilities in the County.

1.6.9 Land Use

Land use data was obtained from the County and the 2023 Joint Camden County Comprehensive Plan. The intent of the Comprehensive Plan is to serve as a planning document that guides the growth and development decisions of Camden County and its incorporated areas over the next 20 years. The Comprehensive Plan serves as a countywide implementation guide to promote local goals related to economic development, land use, transportation, housing, quality of life and other associated topics. For the County and each incorporated jurisdiction, the Comprehensive Plan provides maps of character areas that lay out a vision and goals for unique subareas,

districts, and neighborhoods, as well as future land use maps that define general land use districts for future growth and change. These maps are shown below in Figure 1-13 and Figure 1-14.

Figure 1-13. Character area maps for Camden County and St. Marys (Joint Camden County Comprehensive Plan)

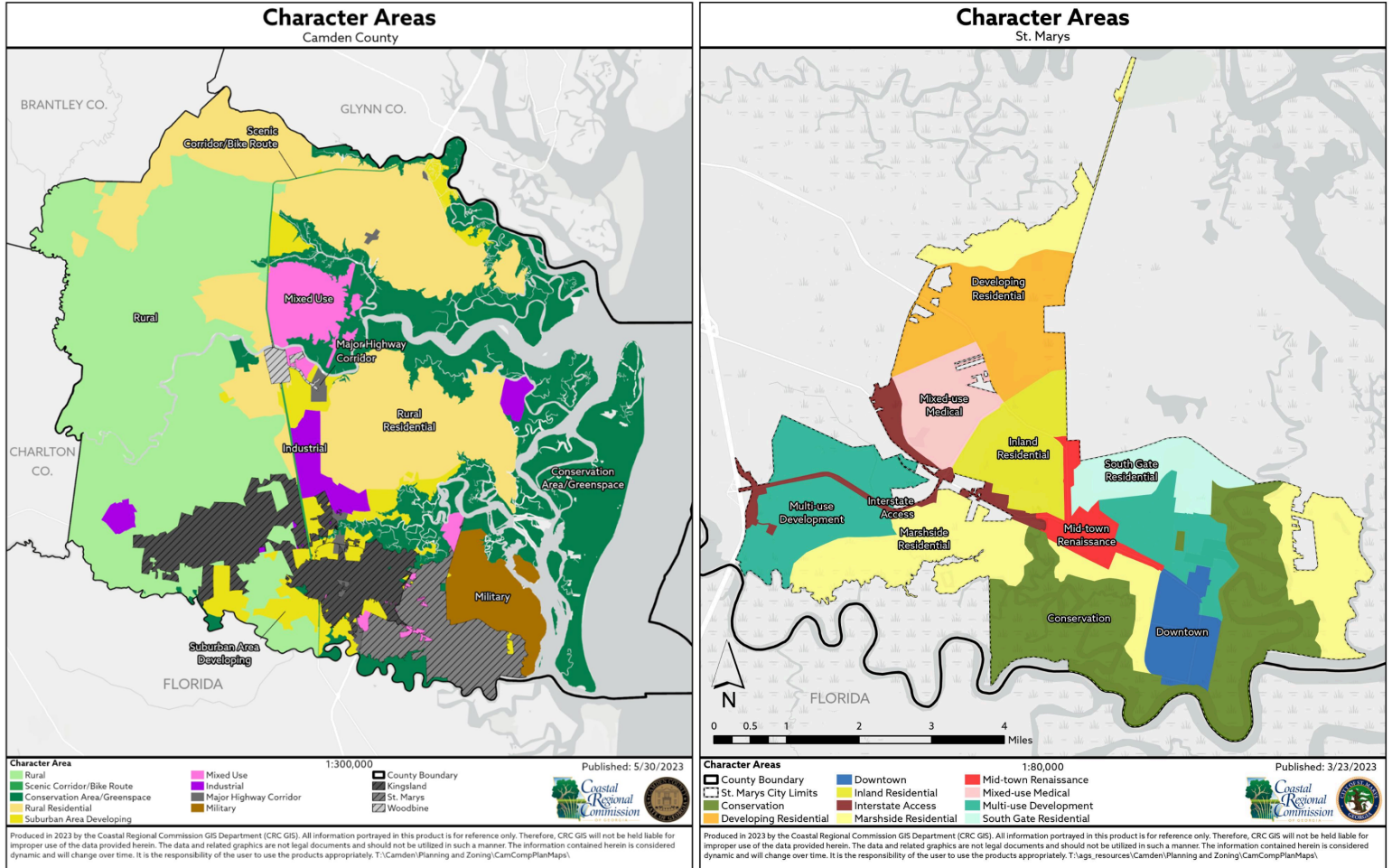
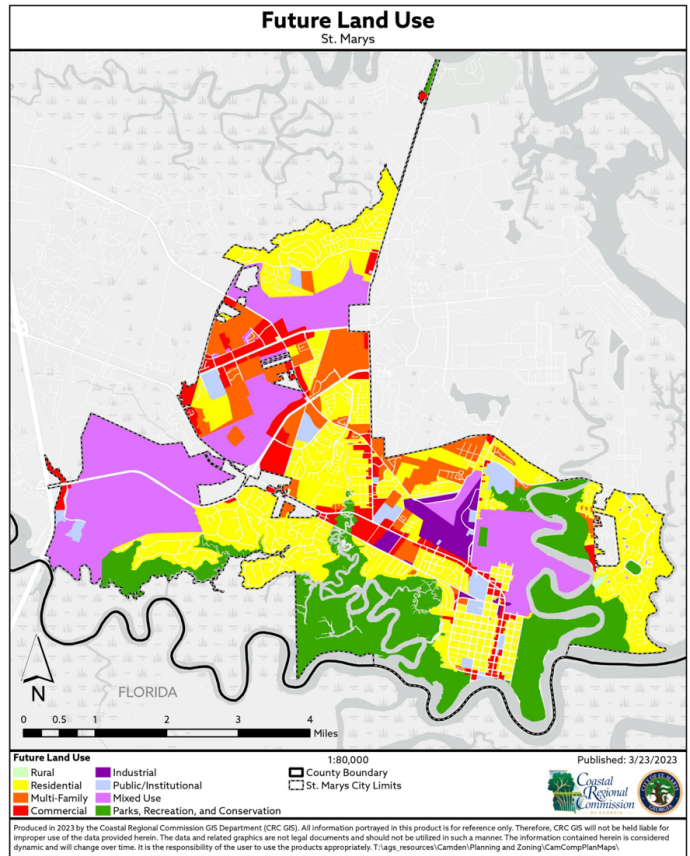
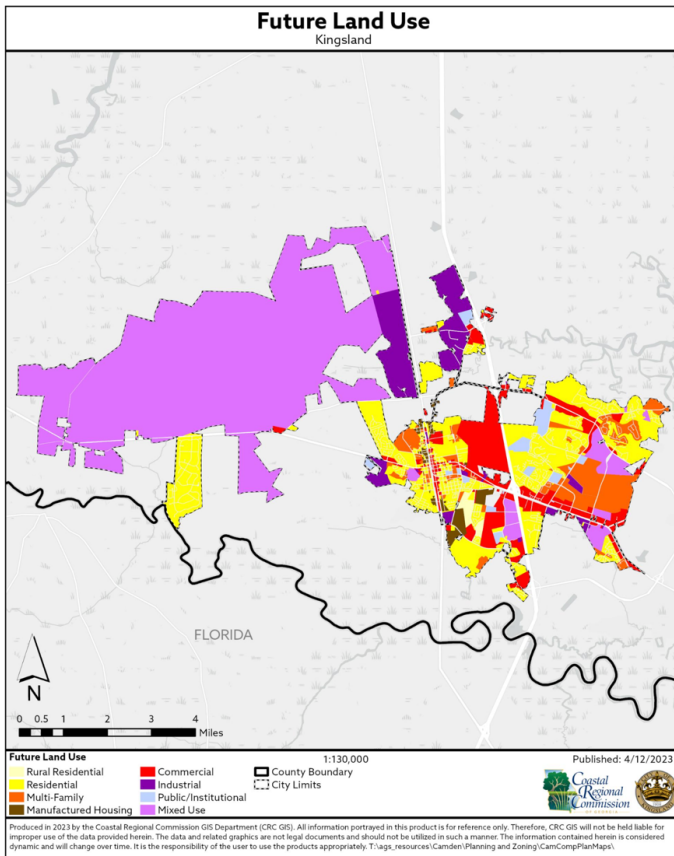
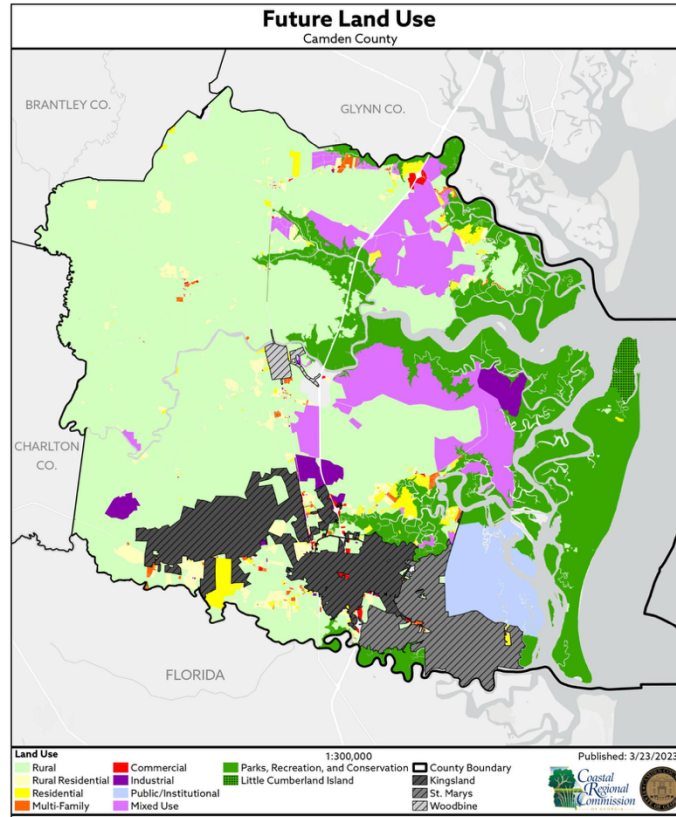


Figure 1-14. Future land use maps for Camden County, Kingsland and St. Marys (Joint Camden County Comprehensive Plan)



1.6.10 Changes and Development Trends

Since the last Plan in 2021 and as outlined in the above sections, Camden County has undergone significant changes and development that has the potential to both increase and reshape the community's vulnerability to natural hazards. These changes, occurring across both incorporated and unincorporated areas, include large-scale residential growth, commercial and industrial expansion, and ongoing challenges related to affordable housing.

- **Residential Growth and Population Increases:** Camden County has continued to experience population growth, which is expected to increase most notably with the approval of over 13,000 new residential units. This scale of development could increase the County's population by as much as 50%, placing substantial additional demand on infrastructure, emergency services, and utilities. Much of this residential growth is occurring in and around hazard-prone areas, including low-lying coastal zones and flood-prone inland tracts, potentially increasing the exposure of future residents to risks such as flooding, storm surge, and wind damage from tropical cyclones.
- **Naval Base Expansion:** The ongoing expansion of NSB Kings Bay continues to influence regional development patterns and population growth. While the base itself is a critical economic and strategic asset, its growth has spurred adjacent residential and commercial development, often in areas with heightened vulnerability to coastal hazards. Increased population density around the base places additional strain on evacuation routes and emergency preparedness systems.
- **Commercial and Industrial Development:** Beyond residential development, the County continues to experience commercial and industrial development, such as the construction of a 3 million square foot warehouse facility. These large facilities lead to added traffic congestion. Additionally, they may increase impervious surfaces and stormwater runoff, exacerbating flood risks in adjacent areas.
- **Multifamily Housing and Affordability Challenges:** In recent years, new apartment complexes have been constructed to meet growing housing demand; however, the lack of affordable housing remains a critical concern. Low-income households are often disproportionately impacted by natural hazards due to factors such as limited access to insurance, fewer resources for recovery, and higher likelihood of residing in vulnerable locations.

Chapter 2 Hazard Identification and Risk Assessment

2.1 Summary of Updates for Chapter 2

The following table provides a description of each section of this chapter and a summary of the changes that have been made to the Camden County Multi-Jurisdictional Hazard Mitigation Plan 2021.

Chapter 2 Section	Updates
Overview	No changes
Hazard Identification	Updated to reflect the 2024 State Plan, 2021 County Plan, updated disaster declaration information and historical occurrence records, and new decisions made by the HMPC during this Plan update
Risk Assessment Methodology	No changes
Asset Inventory	Updated with most recent data
Hazard Profiles, Analysis, and Vulnerability	Updated with most recent data and inclusion of new hazards not addressed in previous Plan; sub-section added for multi-jurisdictional considerations to allow for incorporation throughout the Plan as opposed to in annexes
Conclusions on Hazard Vulnerability	Updated with revised conclusions and scores made by the HMPC during this Plan update

2.2 Overview

As defined by the Federal Emergency Management Agency (FEMA), risk is a combination of hazard, vulnerability, and exposure. “It is the impact that a hazard would have on people, services, facilities, and structures in a community and refers to the likelihood of a hazard event resulting in an adverse condition that causes injury or damage.”

This hazard risk assessment covers all of Camden County, including the unincorporated County and all incorporated jurisdictions participating in this Plan.

The risk assessment process identifies and profiles relevant hazards and assesses the exposure of lives, property, and infrastructure to these hazards. The process allows for a better understanding of the potential risk to natural hazards in the County and provides a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events. This risk assessment followed the methodology described in the FEMA publication Understanding Your Risks –

Identifying Hazards and Estimating Losses (FEMA 386-2, 2002), which breaks the assessment down to a 4-step process:



Data collected through this process has been incorporated into the following sections of this Plan:

- 2.3 Hazard Identification identifies the natural and human-caused hazards that threaten the planning area.
- 2.4 Risk Assessment Methodology
- 2.5 Asset Inventory details the population, buildings, and critical facilities at risk within the planning area.
- 2.6 Hazard Profiles, Analysis, and Vulnerability discusses the threat to the planning area, describes previous occurrences of hazard events and the likelihood of future occurrences, and assesses the planning area's exposure to each hazard profiled, considering assets at risk, critical facilities, and future development trends.
- 2.7: Conclusions on Hazard Risk summarizes the results of the Priority Risk Index and defines each hazard as a Low, Moderate, or High Risk hazard.

2.3 Hazard Identification

To identify hazards relevant to the planning area, the Hazard Mitigation Planning Committee (HMPC) began with a review of the list of hazards identified in the 2024 Georgia Hazard Mitigation Strategy and the 2021 Camden County Multi-Jurisdictional Hazard Mitigation Plan. The HMPC used these lists to identify a full range of hazards for potential inclusion in this Plan update and to ensure consistency across these planning efforts. All hazards in Table 2-1 were evaluated for inclusion in this Plan update.

Table 2-1. Full range of hazards evaluated for inclusion in this Plan

Hazard	Inclusion in 2024 State Plan	Inclusion in 2021 Camden County Plan
Dam Failure	Yes	No
Drought	Yes	Yes
Erosion	Yes	Yes
Earthquake	Yes	Yes
Extreme Heat	Yes	Yes
Flooding	Yes	Yes
Geologic Hazards (sinkhole, landslide)	Yes	No
Hurricane	Yes	Yes

Sea Level Rise	Yes	Yes
Severe Weather (thunderstorms wind, lightning, hail)	Yes	Yes
Severe Winter Weather	Yes	Yes
Tornado	Yes	Yes
Wildfire	Yes	Yes
Active Assailant	Yes	Yes
Hazardous Materials Release	Yes	Yes
Infectious Disease	Yes	No
Infrastructure Failure	Yes	No
Radiological Incident	Yes	Yes
Cyber Attack	Yes	Yes
Water Contamination	No	Yes
Supply Chain Disruption	No	No
Terrorism	No	No

The HMPC evaluated the full list of hazards using existing hazard data, past disaster declarations, local knowledge, and information from the 2024 State Plan and the 2021 Camden County Plan to determine the significance of these hazards to the planning area. Significance was measured in general terms and focused on key criteria such as frequency and resulting damage, which includes deaths and injuries, as well as property and economic damage. Table 2-2 and Table 2-3 list data from the National Oceanic and Atmospheric Administration’s (NOAA) National Center for Environmental Information (NCEI) and FEMA that informed the hazard evaluation.

Table 2-2. Significant events in Camden County since the last Plan update (NCEI)

Date	Event Type
February 2025	Thunderstorm Wind
January 2025	Winter Storm
July 2024	Flood
June 2024	Thunderstorm Wind
May 2024	Thunderstorm Wind
October 2023	Coastal Flood
September 2023	Heavy Rain, Coastal Flood
July 2023	Lightning, Tornado (EF0)
July 2023	Hail (1 inch), Thunderstorm Wind, Heavy Rain
June 2023	Thunderstorm Wind

Table 2-3. FEMA disaster declarations in Camden County (FEMA)

Disaster Number	Declaration Date	Declaration Type	Incident Type	Declaration Title	Total Public Assistance Obligations
3044	7/20/1977	EM	Drought	Drought	-
3097	3/15/1993	EM	Snowstorm	Severe Snowfall, Winter Storm	-
3144	9/14/1999	EM	Hurricane	Hurricane Floyd	\$93,637.08
3218	9/5/2005	EM	Hurricane	Hurricane Katrina Evacuation	-
1833	4/23/2009	DR	Severe Storm	Severe Storms, Flooding, Tornadoes, and Straight-Line Winds	-
3379	10/6/2016	EM	Hurricane	Hurricane Matthew	-
4284	10/8/2016	DR	Hurricane	Hurricane Matthew	\$734,787.9
3387	9/8/2017	EM	Hurricane	Hurricane Irma	-
4338	9/15/2017	DR	Hurricane	Hurricane Irma	\$2,624,649
3406	10/10/2018	EM	Hurricane	Hurricane Michael	-
3422	9/1/2019	EM	Hurricane	Hurricane Dorian	-
3464	3/13/2020	EM	Biological	COVID-19	-
4501	3/29/2020	DR	Biological	COVID-19	\$159,637.7
3616	9/26/2024	EM	Tropical Storm	Hurricane Helene	-
4830	9/30/2024	DR	Hurricane	Hurricane Helene	\$858,970.7

Using the above information and additional discussion, the HMPC evaluated each hazard's significance to the planning area in order to decide which hazards to include in this Plan update. Table 2-4 lists the hazard types included in this Plan.

In comparing the hazard inventory to the inventory in the 2024 Georgia Hazard Mitigation Strategy, Camden County omitted the following hazards:

- Dam Failure: There are no Class I or Class II dams in the County.
- Geologic Hazards (sinkhole, landslide): The HMPC based the omission on the 2024 Georgia Hazard Mitigation Strategy's hazard maps (Figure 2.92 and Figure 2.93), which show low to no potential for such hazards in Camden County. Historical occurrence and local geological assessments corroborated this conclusion.

Table 2-4. Natural and non-natural hazards included in the Plan

Natural Hazards	Non-Natural Hazards
Drought	Active Assailant
Erosion	Cyber Attack
Earthquake	Hazardous Materials Release
Extreme Heat	Infectious Disease
Flooding	Infrastructure Failure
Hurricane	Radiological Incident
Sea Level Rise	Supply Chain Disruption
Severe Weather (thunderstorms wind, lightning, hail)	Terrorism
Severe Winter Weather	Water Contamination
Tornado	
Wildfire	

2.4 Risk Assessment Methodology

The Disaster Mitigation Act of 2000 requires that the HMPC evaluate the risks associated with each of the hazards identified in the planning process. Each hazard was evaluated to determine where it may occur, the severity of potential events, records of past events, the probability of future occurrences, and potential impacts from the hazard. A vulnerability assessment was conducted for each hazard using quantitative and/or qualitative methods depending on the available data, to determine its potential to cause significant human and/or monetary losses. A consequence analysis was also completed for each hazard. Each hazard is profiled in the following format:

- **Hazard Description:** This section provides a description of the hazard, including discussion of its duration and speed of onset or warning time, as well as any secondary effects followed by details specific to the Camden County planning area.
- **Location:** This section includes information on the hazard's physical extent, describing where the hazard can occur, with mapped boundaries where applicable.
- **Extent:** This section includes information on the hazard extent in terms of magnitude and describes how the severity of the hazard can be measured. Where available, the most severe event on record is used as a frame of reference.
- **Historical Occurrences:** This section contains information on historical events, including the location and consequences of all past events on record within or near the Camden County planning area. Where possible, this Plan uses a consistent 20-year period of record except for hazards with significantly longer average recurrence intervals or where data limitations otherwise restrict the period of record.
- **Probability of Future Occurrence:** This section gauges the likelihood of future occurrences based on past events and existing data. The frequency is determined by dividing the number of events observed by the number of years on record and multiplying by 100. This provides the percent chance of the event happening in any given year according to

historical occurrence (e.g. 10 winter storm events over a 20-year period equates to a 50 percent chance of experiencing a severe winter storm in any given year). Unless otherwise noted in the hazard profile, a 20-year period of record is used for determining probability in order to provide a uniform definition of probability and to reflect current conditions, including recent trends driven by climate change. The likelihood of future occurrences is categorized into one of the classifications as follows:

- Highly Likely: Near or more than 100 percent chance of occurrence within the next year
- Likely: Between 10 and 100 percent chance of occurrence within the next year (recurrence interval of 10 years or less)
- Possible: Between 1 and 10 percent chance of occurrence within the next year (recurrence interval of 11 to 100 years)
- Unlikely: Less than 1 percent chance or occurrence within the next 100 years (recurrence interval of greater than every 100 years)
- Climate Change: Where applicable, this section discusses how climate change may or may not influence the risk posed by the hazard on the planning area in the future.
- Vulnerability Assessment: This section quantifies, to the extent feasible using best available data, assets at risk to natural hazards and potential loss estimates. Details on hazard specific methodologies and assumptions are provided where applicable. People, properties and critical facilities, and environmental assets that are vulnerable to the hazard are identified.

The vulnerability assessments followed the methodology described in the FEMA publication *Understanding Your Risks – Identifying Hazards and Estimating Losses* (August 2001). This risk assessment first describes the total vulnerability and values at risk and then discusses specific exposure and vulnerability by hazard. Data used to support this assessment included the following:

- Geographic Information System (GIS) datasets, including County parcel data, topography, transportation layers, and critical facility and infrastructure locations;
- Hazard layer GIS datasets from state and federal agencies;
- Written descriptions of inventory and risks provided by the 2024 Georgia Hazard Mitigation Strategy;
- Written descriptions of inventory and risks provided by the 2021 Camden County Multi-Jurisdictional Hazard Mitigation Plan; and
- Exposure and vulnerability estimates derived using local parcel data.

Two distinct risk assessment methodologies were used in the formation of the vulnerability assessment: The first consists of a quantitative analysis that relies upon best available data and technology, while the second approach consists of a qualitative analysis that relies on local knowledge and rational decision making. For applicable hazards, the quantitative analysis involved the use of FEMA's Hazus-MH, a nationally applicable standardized set of models for estimating potential losses from earthquakes, floods, hurricanes, and tornados. Hazus uses a statistical approach and mathematical modeling of risk to predict a hazard's

frequency of occurrence and estimated impacts based on recorded or historic damage information. The Hazus risk assessment methodology is parametric, in that distinct hazard and inventory parameters, such as wind speed and building type, were modeled using the Hazus software to determine the impact on the built environment.

Vulnerability can be quantified in those instances where there is a known, identified hazard area, such as a mapped floodplain. In these instances, the numbers and types of buildings subject to the identified hazard can be counted and their values tabulated. Other information can be collected in regard to the hazard area, such as the location of critical facilities and infrastructure, historic resources, and valued natural resources (e.g., an identified wetland or endangered species habitat). Together, this information conveys the vulnerability of that area to that hazard. Camden County's GIS-based risk assessment was completed using data collected from local, regional and national sources that included Camden County, the Georgia Emergency Management and Homeland Security Agency (GEMA), and FEMA.

- **Changes in Development:** This section describes how changes in development have impacted vulnerability since the last Plan was adopted. Future development is also discussed in this section, including how exposure to the hazard may change in the future or how development may affect hazard risk.
- **Multi-Jurisdictional Considerations:** Each jurisdiction was considered when determining the potential hazard impact.
- **Problem Statements:** This section summarizes key mitigation planning concerns related to this hazard. Where possible, problem statements are identified at a jurisdictional level.

2.4.1 Priority Risk Index

The conclusions drawn from the hazard profiling and vulnerability assessment process are used to prioritize all potential hazards to the Camden County planning area. The Priority Risk Index (PRI) was applied for this purpose because it provides a standardized numerical value so that hazards can be compared against one another (the higher the PRI value, the greater the hazard risk). PRI values are obtained by assigning varying degrees of risk to 5 categories for each hazard (probability, impact, spatial extent, warning time, and duration). Each degree of risk was assigned a value (1 to 4) and a weighting factor as summarized in Table 2-5.

The sum of all 5 risk assessment categories equals the final PRI value, demonstrated in the equation below (the lowest possible PRI value is a 1.0 and the highest possible PRI value is 4.0).

$$\text{PRI} = [(\text{PROBABILITY} \times .30) + (\text{IMPACT} \times .30) + (\text{SPATIAL EXTENT} \times .20) + (\text{WARNING TIME} \times .10) + (\text{DURATION} \times .10)]$$

Table 2-5. Priority risk index determination methodology

Risk Assessment Category	Level	Degree of Risk Criteria	Index	Weight
PROBABILITY What is the likelihood of a hazard event occurring in a given year?	Unlikely	Less than 1% annual probability	1	30%
	Possible	Between 1% and 10% annual probability	2	
	Likely	Between 10% and 100% annual probability	3	
	Highly Likely	100% annual probability	4	
IMPACT In terms of injuries, damage, or death, would you anticipate impacts to be minor, limited, critical, or catastrophic when a significant hazard event occurs?	Minor	Very few injuries, if any. Only minor property damage and minimal disruption on quality of life. Temporary shutdown of critical facilities.	1	30%
	Limited	Minor injuries only. More than 10% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for > 1 day.	2	
	Critical	Multiple deaths/injuries possible. More than 25% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for > 1 week.	3	
	Catastrophic	High number of deaths/injuries possible. More than 50% of property in affected area damaged or destroyed. Complete shutdown of critical facilities > 30 days.	4	
SPATIAL EXTENT How large of an area could be impacted by a hazard event? Are impacts localized or regional?	Negligible	Less than 1% of area affected	1	20%
	Small	Between 1% and 10% of area affected	2	
	Moderate	Between 10% and 50% of area affected	3	
	Large	Between 50% and 100% of area affected	4	
WARNING TIME Is there usually some lead time associated with the hazard event? Have warning measures been implemented?	More than 24 Hours	Self defined	1	10%
	12 to 24 Hours	Self defined	2	
	6 to 12 Hours	Self defined	3	
	Less than 6 Hours	Self defined	4	
DURATION How long does the hazard event usually last?	Less than 6 Hours	Self defined	1	10%
	Less than 24 Hours	Self defined	2	
	Less than 1 Week	Self defined	3	
	More than 1 Week	Self defined	4	

PRI ratings are provided by category throughout each hazard profile for the planning area as a whole. Ratings specific to each jurisdiction are provided within the Multi-Jurisdictional

Considerations section of each hazard profile. The results of the risk assessment and overall PRI scoring are provided in the appendix.

The purpose of the PRI is to categorize and prioritize all potential hazards for the Camden County planning area as high, moderate, or low risk. The summary hazard classifications generated through the use of the PRI allows for the prioritization of those high and moderate hazard risks for mitigation planning purposes. Mitigation actions are not developed for hazards identified as low risk through this process.

2.5 Asset Inventory

An inventory of assets was compiled to identify the total count and value of exposure in Camden County. This asset inventory serves as the basis for evaluating exposure and vulnerability by hazard. Assets identified for analysis include population, buildings, critical facilities, and critical infrastructure.

2.5.1 Population

1.6 Community Profile details demographics and characteristics of the population in Camden County. Additional metrics and maps are provided below in Figure 2-1 through Figure 2-3.

Figure 2-1. Population density throughout Camden County (US Census Bureau)

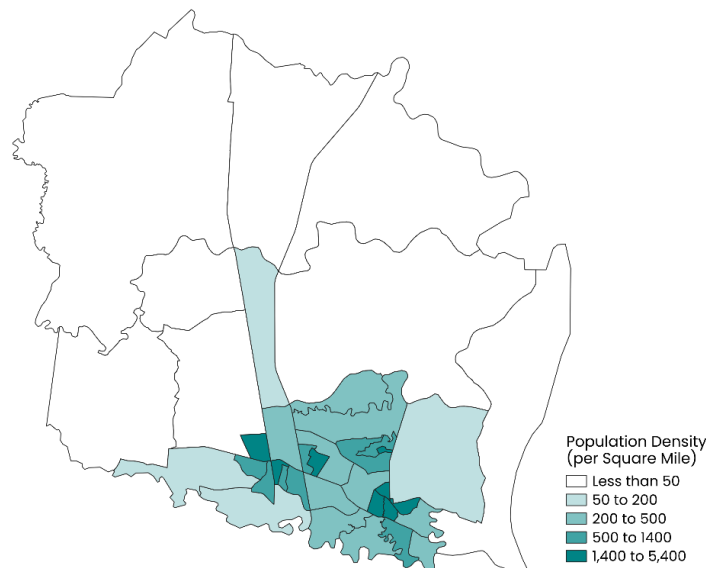


Figure 2-2. Median age throughout Camden County (2023) (US Census Bureau)

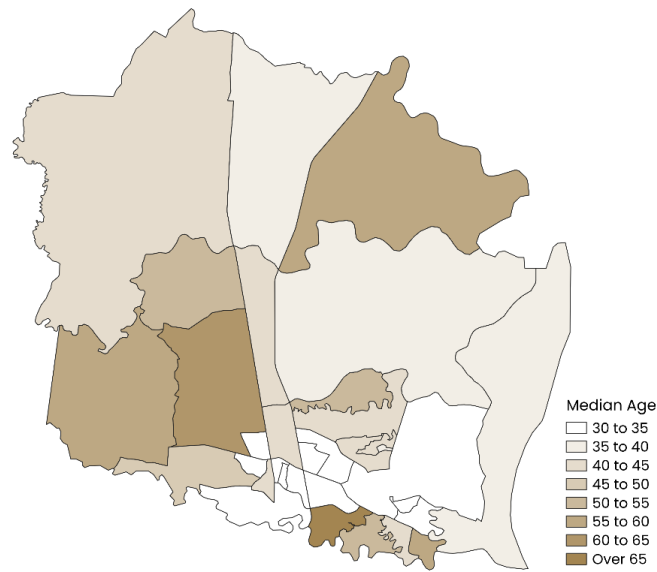
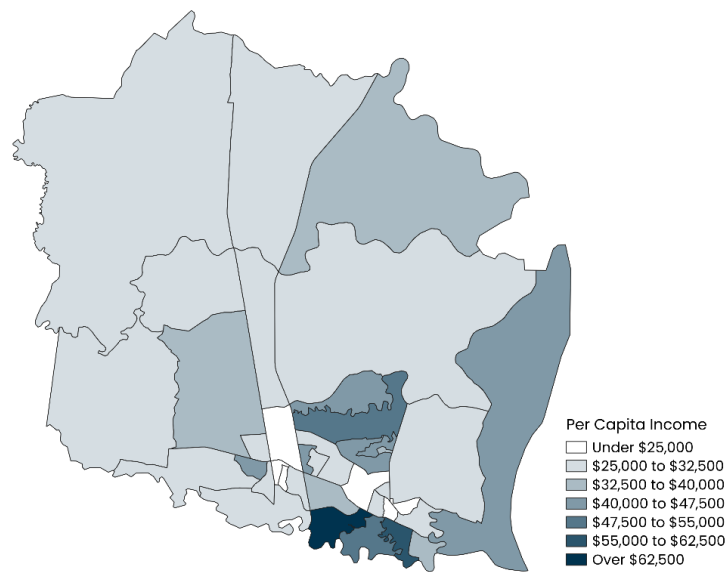


Figure 2-3. Per capita income (2023) throughout Camden County (2023) (US Census Bureau)



2.5.2 Building Exposure

Building exposure was estimated by summarizing improved parcels from 2025 parcel data provided by Camden County. Table 2-6 provides building exposure by jurisdiction according to the parcel data. All occupancy types were summarized into the following categories: Agriculture, Commercial, Education, Government, Industrial, Religious, and Residential.

Table 2-6. Camden County building exposure by jurisdiction and occupancy (Camden County GIS)

Occupancy	Parcel Count	Structure Value
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Kingsland	7701	\$1,942,492,642
Commercial	819	\$339,847,737
Educational	21	\$170,234,474
Government	67	\$35,390,194
Industrial	4	\$9,477,646
Religious	43	\$27,759,950
Residential	6747	\$1,699,630,378
St Marys	7680	\$2,294,802,613
Commercial	770	\$243,871,600
Educational	12	\$91,644,007
Government	77	\$20,719,451
Industrial	29	\$23,649,234
Religious	56	\$20,495,958
Residential	6736	\$1,894,422,363
Woodbine	537	\$104,995,318
Commercial	112	\$8,676,448
Educational	3	\$1,954,683
Government	33	\$21,135,403
Industrial	4	\$384,400
Religious	15	\$9,611,640
Residential	370	\$63,232,744
Unincorporated Camden County	570	\$45,582,819
Agricultural	229	\$14,095,234
Commercial	283	\$24,599,546
Educational	1	\$2,239,011
Government	57	\$4,649,028
Industrial	27	\$1,719,875
Religious	76	\$9,611,640
Residential	5318	\$1,220,502,714

2.5.3 Critical Facilities and Infrastructure Exposure

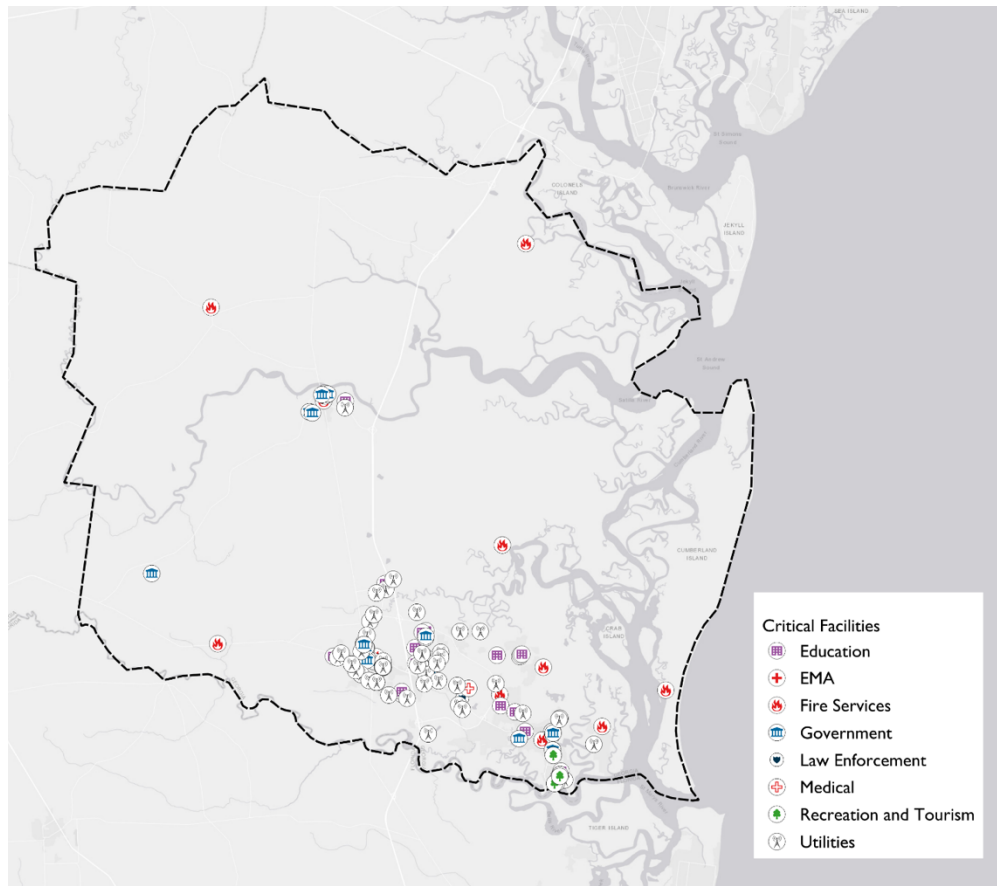
Critical facilities and infrastructure are often defined as those essential services and lifelines that, if damaged during an emergency event, would result in severe consequences to public health, safety, and welfare. Critical facilities and infrastructure were compiled by updating the list of critical facilities and infrastructure from the Georgia Mitigation Information System (GMIS) with a GIS data layer provided by Camden County.

Critical facilities and infrastructure in Camden County are listed by type and mapped in Table 2-7 and Figure 2-4.

Table 2-7. Critical facilities in Camden County (Camden County GIS)

Jurisdiction	EMA	Education	Fire Services	Government	Law Enforcement	Medical	Tourism	Utilities	Total
City of Kingsland		3	1	7	1			51	63
City of St. Marys		1	1	6	1		4	7	20
City of Woodbine				1				1	2
Unincorporated Camden County	1	14	14	17	2	1	1		50
Countywide Total	1	18	16	31	4	1	5	59	135

Figure 2-4. Critical facilities in Camden County (Camden County GIS)



2.6 Hazard Profiles, Analysis, and Vulnerability

2.6.1 Drought

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Drought	Likely	Limited	Large	More than 24 Hours	More than 1 Week	2.8

2.6.1.1 Hazard Background

Drought is a deficiency in precipitation over an extended period. It is a normal, recurrent feature of climate that occurs in virtually all climate zones. The duration of a drought varies widely. There are cases when drought develops relatively quickly and lasts a very short period of time, exacerbated by extreme heat and/or wind, and there are other cases when drought spans multiple years, or even decades. Studying the paleoclimate record is often helpful in identifying when long-lasting droughts have occurred. Common types of drought include:

- **Meteorological Drought:** Meteorological drought is based on the degree of dryness (rainfall deficit) and the length of the dry period.
- **Agricultural Drought:** Agricultural drought is based on the impacts to agriculture by factors such as rainfall deficits, soil water deficits, reduced ground water, or reservoir levels needed for irrigation.
- **Hydrological Drought:** Hydrological drought is based on the impact of rainfall deficits on the water supply, such as stream flow, reservoir and lake levels, and ground water table decline.
- **Socioeconomic Drought:** Socioeconomic drought is based on the impact of drought conditions (meteorological, agricultural, or hydrological drought) on supply and demand of some economic goods. Socioeconomic drought occurs when the demand for an economic good exceeds supply as a result of a weather-related deficit in water supply.

The wide variety of disciplines affected by drought, its diverse geographical and temporal distribution, and the many scales drought operates on make it difficult to develop both a definition to describe drought and an index to measure it. Many quantitative measures of drought have been developed in the United States, depending on the discipline affected, the region being considered, and the particular application.

The United States Drought Monitor (USDM) provides a summary of drought conditions across the United States and Puerto Rico on weekly-basis and labels them by intensity. The USDM uses a convergence of evidence approach, blending objective physical indicators with insight from local experts, condition observations and reports of drought impacts – physical indicators incorporated in its analysis include precipitation, snowpack, humidity, evapotranspiration, lake and reservoir levels, streamflow, vegetation health, and soil moisture and groundwater.

The Palmer Drought Severity Index (PDSI) is a measure of meteorological drought devised in 1965 and was the first drought indicator to assess moisture status comprehensively. It uses temperature and precipitation data to calculate water supply and demand, incorporates soil moisture, and is considered most effective for unirrigated cropland. It primarily reflects long-term drought and has been used extensively to initiate drought relief. It is more complex than the Standardized Precipitation Index (SPI) and the Drought Monitor. One benefit of the PDSI is that it

can capture impacts of climate change on drought because it accounts for key measures in evapotranspiration.

The SPI is a way of measuring drought that, like the PDSI, is negative for drought and positive for wet conditions. However, the SPI is a probability index that considers only precipitation, while PDSI are water balance indices that consider water supply (precipitation), demand (evapotranspiration) and loss (runoff).

By definition, drought develops and worsens over a period of time. It inherently has a slow speed of onset and a long duration. Additionally, due to the variety of indices for tracking drought, there is significant time to issue hazard warnings. Drought warnings can be regularly updated and allow for response to escalate depending on the severity of conditions.

Warning Time: 1 – More than 24 Hours

Duration: 4 – More than 1 Week

2.6.1.2 Location

Drought is a regional hazard that can cover the entire planning area, and in some cases the entire State.

Spatial Extent: 4 – Large

2.6.1.3 Extent

Drought extent can be defined in terms of intensity, using the USDM scale. The levels of intensity range from D0 – Abnormally Dry to D4 – Exceptional Drought. Table 2-8 below provides more information on drought levels and varying degrees of action.

Table 2-8. USDM drought classifications (USDM)

Category	Description	Example Percentile Range for Most Indicators	Values for Standard Precipitation and Precipitation–Evapotranspiration Indices
None	Normal or wet conditions	30.01 or Above	-0.49 or above
D0	Abnormally Dry	20.01 to 30.00	-0.5 to -0.79
D1	Moderate Drought	10.01 to 20.00	-0.8 to -1.29
D2	Severe Drought	5.01 to 10.00	-1.3 to -1.59
D3	Extreme Drought	2.01 to 5.00	-1.6 to -1.99
D4	Exceptional Drought	0.00 to 2.00	-2.0 or less

Table 2-9 details possible impacts specific to Georgia.

Table 2-9. Historically observed impacts of drought in Georgia (USDM)

Category	Examples of Historically Observed Impacts
D0	Fire risk is elevated
	Topsoil moisture decreases; planting is delayed
D1	Crops are vulnerable; soil moisture is low
	Gardens and lawns require more water
	Stream and pond levels are lower; water temperatures increase
	Tree stress begins
D2	Crops are stressed; hay yield is low; producers feed cattle early; planting is delayed; soil is hard; conditions are dustier than usual
	Drought mitigation; water conservation education
	Small streams dry up; rivers are very low
	Tree mortality begins
D3	Agriculture suffers economic loss
	Ground is cracking
	Landscaping business is negatively affected; agriculture suffers economic loss
	Majority of hay/grazing is lost
	Outdoor burn bans are implemented
	Rivers and livestock ponds are dry; wells are drying up; mandatory water conservation is implemented
	Trees have early leaf drop
D4	Agriculture economy is severely impacted
	Fire risk is high; fire activity increases
	Hydroelectric power generation is significantly reduced
	Tree mortality is high; army worm outbreaks occur

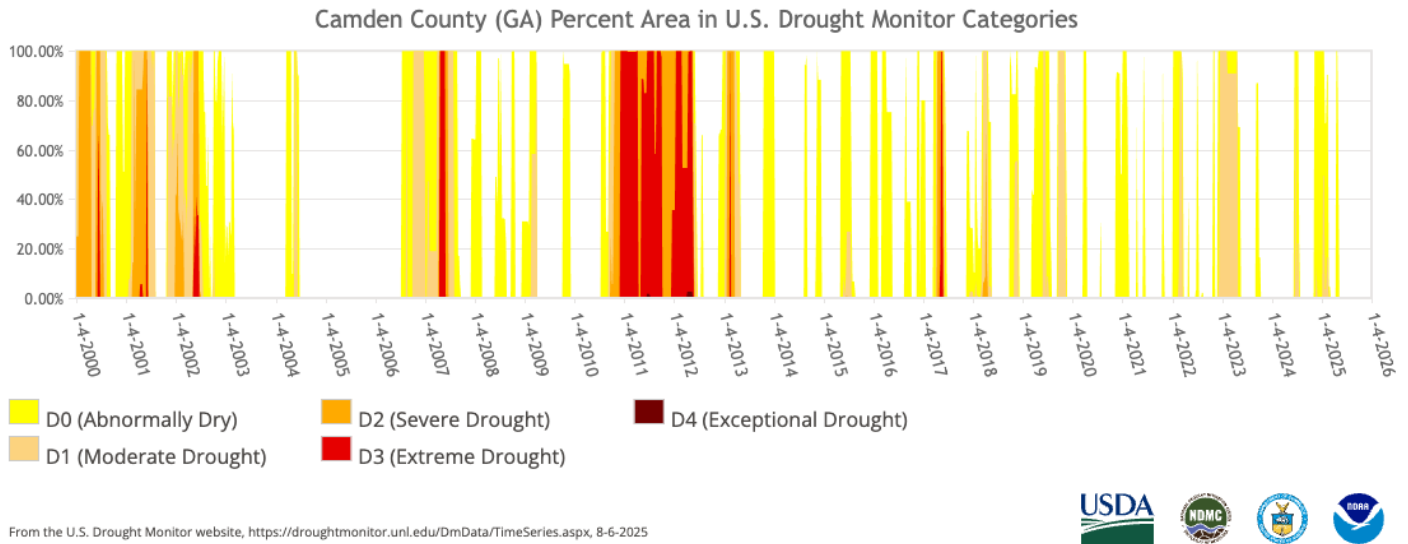
A category of D2 – Severe Drought on the USDM scale can typically result in crop and livestock impacts, water conservation requirements, low river levels and dried up streams, and tree mortality.

Impact: 2- Limited

2.6.1.4 Historical Occurrences

Camden County has experienced drought in 19 of the 20 years between 2005 and 2024. The severity of drought has reached D3 – Extreme Drought levels in 5 of the 20 years and D4 – Exception Drought in 2 of the 20 years.

Figure 2-5. Time series graph for drought monitor conditions in Camden County (source: USDM)



2.6.1.5 Probability of Future Occurrence

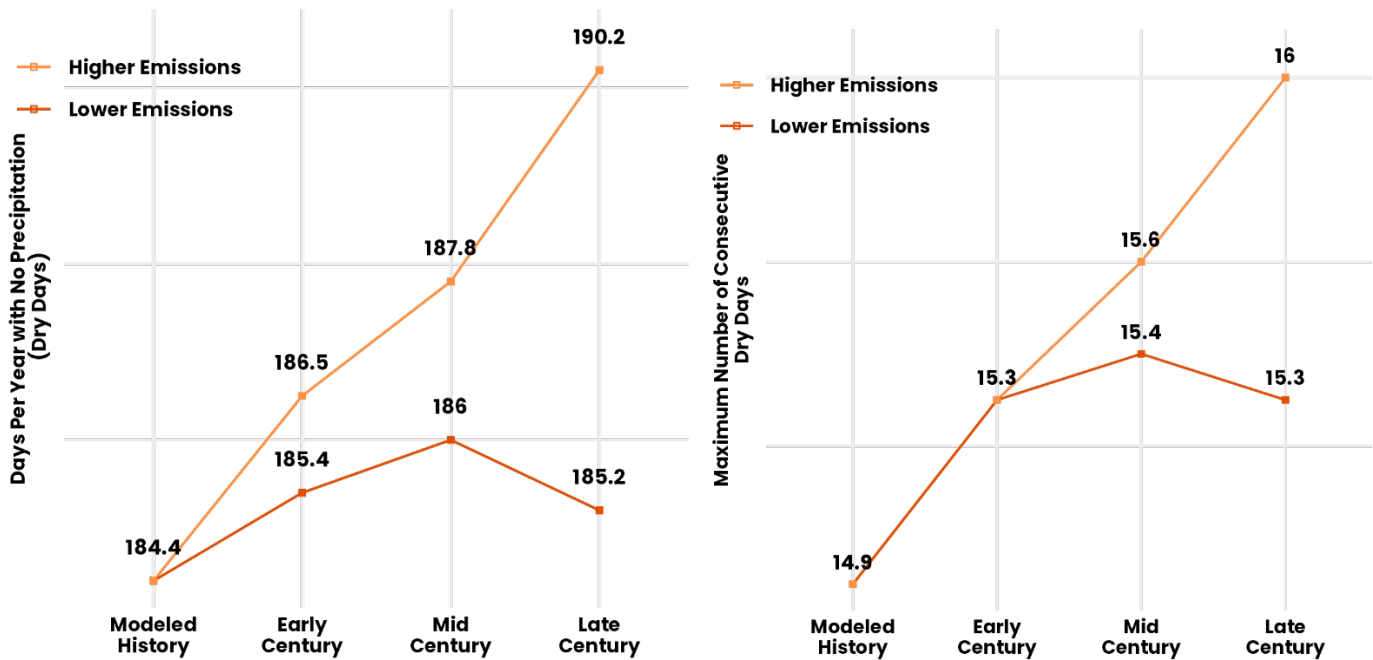
Over the 20-year period from 2005 to 2024, based on the USDM, Camden County experienced drought conditions ranging from D0 – Abnormally Dry to D3 – Extreme Drought in 19 of the years.

Probability: 3- Likely

2.6.1.6 Climate Change

The Fourth National Climate Assessment reports that average and extreme temperatures are increasing across the country and average annual precipitation is decreasing in the Southeast. Heavy precipitation events are becoming more frequent, meaning that there will likely be an increase in the average number of consecutive dry days. As temperature is projected to continue rising, evaporation rates are expected to increase, resulting in decreased surface soil moisture levels. Together, these factors suggest that drought will increase in intensity and duration in the Southeast.

Figure 2-6. Drought-related climate projections (Climate Mapping for Resilience and Adaptation)



2.6.1.7 Vulnerability Assessment

People

Drought can affect people's physical and mental health. For those economically dependent on a reliable water supply, drought may cause anxiety or depression about economic losses, reduced incomes, and other employment impacts. Conflicts may arise over water shortages. People may be forced to pay more for water, food, and utilities affected by increased water costs. Drought may cause health problems due to poorer water quality from lower water levels. If accompanied by extreme heat, drought can also result in higher incidents of heat stroke and even loss of life.

Property

Drought is unlikely to cause damage to the built environment, but it may cause severe property loss for the agricultural industry in terms of crop and livestock losses. The University of Georgia (UGA) Extension Agriculture Snapshots for Camden County highlights the significance of agriculture in the County. According to this report, the total economic contribution of agriculture and related industry in 2022 was \$108,024,240 and 1,177 jobs. Camden County has a 2025 Farm Gate Value of over \$25 million and the top commodities are timber, greenhouse, and blueberries. This value is exposed to damage from drought. The NCEI Storm Events Database reports \$22,000 in crop damages during the 20-year period from 2005 through 2024, which equates to an annualized loss of \$1,100.

Environment

Drought can affect local wildlife by shrinking food supplies and damaging habitats. Sometimes this damage is only temporary, and other times it is irreversible. Wildlife may face increased disease rates due to limited access to food and water. Increased stress on endangered species could cause extinction. Another concern during a drought is that contaminants such as pesticides and fertilizers may concentrate in the soil as precipitation wanes and then enter waterways during heavy rains and flooding. This can threaten water quality with repercussions for agriculture, drinking water supply, and local plants and wildlife. Drought conditions can also provide a substantial increase in wildfire risk. As plants and trees die from a lack of precipitation, increased insect infestations, and diseases, all of which are associated with drought, they become fuel for wildfire. Long periods of drought can result in more intense wildfires, which bring additional consequences for the economy, the environment, and society. Drought may also increase likelihood of wind and water erosion of soils.

Consequence Analysis

Table 2-10. Drought consequence analysis

Category	Consequences
Impact on the Public	Drought can cause anxiety or depression about economic losses, conflicts over water shortages, reduced incomes, and fewer recreational activities.
Impact on Responders	Impacts to responders are unlikely. Exceptional drought conditions may impact the amount of water immediately available to respond to structure fire and wildfires.
Continuity of Operations (including delivery of services)	Drought would have minimal impacts on continuity of operations due to the relatively long warning time that would allow for plans to be made to maintain continuity of operations. During extreme drought conditions, alternative water supplies may be needed.
Property, Facilities, and Infrastructure	Drought has the potential to affect water supply for residential, commercial, institutional, industrial, and government-owned areas. Drought can reduce water supply in wells and reservoirs. Utilities may be forced to increase rates and seek alternate supplies.
Impact of Environment	Environmental impacts include strain on local plant and wildlife; increased probability of erosion and wildfire; and decreased water quality.
Economic Conditions	Farmers may face crop losses or increased livestock costs. Businesses that depend on farming may experience secondary impacts. Extreme drought has the potential to impact local

	businesses in landscaping, recreation and tourism, and public utilities.
Public Confidence in Governance	When drought conditions persist with no relief, local or State governments must often institute water restrictions, which may impact public confidence.

2.6.1.8 Changes in Development

Drought is predominantly controlled by larger weather patterns and less by human development. However, increased development and the resulting increasing impervious surfaces would mean less surface water would be able to directly infiltrate into the ground. Additionally, as population grows, water demand will likely increase, which could lower the threshold for socioeconomic drought, an inability of water supply to meet water demand. According to the USDA Census of Agriculture, from 2017 to 2022 Camden County's acres of farmland increased from 5,545 acres to 8,492 acres with total farms increasing from 47 to 69. This trend suggests that changes in development are resulting in higher overall agricultural exposure to drought.

2.6.1.9 Multi-Jurisdictional Considerations

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
City of Kingsland	3	1	4	1	4	2.5
City of St. Marys	3	2	4	1	4	2.8
City of Woodbine	3	2	4	1	4	2.8
Unincorporated Camden County	3	2	4	1	4	2.8

Drought risk, warning time and duration are largely uniform across the planning area. The majority of damages that result from drought are to crops and other agriculture-related activities as well as water- and agriculture-dependent industries. In more heavily developed areas, the magnitude of drought is less severe, with lawns and local gardens affected and potential impacts on local water supplies during severe, prolonged drought.

2.6.1.10 Problem Statements

- Agricultural parcels make up a larger percentage of parcels in unincorporated Camden County than the other incorporated jurisdictions; these agricultural operations will be impacted during a period of drought.
- In the County, agriculture is responsible for 1,177 jobs and a total output of over \$108 million, so extended period of drought in the County will have larger economic impacts.
- Many residents of Camden County have shallow wells which can go dry during drought periods, thus leaving those residents without readily available potable water for extended periods of time.

2.6.2 Erosion

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Erosion	Likely	Limited	Small	More than 24 Hours	More than 1 Week	2.4

2.6.2.1 Hazard Background

Coastal Erosion

Coastal erosion is a process whereby large storms, flooding, strong wave action, sea level rise, and human activities, such as inappropriate land use, alterations, and shore protection structures, wear away the beaches and bluffs along the coast. Erosion undermines and often destroys homes, businesses, and public infrastructure and can have long-term economic and social consequences. According to NOAA, coastal erosion is responsible for approximately \$500 million per year in coastal property loss in the United States, including damage to structures and loss of land. To mitigate coastal erosion, the federal government spends an average of \$150 million each year on beach nourishment and other shoreline erosion control measures.

Coastal erosion has both natural causes and causes related to human activities. Gradual coastal erosion and accretion result naturally from the impacts of tidal longshore currents. Severe coastal erosion can occur over a short period when the state is impacted by hurricanes, tropical storms and other weather systems. Sand is continually removed by longshore currents in some areas, but it is also continually replaced by sand carried in by the same type of currents. Structures such as piers or sea walls, jetties, and navigational inlets may interrupt the movement of sand. Sand can become “trapped” in one place by these types of structures. The currents will, of course, continue to flow, though depleted of sand trapped elsewhere. With significant amounts of sand trapped in the system, the continuing motion of currents (now deficient in sand) results in erosion. In this way, human construction activities that result in the unnatural trapping of sand have the potential to result in significant coastal erosion.

Erosion rates and potential impacts are highly localized. Severe storms can remove wide beaches, along with substantial dunes, in a single event. In undeveloped areas, these high recession rates are not likely to cause significant concern, but in some heavily populated locations, one or two feet of erosion may be considered catastrophic.

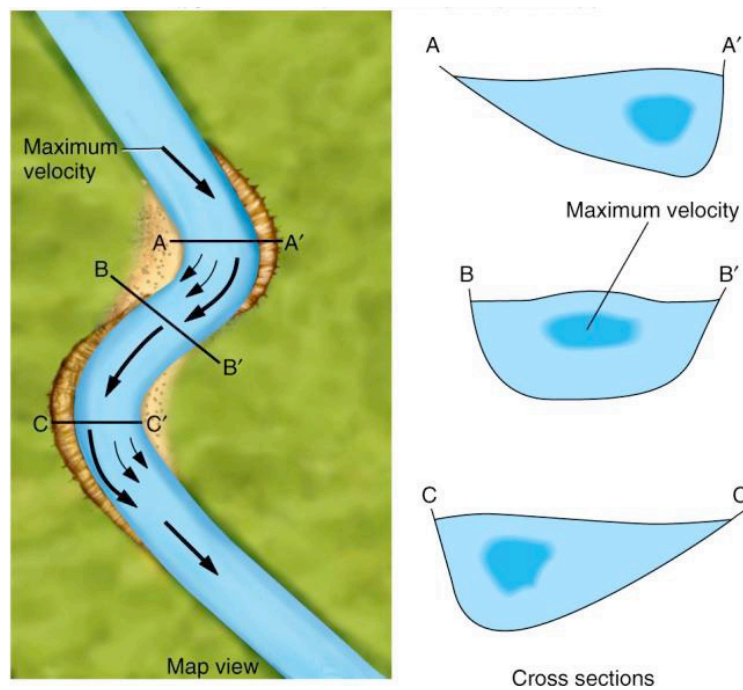
Estuaries are partially enclosed, coastal water bodies where freshwater meets saltwater from the ocean. They are influenced by tides but still protected from the full force of ocean waves. Estuaries are often referred to as bays or sounds. Estuarine coastlines can experience erosion through short-term processes, such as tides, storms, wind, and boat wakes, as well as long-term processes, such as sea level rise. Many variables determine the rate of estuarine erosion including shoreline type, geographic location and size of the associated estuary, the type and abundance

of vegetation, and the frequency and intensity of storms. Estuarine erosion is problematic as more development occurs along estuarine shorelines.

Stream Bank Erosion

Stream banks erode by a combination of direct stream processes, like down cutting and lateral erosion, and indirect processes, like mass-wasting accompanied by transportation. When the channel bends, water on the outside of the bend (the cut-bank) flows faster and water on the inside of the bend (the point) flows slower as shown in Figure . This distribution of velocity results in erosion occurring on the outside of the bend and deposition occurring on the inside of the bend.

Figure 2-7. Stream meanders



Stream bank erosion is a natural process, but acceleration of this natural process leads to a disproportionate sediment supply, stream channel instability, land loss, habitat loss and other adverse effects. Stream bank erosion processes, although complex, are driven by two major components: stream bank characteristics (erodibility) and hydraulic/gravitational forces. Many land use activities can affect both of these components and lead to accelerated bank erosion. The vegetation rooting characteristics can protect banks from fluvial entrainment and collapse, and provide internal bank strength. When riparian vegetation is changed from woody species to annual grasses and/or forbs, the internal strength is weakened, causing acceleration of mass wasting processes. Stream bank aggradation or degradation is often a response to stream channel instability. Since bank erosion is often a symptom of a larger, more complex problem, the long-term solutions often involve much more than just bank stabilization. Numerous studies have demonstrated that stream bank erosion contributes a large portion of the annual sediment yield.

Determining the cause of accelerated streambank erosion is the first step in solving the problem. When a stream is straightened or widened, streambank erosion increases. Accelerated streambank erosion is part of the process as the stream seeks to re-establish a stable size and pattern. Damaging or removing streamside vegetation to the point where it no longer provides for bank stability can cause a dramatic increase in bank erosion. A degrading streambed results in higher and often unstable, eroding banks. When land use changes occur in a watershed, such as clearing land for agriculture or development, runoff increases. With this increase in runoff the stream channel will adjust to accommodate the additional flow, increasing streambank erosion. Addressing the problem of streambank erosion requires an understanding of both stream dynamics and the management of streamside vegetation.

Warning Time: 1 – More than 24 hours

Duration: 4 – More than 1 week

2.6.2.2 Location

Erosion can occur along any shoreline in the region. Erosion is likely to be more frequent and severe along the Atlantic coast, but erosion of estuarine and streambank shorelines can also occur. In Camden County, erosion is typically caused by coastal tides, ocean currents, and storm events. Erosion rates are dependent on many characteristics, including soil type. According to the USDA Web Soil Survey, much of the County's soils are composed of fine-grained particles such as sand, and some areas of loamy sand, while inland soils tend to have greater organic matter content. This makes the sandy, coastal areas more susceptible to erosion. While much of the coast is protected, more developed areas are more susceptible to erosion.

2.6.2.3 Extent

The magnitude of erosion can be measured as a rate of change from a measured previous condition. The Georgia Coastal Hazards Portal maps shoreline change rates for coastal and estuarine shorelines. The program analyzed historical shorelines using AMBUR from the 1930s to the 2000s. From this analysis, the program derived erosional hot spots, based on research from the Applied Coastal Research Laboratory at Georgia Southern University. The coastal areas of Camden County have experienced varying rates of erosion in some areas as well as accretion in others. These varying coastline changes are highlighted in Figure 2-8. However, erosion is not only limited along the coast in Camden County; as such, a further assessment of erosional hotspots can be seen in Figure 2-9.

Erosion rates can vary significantly across the County due to several factors including fetch, shoreline orientation, and soil composition. To account for these variations, long-term erosion can also be measured by land cover changes and increases in open water. While a small fraction of the shoreline may exhibit accretion over a short period of time, cumulative impacts can still indicate an overall loss of estuarine coastline and marsh habitat. Table 2-11 provides from the

NOAA Coastal Change Analysis Program Land Cover Atlas showing land cover changes in the County from 1996 to 2010.

Table 2-11. Land cover changes (1996 to 2010) (NOAA)

Land Cover Type	Net Change (sq. mi)	Percent Change
High Impact Development	0.79	29%
Low Impact Development	3.51	32.7%
Open Space Development	1.98	27.9%
Grassland	-12.64	-41.9%
Agriculture	0.44	26.7%
Forested	-29.02	-12.4%
Scrub/Shrub	28.32	91.4%
Woody Wetland	0.46	0.25%
Emergent Wetland	4.03	3%
Barren Land	0.44	4.8%
Open Water	1.68	1.2%

The Land Cover Atlas data indicates a small percent increase in open water as well as in wetland areas, but a significant percent decrease in forested and grassland in the County. Camden County also saw significant increases in high and low-impact development as well as open space development. Increases in developed land likely result in increased impervious surfaces, which may increase stormwater runoff, alter drainage patterns, and further exacerbate erosion and flood issues.

In terms of the magnitude of impacts, erosion may cause property damage when severe but is unlikely to cause injury or death.

Impact: 2 – Limited

Spatial Extent: 2 – Small

2.6.2.4 Historical Occurrences

As Figure 2.9 shows, shoreline erosion is occurring along ocean and estuarine coastlines throughout Camden County. Erosion is typically an ongoing process, however it can be intensified during storm events, particularly hurricane storm tides. An examination of NCEI event narrative records for hurricanes, tropical storms, storm surges, and coastal floods returned four instances of erosion, as detailed in

Table 2-12.

Figure 2-8. Coastal erosion in Camden County (2020) (United States Geologic Survey (USGS))

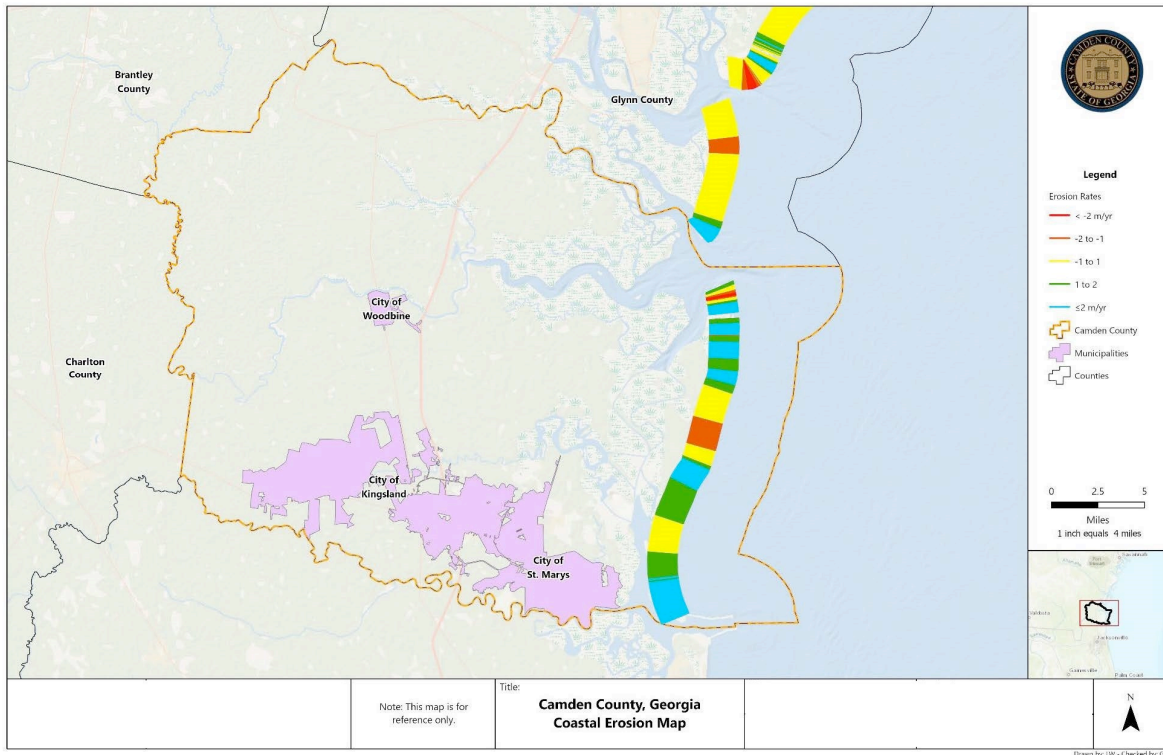


Figure 2-9. Erosional hotspots in Camden County (2000) (Georgia Coastal Hazards Portal)

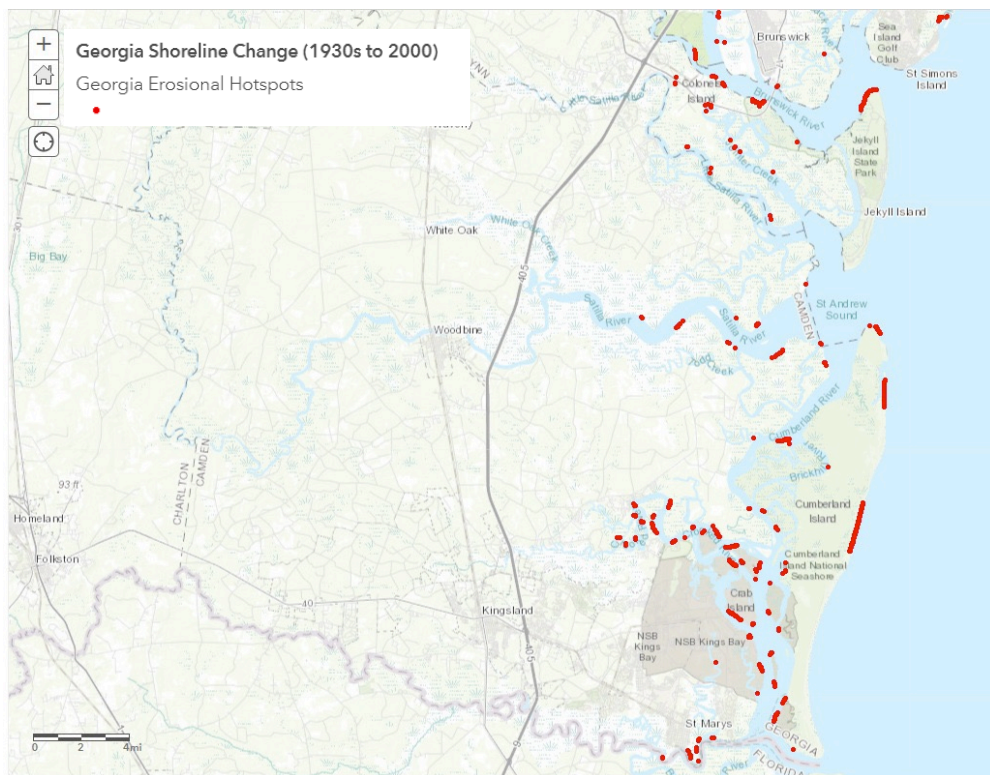


Table 2-12. Storm events relating to erosion in Camden County (1950 to 2025) (NOAA NCEI)

Date	Event Type	Event Narrative
October 27, 2015	Coastal Flood	A full moon on Oct. 27th produced higher than normal astronomical tides and combined with moderate onshore flow created minor coastal flooding and beach erosion around the times of high tide. Water level departures were up 0.75 ft above predictions along the Atlantic coast.
November 5, 2021	Coastal Flood	An area of low pressure developed across the southern Gulf of Mexico on Friday Nov. 5th and tracked eastward across north-central Florida Friday night, deepening offshore of the local NE FL Atlantic coast on Saturday Nov. 6th as strong surface high pressure wedged southward north of the region. This created a rare, true Nor'Easter event for the local area which including coastal and moderate tidal flooding with inundation of 2-3 ft at high tides and damaging wind gusts for coastal and marine areas. Moderate to major coastal erosion occurred. For coastal SE Georgia, the strongest winds occurred during the early morning hours of Saturday, November 6th, with gusts of 40-50 mph.
November 10, 2022	Tropical Storm	Damage assessments are ongoing in Camden County. Most impacts were near areas immediately adjacent to coastal waterways. The most significant impacts occurred around high tide Thursday morning, November 11th where most storm surge inundation damage occurred in downtown St. Marys area and Cujo Point, a small subdivision in the Dover Bluff area in Northeast Camden County. Around 9:30 am on 11/10, significant beach erosion, surge flooding, and flood water entered the dune system on Cumberland Island. At 9:55 am, Cumberland Island National Seashore employees reported water topped the seawall and minor street flooding was occurring in St. Marys on St. Marys Street.
September 28, 2023	Coastal Flooding	Coastal hazard potential increased through the week as high astronomical spring tides coincided with a persistent onshore flow pattern. Coastal hazards include increasingly strong and frequent rip currents, beach erosion and minor to moderate tidal flooding along the coast, within the Intracoastal Waterway and St. Johns River basin.

2.6.2.5 Probability of Future Occurrence

Erosion and accretion are natural processes that are possible to continue to occur. The likelihood of significant instances of erosion will likely be tied to the occurrence of hurricane, tropical storm, and nor'easter events.

Probability: 3- Likely

2.6.2.6 Climate Change

Climate change is expected to make heavy rain events and tropical storms and hurricanes more frequent and intense. As a result, the erosion typically caused by these storms can be expected to occur more frequently. Coastal erosion is also expected to increase as a result of rising seas. A 2018 study found that globally, between 1984 and 2015 erosion outweighed accretion. However, the study could not conclude the degree to which erosion during this period is attributed to climate changes or increased coastal development. Nonetheless, increases in erosion have been observed and are expected to continue.

2.6.2.7 Vulnerability Assessment

People

Erosion is unlikely to have any direct impact on the health or safety of individuals. However, it may cause indirect harm by weakening structures and by changing landscapes in ways that increase risk of other hazard impacts. For example, erosion of dune systems causes areas protected by those dunes to face higher levels of risk.

Property

Property damage due to erosion typically only results in conjunction with large storm events which also bring wind and water damages. These events can cause scour and weaken foundations, which may undermine affected buildings' structural integrity.

Environment

Erosion can change the shape and characteristics of coastal shorelines and riverine floodplains. Eroded material may clog waterways and decrease drainage capacity. Erosion can also negatively impact water quality by increasing sediment loads in waterways.

Consequence Analysis

Table 2-13 Erosion consequence analysis

Category	Consequences
Impact on the Public	Erosion is unlikely to impact public health and safety.
Impact on Responders	Erosion is unlikely to require immediate response or rescue operations.
Continuity of Operations (including delivery of services)	Erosion is unlikely to impact public continuity of operations.
Property, Facilities, and Infrastructure	Erosion can result in property damage if it is severe enough or if scour occurs that undermines the integrity of structural foundations.

Impact of Environment	Erosion can increase sediment loads in waterbodies and change riverine and coastal topography.
Economic Conditions	Beach renourishment projects to counter erosion are extremely costly. Water dependent industries may suffer from lost shoreline and degraded water quality.
Public Confidence in Governance	Erosion is unlikely to impact public confidence.

2.6.2.8 Changes in Development

Increased development along the coastal areas vulnerable to erosion could speed up or intensify existing erosion processes. Enhanced development anywhere on the coast could create new erosional hotspots if not managed properly. Development of land along rivers and streams, will further contribute to the erosion of these banks.

2.6.2.9 Multi-Jurisdictional Considerations

The following table summarizes erosion hazard risk by jurisdiction. Exposure to erosion varies across jurisdictions, therefore probability and spatial extent are dependent upon the area at risk. Unincorporated Camden County, the City of St. Marys, and the City of Woodbine, where there are shorelines at risk, were assigned a probability of 3 (likely), an impact of 2 (limited), and a spatial extent of 2 (small). The City of Kingsland, which is further inland and has no coastal shoreline, was assigned a probability score of 2 (possible), because riverine shorelines could potentially erode, an impact of 2 (small), and a spatial extent of 1 (negligible). Warning time and duration are inherent to the hazard and remain constant across jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
City of Kingsland	2	2	1	1	4	1.9
City of St. Marys	3	2	2	1	4	2.4
City of Woodbine	3	2	2	1	4	2.4
Unincorporated Camden County	3	2	2	1	4	2.4

2.6.2.10 Problem Statements

- Erosional hotspots are most prevalent in unincorporated Camden County and around the City of St. Marys. However, erosion is still possible further inland along the numerous rivers in the County.
- The Cumberland Island coastline is likely to experience the most significant erosion in Camden County; as an important cultural and community resource, further mitigation of erosion in this area is important to residents and tourism alike.
- Related Hazards: Sea Level Rise, Hurricane, Severe Weather, and Flood

2.6.3 Earthquake

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Earthquake	Unlikely	Limited	Moderate	Less than 6 hours	Less than 6 hours	2

2.6.3.1 Hazard Background

An earthquake is the sudden shaking of the ground caused by the movement of the Earth's tectonic plates along faults or by volcanic activity. Most earthquakes occur when stress builds up along faults in the Earth's outer crust. These fault planes are typically found along borders of the Earth's 10 tectonic plates, where plates push, pull, and slide past one another. As the plates move at different speeds and in different directions, stress accumulates in the surrounding rock. When the stress exceeds the rock's ability to withstand it, the rock fractures, releasing stored energy in the form of seismic waves that produce an earthquake. Earthquakes generally occur with little to no warning and last for a short period of time. However, earthquakes can often be followed by periods of aftershocks that vary in severity but can compound damages.

Warning Time: 4 – Less than 6 hours

Duration: 1 – Less than 6 hours

2.6.3.2 Location

The USGS Quaternary Faults Database was consulted to determine the sources of potential earthquakes within range of Camden County. Quaternary faults are active faults recognized at the surface which have evidence of movement in the past 2.58 million years. The only major fault zone within range to cause significant shaking in Camden County is the "Charleston liquefaction features" fault area.

Earthquakes are generally felt over a wide area, with impacts occurring hundreds of miles from the epicenter. Therefore, any earthquake that impacts Camden County is likely to be felt across most, if not all, of the planning area.

Spatial Extent: 3 – Moderate

2.6.3.3 Extent

Earthquakes are measured in terms of their magnitude and intensity. Magnitude is measured using the Richter Scale, an open-ended logarithmic scale that describes the energy release of an earthquake through a measure of shock wave amplitude. A detailed description of the Richter Scale is given in Table 2-14. Although the Richter scale is usually used by the news media when reporting the intensity of earthquakes and is the scale most familiar to the public, the scale currently used by the scientific community in the United States is called the Modified Mercalli

Intensity (MMI) scale. The MMI scale is an arbitrary ranking based on observed effects. Table 2-15 shows descriptions for levels of earthquake intensity on the MMI scale compared to the Richter scale. Seismic shaking is typically the greatest cause of losses to structures during earthquakes.

Table 2-14. Richter Scale (FEMA)

Magnitude	Effects
Less than 3.5	Generally, not felt, but recorded.
3.5 – 5.4	Often felt, but rarely causes damage.
5.4 – 6.0	At most slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions.
6.1 – 6.9	Can be destructive in areas up to 100 kilometers across where people live.
7.0 – 7.9	Major earthquake. Can cause serious damage over larger areas.
8.0 or greater	Great earthquake. Can cause serious damage in areas several hundred kilometers across.

Table 2-15. Comparison of Richter Scale and MMI Scale

MMI	Richter Scale	Felt Intensity
I	0 – 1.9	Not felt. Marginal and long period effects of large earthquakes.
II	2.0 – 2.9	Felt by persons at rest, on upper floors, or favorably placed.
III	3.0 – 3.9	Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV	4.0 – 4.3	Hanging objects swing. Vibration like passing of heavy trucks. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink the upper range of IV, wooden walls and frame creak.
V	4.4 – 4.8	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Pendulum clocks stop, start.
VI	4.9 – 5.4	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Books, etc., fall off shelves. Pictures fall off walls. Furniture moved. Weak plaster and masonry D cracked. Small bells ring. Trees, bushes shaken.
VII	5.5 – 6.1	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices. Some cracks in masonry C. Waves on ponds. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.
VIII	6.2 – 6.5	Steering of motor cars is affected. Damage to masonry C; partial collapse. Some damage to masonry B. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.

IX	6.6 – 6.9	General panic. Masonry D destroyed; masonry C heavily damaged, sometimes with complete collapse; masonry B seriously damaged. (General damage to foundations.) Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluvial areas sand and mud ejected, earthquake fountains, sand craters.
X	7.0 – 7.3	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
XI	7.4 – 8.1	Rails bent greatly. Underground pipelines completely out of service.
XII	> 8.1	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown in the air.

Camden County has felt two earthquakes which measured V on the MMI Scale – one in 1886 and another in 1900. There are no reports of more recent earthquakes in the County.

Impact: 2 – Limited

2.6.3.4 Historical Occurrences

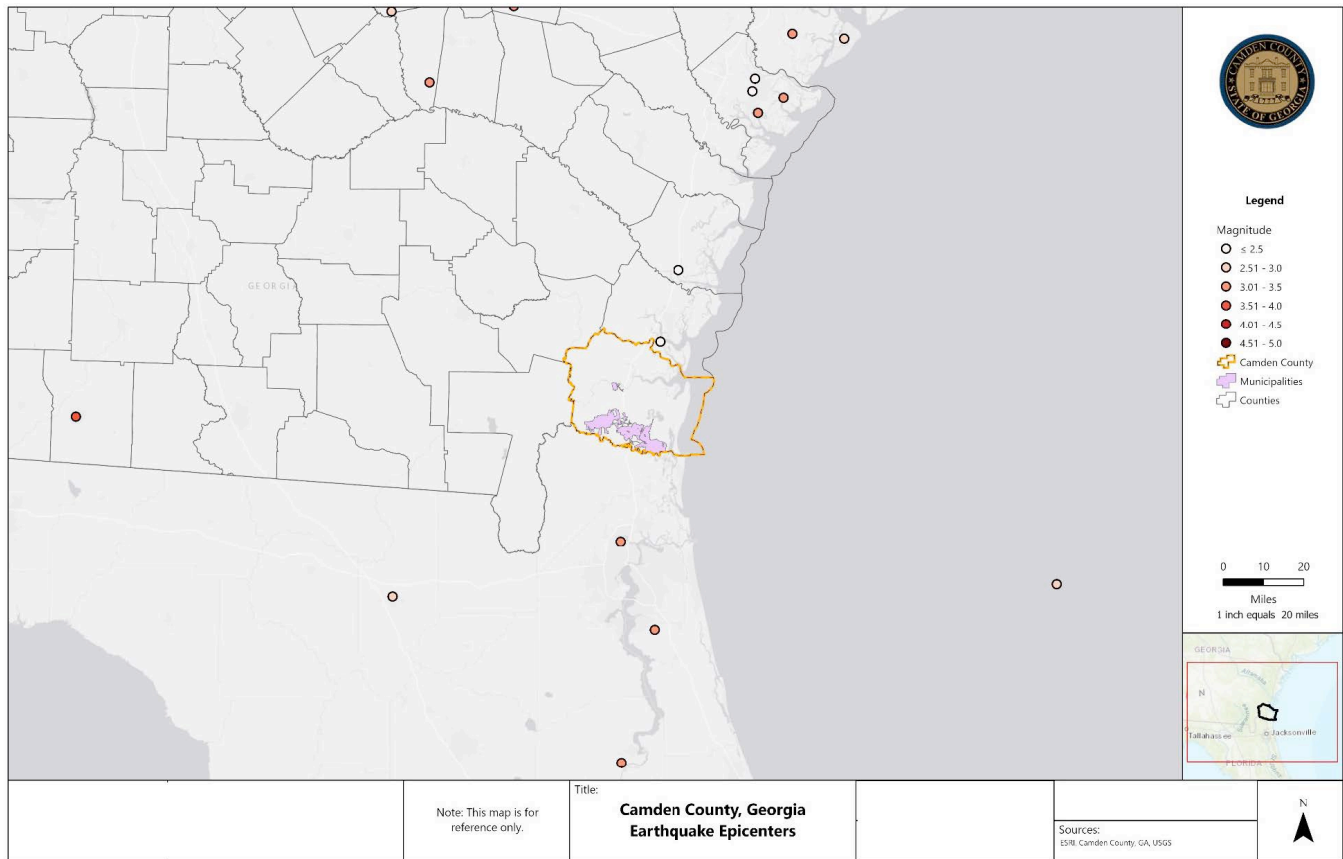
The USGS Earthquake Hazards Program maintains a database of historical earthquakes of a magnitude 2.5 and greater from 1900 to 2008. Earthquake events that occurred within 100 miles of Camden County are shown in Figure 2-10 in relation to the County. The map documents all earthquakes that have occurred within 100 miles of Camden County; however, given the long distances across which earthquake impacts can be felt, these events do not encompass all earthquakes that have affected the planning area.

The National Geophysical Data Center maintains a database of the felt intensity of earthquakes from 1638 to 1985 including the maximum intensity for each locality that felt the earthquake. According to this database, in the 100-year period from 1885 to 1985, there were 2 earthquakes felt in and around the City of Jacksonville, Florida, which was used to approximate Camden County impacts. These earthquakes are detailed in Table 2-16. There are no records of any earthquakes since 1985 affecting Camden County.

Table 2-16. Historical earthquakes felt near Camden County (1885-1985) (National Geophysical Data Center)

Year	Magnitude	MMI	Epicentral Distance
1886	n/a	5	326
1990	n/a	5	-

Figure 2-10. Historical earthquakes within 100 miles of Camden County by magnitude (USGS)



2.6.3.5 Probability of Future Occurrences

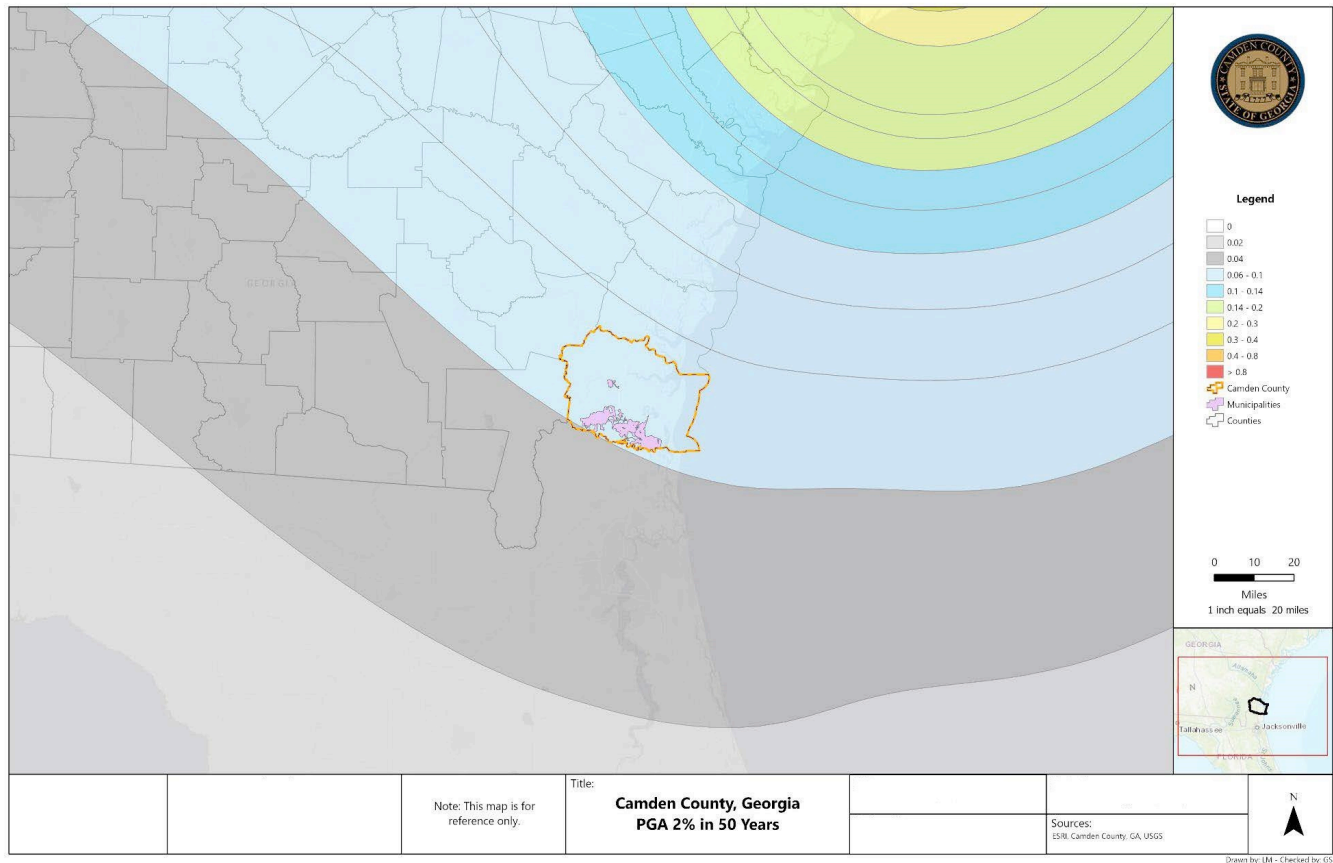
Based on the record of past occurrences over a 140-year period from 1885 to 2025, there were no earthquakes that have or could have caused building damage, defined for this purpose as an MMI of 6 or greater. Using past occurrence as an indicator of future probability, there is less than 1 percent annual chance.

Probability: 1 – Unlikely

2.6.3.6 Climate Change

According to FEMA, the impacts of climate change on earthquake magnitude and frequency is an ongoing area of research. While the direct impacts are currently inconclusive, it is possible that climate change will affect the ability for an area to recover from damages caused by earthquakes.

Figure 2-11. Seismic hazard information for Camden County (USGS)



2.6.3.7 Vulnerability Assessment

People

Earthquake events in Camden County are unlikely to produce more than moderate ground shaking; therefore, injury or death is unlikely. Objects falling from shelves generally pose the greatest threat to safety. In severe cases, an earthquake could cause fatalities due to building collapse.

Property

In a severe earthquake event, buildings can be damaged by the shaking itself or by the ground beneath them settling to a different level than it was before the earthquake (subsidence). Buildings can even sink into the ground if soil liquefaction occurs. If a structure (a building, road, etc.) is built across a fault, the ground displacement during an earthquake could seriously damage that structure.

Earthquakes can also cause damages to infrastructure, resulting in secondary hazards. Damages to dams or levees could cause failures and subsequent flooding. Fires can be started by broken gas lines and power lines. Fires can be a serious problem, especially if the water lines that feed the fire hydrants have been damaged as well. Impacts of earthquakes also include debris clean-up and service disruption.

Camden County has not been impacted by an earthquake with more than a moderate intensity, so major damage to the built environment is unlikely. However, there is potential for impacts to certain masonry buildings, as well as environmental damages with secondary impacts on structures.

All critical facilities should be considered at risk to minor damage should an earthquake event occur.

Environment

An earthquake is unlikely to cause substantial impacts to the natural environment in Camden County. Impacts to the built environment (e.g. ruptured gas line) could damage the surrounding environment. However, this type damage is unlikely based on historical occurrences.

Consequence Analysis

Table 2-17. Earthquake consequence analysis

Category	Consequences
Impact on the Public	Impact expected to be moderate to severe for people who are unprotected or unable to take shelter; moderate to light impacts are expected for those who are protected.
Impact on Responders	Responders may need to enter compromised structures or infrastructure. Adverse impacts are expected to be severe for unprotected personnel and moderate to light for protected personnel.
Continuity of Operations (including delivery of services)	Damage to facilities/personnel in the area of peak ground shaking may require relocation of operations and lines of succession execution. Disruption of lines of communication and damage of facilities may postpone delivery of services.
Property, Facilities, and Infrastructure	Damage to facilities and infrastructure in the area of the incident may be extensive for facilities, people, and infrastructure. Cascading impacts may result if buildings, infrastructure, or vehicles housing hazardous materials are impacted.
Impact of Environment	May cause extensive damage, creating denial or delays in the use of some areas. Remediation may be needed.
Economic Conditions	If ground shaking is severe, local economy and finances are expected to be adversely affected, possibly for an extended period of time. Minor shaking may cause economic losses due to damage to local businesses or loss of inventory.
Public Confidence in Governance	Ability to respond and recover may be questioned and challenged if response, and recovery are not timely and effective.

2.6.3.8 Changes in Development

Development since 2021 has increased overall exposure in Camden County. However, development changes have not affected the risk characteristics of earthquakes in Camden

County. The probability, impact, spatial extent, warning time, and duration of earthquakes in Camden County have not changed, nor are they expected to in the near future.

2.6.3.9 Multi-Jurisdictional Considerations

There are no significant differences between jurisdictions for this hazard.

2.6.3.10 Problem Statements

- Poorly constructed masonry buildings that lack reinforcement may be vulnerable to the magnitude of earthquake that could be expected to impact Camden County; these structures should be retrofitted for earthquake resilience.

2.6.4 Extreme Heat

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Extreme Heat	Likely	Limited	Large	6-12 hours	Less than 24 hours	2.8

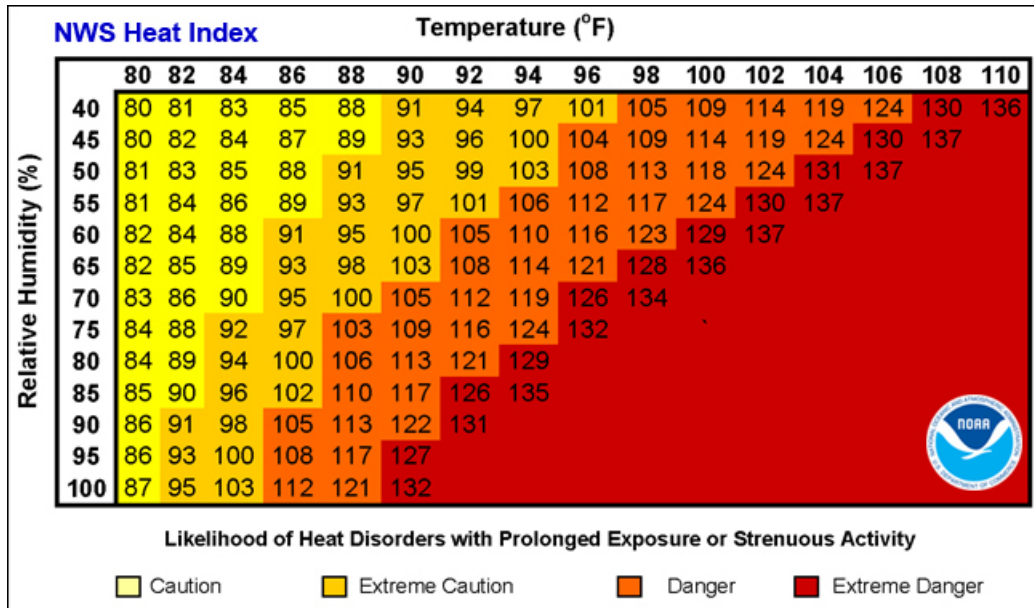
2.6.4.1 Hazard Background

FEMA defines extreme heat as a long period (2 to 3 days) of high heat and humidity with temperatures above 90 degrees. Under extreme heat conditions, evaporation is slowed, and the body must work harder to maintain a normal temperature, which in some cases can lead to death. Extreme heat often results in the highest annual number of deaths among all weather-related disasters. According to Ready.gov:

- Extreme heat can occur quickly and without warning
- Older adults, children, and sick or overweight individuals are at greater risk from extreme heat
- Humidity increases the feeling of heat as measured by heat index

Ambient air temperature and relative humidity determine heat conditions. The relationship of these factors creates what is known as the apparent temperature. The Heat Index chart in Figure 2-12 uses both of these factors to produce a guide for the apparent temperature or relative intensity of heat conditions, known as the heat index. Exposure to direct sun can increase heat index values by as much as 15°F. The shaded zone above 105°F corresponds to a heat index that may cause increasingly severe heat disorders, which would be exacerbated with continued exposure and/or physical activity.

Figure 2-12. Heat index chart (NOAA)



During these conditions, the human body has difficulties cooling through the normal method of the evaporation of perspiration. Health risks rise when a person is overexposed to heat. The most dangerous place to be during an extreme heat incident is in a permanent home, with little or no air conditioning. Those at greatest risk for heat-related illness include people 65 years of age and older, young children, people with chronic health problems such as heart disease, people who are obese, people who are socially isolated, and people who are on certain medications, such as tranquilizers, antidepressants, sleeping pills, or drugs for Parkinson's disease. However, even young and healthy individuals are susceptible if they participate in strenuous physical activities during hot weather or are not acclimated to hot weather. Table 2-18 lists typical symptoms and health impacts of heat exposure.

Table 2-18. Typical health impacts of extreme heat (NWS Heat Index Program)

Heat Index (°F)	Disorder
80-90	Fatigue possible with prolonged exposure and/or physical activity
90-105	Sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and/or physical activity
105-130	Heatstroke/sunstroke highly likely with continued exposure

The National Weather Service (NWS) has a system in place to initiate alert procedures (advisories or warnings) when the heat index is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. The NWS Forecast Office in Peachtree City/Atlanta sets the following criteria, which apply to the entire state of Georgia for heat advisory and excessive heat:

- **Heat Advisory:** At least 80% chance of heat index of 105°F or greater or daytime air temperature of 103°F or greater for any duration within 12 to 24 hours.

- **Excessive Heat Watch:** At least 50% chance for heat index of 110°F or greater or daytime air temperature of 105°F or greater within 36 to 72 hours.
- **Excessive Heat Warning:** At least 80% chance for heat index of 110°F or greater or daytime air temperature of 105°F or greater for any duration within 12 to 24 hours.

While heat conditions may last several days, a warning can be issued even for one day of expected heat conditions.

Impacts of extreme heat are not only focused on human health, as prolonged heat exposure can have negative impacts on infrastructure as well. Prolonged high heat exposure increases the risk of pavement deterioration, as well as railroad warping or buckling. High heat also puts a strain on energy systems and consumption, as air conditioners are run at a higher rate and for longer; extreme heat can also reduce transmission capacity over electric systems.

Warning Time: 2 – 6 to 12 hours

Duration: 3 – Less than 24 hours

2.6.4.2 Location

The entire planning area is susceptible to high temperatures and incidents of extreme heat.

Spatial Extent: 4 – Large

2.6.4.3 Extent

The extent of extreme heat can be defined by the maximum apparent temperature reached. Temperatures in Camden County consistently reach over 100°F and have historically reached up to 110°F to 115°F as recorded at two weather stations in Camden County.

NCEI does not report any deaths or injuries from extreme heat in the County. However, that does not mean that these outcomes are impossible.

Impact: 2 – Limited

2.6.4.4 Historical Occurrences

NCEI does not record any incidents of heat or excessive heat for Camden County between 1996 and 2025. However, heat index records indicate that the Camden County area regularly experiences heat index temperatures above 100°F. Table 2-19 provides counts of heat index values by threshold recorded from 2005 to 2025 at the McKinnon St. Simons Airport (KSSI) weather station, provided as the number of hours in a given year where the heat index reached or exceeded 100°F.

Table 2-19. Historical heat index value counts, KSSI (2005 to 2025) (North Carolina Climate Office, Heat Index Climatology Tool)

Year	Heat Index Value				Total
	100-104°F	105-109°F	110-114°F	≥115°F	
2005	71	10	3	0	84
2006	45	14	0	0	59
2007	57	17	6	0	80
2008	40	0	0	0	40
2009	14	0	0	0	14
2010	99	18	6	0	123
2011	66	18	0	0	84
2012	47	27	9	0	83
2013	3	0	0	0	3
2014	16	0	0	0	16
2015	41	3	0	0	44
2016	94	18	0	0	112
2017	53	12	0	0	65
2018	68	2	0	0	70
2019	33	2	0	0	35
2020	60	11	0	0	71
2021	67	12	0	0	79
2022	81	31	3	0	115
2023	78	17	5	0	100
2024	90	43	11	1	145
2025	91	31	5	0	127
Sum	1214	286	48	2	1549
Average	58	14	2	0	74

Table 2-20 provides counts at the Jacksonville International Airport (JAX), provided as the number of days each year where the heat index reached or exceeded 100°F.

Table 2-20. Historical heat index value counts for JAX (2005 to 2025) (Florida State University, Florida Climate Center)

Year	Heat Index Value					Total
	100-104°F	105-109°F	110-114°F	115-119°F	>120°F	
2005	49	10	2	1	0	62
2006	23	1	0	0	0	24
2007	34	8	4	1	0	47
2008	8	0	0	0	0	8
2009	33	5	2	0	0	40
2010	67	21	4	2	1	95
2011	46	7	2	1	0	56

2012	28	4	2	0	0	34
2013	25	0	0	0	0	25
2014	24	4	0	0	0	28
2015	46	10	3	0	0	59
2016	59	11	3	0	0	73
2017	51	8	2	1	1	63
2018	56	4	0	0	0	60
2019	48	11	5	2	0	66
2020	55	10	2	0	0	67
2021	25	4	1	0	0	30
2022	53	13	2	0	0	68
2023	60	22	12	6	1	101
2024	62	26	3	0	0	91
2025	60	26	15	6	1	108
Sum	912	205	64	20	4	1205
Average	42	10	4	2	0	57.38

2.6.4.5 Probability of Future Occurrences

Data was gathered on historical heat index values using the McKinnon St. Simons Airport and Jacksonville International Airport weather stations as an approximation for Camden County. Based on 25 years of data included in Table 2-19 and Table 2-20, heat index temperatures surpassed 100°F in all of the 20 reporting years at both stations, which equates to a 100 percent annual chance of heat index values exceeding 100°F in any given year.

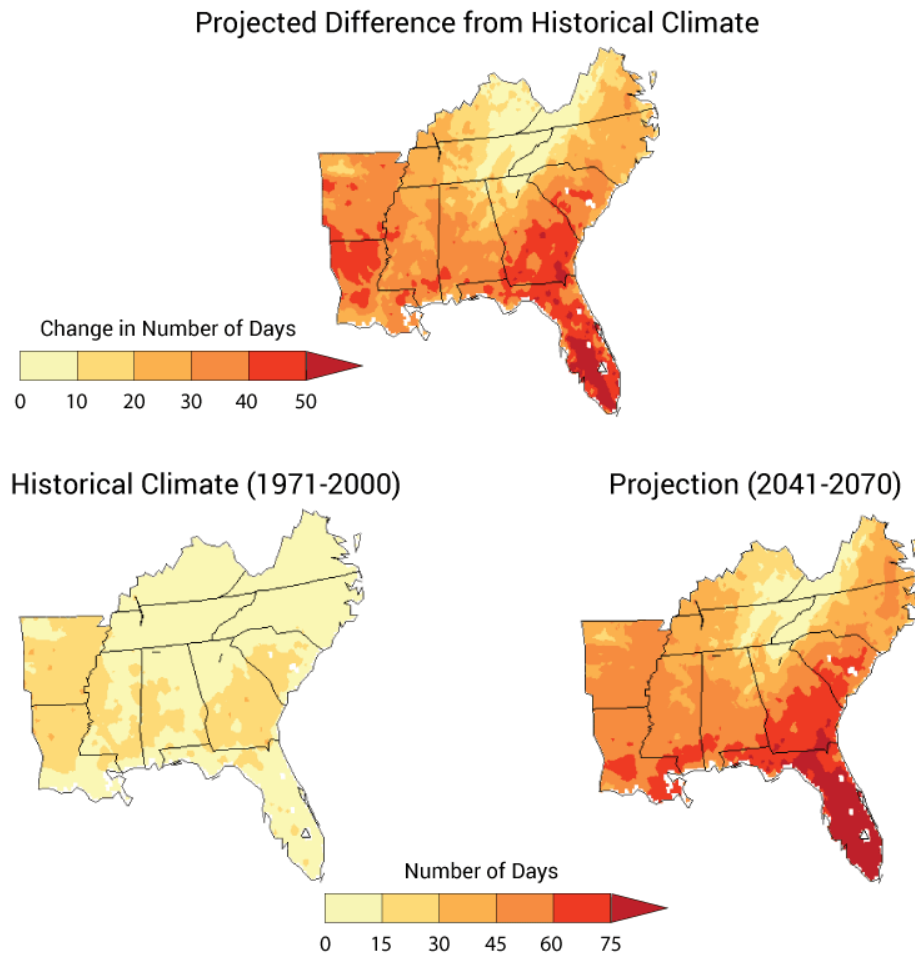
Reports from the McKinnon St. Simons Island Airport indicate that the County will likely average 16 hours per year with a heat index above 105° the criteria for issuing a heat advisory. Reports from the Jacksonville Airport indicate that the County will likely average 16 days per year with a heat index above 105° the criteria for issuing a heat advisory. The probability of exceeding a heat index above 105°F is likely.

Probability: 3 – Likely

2.6.4.6 Climate Change

Research shows that average temperatures will continue to rise in the Southeast United States and globally, directly affecting Camden County. Per the Fourth National Climate Assessment, “extreme temperatures are projected to increase even more than average temperatures. Cold waves are projected to become less intense and heat waves more intense.” The number of days over 95°F is expected to increase by between 20 and 30 days annually, as shown in Figure 2-13.

Figure 2-13. Projected change in number of days over 95°F (NOAA)



2.6.4.7 Vulnerability Assessment

People

Extreme heat can cause heat stroke and even loss of human life. The elderly and the very young are most at risk to the effects of heat. People who are isolated are also more vulnerable to extreme heat.

Property

Extreme heat is unlikely to cause significant damages to the built environment. However, road surfaces can be damaged as asphalt softens, and concrete sections may buckle under expansion caused by heat. Train rails may also distort or buckle under the stress of heat induced expansion. Power transmission lines may sag from expansion and if contact is made with vegetation the line may short out causing power outages. Additional power demand for cooling also increases power line temperature adding to heat impacts.

Extreme heat can also cause significant agricultural losses. However, according to insurance claim data from the USDA Risk Management Agency, there were no reported crop losses in

Camden County from 2008 to 2019. Camden County has a Farm Gate Value of over \$25 million so the impact from extreme heat could greatly impact this industry.

Environment

Wild animals are vulnerable to heat disorders similar to humans, including mortality. Vegetation growth will be stunted, or plants may be killed if temperatures rise above their tolerance extremes.

Consequence Analysis

Table 2-21. Extreme heat consequence analysis

Category	Consequences
Impact on the Public	Extreme heat may cause illness and/or death.
Impact on Responders	Consequences may be greater for responders if their work requires exertion and/or wearing heavy protective gear.
Continuity of Operations (including delivery of services)	Continuity of operations is not expected to be impacted by extreme heat. Complications may arise if electricity demand results in power outages; however, this should be managed for critical operations with backup power and system redundancies.
Property, Facilities, and Infrastructure	Minor impacts may occur, including possible damages to road surfaces and power lines.
Impact of Environment	Environmental impacts include strain on local plant and wildlife, including potential for illness or death.
Economic Conditions	Farmers may face crop losses or increased livestock costs.
Public Confidence in Governance	Extreme heat is unlikely to impact public confidence.

2.6.4.8 Changes in Development

Increases in impervious surface area can exacerbate heat conditions through the urban heat island effect, whereby the concentration of structures, infrastructure, and human activity, traps and stores heat resulting in localized “heat islands.”

2.6.4.9 Multi-Jurisdictional Considerations

Extreme heat risk and impact do not vary significantly by jurisdiction.

2.6.4.10 Problem Statements

- Populations most vulnerable to the effects of excessive heat are children under the age of 5 and those over the age of 65. The percentage of population over 65 in the City of St. Marys, the City of Woodbine, and unincorporated Camden County is higher than that of the

County and the State; the proportion of population under 5 years of age in all incorporated jurisdictions is higher than that of Camden County.

- Individuals without access to air conditioning, especially elderly and others with underlying conditions making them more susceptible to heat stroke, are more vulnerable to extreme heat events. Cooling centers, fan distribution, and other mitigation actions could reduce vulnerability.
- Related Hazards: Drought

2.6.5 Flooding

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Flood	Highly Likely	Critical	Moderate	6-12 hours	Less than 1 week	3.3

2.6.5.1 Hazard Background

Flooding is defined by the rising and overflowing of water onto normally dry land. As specified by FEMA, a flood is a general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties. Flooding can result from an overflow of inland waters or an unusual accumulation or runoff of surface waters from any source.

Flooding is the most frequent and costly of all-natural hazards in the United States. According to the NWS, approximately 75 percent of presidentially declared disasters are related to flooding. Taken as a whole, more frequent, localized flooding problems that do not meet federal disaster declaration thresholds ultimately cause the majority of damages across the United States.

Sources and Types of Flooding

Flooding in Camden County can be attributed to four main sources as noted below.

Coastal Tidal Flooding: All lands bordering the coast along the Atlantic Ocean and in low-lying coastal plains are susceptible to tidal effects and flooding. Coastal land such as sand bars, barrier islands and deltas provide a buffer zone to help protect human life and real property relative to the sea much as flood plains provide a buffer zone along rivers and other bodies of water. Coastal floods usually occur because of abnormally high tides or tidal waves, storm surge and heavy rains in combination with high tides, tropical storms and hurricanes. As noted in the 2017 Flood Insurance Study (FIS) report, the principal flood problem in Camden County is “flooding controlled by the Atlantic Ocean.” This includes coastal storm surge tides augmented by wind induced waves along with flooding due to rains induced by hurricanes, tropical storms, and other storms.

Riverine Flooding: Camden County has numerous rivers, streams, and tributaries running throughout its jurisdiction that are susceptible to overflowing their banks during and following excessive precipitation events. Camden County’s Hazard Risk Analyses Supplement to the Camden County Joint Hazard Mitigation Plan was used for this assessment, with additional

information from past FIS reports. Per the 2017 FIS report, the sources of flooding in the County include the Crooked River, the Satilla River, and the St. Marys River, along with associated tributaries, as well as multiple creeks, ponds, and swamps.

Although the FIS does not report riverine flooding as a “principle flood issue” the County’s prior Plan and floodplain management resources all cite the multiple rivers surrounding the low-lying coastal county as primary causes of flooding.

Flash or Rapid Flooding: A flash flood occurs when water levels rise at an extremely fast rate as a result of intense rainfall over a brief period, possibly from severe thunderstorms and sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil, or impermeable surfaces. Flash flooding can happen in Special Flood Hazard Areas (SFHA) as delineated by the National Flood Insurance Program (NFIP) and can also happen in areas not associated with floodplains. Flash flood hazards caused by surface water runoff are most common in urbanized areas, where greater population density generally equates to more impervious surface (e.g., pavement and buildings) which increases the amount of surface water generated.

Flash flooding is a dangerous form of flooding which can reach full peak in only a few minutes. Flash floods in Camden County are more commonly the result of severe summer thunderstorms that produce high rainfall intensities scattered over small areas. Rapid onset allows little or no time for protective measures. Flash flood waters move at very fast speeds and can damage buildings and infrastructure, tear out trees, and scour channels. Flash flooding can result in higher loss of life, both human and animal, than slower developing river and stream flooding.

Localized/Stormwater Flooding: Localized stormwater flooding can occur throughout Camden County. Localized stormwater flooding occurs when heavy rainfall and an accumulation of runoff overburden the stormwater drainage system. The cause of localized stormwater flooding in Camden County can be attributed primarily to the large amount of developed and impervious land both in the County and upstream, which limits ground absorption and increases surface water runoff.

The following structural drainage issues may cause or exacerbate localized flooding:

- **Inadequate Capacity:** An undersized/under capacity pipe system can cause water to back-up behind a structure which can lead to areas of ponded water and/or overtopping of banks.
- **Clogged Inlets:** Debris covering the asphalt apron and the top of grate at catch basin inlets may contribute to an inadequate flow of stormwater into the system. Debris within the basin itself may also reduce the efficiency of the system by reducing the carrying capacity.

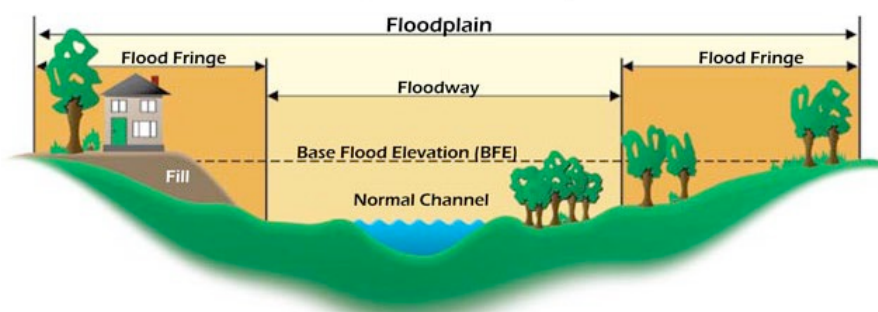
- **Blocked Drainage Outfalls:** Debris blockage or structural damage at drainage outfalls may prevent the system from discharging runoff, which may lead to a back-up of stormwater within the system.
- **Improper Grade:** Poorly graded asphalt around catch basin inlets may prevent stormwater from entering the catch basin as designed. Areas of settled asphalt may create low spots within the roadway that allow for areas of ponded water.

While localized flooding may not be as destructive as coastal flooding, it is a chronic problem. The repetitive damage caused by such flooding can add up. Sewers may back up, yards can be inundated, and mechanical systems can be damaged when homes, businesses and vehicles are flooded. These impacts, and other localized flooding impacts, can create public health and safety concerns. Drainage and sewer systems not designed to carry the capacity currently needed to handle increased storm runoff will only continue to cause flooding without mitigation.

Flooding and Floodplains

A floodplain, as shown in Figure 2-14, is flat or nearly flat land adjacent to a stream or river that experiences occasional or periodic flooding. It includes the floodway, which consists of the stream channel and adjacent areas that carry flood flows, and the flood fringe, which are areas covered by the flood, but which do not experience a strong current. Floodplains are made when floodwaters exceed the capacity of the main channel or escape the channel by eroding its banks. When this occurs, sediments (including rocks and debris) are deposited that gradually build up over time to create the floor of the floodplain. Floodplains generally contain unconsolidated sediments, often extending below the bed of the stream.

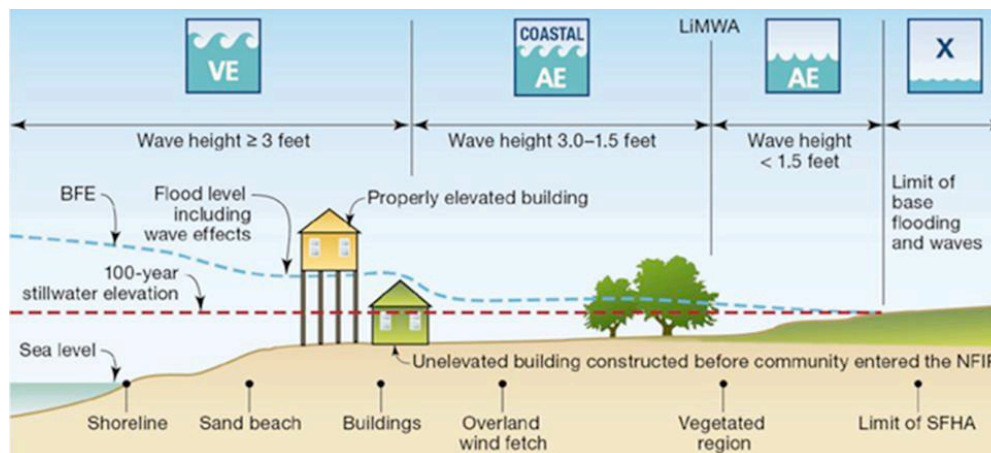
Figure 2-14. Characteristics of a floodplain (FEMA)



Source: NFIP Guidebook, FEMA

In coastal areas, flooding occurs due to high tides, tidal waves, storm surge, or heavy rains in combination with these other sources. In these areas, flood hazards typically include the added risk of wave action delineated by the VE Zone and Coastal AE Zone. Wave height and intensity decreases as floodwaters move inland. Figure 2-15 shows the typical coastal floodplain and the breakdown of flood zones in these settings.

Figure 2-15. Characteristics of a coastal floodplain (FEMA)



In its common usage, the floodplain most often refers to that area that is inundated by the “100-year flood,” better defined as the “1-percent-annual-chance flood” because it is the flood that has a 1 percent chance in any given year of being equaled or exceeded. The NFIP utilizes the 1-percent-annual-chance flood as a basis for floodplain management. The “500-year flood” or “0.2-percent-annual-chance flood” is the flood that has a 0.2 percent chance of being equaled or exceeded in any given year. The potential for flooding can change and increase through various land use changes and changes to land surface, which result in a change to the floodplain. Similarly, a change in environment can create localized flooding problems inside and outside of natural floodplains by altering or confining natural drainage channels. These changes are most often created by human activity.

The 1-percent-annual-chance flood, which is the minimum standard used by most federal and state agencies, is used by the NFIP as the standard for floodplain management and to determine the need for flood insurance. Participation in the NFIP requires adoption and enforcement of a local floodplain management ordinance which is intended to prevent unsafe development in the floodplain, thereby reducing future flood damages. Participation in the NFIP allows for the federal government to make flood insurance available within the community as a financial protection against flood losses. Since floods have an annual probability of occurrence, have a known magnitude, depth and velocity for each event, and in many cases, have a map indicating where they will likely occur, they are in many ways often the most predictable and manageable hazard.

While weather forecasting can project periods of heavy rain, the likelihood of flooding is difficult to predict, leaving limited warning time for flood events. Especially as heavy rain events become more common, as discussed below under Climate Change, warning time for flooding may decrease, thereby increasing risk to those in harm’s way.

Warning Time: 3 – 6 to 12 hours

Duration: 3 – Less than 1 week

2.6.5.2 Location

Regulated floodplains are illustrated on inundation maps called Flood Insurance Rate Maps (FIRM). A FIRM is the official map for a community on which FEMA has delineated both the SFHA and the risk premium zones applicable to the community. SFHA represent the areas subject to inundation by the 1-percent-annual-chance flood event. Structures located within the SFHA have a 26-percent chance of flooding during the life of a standard 30-year mortgage. Note that floods may occur outside of the SFHA. In fact, 35 percent of flood insurance claims in Georgia are outside of the SFHA.

For this risk assessment, flood prone areas were identified within Camden County using the FIRM dated December 12, 2017. Figure 2-16 reflects the 2017 mapped flood insurance zones for Camden County and the description of each zone can be found in Table 2-22.

Figure 2-16. Flood hazard areas in Camden County (Camden County GIS)



Table 2-22. Mapped flood insurance zones within Camden County (FEMA)

Zone	Description
VE	Also known as the coastal high hazard areas. They are areas subject to high velocity water including waves; they are defined by the 1% annual chance (base) flood limits (also known as the 100-year flood) and wave effects 3 feet or greater. The hazard zone is mapped with base flood elevations (BFEs) that reflect the combined influence of stillwater flood elevations, primary frontal dunes, and wave effects 3 feet or greater.

AE	AE Zones, also within the 100-year flood limits, are defined with BFEs that reflect the combined influence of stillwater flood elevations and wave effects less than 3 feet. The AE Zone generally extends from the landward VE zone limit to the limits of the 100-year flood from coastal sources, or until it reaches the confluence with riverine flood sources. The AE Zones also depict the SFHA due to riverine flood sources, but instead of being subdivided into separate zones of differing BFEs with possible wave effects added, they represent the flood profile determined by hydrologic and hydraulic investigations and have no wave effects. The Coastal AE Zone is differentiated from the AE Zone by the Limit of Moderate Wave Action (LiMWA) and includes areas susceptible to wave action between 1.5 to 3 feet.
A	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown within these zones.
Zone X (shaded)	Moderate risk areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by a levee. No BFEs or base flood depths are shown within these zones. (Zone X (shaded) is used on new and revised maps in place of Zone B.)
Zone X (unshaded)	Minimal risk areas outside the 1-percent and 0.2-percent-annual-chance floodplains. No BFEs or base flood depths are shown within these zones. Zone X (unshaded) is used on new and revised maps in place of Zone C.

Approximately 48 percent of Camden County falls within the SFHA. Table 2-23 provides a summary of the County's total area by flood zone on the FIRM.

Table 2-23. Flood zone acreage in Camden County (2017) (FEMA)

Flood Zone	Acreage	Percent of Total
A	64,861	14.3%
AE	66,185	14.6%
VE	83,702	18.5%
X (shaded)	19,175	4.2%
X (unshaded)	218,324	48.3%
Total	452,246	--
SFHA Total	214,747	47.5%

In addition to riverine and coastal flooding, the planning area may also experience smaller scale localized stormwater flooding events. Table 2-24 lists locations of stormwater flooding and the cause of flooding in these areas, as identified by the HMPC.

Table 2-24. Locations of stormwater flooding in Camden County

Jurisdiction	Street Name or Intersection	Cause of Flooding
Camden County	New Post Road	Tropical storm rain

Camden County	Georgia Highway 40	Tropical storm rain
Kingsland	Wolf Bay Circle	Drainage issues
Kingsland	Meadows Subdivision	Drainage issues
Kingsland	Woodhaven Subdivision	Drainage issues
Kingsland	Lake Vine/Hydrangea Road	Drainage issues
Kingsland	Summerfield Subdivision	Drainage issues
Kingsland	Maycreek Road	Drainage issues
Kingsland	Gross Road	Drainage issues
Kingsland	Grove Boulevard	Drainage issues
Kingsland	Highway 40 and Lee Street Intersection	Drainage issues
St. Marys	Crooked River Subdivision	Drainage issues
St. Marys	St. Marys Street	Tidal flooding
Woodbine	Camden Avenue	Heavy rains, Drainage issues
Woodbine	West 3 rd Street	Heavy rains, Drainage issues

For this risk assessment, riverine and coastal losses were determined from the 1-percent-annual-chance flood boundaries downloaded from the FEMA Flood Map Service Center in June 2025. The flood boundaries were overlaid with the USGS 10-meter digital elevation model using the Hazus-MH Enhanced Quick Look tool to generate depth grids. The flood depth grids were then imported into Hazus-MH to calculate the riverine and coastal flood loss estimates. Figure 2-17 illustrates the riverine inundation boundary associated with the 1-percent-annual-chance flood based on the report by the Coastal Regional Commission of Georgia's Hazard Risk Analyses Supplement to the Camden County Joint Hazard Mitigation Plan. Figure 2-18 illustrates the coastal inundation boundary associated with the 1-percent-annual-chance flood based on the report by the Coastal Regional Commission of Georgia's (CRC) Hazard Risk Analyses Supplement to the Camden County Joint Hazard Mitigation Plan. Please note that the riverine and coastal flooding may not take into account elevated housing or raised Base Flood Elevation. The complete analysis is provided in the Appendix B.

Figure 2-17. Riverine 1-percent-annual-chance flood inundation (CRC)

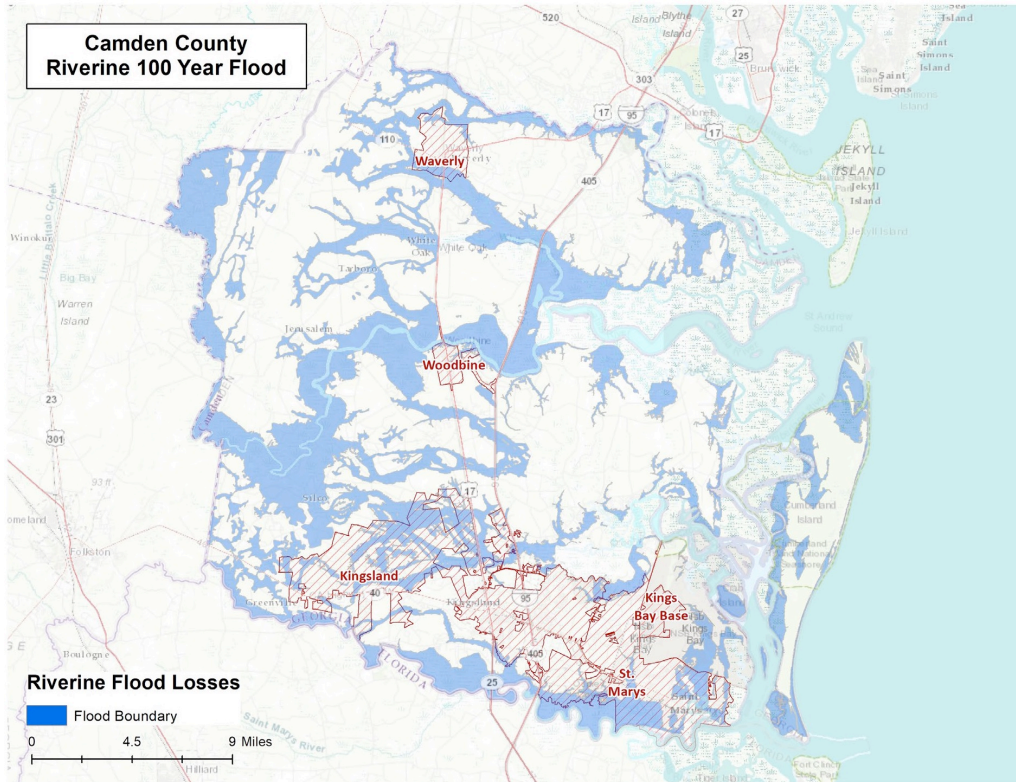
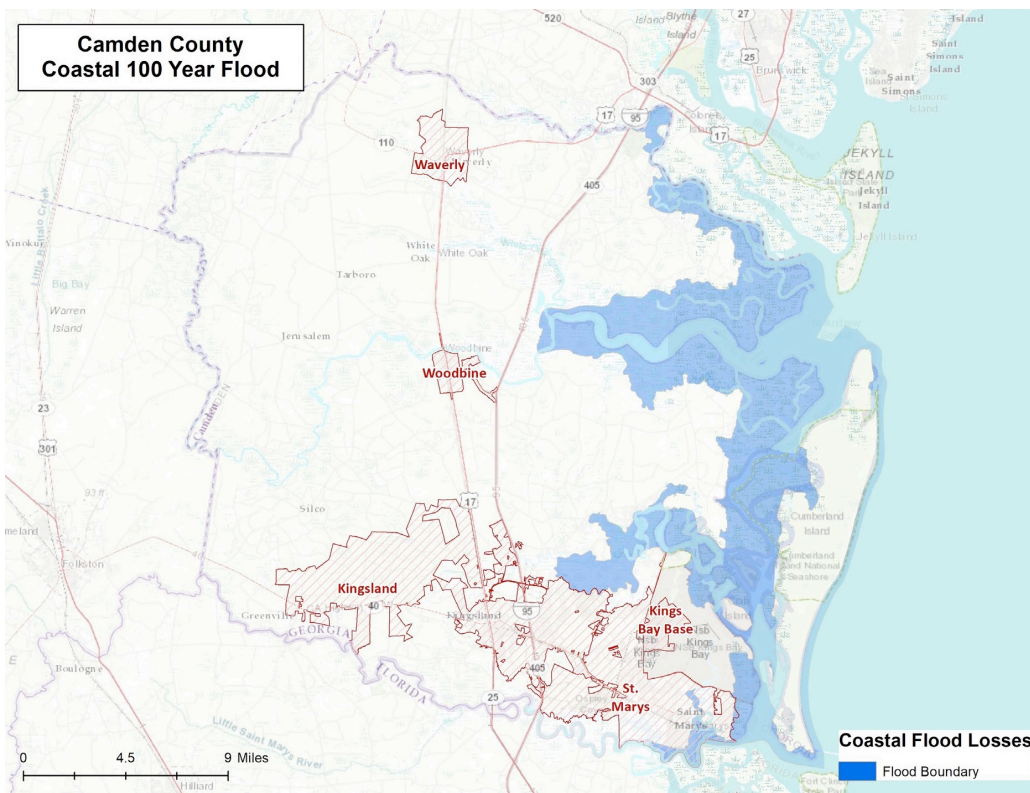


Figure 2-18. Coastal 1-percent-annual-chance flood inundation (CRC)



2.6.5.3 Extent

Flood extent can be defined by the amount of land in the floodplain, detailed above, and the potential magnitude of flooding as measured by flood depth and velocity. Figure 2-19 and Figure 2-20 map the potential loss ratios of total building exposure to losses sustained to buildings from the 1-percent-annual-chance flood by census block for riverine and coastal flooding.

Figure 2-19. Potential loss ratios from the 1-percent-annual-chance riverine flood (CRC)

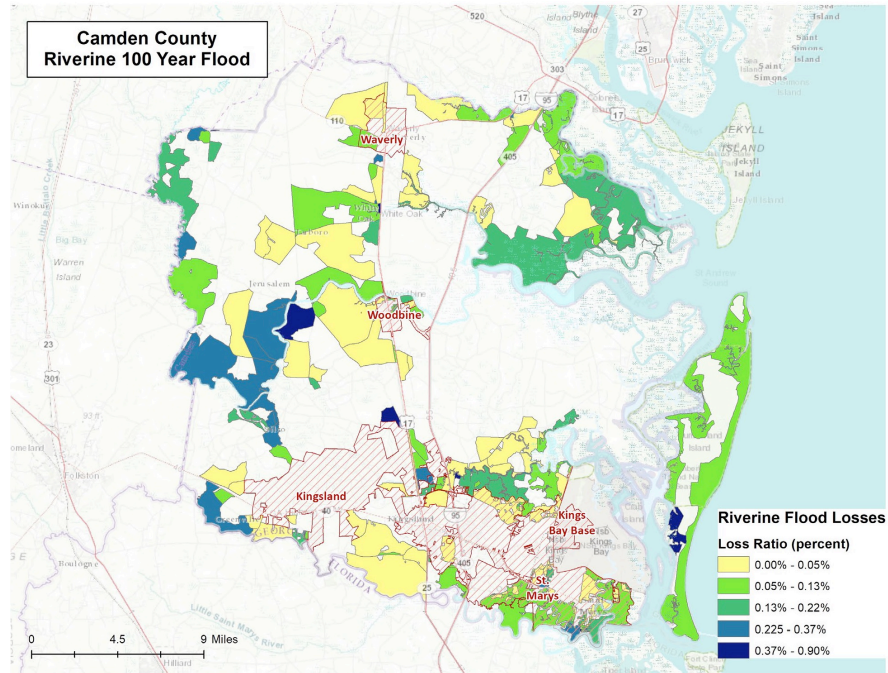
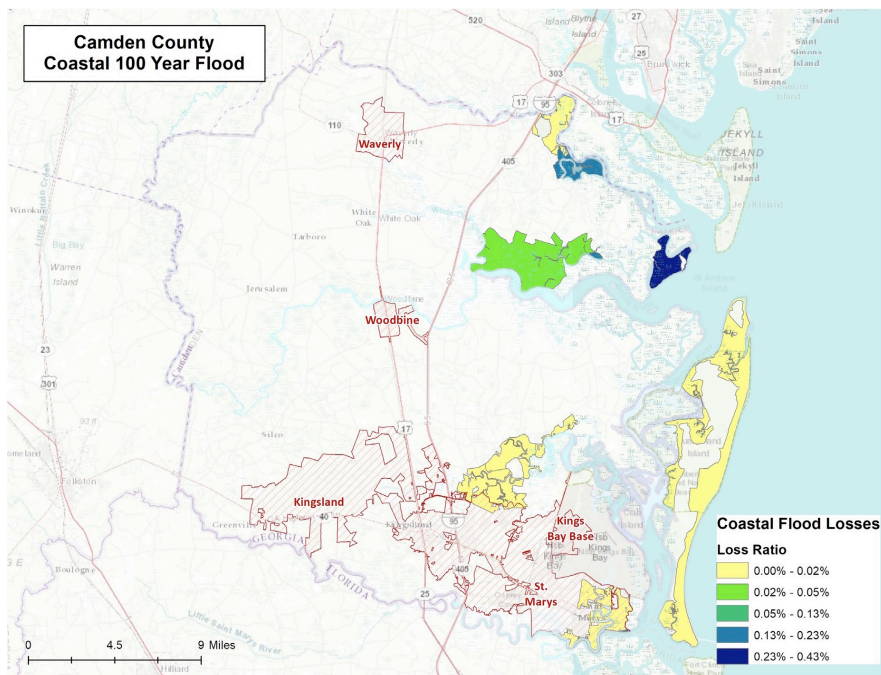


Figure 2-20. Potential loss ratios from the 1-percent-annual-chance coastal flood (CRC)



Spatial Extent: 3 – Moderate

Impact: 3 – Critical

2.6.5.4 Historical Occurrences

Table 2-25 details the past occurrences of flooding identified from 1996 to 2024 by NCEI. Only those historical occurrences listed in the NCEI database are shown here and other unrecorded or unreported events may have occurred within the planning area during this timeframe.

Table 2-25. Recorded flood-related events in Camden County (1996 to 2024) (NOAA NCEI)

Location	Date	Deaths/Injuries	Reported Property Damage	Reported Crop Damage
Coastal Flood				
Coastal Camden	9/27/2015	0/0	\$0	\$0
Coastal Camden	10/27/2015	0/0	\$0	\$0
Coastal Camden	11/25/2015	0/0	\$0	\$0
Coastal Camden	11/13/2016	0/0	\$0	\$0
Coastal Camden	9/20/2020	0/0	\$0	\$0
Coastal Camden	9/21/2020	0/0	\$0	\$0
Coastal Camden	10/17/2020	0/0	\$0	\$0
Coastal Camden	11/5/2021	0/0	\$0	\$0
Coastal Camden	4/10/2023	0/0	\$0	\$0
Coastal Camden	4/10/2023	0/0	\$0	\$0
Coastal Camden	6/4/2023	0/0	\$0	\$0
Coastal Camden	9/27/2023	0/0	\$0	\$0
Coastal Camden	10/1/2023	0/0	\$0	\$0
Flash Flood				
St. Marys	10/07/1996	0/0	\$15,000	\$0
Countywide	9/18/1998	0/0	\$15,000	\$0
St. Marys	9/6/2000	0/0	\$10,000	\$0
Woodbine	8/1/2011	0/0	\$0	\$0
Scarlet	6/26/2012	0/0	\$4,000	\$0
Flood				
Inland Camden	3/1/1998	0/0	\$25,000	\$0
St. Marys	3/3/2002	0/0	\$0	\$0
Inland Camden	9/9/2004	0/0	\$0	\$0
Countywide	10/7/2005	0/0	\$0	\$0
Spring Bluff	4/5/2009	0/0	\$0	\$0
Greenville	7/1/2012	0/0	\$800,000	\$0
St. Marys Arpt	7/20/2024	0/0	\$0	\$0
Burnt Fort	8/11/2024	0/0	\$0	\$0
Kingsland	8/23/2024	0/0	\$0	\$0

Location	Date	Deaths/Injuries	Reported Property Damage	Reported Crop Damage
Heavy Rain				
Kingsland	8/11/2003	0/0	\$0	\$0
Countywide	10/3/2005	0/0	\$0	\$0
Countywide	10/4/2005	0/0	\$0	\$0
Kingsland	8/25/2007	0/0	\$0	\$0
Kingsland	9/1/2009	0/0	\$0	\$0
Kingsland	9/21/2011	0/0	\$0	\$0
Woodbine	6/25/2012	0/0	\$0	\$0
Scotchville	6/25/2012	0/0	\$0	\$0
Kingsland	6/26/2012	0/0	\$0	\$0
St Marys Arpt	6/26/2012	0/0	\$0	\$0
St Marys	5/2/2013	0/0	\$0	\$0
Kingsland	5/3/2013	0/0	\$0	\$0
St Marys Arpt	8/14/2013	0/0	\$0	\$0
Colesburg	9/17/2013	0/0	\$0	\$0
St Marys Arpt	8/3/2014	0/0	\$0	\$0
Harriets Bluff	8/3/2014	0/0	\$0	\$0
St Marys Arpt	8/20/2015	0/0	\$0	\$0
Woodbine	12/1/2018	0/0	\$0	\$0
Kingsland	7/5/2019	0/0	\$0	\$0
Harriets Bluff	7/5/2019	0/0	\$0	\$0
Harriets Bluff	7/5/2019	0/0	\$0	\$0
Harriets Bluff	7/5/2019	0/0	\$0	\$0
Woodbine	7/7/2021	0/0	\$0	\$0
Kingsland	7/7/2021	0/0	\$0	\$0
Greenville	7/7/2021	0/0	\$0	\$0
Tarboro	7/27/2021	0/0	\$0	\$0
Tarboro	7/27/2021	0/0	\$0	\$0
St Marys	7/7/2022	0/0	\$0	\$0
St Marys Arpt	7/3/2023	0/0	\$0	\$0
Kingsland	9/25/2023	0/0	\$0	\$0
Harriets Bluff	8/22/2024	0/0	\$0	\$0
Kingsland	8/23/2024	0/0	\$0	\$0
Harriets Bluff	8/23/2024	0/0	\$0	\$0
Total		0/0	\$869,000	\$0

According to NCEI, 61 recorded flood-related events affected the planning area from 1996 to 2024, causing an estimated \$869,000 in property damage, with no injuries, fatalities, or crop damage. These records specifically note flood impacts in all participating jurisdictions.

The following event narratives are provided from the NCEI Storm Events Database and the previous Plan to illustrate the impacts of flood events on the County:

- **1994 and 1995:** Winter storms and tropical storms in 1994 and 1995 resulted in excess of \$56,000 in flood damages. The flooding on October 11, 1994 was a result of a tropical depression. Flooding damage occurred at the Mission Trace subdivision in St. Marys. The heavy rainfall from the storm overwhelmed the drainage systems and back-up flooding damaged numerous homes. Several roads closed including Colerain Rd., Spur 40, and N. River Causeway. Georgia Highway 40 was closed periodically throughout October 12th. Camden County received Presidential Disaster Declaration status on October 19th.
- **August 25, 1995:** Hurricane Jerry brought heavy rainfall to the area. Most flooding conditions occurred in Woodbine and south of White Oak, causing several washed out and impassable roads.
- **October 7, 1996:** Heavy rainfall (4 to 8 inches) from Tropical Storm Josephine caused flooding across most of Camden County. The flooding closed many roads which closed the public schools for two days.
- **March 1, 1998:** Severe flooding damage occurred on, from the effects of El Nino. Flooding occurred mainly along the St. Marys and Satilla Rivers. More than 200 homes were damaged in this event.
- **September 18, 1998:** Flooding closed numerous streets in St. Marys and Kingsland. One family was relocated by the Red Cross. Flooding events in 1998 resulted in excess of \$3,500,000 in damages. The total dollar value of damages paid by GEMA/FEMA as a result of flooding events is in excess of 3.6 million dollars. Most flooding issues occur as the rivers overflow banks and during periods of heavy rainfall. Many of the newly developed residential areas are located close to the rivers.
- **March 3, 2002:** Urban and small stream flooding occurred at Highway 40 overpass to Interstate 95. Spur 40 near Crooked River Elementary School flooded to one foot in depth. Numerous secondary roads were also flooded in St. Marys.
- **September 9, 2004:** 12 roads were closed in the Browntown area from flooding caused by Hurricane Frances.
- **April 5, 2009:** A stationary front draped across north Florida and southeast Georgia maintained a series of disturbances riding eastward along the boundary. Gulf moisture fed the storms with heavy rainfall occurring across most of the region. A strong disturbance over the Rockies became a low-pressure system that finally drove a cold front through the area. Jet dynamics were favorable for strong to severe storms during the period. The Camden County Emergency Manager reported major flooding on the Satilla River causing 20 residences to flood. This included 15 mobile homes, which were evacuated. Note that NCEI reports zero dollars in damages for this event.
- **September 21, 2011:** Moist yet weak south to southwest steering flow and active sea breezes supported heavy rainfall in showers and storms. Diurnal instability enhanced storms in the afternoon and early evening. Locally heavy rainfall produced minor street flooding in low

lying areas. Standing water up to 3 inches deep was reported along State Road 40 and U.S. Highway 17 in Kingsland.

- **June 26 to 27, 2012:** Tropical Storm Debby moved across the area from the northeast Gulf of Mexico. Depp tropical moisture combined with a stalled frontal boundary across north Florida over a period of several days caused extensive flooding rainfall, as well as historic river flooding on the St. Marys River. A few severe storms developed each day, but the main impact was flooding rainfall and extensive river flooding. Observers measured between 3.5 to 5.7 inches in 24-hour periods; 48-hour rainfall totaled up to 11.7 inches. Floodwaters approached and damaged homes on Thrift Road.
- **July 1, 2012:** Historic river flooding along the St. Marys River continued after the passage of Tropical Storm Debby, which brought with it heavy rainfall. State Road 40 was closed between Kingsland and Folkston due to flooding. Approximately 37 homes in the Flea Hill area were flooded with river waters and evacuated.
- **September 27, 2015:** A period of persistent rain and the approach of the full Super Moon of 2015 created higher than normal tides along the local coast with minor flooding impacts around the times of High Tides. The USGS water level gage at Sea Camp Dock on Cumberland Island reached 5.3 feet above NAVD88. The highest astronomical tide is 4.7 feet above NAVD88.
- **October 27, 2015:** A full moon produced higher than normal astronomical tides and combined with moderate onshore flow created minor coastal flooding and beach erosion around the times of high tide. Water level departures were up to 0.75 feet above predictions along the Atlantic coast. The tide gauge at the Sea Camp Dock on Cumberland Island measured at water level of 5.59 feet above NAVD88; minor coastal flooding typically begins around 5 feet.
- **November 13, 2016:** A lingering NNE surge combined with high tide close to the full moon created elevated water levels along the Atlantic Coast and within the St. Johns River Basin. At 7:36 am, the water level gauge at the Sea Camp Dock on Cumberland Island measured 5.48 feet NAVD88, or 1.7 feet above MHHW. This was about 1 foot above predicted astronomical tide and was the peak tide during this perigee event. This resulted in minor coastal flooding.

Camden County has had two FEMA Major Disaster Declarations for severe storms that include elements of flooding in 1994 and 2009. Additionally, the County has received three Major Disaster Declarations for hurricanes in 2004, 2016, and 2017, which also may have included damages associated with flooding.

2.6.5.5 Probability of Future Occurrence

By definition, SFHA are those areas that will be inundated by the flood event having a 1-percent-annual-chance of being equaled or exceeded in any given year. While exposure to flood hazards varies across jurisdictions, all jurisdictions have at least some area of land in FEMA-mapped flood hazard areas. This delineation is a useful way to identify the most at-risk areas, but

flooding does not occur in set intervals; any given flood may be more or less severe than the defined 1-percent-annual-chance flood. There is also risk of localized and stormwater flooding in areas outside the SFHA and at different intervals than the 1-percent-annual-chance flood.

Floods of varying severity occur regularly in Camden County, and impacts from past flood events have been noted by NCEI in all participating jurisdictions. NCEI reports 61 flood-related events in the 25-year period from 2000 to 2024, which equates to an average of 2.4 flood events per year. Therefore, the overall probability of flooding in the County is considered highly likely.

Probability: 4 – Highly Likely

2.6.5.6 Climate Change

Per the Fourth National Climate Assessment, frequency and intensity of heavy precipitation events is expected to increase across the country. More specifically, it is “very likely” (90 to 100 percent probability) that most areas of the United States will exhibit an increase of at least 5 percent in the maximum 5-day precipitation by late 21st century. Additionally, increases in precipitation totals are expected in the Southeast. The mean change in the annual number of days with rainfall over 1 inch for the Southeastern United States is projected to be 0.5 to 1.5 days. Therefore, with more rainfall falling in more intense incidents, the planning area may experience more frequent flash flooding. Increased flooding may also result from more intense tropical cyclone; researchers have noted the occurrence of more intense storms bringing greater rainfall totals, a trend that is expected to continue as ocean and air temperatures rise.

2.6.5.7 Vulnerability Assessment

People

Floods create several health hazards, some of which are not always reported. This can include immediate dangers from floodwaters and debris, post-flood health risks from stagnant water and mildew, and long-term psychological impacts.

When a flood occurs, floodwaters carry contaminants such as dirt, oil, animal waste, and agricultural or industrial chemicals. Additionally, flooding can overwhelm sewer systems, causing backups of raw sewage that spread bacteria such as E. coli or other disease-causing agents. Debris carried by flood water (such as branches or other items) can cause injury, and clearing debris afterward poses risks from sharp objects or even risk of electrocution due to downed power lines.

Following a flood, stagnant water left behind breeds mosquitoes, which can lead to the spread of vector-borne diseases. Local drinking water may become contaminated, leading to the need of a boil order to prevent illness. Water damage in buildings can cause a buildup of mold and mildew,

creating respiratory hazards. These hazards may not appear immediately, but can cause long-term health problems. For example, air ducts that are not properly cleaned can circulate harmful sediments throughout a building long after flood waters have subsided.

Flood survivors may face psychological stress, especially for those who lose homes or belongings, face costly repairs, or fear repeat flooding. Emotional stress can worsen both physical and mental health over time.

An estimate of population at risk to flooding was developed by the CRC; Hazus-MH estimates that the number of households that are expected to be displaced from their homes due to riverine and coastal flooding and the associated potential evacuation. Figure 2-21 and Figure 2-22 below map the estimated short-term shelter needs for riverine and coastal 1-percent-annual-chance flooding scenarios, respectively. The analyses estimate that 7,196 individuals in 2,399 households might be displaced due to the riverine flood and 1,022 individuals in 341 households might be displaced due to coastal flooding.

Figure 2-21. Estimated short-term shelter needs for riverine 1-percent-annual-chance flooding scenario (CRC)

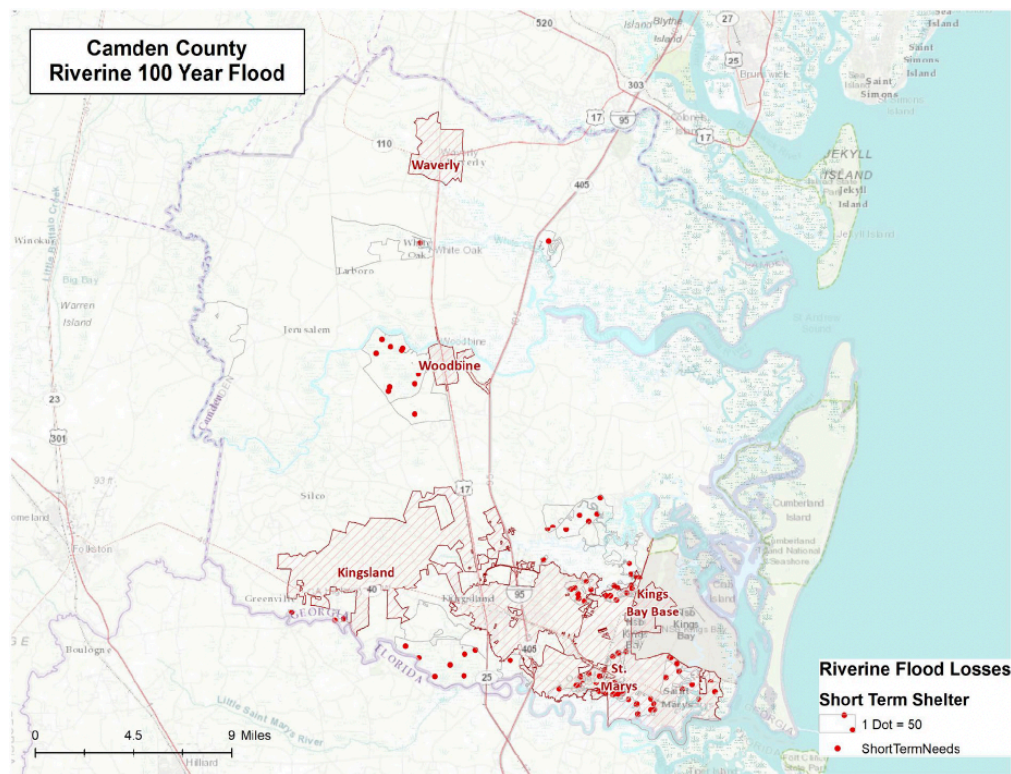
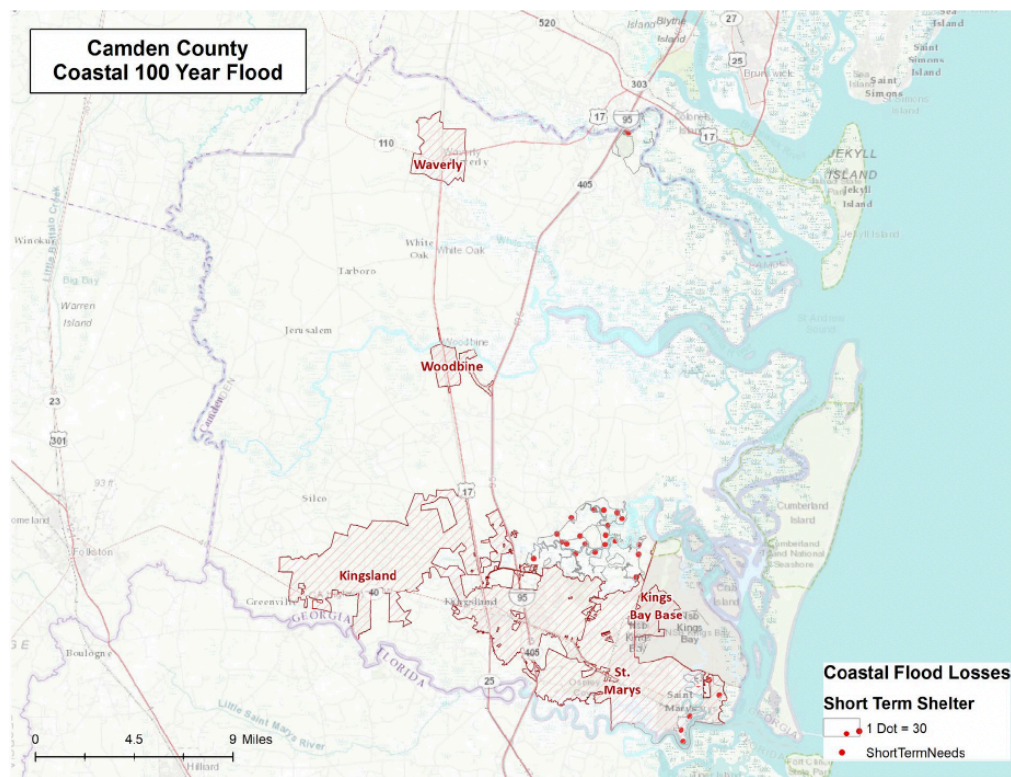


Figure 2-22. Estimated short-term shelter needs for coastal 1-percent-annual-chance flooding scenario (CRC)



Property

Residential, commercial, and public buildings, as well as critical facilities and infrastructure such as transportation, water, energy, and communication systems may be damaged or destroyed by flood waters.

Table 2-26 details the estimated losses for the 1-percent-annual-chance flood event for the entire planning area. The total damage estimate value is based on damages to the total of improved building value and contents value. Land value is not included in any of the loss estimates as generally land is not subject to loss from floods.

Table 2-26. Estimated building loss for 1-percent-annual-chance riverine flood (CRC)

Occupancy Classification	Total Buildings	Total Buildings Damaged	Total Building Exposure	Total Loss to Buildings	Loss Ratio
Kingsland					
Commercial	409	1	\$284,848,903	\$3,714	0.00%
Residential	7,376	180	\$1,500,519,014	\$8,652,731	0.58%
St. Marys					
Commercial	409	28	\$459,134,014	\$2,641,394	0.58%
Government	17	1	\$22,828,218	\$223,829	0.98%
Industrial	121	10	\$145,324,256	\$1,247,245	0.86%
Religious	54	14	\$80,155,089	\$5,451,339	6.80%
Residential	7,119	943	\$1,331,992,177	\$53,393,693	4.01%
Unincorporated					

Commercial	117	13	\$51,087,621	\$1,478,666	2.89%
Government	13	5	\$9,187,268	\$284,537	3.10%
Industrial	47	6	\$27,241,220	\$905,505	3.32%
Religious	67	7	\$29,814,916	\$368,701	1.24%
Residential	6,725	823	\$947,956,124	\$43,013,051	4.54%
Waverly					
Residential	123	4	\$13,789,586	\$267,877	1.94%
Woodbine					
Commercial	59	1	\$33,086,720	\$55,739	0.17%
Residential	468	15	\$68,365,662	\$1,047,479	1.53%
Total	23,124	2,051	\$5,005,330,788	\$119,035,500	

Table 2-27. Estimated building loss for 1-percent-annual-chance coastal flood (CRC)

Occupancy Classification	Total Buildings	Total Buildings Damaged	Total Building Exposure	Total Loss to Buildings	Loss Ratio
Kingsland					
Residential	7,376	5	\$1,500,519,014	\$383,526	0.03%
St. Marys					
Residential	7,119	23	\$1,331,992,177	\$1,093,226	0.08%
Commercial	409	5	\$459,134,014	\$211,890	0.05%
Unincorporated					
Residential	6,725	52	\$947,956,124	\$2,585,961	0.27%
Total	21,629	85	\$4,239,601,329	\$4,274,582	

The loss ratio is the loss estimate divided by the total potential exposure (i.e., total of improved and contents value for all buildings located within the flood zones included in this Hazus analysis) and displayed as a percentage of loss. Higher loss ratios can be an indicator that a community may have more difficulties recovering from a flood.

The loss ratios for the 1-percent-annual-chance riverine flood show significant variation across jurisdictions and occupancy types, reflecting differences in vulnerability, building exposure, and flood severity. Residential structures consistently experience higher loss ratios, especially in the City of St. Marys (4.01 percent) and the unincorporated areas (4.54 percent), indicating substantial damage relative to the total value of residential building stock. Certain nonresidential categories also show elevated ratios, most notably religious buildings in the City of St. Marys with a 6.80% loss ratio, the highest among all groups. In contrast, commercial properties in the City of Kingsland and the City of Woodbine exhibit very low loss ratios (0.00 percent and 0.17 percent, respectively), suggesting limited exposure or effective flood-mitigation measures. Government and industrial buildings generally fall in the moderate range (around 1 to 3 percent), with slightly higher ratios in unincorporated areas. The loss ratios for the 1-percent-annual-chance coastal flood are generally lower and range from 0.03 percent to 0.27 percent. Note that this estimate only accounts for damages in certain Zone A areas where flood depths are known; Zone A areas where

flood depths are unknown are not included in this analysis. Additionally, even smaller, more probabilistic floods may also result in the County having difficulty recovering.

Across the planning area there are 2 critical facilities located in Zone A and 4 facilities located in Zone AE. Table 2-28 details these critical facilities at risk of flooding by type.

Table 2-28. Summary of critical facilities at risk to 1-percent-annual-chance flood (CRC)

Facility Type	Zone A	Zone AE	Zone VE	Total Facilities at Risk
Education	-	1	-	1
EMS	1	-	-	1
Transportation	-	1	-	1
Utilities	1	2	-	3
Total	2	4	0	6

Mortgage lenders require that owners of properties with federally-backed mortgages located within SFHA purchase and maintain flood insurance policies on their properties. Consequently, newer and recently purchased properties in the community are typically insured against flooding.

According to FEMA data shared through OpenFEMA, as of September 2025, there have been a total of 354 flood claims reported in Camden County through the NFIP since 1978 (note, not all jurisdictions had joined the NFIP at this time) totaling over \$5 million in claim payments. A summary of these figures by jurisdiction can be found in Table 2-29. Note that these figures include only losses to structures insured under the NFIP and for losses that were claimed under the program and granted payouts. It is highly likely that additional losses occurred in Camden County that were either uninsured, denied claim payments, or simply not reported.

Table 2-29. Summary of insured flood losses by jurisdiction (FEMA)

Jurisdiction	Number of Claims	Total Claims Payments
Kingsland	51	\$1,867,400.24
St. Marys	74	\$838,404.93
Woodbine	2	\$6,585.75
Unincorporated Areas	105	\$855,485.73
Camden County Total	345	\$5,237,106.84

Repetitive Loss Analysis

A repetitive loss property is a property for which (1) two or more flood insurance claims of more than \$1,000 have been paid by the NFIP within any 10-year period since 1978 or (2) two or more grants in which the cost of repair, on the average, equaled or exceeded 25 percent of the value of the structure have been paid by FEMA's Flood Mitigation Assistance program. A severe repetitive

loss property is a property for which (1) four or more NFIP flood insurance claims of more than \$5,000 each have been paid, with total claims exceeding \$20,000, or (2) at least two NFIP building-damage claims have been paid that together exceed the market value of the structure. In both cases, at least two claims must have occurred within a 10-year period, and claims made within 10 days of each other count as a single claim. An analysis of repetitive loss was completed to examine repetitive losses within the planning area using data from OpenFEMA as of December 2024.

According to the data, there are a total of 25 repetitive loss properties within the Camden County planning area, of which 56 percent are insured. In total, there are 3 properties classified as severe repetitive loss properties. Table 2-30 summarizes repetitive loss properties by jurisdiction.

Table 2-30. Repetitive loss properties by jurisdiction (FEMA)

Jurisdiction	Property Count	Insured Count	Percent Outside SFHA	Total Number of Losses
Kingsland	6	2	100%	17
St. Marys	7	5	14%	17
Woodbine	1	0	100%	2
Unincorporated Camden County	11	7	0%	26
Total	25	14	32%	62

Environment

During a flood event, chemicals and other hazardous substances may end up contaminating local water bodies. Flooding kills animals and in general disrupts the ecosystem. Snakes and insects may also make their way to the flooded areas.

Floods can also cause significant erosion, which can alter streambanks and deposit sediment, changing the flow of streams and rivers and potentially reducing the drainage capacity of those waterbodies.

Consequence Analysis

Table 2-31. Flood consequence analysis

Category	Consequences
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Impact on the Public	Localized impact expected to be severe for incident areas and moderate to light for other adversely affected areas.
Impact on Responders	First responders are at risk when attempting to rescue people from their homes. They are subject to the same health hazards as the public. Flood waters may prevent access to areas in need of response or the flood may prevent access to the critical facilities themselves which may prolong response time. Damage to personnel will generally be localized to those in the flood areas at the time of the incident and is expected to be limited.
Continuity of Operations (including delivery of services)	Floods can severely disrupt normal operations, especially when there is a loss of power. Damage to facilities in the affected area may require temporary relocation of some operations. Localized disruption of roads, facilities, and/or utilities caused by the incident may postpone delivery of some services.
Property, Facilities, and Infrastructure	Buildings and infrastructure, including transportation and utility infrastructure, may be damaged or destroyed. Impacts are expected to be localized to the area of the incident. Severe damage is possible.
Impact of Environment	Chemicals and other hazardous substances may contaminate local water bodies. Wildlife and livestock deaths possible. The localized impact is expected to be severe for incident areas and moderate to light for other areas affected by the flood or HazMat spills.
Economic Conditions	Local economy and finances will be adversely affected, possibly for an extended period of time. During floods (especially flash floods), roads, bridges, farms, houses and automobiles can be destroyed. Additionally, the local government must deploy firemen, police and other emergency response personnel and equipment to help the affected area. It may take years for the affected communities to be re-built and business to return to normal.
Public Confidence in Governance	Ability to respond and recover may be questioned and challenged if planning, response, and recovery are not timely and effective.

2.6.5.8 Changes in Development

It is very likely that development can and will change the flood hazard and increase risk. Increased development anywhere in the County will likely lead to increased impervious surfaces; such development will alter flood patterns as well as intensity of flooding events. This is especially true of increased development within or near identified floodplains. Growth pressure is likely in undeveloped areas in proximity to the water and coastal marshland.

The County and incorporated jurisdictions' Joint Comprehensive Plan states as a goal: "considering current and future flooding scenarios (30 to 50 years) with the siting and design of development, including residential and commercial as well as infrastructure such as roads, sewer, wastewater treatment, etc." The County states an additional goal of preserving natural infrastructure to maintain protection for the County from coastal hazards. With these goals, the County is continuing to encourage green space and conservation areas along the coast and riverbanks.

2.6.5.9 Multi-Jurisdictional Considerations

The following table summarizes flood hazard risk by jurisdiction. Flood risk varies significantly across the County. All participating jurisdictions have at least some area in SFHA and are thus exposed to a high risk of flooding; Given that other sources of flooding and other levels of flooding may occur beyond the areas, the spatial extent was considered moderate for all jurisdictions except the City of Woodbine, where it was considered small. Impact ratings were based upon loss estimates; all jurisdictions were rated with an impact of critical. All communities also face a uniform probability of flooding.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
City of Kingsland	4	3	3	2	3	3.3
City of St. Marys	4	3	3	2	3	3.3
City of Woodbine	4	3	2	3	3	3.2
Unincorporated Camden County	4	3	3	2	3	3.3

2.6.5.10 Problem Statements

- Evacuation of residents during storms is of concern to the community; many residential areas are accessed by County roads that would quickly be flooded during a storm surge or a flooding event and could potentially cut off access for emergency services during and after an event. State Road 40 and US Highway 17 are also prone to flooding.
- The HMPC is concerned about damage to historic highways, including Old Dixie Highway, Old Bartram Trail, Old Jefferson Highway, Colerain St. Marys, Old Post Road, and Kings Bay Road.
- Related Hazards: Hurricane, Severe Weather, Sea Level Rise

2.6.6 Hurricane

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Hurricane	Likely	Catastrophic	Large	More than 24 hours	Less than 1 week	3.3

2.6.6.1 Hazard Background

Hurricanes and tropical storms are classified as cyclones and defined as any closed circulation developing around a low-pressure center in which the winds rotate counterclockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and whose diameter averages 10 to 30 miles across. A tropical cyclone refers to any such circulation that develops over tropical waters. Tropical cyclones act as a “safety-valve,” limiting the continued build-up of heat and energy in tropical regions by maintaining the atmospheric heat and moisture balance between the tropics and the pole-ward latitudes. The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation, and tornadoes.

The key energy source for a tropical cyclone is the release of latent heat from the condensation of warm water. Their formation requires a low-pressure disturbance, warm sea surface temperature, rotational force from the spinning of the earth, and the absence of wind shear in the lowest 50,000 feet of the atmosphere. The majority of hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico during the official Atlantic hurricane season, which encompasses the months of June through November. The peak of the Atlantic hurricane season is in early to mid-September.

While hurricanes pose the greatest threat to life and property, tropical storms and depressions also can be devastating. A tropical disturbance can grow to a more intense stage through an increase in sustained wind speeds. The progression of a tropical disturbance is described below.

- **Tropical Depression:** A tropical cyclone with maximum sustained winds of 38 miles per hour (mph) (33 knots) or less.
- **Tropical Storm:** A tropical cyclone with maximum sustained winds of 39 to 73 mph (34 to 63 knots).
- **Hurricane:** A tropical cyclone with maximum sustained winds of 74 mph (64 knots) or higher. In the western North Pacific, hurricanes are called typhoons; similar storms in the Indian Ocean and South Pacific Ocean are called cyclones.
- **Major Hurricane:** A tropical cyclone with maximum sustained winds of 111 mph (96 knots) or higher, corresponding to a Category 3, 4 or 5 on the Saffir-Simpson scale.

As an incipient hurricane develops, barometric pressure (measured in millibars or inches) at its center falls and winds increase. If the atmospheric and oceanic conditions are favorable, it can intensify into a tropical depression. When maximum sustained winds reach or exceed 39 mph, the system is designated a tropical storm, given a name, and is monitored by the National Hurricane Center (NHC) in Miami, Florida. When sustained winds reach or exceed 74 miles per hour the storm






is deemed a hurricane. Hurricanes are given a classification based on the Saffir–Simpson scale; this scale is reproduced in **Error! Reference source not found.** The Saffir–Simpson scale categorizes hurricane intensity linearly based upon maximum sustained winds and barometric pressure, which are combined to estimate potential damage. Categories 3, 4, and 5 are classified as “major” hurricanes and, while hurricanes within this range comprise only 20 percent of total tropical cyclone landfalls, they account for over 70 percent of the damage in the United States. **Error! Reference source not found.** describes the damage that could be expected for each category of hurricane. Damage during hurricanes may also result from spawned tornadoes, storm surge, and inland flooding associated with heavy rainfall that usually accompanies these storms.

Table 2-32. Saffir-Simpson scale (NOAA)

Category	Maximum Sustained Wind Speed (mph)	Types of Damage
1	74 to 95	Very dangerous winds will produce some damage; Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96 to 110	Extremely dangerous winds will cause extensive damage; Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3	111 to 129	Devastating damage will occur; Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4	130 to 156	Catastrophic damage will occur; Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5	157 +	Catastrophic damage will occur; A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Table 2-33. Hurricane damage classifications (NHC)

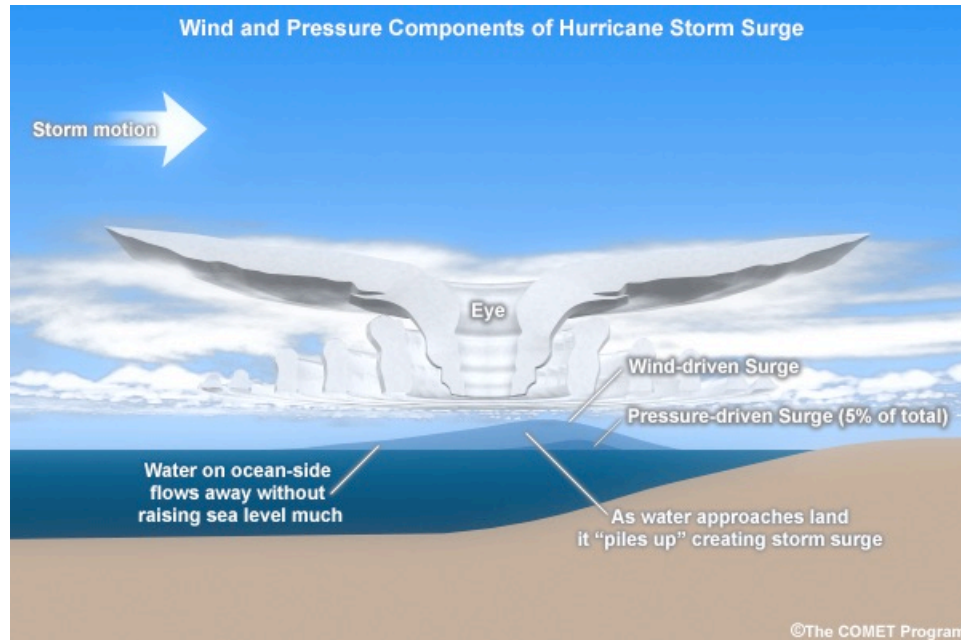
Storm Category	Damage Level	Description of Damages	Photo Example
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1	MINIMAL	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal flooding and minor pier damage.	
2	MODERATE	Some roofing material, door, and window damage. Considerable damage to vegetation, mobile homes, etc. Flooding damages piers and small cracks in unprotected moorings may break their moorings.	
3	EXTENSIVE	Some structural damage to small residences and utility buildings, with a minor amount of curtainwall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures, with larger structures damaged by floating debris. Terrain may be flooded well inland.	
4	EXTREME	More extensive curtainwall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland.	
5	CATASTROPHIC	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.	

The greatest potential for loss of life related to a hurricane is from the storm surge. Storm surge is water that is pushed toward the shore by the force of the winds swirling around the storm as shown in Figure 2-23. This advancing surge combines with the normal tides to create the hurricane storm tide, which can increase the mean water level to heights impacting roads, homes and other critical infrastructure. In addition, wind driven waves are superimposed on the storm tide. This rise in water level can cause severe flooding in coastal areas, particularly when the storm tide coincides with the normal high tides.

The maximum potential storm surge for a location depends on several different factors. Storm surge is a very complex phenomenon because it is sensitive to the slightest changes in storm intensity, forward speed, size (radius of maximum winds), angle of approach to the coast, central pressure (minimal contribution in comparison to the wind), and the shape and characteristics of coastal features such as bays and estuaries. Other factors which can impact storm surge are the width and slope of the continental shelf and the depth of the ocean bottom. A narrow shelf, or one that drops steeply from the shoreline and subsequently produces deep water close to the shoreline, tends to produce a lower surge but higher and more powerful storm waves. A shallow slope, as is found off the coast of Camden County, will produce a greater storm surge than a steep shelf. Damage during hurricanes may also result from inland flooding from associated heavy rainfall.

Figure 2-23. Components of hurricane storm surge (NOAA)



Warning Time: 1 – More than 24 hours

Duration: 3 – Less than 1 week

2.6.6.2 Location

Hurricanes and tropical storms can occur anywhere within Camden County. While coastal areas are most vulnerable to hurricanes, the wind and rain impacts can be felt hundreds of miles inland. Storm surge impacts are more limited, affecting areas along coastal and estuarine shorelines and reaching further inland depending on the height of the surge. All of Camden County is vulnerable to hurricane and tropical storm surge, but to varying degrees, with areas closer to the coast and water bodies that drain into the coast (namely the St. Marys, Satilla, and Crooked Rivers and their tributaries) facing greater risk than areas further inland.

Figure 2-24 through Figure 2-28 show the estimated extent of surge by storm category according to NOAA's Sea, Lake, and Overland Surges from Hurricanes (SLOSH) data. The SLOSH model is a computerized numerical model developed by the NWS to estimate storm surge heights resulting from historical, hypothetical, or predicted hurricanes by taking into account the atmospheric pressure, size, forward speed, and track data. The model creates outputs for all different storm simulations from all points of the compass. Each direction has a maximum envelope of water (MEOW) for each category of storm (1 to 5), and all directions combined result in a maximum of maximums (MOM) set of data. Note that the MOM does not illustrate the storm surge that will occur from any given storm but rather the full potential extent of surge from all possible storms. As shown in these maps, Camden County is vulnerable to storm surge impacts from all storm categories.

Figure 2-24. Storm surge inundation, Category 1 (NOAA SLOSH)

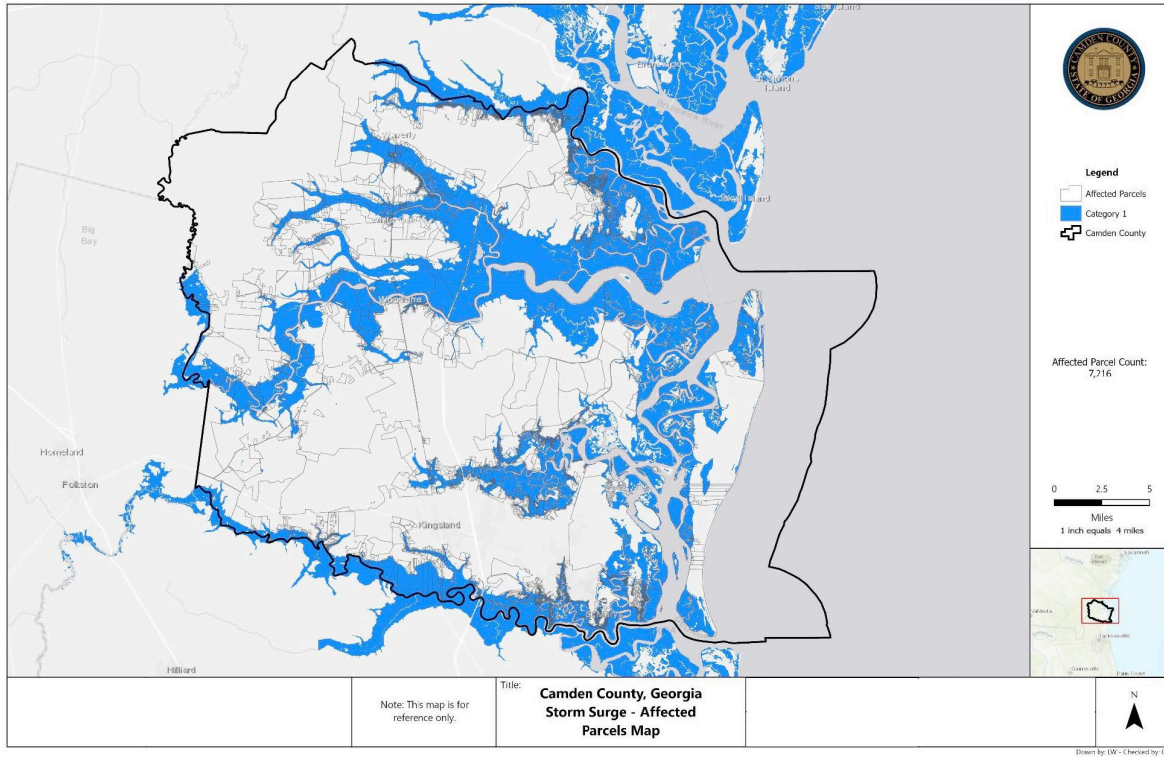


Figure 2-25. Storm surge inundation, Category 2 (NOAA SLOSH)

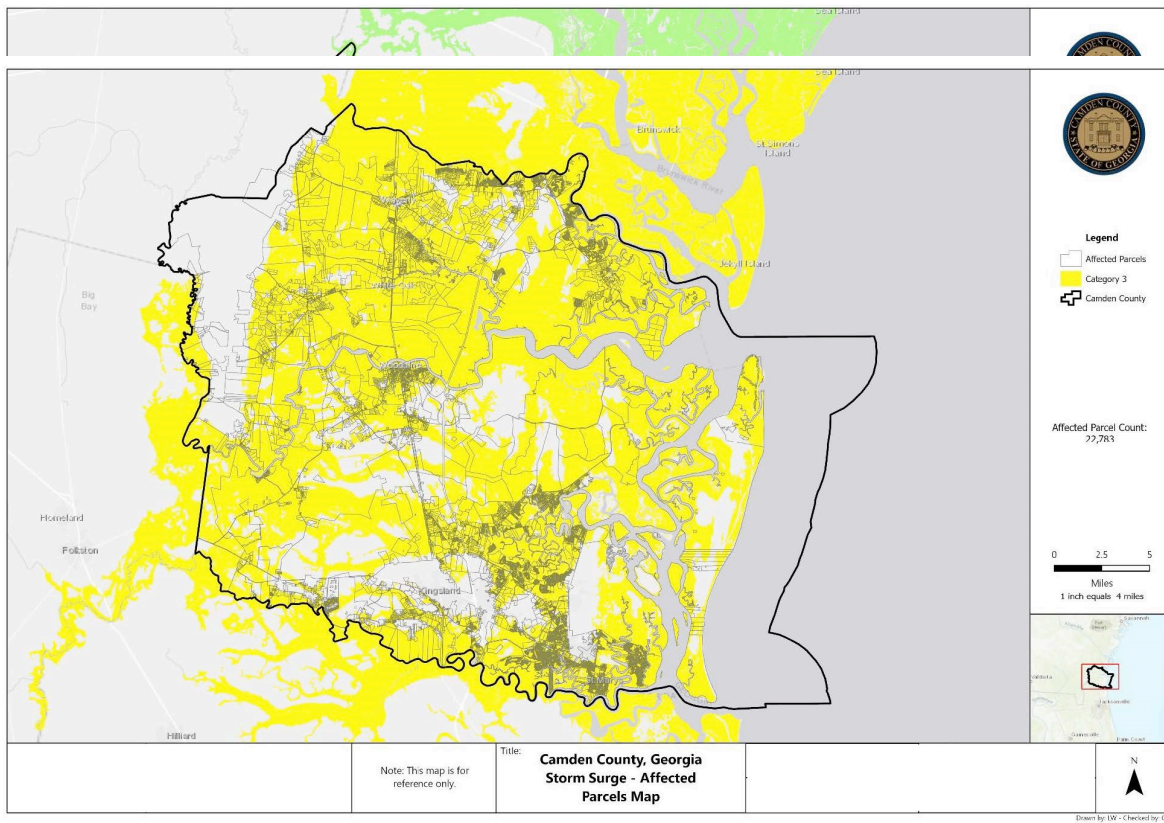


Figure 2-26. Storm surge inundation, Category 3 (NOAA SLOSH)

Figure 2-27. Storm surge inundation, Category 4 (NOAA SLOSH)

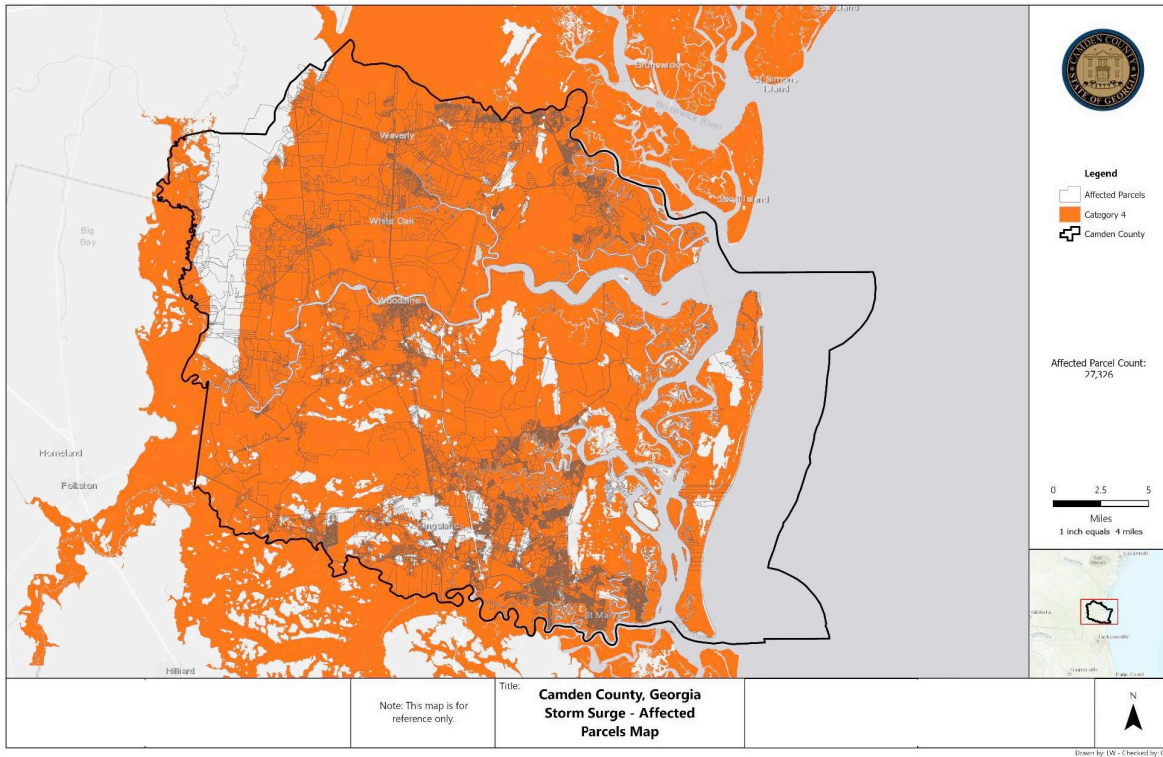
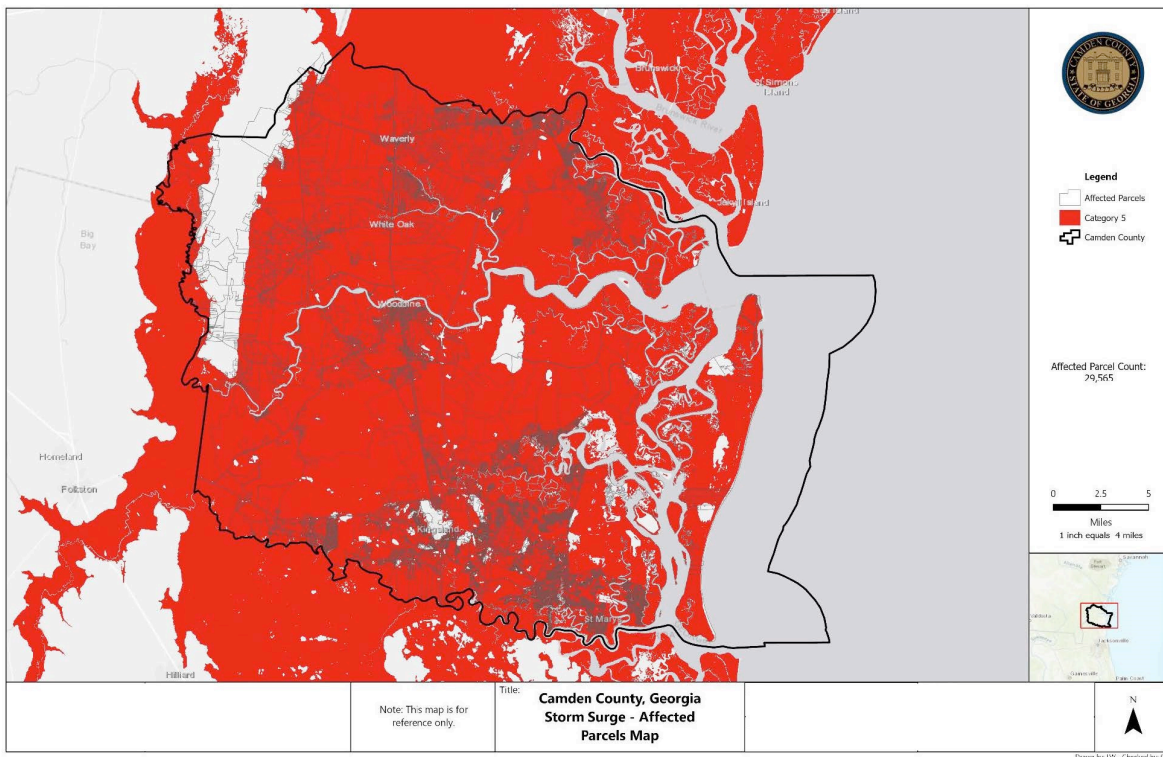


Figure 2-28. Storm surge inundation, Category 5 (NOAA SLOSH)



2.6.6.3 Extent

As described above, the Saffir–Simpson hurricane wind scale provides a measure of extent of a hurricane. The County is susceptible to the full force of every category of hurricane.

Impact: 4 – Catastrophic

Spatial Extent: 4 – Large

2.6.6.4 Historical Occurrences

Camden County has experienced six FEMA Major Disaster Declarations for hurricanes and tropical storms, outlined in Table 2-34 below, as well as eight Emergency Declarations, outlined in Table 2-35.

Table 2-34. Major Disaster Declarations in Camden County (2004 to 2024) (FEMA)

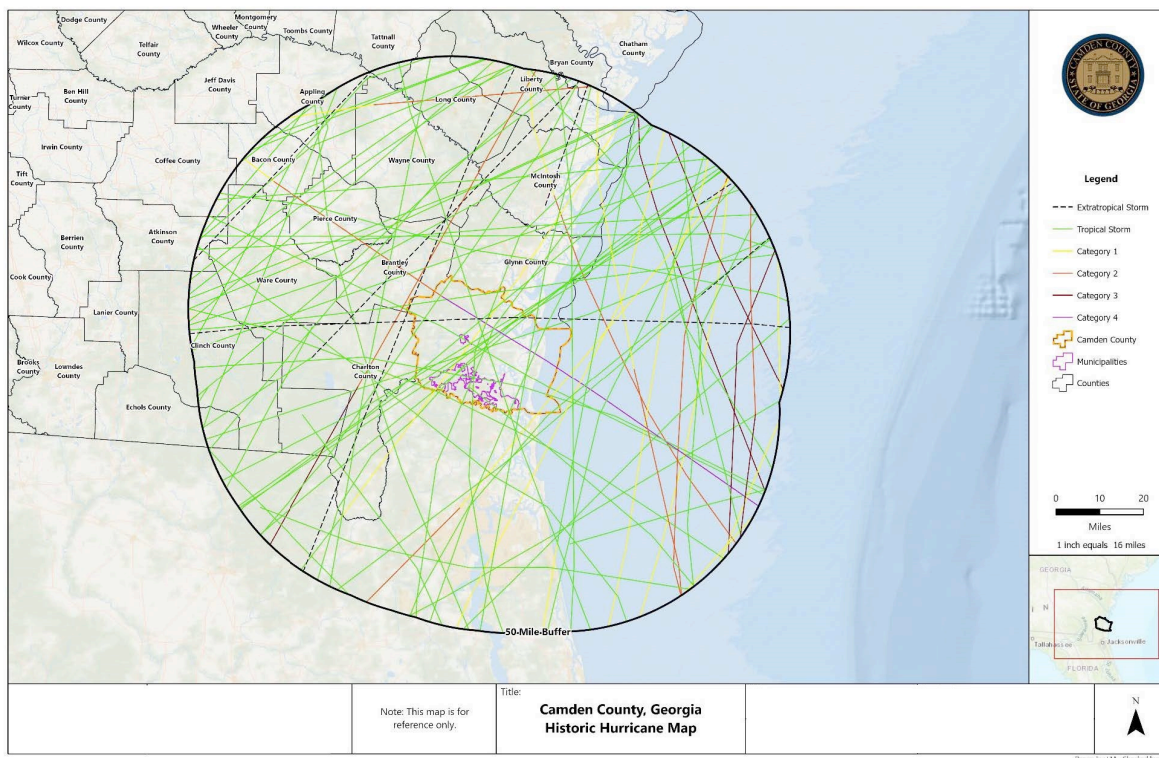
Disaster Number	Declaration Date	Incident Type	Declaration Title
DR-1560-GA	2004-09-24	Hurricane	TROPICAL STORM FRANCES
DR-4284-GA	2016-10-08	Hurricane	HURRICANE MATTHEW
DR-4338-GA	2017-09-15	Hurricane	HURRICANE IRMA
DR-4738-GA	2023-09-07	Hurricane	HURRICANE IDALIA
DR-4821-GA	2024-09-24	Tropical Storm	TROPICAL STORM DEBBY
DR-4830-GA	2024-09-30	Hurricane	HURRICANE HELENE

Table 2-35. Emergency Declarations in Camden County (1999 to 2024) (FEMA)

Disaster Number	Declaration Date	Incident Type	Declaration Title
EM-3144-GA	1999-09-14	Hurricane	HURRICANE FLOYD EMERGENCY DECLARATIONS
EM-3218-GA	2005-09-05	Hurricane	HURRICANE KATRINA EVACUATION
EM-3379-GA	2016-10-06	Hurricane	HURRICANE MATTHEW
EM-3387-GA	2017-09-08	Hurricane	HURRICANE IRMA
EM-3406-GA	2018-10-10	Hurricane	HURRICANE MICHAEL
EM-3422-GA	2019-09-01	Hurricane	HURRICANE DORIAN
EM-3607-GA	2024-08-05	Tropical Storm	HURRICANE DEBBY
EM-3616-GA	2024-09-26	Tropical Storm	HURRICANE HELENE

According to the Office of Coastal Management’s Tropical Cyclone Storm Segments data, which is a subset of the International Best Track Archive for Climate Stewardship dataset, 21 tropical storms or extratropical storms passed within 50 miles of Camden County between 1900 and 2017. This is the most current spatial data available. These storm tracks are shown in Figure 2-29.

Figure 2-29. Hurricane and tropical storm tracks within 50 miles of Camden County (1900 to 2017) (NOAA)



The above map of storms is not an exhaustive list of hurricanes that have affected Camden County. Several storms have passed further than 50 miles away from the County yet had strong enough winds or rain to cause impacts. Further, additional storms have occurred since 2017. NCEI recordkeeping began in 1996 and the database records hurricane and tropical storm events across the region by county and zone; therefore, one event that impacts multiple jurisdictions may be recorded multiple times. During the 28-year period from 1996 to 2024, NCEI records 15 hurricane and tropical storms events, which are summarized in Table 2-36. Where property damage estimates were broken out by type, NCEI reports only the value of wind-related damages, however flooding associated with such events often causes the majority of damage.

Table 2-36. Recorded hurricanes and tropical storms in Camden County (1996 to 2024) (NCEI)

Date	Storm	Deaths/ Injuries	Property Damage	Crop Damage
9/5/2004	Tropical Storm Frances	0/0	\$0	\$0
9/25/2004	Tropical Storm Jeanne	0/0	\$0	\$0
10/5/2005	Tropical Storm Tammy	0/0	\$0	\$0
6/13/2006	Tropical Storm Alberto	0/0	\$0	\$0
8/21/2008	Tropical Storm Fay	0/0	\$0	\$0
5/27/2012	Tropical Storm Beryl	0/0	\$2,300,000	\$0
9/1/2016	Tropical Storm Hermine	0/0	\$0	\$0

10/6/2016	Hurricane Matthew	0/0	\$0	\$0
9/10/2017	Hurricane Irma	0/0	\$0	\$0
8/2/2020	Tropical Storm Isaiia	0/0	\$0	\$0
9/29/2022	Hurricane Ian	0/0	\$0	\$0
11/10/2022	Hurricane Nicole	0/0	\$0	\$0
8/30/2023	Hurricane Idalia	0/0	\$0	\$0
8/4/2024	Hurricane Debby	0/0	\$0	\$0
9/27/2024	Hurricane Helene	0/0	\$0	\$0
Total	15	0/0	\$2,300,000	\$0

The following event narratives from NCEI provide a fuller scope of the impacts from selected events:

- June 13, 2006:** Tropical Storm Alberto made landfall along the northeast Gulf of Mexico coast and as a weakening system moved north-northeast across north Florida and southeast Georgia – positioning the region on the north and east side of the storm. Southeast Georgia experienced periods of sustained tropical storm force winds and gusts. Heavy rainfall occurred across the Suwannee River Valley. Maximum sustained winds recorded were 44 mph in Brunswick; generally winds ranged from 29–44 mph. Scattered trees and power lines were blown down across the region. Most wind damage occurred during the afternoon and early evening of June 24th. Wave heights reached 6–9 feet across the coastal waters. Storm tides at St. Simons Island ran 0.98feet above normal astronomical tide predictions. Across southeast Georgia, rainfall totals ranged from 1 to 6 inches. Some minor temporary flooding occurred; the rainfall was beneficial to the area, helping to recover from a minor drought. River flooding was not a concern. Two confirmed tornadoes touched down in the County – at Kings Bay Submarine Base and in St. Marys.
- May 27, 2012:** Tropical Storm Beryl moved onshore on the northeast Florida coast the night of Sunday May 27th and moved slowly inland across north Florida before recurving over south Georgia. Winds caused tree and power line damage mainly impacting coastal counties. The strongest wind gust measured was 73 mph at Buck Island on the St. Johns River. Flooding rainfall developed with storm total rainfall amounts of 6 to 15 inches reported across the area. The Kings Bay Naval Base reported wind gusts to 58 mph in a rain band. On a waterfront facility at the base, another gust of 65 mph was reported. Many trees were blown down around the county, causing damage to homes and vehicles, and downing power lines. The city dock and boat ramp were closed in downtown St. Marys due to significant damage. At the naval Base, a \$2 million dollar dock was damaged.
- October 6, 2016:** Hurricane Matthew tracked northward along the Florida Atlantic coast as a Category 3 Hurricane. Northeast Florida and Southeast Georgia only experienced tropical storm conditions with sustained wind speeds around 35–55 mph with higher gusts up to 80 mph along coastal areas and the St. Johns River basin, with much weaker winds inland. Strong winds and flooding rainfall, as well as 4–7 ft storm surge impacted much of coastal northeast Florida and portions of southeast Georgia. Storm total rainfall ranged from near

10 inches in some coastal areas to 2-4 inches farther inland. In Camden County, maximum storm surge and storm tide included a surge of 3.65 ft at the Sea Camp Dock with a peak storm tide of 7 ft relative to the MHHW datum. A storm surge of 1.73 ft was measured at the Satilla Rivier with a total storm tide of 5.11 ft relative to MHHW datum. During the storm, a tree and powerline were blown down at Point Peter Road and the north River Causeway blocking the intersection. Storm total 48-rainfall included 6.34 inches along the Satilla River at US Highway 17.

- September 10, 2017:** Hurricane Irma's eye passed west of the area, with the region on the storm's turbulent east side. Widespread tropical storm force winds with gusts to hurricane force were felt across much of the area. Extensive tree and power line damage occurred from the winds. One of the greatest local impacts exacerbated by Irma's rainfall and storm surge was river flooding. Prior to Irma's arrival, a local nor'easter developed 3 days prior, with strong onshore flow pumping water into the St. Johns River basin. Elevated water levels of 1-2 feet above normal tidal departure were already ongoing for several tidal cycles before Irma's surge and rainfall. The nor'easter also brought heavy rainfall bands, with some areas near the coast realizing 4-6 inches in 24 hours. The region also experienced above average rainfall during the preceding summer months. The St. Johns River basin continued to rise with the combination of trapped tides due to the nor'easter, astronomically high tides heading into the spring tide season, storm surge of up to 5 feet, freshwater rainfall of 7-11 inches, and strong southerly winds pushing water across the basin on the east side of Irma. Coastal infrastructure that was already weakened due to Hurricane Matthew the year prior suffered the most damage from Irma's storm surge. In Camden County specifically, the tide gauge on the Atlantic Coast at Sea Camp Dock on Cumberland Island crested at 6.48 feet. Moderate flooding occurred at that level. The Satilla River at Woodbine crested at 6.85 feet; major flooding occurred at that level.
- November 10, 2022:** Hurricane Nicole approached the SE FL Atlantic Coast and made landfall as a Category 1 near Vero Beach during the pre-dawn hours of Thursday, November 10th. Strong high pressure dominated NNE of the region ahead of Nicole on Wednesday, November 9th, which created strong onshore flow and gusty winds of 35-50 mph in a local 'nor'easter' type of event. This strong onshore flow combined with high astronomical tides 'charged' inland estuaries including the St. Johns River basin ahead of storm surge from Hurricane Nicole. Winds and ocean surge increased through Wednesday night with the peak of the storm surge along the local Atlantic Coast Thursday morning around high tide, then the surge peak down the St. Johns River through high tide Thursday afternoon. After landfall, Nicole weakened to a tropical storm as the center track WNW across central FL through the day Thursday then began a more northward turn across the central FL panhandle into Thursday night. The main local impacts from Nicole were storm surge inundation as well as tropical storm force wind damage.
- September 9, 2024:** Hurricane Helene made landfall as a category 4 with peak winds of near 140 mph in the Florida Big Bend just east of the Aucilla River Entrance in Taylor County, late Thursday evening September 26, 2024. Helene's main impact to southeast Georgia and

northeast Florida was wind damage as it tracked quickly north-northeast. The very powerful hurricane and the forward motion produced a wide swath of wind damage across the forecast area with peak wind gusts 55 to 75 mph across the eastern half of the area, and western zones up to 75 to 100 mph from the Suwannee Valley area northward through interior southeast GA. The max wind gust of 100 mph was measured at the Alma GA ASOS in the early morning hours of Friday September 27th. Given the strength of these winds, widespread power outages, structure damage and downed or uprooted trees occurred across inland southeast GA and portions of northeast FL. At least 1 tornado occurred, which was in Coffee county. Maximum rainfall amounts of 3 to 5 inches were located over western half of the area.

In addition to wind impacts, Camden County is vulnerable to damage from storm surge flooding caused by hurricanes.

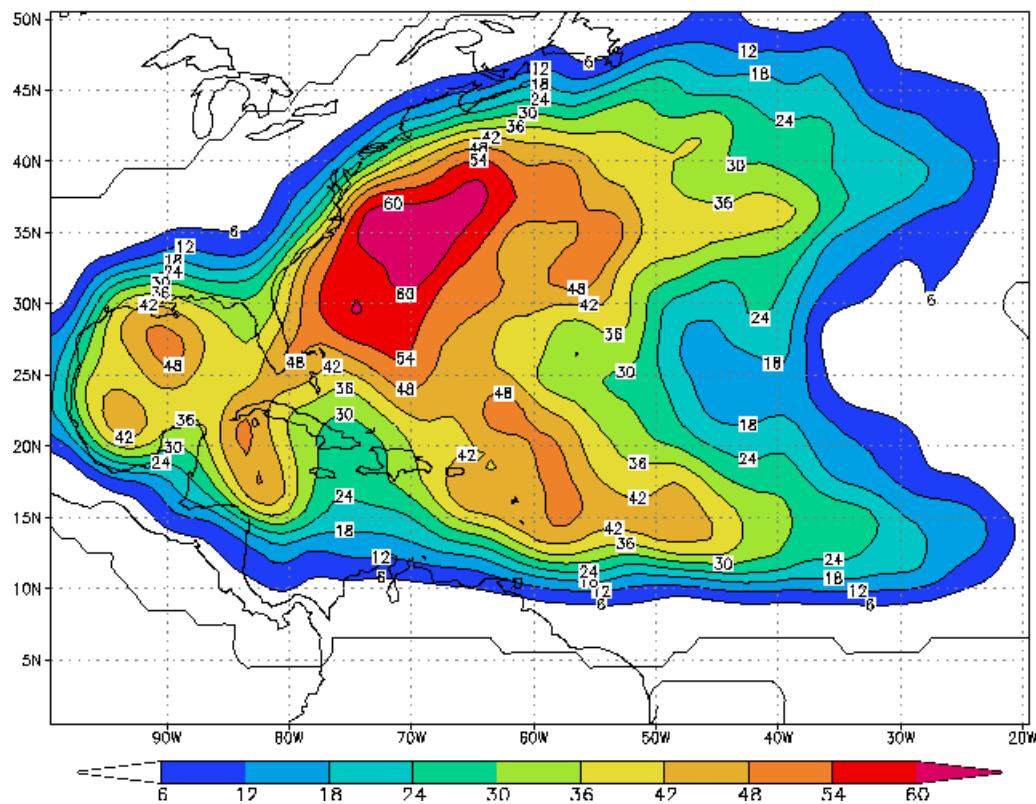
2.6.6.5 Probability of Future Occurrence

In the 20-year period from 2004 to 2024, 14 hurricanes and tropical storms have impacted Camden County, which equates to a 70 percent annual probability of hurricane or tropical storm force winds impacting the planning area in any given year. This probability does not account for impacts from hurricane rains or storm surge, which may also be severe. The probability of a hurricane or tropical storm impacting Camden County is likely.

Probability: 3 – Likely

Figure 2-30 shows, for any particular location, the chance of a hurricane or tropical storm affecting the area sometime during the Atlantic hurricane season. The figure was created by the NOAA Hurricane Research Division, using data from 1944 to 1999. The figure shows the number of times a storm or hurricane was located within approximately 100 miles (165 kilometers) of a given spot in the Atlantic basin.

Figure 2-30. Empirical probability of a named hurricane or tropical storm (NOAA)



Georgia's 100 miles of coastland is shaped in a way that helps hide it from the direct hit of most storms. Direct hits do happen; however, they are less frequent than its coastal neighbors, Florida and North Carolina. The state is still vulnerable to the impacts of hurricanes and tropical storms as detailed in this section. Substantial hurricane damage is typically most likely to be expected in the easternmost counties of the State; however, hurricane and tropical storm-force winds have significantly impacted areas far inland.

2.6.6.6 Climate Change

Camden County's coastal location makes it a prime target for hurricane landfalls and changing climate and weather conditions may increase the number and frequency of future hurricane events. Hurricanes and other coastal storms may result in increased flooding, injuries, deaths, and extreme property loss. According to the US Government Accountability Office, national storm losses from changing frequency and intensity of storms is projected to increase anywhere from \$4 to 6 billion in the near future.

According to NOAA, weather extremes will likely cause more frequent, stronger storms in the future due to rising surface temperatures. NOAA models predict that while there may be less frequent, low-category storm events (tropical storms, Category 1 hurricanes), there will be more, high-category storm events (Category 4 and 5 hurricanes) in the future. This means that there may be fewer hurricanes overall in any given year, but when hurricanes do form, it is more likely that they will become large storms that can create massive damage.

2.6.6.7 Vulnerability Assessment

People

The very young, the elderly and the handicapped are especially vulnerable to harm from hurricanes. For those who are unable to evacuate for medical reasons, there should be provision to take care of special-needs patients and those in hospitals and nursing homes. Many of these patients are either oxygen-dependent, insulin-dependent, or in need of intensive medical care. There is a need to provide ongoing treatment for these vulnerable citizens, either on the coast or by air evacuation to upland hospitals. The stress from disasters such as a hurricane can result in immediate and long-term physical and emotional health problems among victims.

Individuals in mobile homes are more vulnerable to hurricane winds, especially if their unit does not have tie downs and other wind safety measures. According to the 2019 to 2023 5-year estimate from the American Community Survey (ACS), Camden County has 2,382 housing units classified as mobile homes. Table 2-37 below includes data by jurisdiction. Communities within Camden County with more mobile homes may face more severe impacts from hurricane events as a result.

Table 2-37. Mobile home units by jurisdiction (2023) (ACS)

Jurisdiction	Total Housing Units	Mobile Home Units	Mobile Home Units, Percent of Total
Kingsland	7,252	502	6.9
St. Marys	8,258	360	4.4
Woodbine	584	50	8.6
Camden County	23,192	2,382	10.3

Property

Hurricanes can cause catastrophic damage to coastlines and several hundred miles inland. Hurricanes can produce winds exceeding 157 mph as well as tornadoes and microbursts. Additionally, hurricanes often bring intense rainfall that can result in flash flooding. Floods and flying debris from the excessive winds are often the deadly and most destructive results of hurricanes.

Hazus was used to determine hurricane risk based on a probabilistic wind damage risk assessment modeled a Category 2 storm with maximum winds of 99 mph (1-percent-annual-chance event). This analysis produced estimates of the likelihood of varying levels of damage as well as building-related economic losses. Note that Hazus only assesses hurricane wind and does not account for any other hazards associated with hurricane.

Figure 2-31 maps the wind speeds modeled for the event throughout the County. Figure 2-32 maps the building loss ratios determined based on the modeled storm.

Figure 2-31. Hurricane wind speeds for the modeled Category 2 storm (CRC)

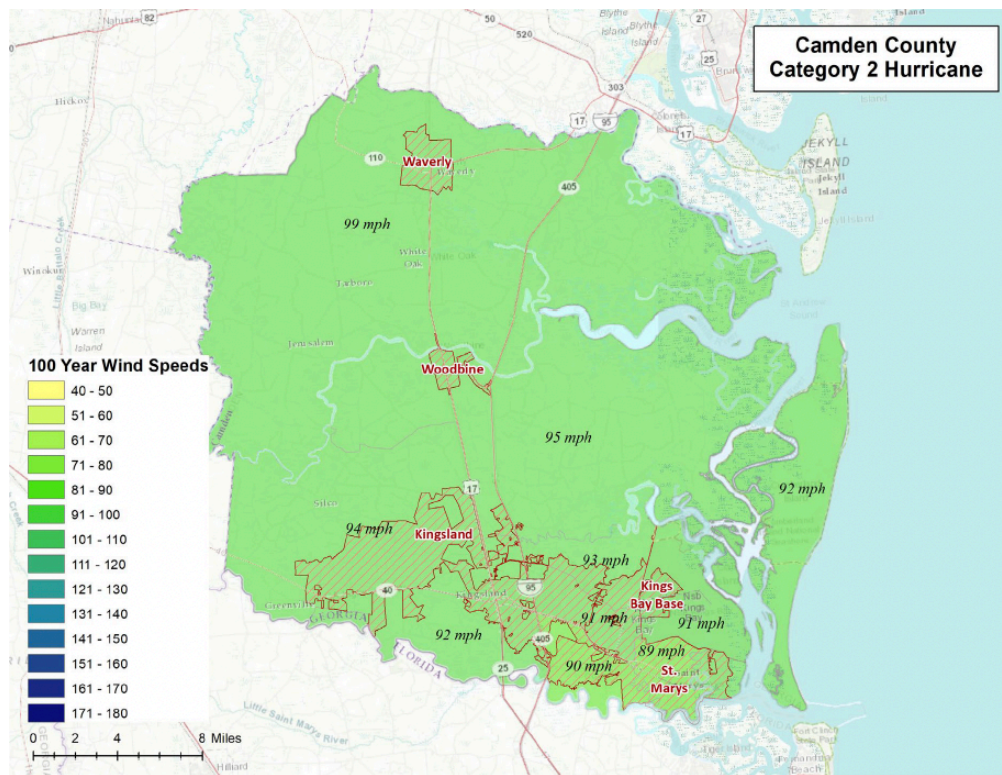
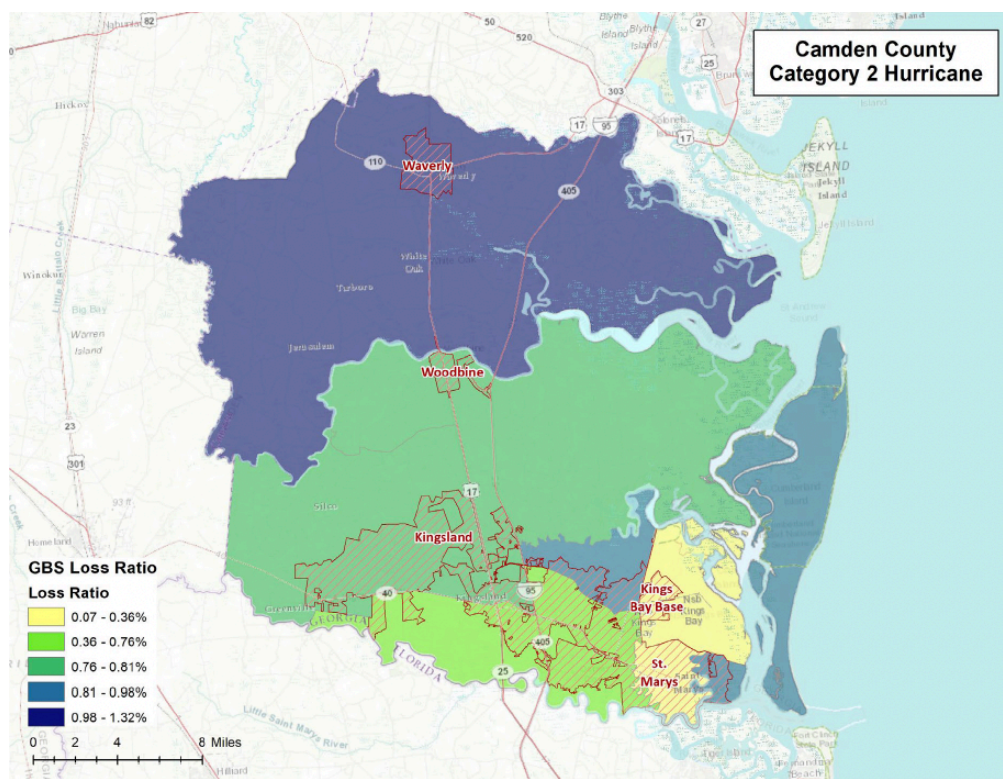


Figure 2-32. Building loss ratios for the modeled Category 2 storm (CRC)



The analysis estimates 1,838 damaged buildings equating to \$42,169,330 in building damages for the Category 2 hurricane wind event with a total economic loss of \$61,633,870, which equates to a loss ratio of 0.73 percent. However, damages from an actual hurricane event would likely also involve flood impacts that would raise the damage total. Therefore, even a 100-year hurricane event may cause more serious damages than what is reported here from Hazus.

Given equal vulnerability to hurricane winds across all of Camden County, all critical facilities are considered to be at risk. Certain buildings may perform better than others based on their age and construction, among other factors. Depending on their locations, critical facilities may also be at risk to storm surge flooding. The Hazus analysis found no essential facilities moderately or completely damaged by the modeled storm, but all 38 essential facilities would experience a loss of function for at least 1 day.

Hazus estimates the total amount of debris that will be generated by a hurricane, breaking the debris down into four general categories: Brick/Wood, Reinforce Concrete/Steel, Eligible Tree Debris, and Other Tree Debris. Table 2-38 summarizes debris amounts for the modeled storm event.

Table 2-38. Estimated debris generation for Category 2 storm (CRC)

Tree Debris		Brick/Wood	Concrete/Steel	Total
Eligible	Other			
24,353	332,218	6,177	0	362,748

Environment

Aquatic species within the lake will either be displaced or destroyed. The velocity of the flood wave will likely destroy riparian and instream vegetation and destroy wetland function. The flood wave will like cause erosion within and adjacent to the stream. Deposition of eroded deposits may choke instream habitat or disrupt riparian areas. Sediments within the lake bottom and any low oxygen water from within the lake will be dispersed, potentially causing fish kills or releasing heavy metals found in the lake sediment layers.

Consequence Analysis

Table 2-39. Hurricane and tropical storm consequence analysis

Category	Consequences
Impact on the Public	Impacts can include injury or death, loss of property, outbreak of diseases, mental trauma and loss of livelihoods. Flooding can displace people from their homes. Water can become polluted, leading to the spread of diseases. Residential, commercial, and public buildings, as well as critical infrastructure such as transportation, water, energy, and communication systems may be damaged or destroyed, resulting in cascading impacts to the public.
Impact on Responders	Flooding, as well as downed trees and powerlines can limit vehicle access, posing a threat for first responder safety and slowing response times.
Continuity of Operations (including delivery of services)	Damage to facilities from flooding or wind may require temporary relocation of some operations. Operations may be interrupted by power outages. Disruption of roads and/or utilities may postpone delivery of some services.
Property, Facilities, and Infrastructure	Structural damage to buildings may occur; damage to glass windows and doors by high winds and debris; loss of roof coverings, partial wall collapses, and other damages requiring significant repairs are possible in a major (category 3 to 5) hurricane.
Impact of Environment	Hurricanes can devastate wooded ecosystems and forest canopies, and they can change habitats so drastically that the indigenous animal

	populations suffer as a result. High winds can strip fruits, seeds and berries from bushes and trees. Secondary impacts such as damage to pipelines can lead to hazardous waste spills.
Economic Conditions	The local economy can be adversely affected, possibly for an extended period of time, depending on damages. Loss of profit from temporary business closures and supply chain delays.
Public Confidence in Governance	Likely to impact public confidence due to possibility of major event requiring substantial response and long-term recovery effort.

2.6.6.8 Changes in Development

While increased development will not impact the incidence of hurricane wind, it will lead to more exposure, which in turn may increase risk. This is especially true for mobile home development, which is more at risk to wind. Like flooding, increased development will likely lead to increased impervious surfaces, which could potentially increase the impacts and patterns of storm surge.

2.6.6.9 Multi-Jurisdictional Considerations

Aspects of hurricane risk, particularly related to wind, do not vary significantly by jurisdiction.

2.6.6.10 Problem Statements

- Unincorporated Camden County and Woodbine are potentially more vulnerable to hurricane wind due to the greater percentage of mobile homes. Providing targeted outreach on the importance of tie-downs and enforcing the installation of tie-downs for mobile home units could mitigate this vulnerability.
- Evacuation and reentry policies, especially in the event flood from storm surge or stormwater blocks necessary roadways, remains a concern.
- Related Hazards: Flood, Severe Weather, Tornado

2.6.7 Sea Level Rise

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Sea Level Rise	Likely	Critical	Large	More than 24 hours	More than 1 week	3.1

2.6.7.1 Hazard Background

Sea level rise is the increase in sea levels as a result of atmospheric and oceanic warming which causes water expansion as well as ice melt from ice sheets and glaciers. Sea level rise is a result of global climate change. Climate change may be due to natural internal processes or external forces such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of the atmosphere or in land use. Climate change is a natural

occurrence in which the earth has warmed and cooled periodically over geologic time. The recent and rapid warming of the earth over the past century has been cause for concern, as this warming is very likely due to the accumulation of human-caused greenhouse gases, such as carbon dioxide, in the atmosphere. This warming is occurring almost everywhere in the world which suggests a global cause rather than changes in localized weather patterns. In 2018, the Intergovernmental Panel on Climate Change (IPCC) reported with high confidence that warming due to such emissions will cause long-term changes in the climate system such as sea level rise and its associated impacts.

There are generally two separate mechanics involved in global sea level rise. The first is directly attributed to global temperature increases, which warm the oceans waters and cause them to expand. The second is attributed to the melting of ice over land which simply adds water to the oceans. Global sea level rise is likely caused by a combination of these two mechanics and can be exasperated on the local level by factors such as erosion and subsidence. The rate of sea level rise has varied throughout geologic history, and studies have shown that global temperature and sea level are strongly correlated.

Due to sea-level rise projected throughout the 21st century and beyond, coastal systems and low-lying areas will increasingly experience adverse impacts such as submergence, coastal flooding, and coastal erosion. The population and assets projected to be exposed to coastal risks as well as human pressures on coastal ecosystems will increase significantly in the coming decades due to population growth, economic development, and urbanization. Coastal Camden County is particularly vulnerable to the effects of sea level rise due to its coastal location, subtropical environment, low topography, and tourism economy.

Warning Time: 1 – More than 24 hours

Duration: 4 – More than one week

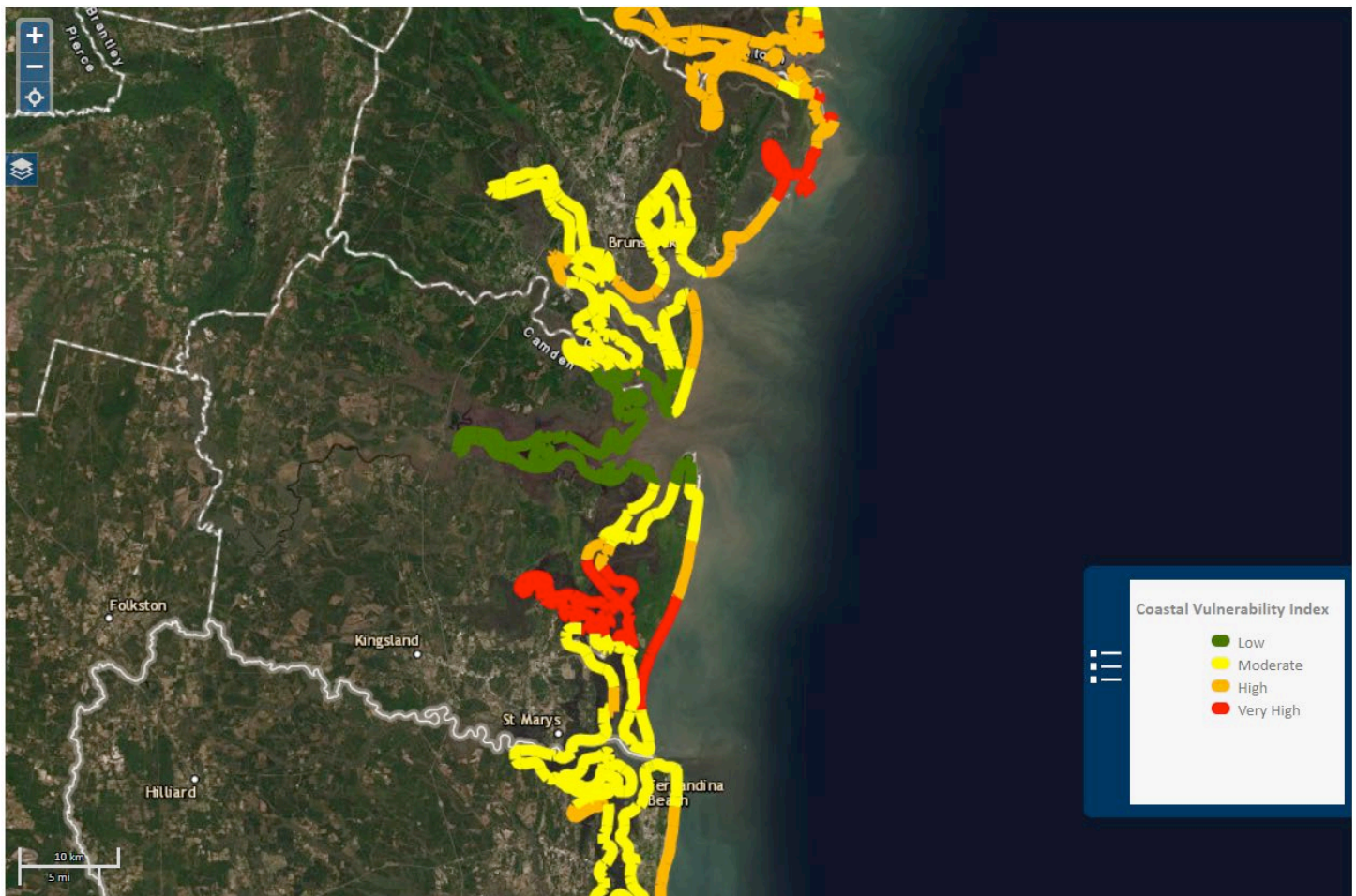
2.6.7.2 Location

Sea level rise can occur anywhere along the coast and along major waterways in Camden County. The Coastal Vulnerability Index (CVI), developed by USGS, provides a preliminary overview of the relative susceptibility of the United States coast to sea level rise. The CVI is based on geomorphology, regional coastal slope, tide range, wave height, relative sea level rise, and shoreline erosion and acceleration rates. For each study area, each variable is scored on a 1 to 5 scale based on defined parameters, where “1” indicates low contribution to coastal vulnerability and “5” indicates high contribution to vulnerability. These scores are then aggregated into a single index through a mathematical formula. The resulting index gives an overview of where physical changes may occur due to sea-level rise.

Figure 2-33 shows the CVI for Camden County. Central Cumberland Island, on the Atlantic Coastline and the Cumberland Sound, and inland along the Crooked River are the areas most

vulnerable to sea level rise in the region with very high ratings. Shorelines along the remainder of the Atlantic Coast, along the St. Marys River, which creates the border between Georgia and Florida, and the remainder of the Cumberland Sound coastline are all rated moderate to high vulnerability. The northern border of the County and inland along the Satilla river are rated as low vulnerability.

Figure 2-33. Coastal vulnerability index (USGS)



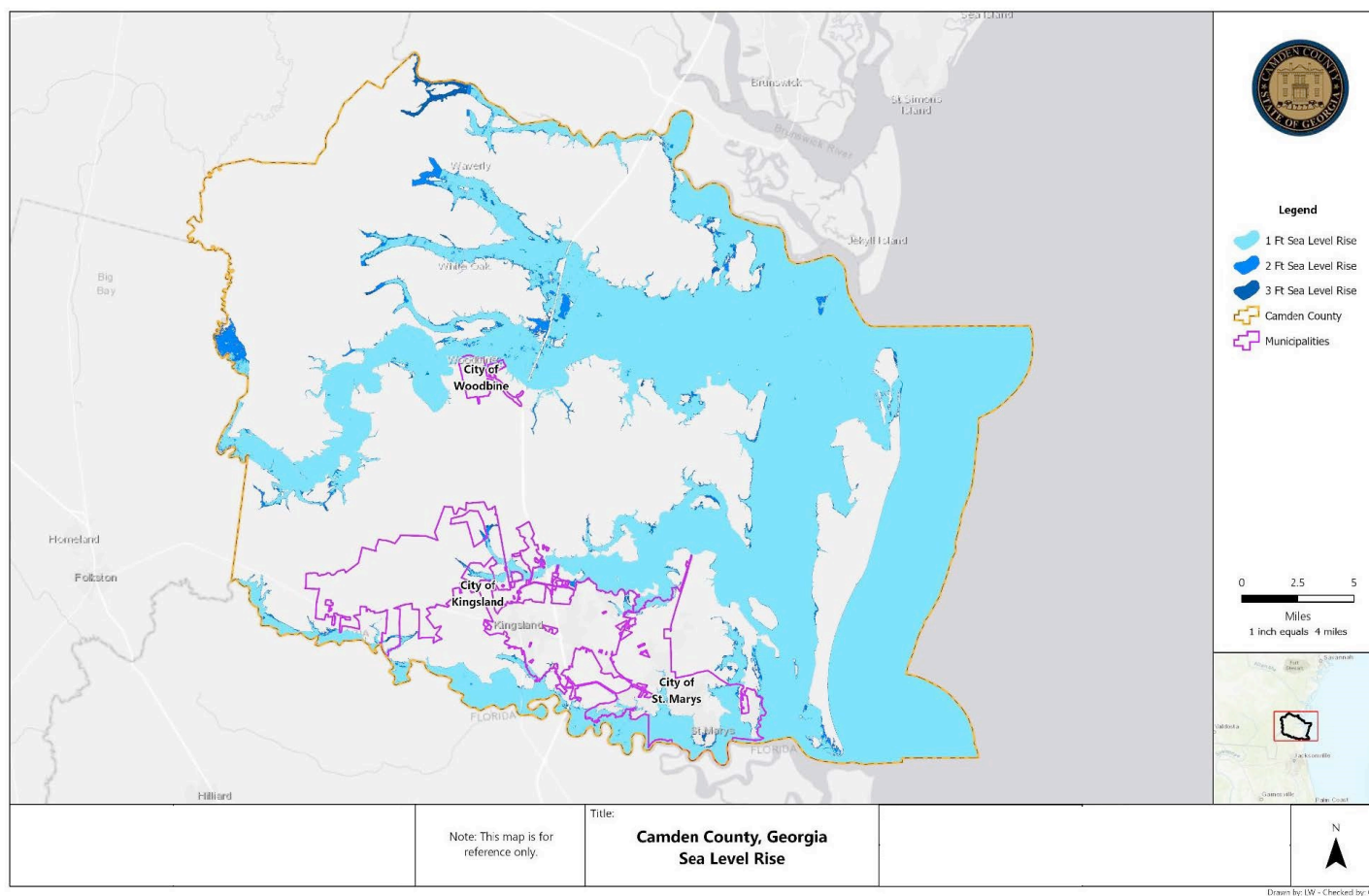
2.6.7.3 Extent

Sea level rise is measured by the number of feet of relative rise and the areas that such rise would inundate. The estimated impacts of 1-foot, 2-foot, and 3-foot, sea level rise are shown in

Figure 2-34. The sea level rise estimate maps show inundation above mean higher high water (the average of each day's higher high tide line). Sea level rise will likely affect coastal areas, coastal marsh lands as well as land along the Cumberland Sound and the St. Marys, Crooked, and Satilla rivers and their tributaries. Additionally, sea level rise will likely increase future risk of flooding from the other flood hazards discussed in this Plan, as more land will have a lower elevation relative to sea level. For example, with much of the coastal areas and wetlands

inundated, inland areas will lose their natural protection and may become susceptible to coastal flooding with velocity wave action.

Figure 2-34. Estimated impact of 1-foot, 2-foot, and 3-foot sea level rise the County (NOAA)



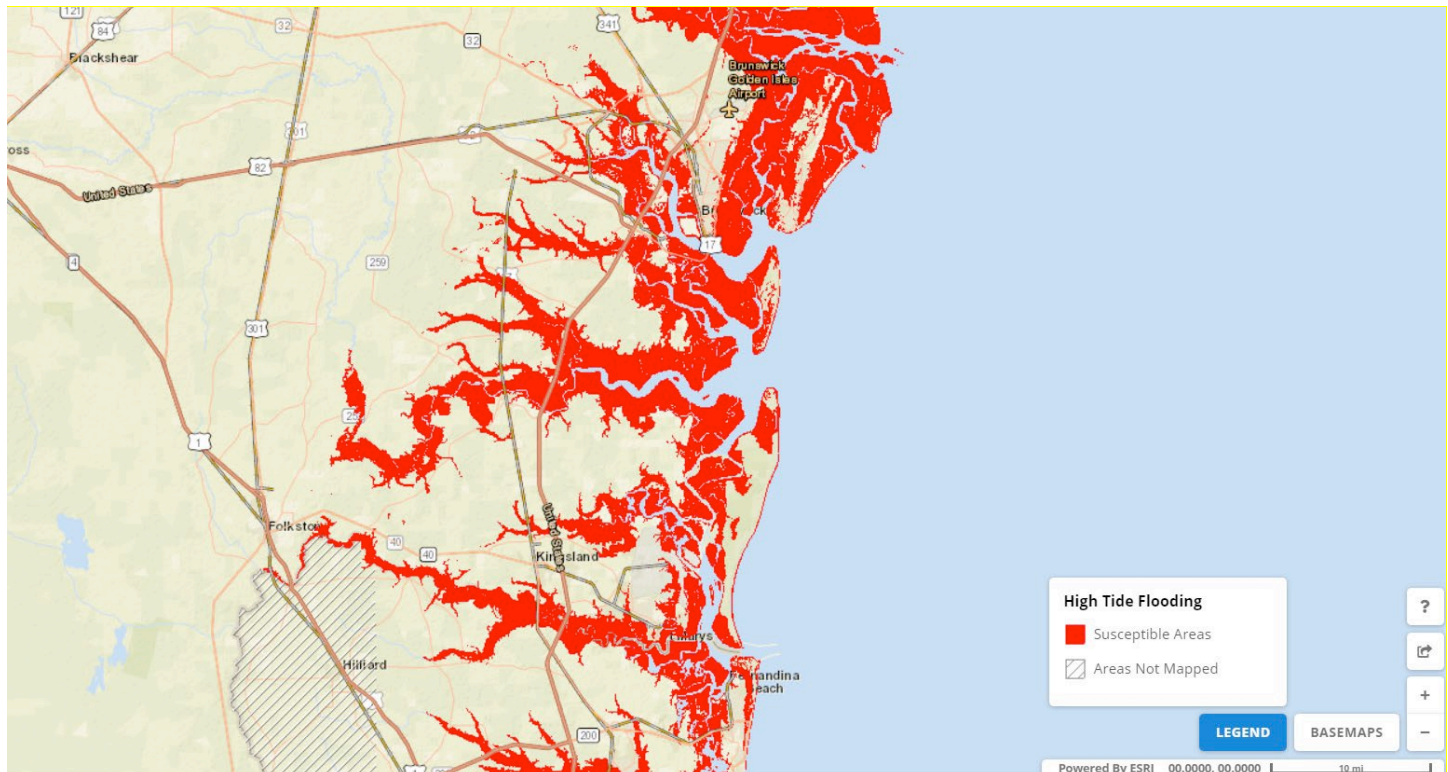
Sea level rise is a slow onset hazard, and because the full extent of anticipated sea level rise has not yet been realized, the effects of sea level rise have not yet been fully felt. However, sea level rise has already begun to cause “clear sky” or “nuisance” flooding, which is brought on by high tides rather than storm or rain events. Tidal flooding causes temporary inundation of low-lying areas during high-tide events. While tidal flooding is not caused by sea level rise itself, a 2015 tidal flooding report published by NOAA notes that tidal flood rates are steadily increasing, and daily highest tides surpass fixed elevations increasingly frequently, due in part to sea level rise. According to NOAA, annual occurrences of high tide flooding have increased 5-fold to 10-fold since the 1960s. Sea level rise may cause flooding to occur more frequently and last for longer durations of time. According to Climate Central, the Fernandina Beach water level station, 20 miles from Camden County, experienced 13 total coastal flood days between 2000 through 2025. Of these days, 100 percent would not have occurred without climate change and the resulting sea level rise. As sea level continues to rise, tidal flooding will continue to occur more frequently and

over a greater inland area. Figure 2-35 shows areas in Camden County that are susceptible to high tide flooding.

Impact: 3 – Critical

Spatial Extent: 3 – Moderate

Figure 2-35. Areas susceptible to high tide flooding (NOAA)



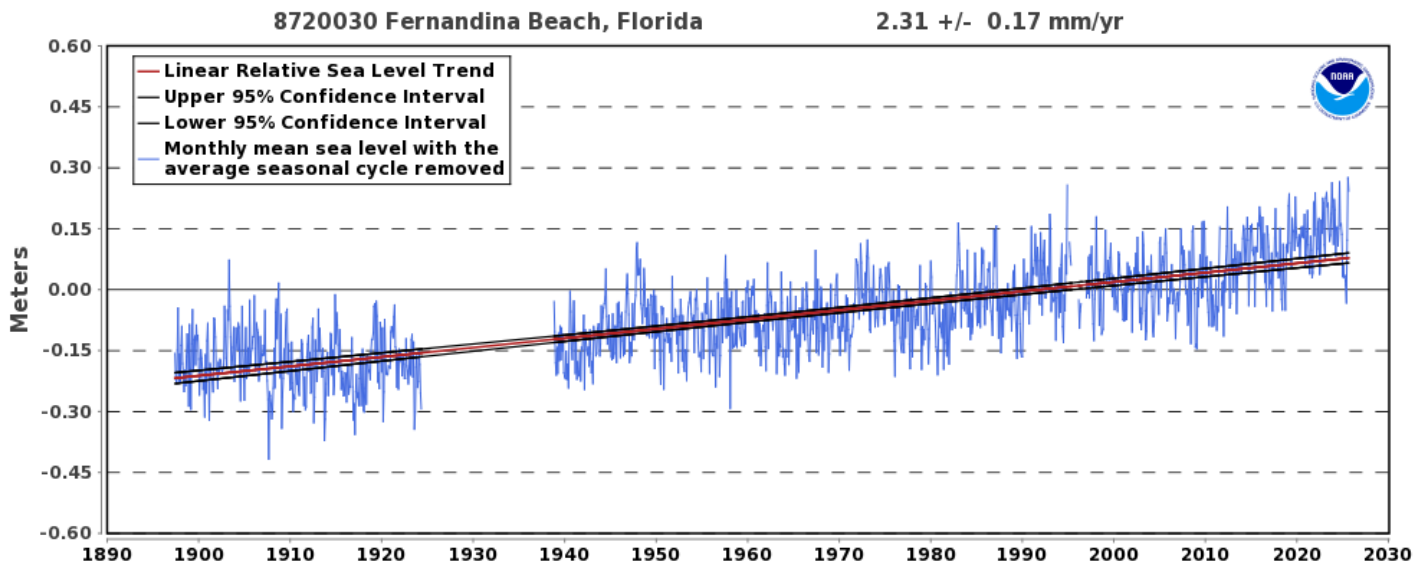
2.6.7.4 Historical Occurrences

Historic trends in local mean sea level are best determined from tide gauge records. The Center for Operational Oceanographic Products and Services (CO-OPS) has been measuring sea level for over 150 years, with tide stations operating on all US coasts. Changes in mean sea level, either a sea level rise or sea level fall, have been computed at 128 long-term water level stations using a minimum span of 30 years of observations at each location. These measurements have been averaged by month to remove the effect of higher frequency phenomena (e.g. storm surge) in order to compute an accurate linear sea level trend.

Figure 2-36 shows the monthly mean sea level at NOAA's Fernandina Beach, FL station, located just across the Florida border from the City of St. Marys. These values are shown without the regular seasonal fluctuations due to coastal ocean temperatures, salinities, winds, atmospheric pressures, and ocean currents. The long-term linear trend is also shown, including its 95 percent confidence interval. The plotted values are relative to the most recent mean sea level datum established by CO-OPS. The relative sea level trend is 2.31 millimeters per year with a 95 percent

confidence interval of ± 0.17 millimeters per year based on monthly mean sea level data from 1897 to 2024 which is equivalent to a change of 0.76 feet in 100 years.

Figure 2-36. Mean sea level trends for Fernandina Beach, Florida (NOAA)



2.6.7.5 Probability of Future Occurrence

The US Army Corps of Engineers (USACE) has provided guidance to evaluate designs over a project's life cycle in order to account for the rise of global mean sea level. The USACE guidance is based on original guidance by the National Research Council (NRC). The 1987 NRC report recommended that feasibility studies for coastal projects consider the high probability of accelerating global mean sea level rise and provided three different acceleration scenarios through the year 2100. The NRC committee provided an equation for calculating sea level rise and recommended "projections be updated approximately every decade to incorporate additional data."

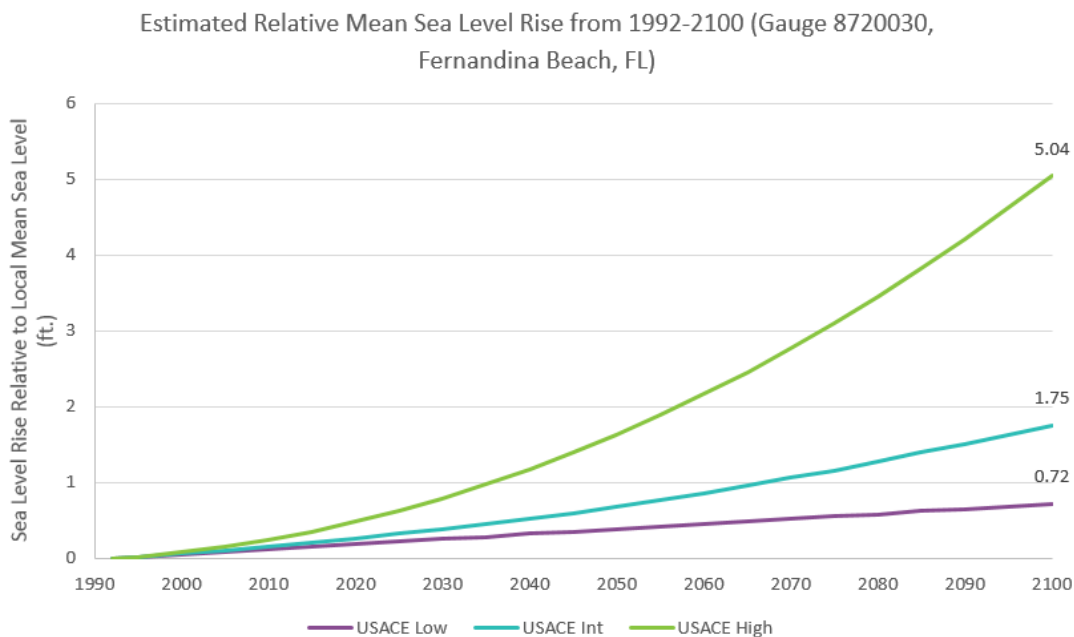
The USACE guidance adjusted the NRC equation to include the historic global mean sea level change rate of 1.7 millimeters per year as presented by the IPCC and the start date of 1992 (which corresponds to the midpoint of the National Tidal Datum Epoch of 1983 to 2001), instead of 1986 (the start date for the NRC's equation). These changes resulted in values for the variable b being equal to $2.71\text{E-}5$ for modified NRC Curve I, $7.00\text{E-}5$ for modified NRC Curve II, and $1.13\text{E-}4$ for modified NRC Curve III. The resulting equation is as follows:

$$E(t) = 0.0017\text{m/yr} \cdot t + bt^2$$

In the above equation, t represents years, b is a constant, and $E(t)$ is the relative sea-level change, in meters, as a function of t . The three updated global mean sea level rise acceleration scenarios are depicted in Figure 2-37.

Based on the USACE guidance and data from the Fernandina Beach, Florida NOAA gauge, a projected sea level rise to be used for future planning decisions can be calculated. Figure 2-37 shows sea level rise projections for three scenarios from the USACE (relative to Local Mean Sea Level). The USACE low curve uses the historic rate of sea level change as the rate, the USACE intermediate curve uses the NRC Curve I modified by recent IPCC low emissions projections and the local rate of vertical land movement, and the USACE high curve uses the NRC Curve II modified by recent IPCC higher emissions projections and the local rate of vertical land movement. Given that the USACE low curve does not consider further climate change, the USACE intermediate and high curves are more likely. However, which of the curves is the more likely scenario depends on future emissions levels. Based on the more conservative estimate of the intermediate curve, Camden County should plan for at least 0.68 feet of sea level rise from 1992 local mean sea levels by 2050.

Figure 2-37. Sea level rise projections for Camden County (1992-2100) (USACE)



Probability: 3 – Likely

2.6.7.6 Climate Change

Sea level rise is a direct result of global climate change. Estimates for sea level rise are based on projected greenhouse gas emission levels and their associated impacts on global temperature change. Most sea level rise models do not fully account for ice melt, and therefore actual sea level rise may be significantly higher than current estimates suggest. As such, these projections contain substantial variability but are nonetheless important to consider when planning for coastal areas because they indicate where flooding can be expected should actual sea level rise meet estimated levels.

2.6.7.7 Vulnerability Assessment

Methodologies and Assumptions

Vulnerability to sea level rise was assessed using Climate Central's Surging Seas Risk Finder using estimated sea level rise of 3 feet above mean higher high water. This estimate was chosen as it is in between the USACE intermediate (1.75) and USACE high (5.04) projections for local sea level rise by 2100. Risk is estimated using sea level rise projections as well as data from the NOAA water level station at Fernandina Beach, Florida, which is approximately 20 miles from Camden County. Note that this assessment assumes future storms will be similar in magnitude to current storms, isolating impacts of sea level rise. Additional assessment is based on past occurrences nationally and internationally as well as data from NOAA, USGS, IPCC, and other sources.

People

Sea level rise will lead to increased flooding and the associated harms to humans, such as illness, or injury or death from driving into flooded waters and drowning. Though sea level rise impacts will likely affect the entire County, people living along the coast will be most impacted, particularly burdening lower income, elderly, minority, or otherwise disproportionately vulnerable individuals. Figure 2-38 illustrates Camden County's social vulnerability to sea level rise.

As reported by Climate Central, approximately 1,799 people in Camden County currently live in areas expected to be impacted by 3 feet of sea level rise. Note: this data, based on the 2010 Census, is the most recent available. Per this assessment, none of the population at risk to 3 feet of sea level rise are categorized as high social vulnerability. Table 2-40 below further breaks this number down into the social vulnerability categories in the map above and Table 2-41 by jurisdiction.

Figure 2-38. Social vulnerability to sea level rise (Climate Central)

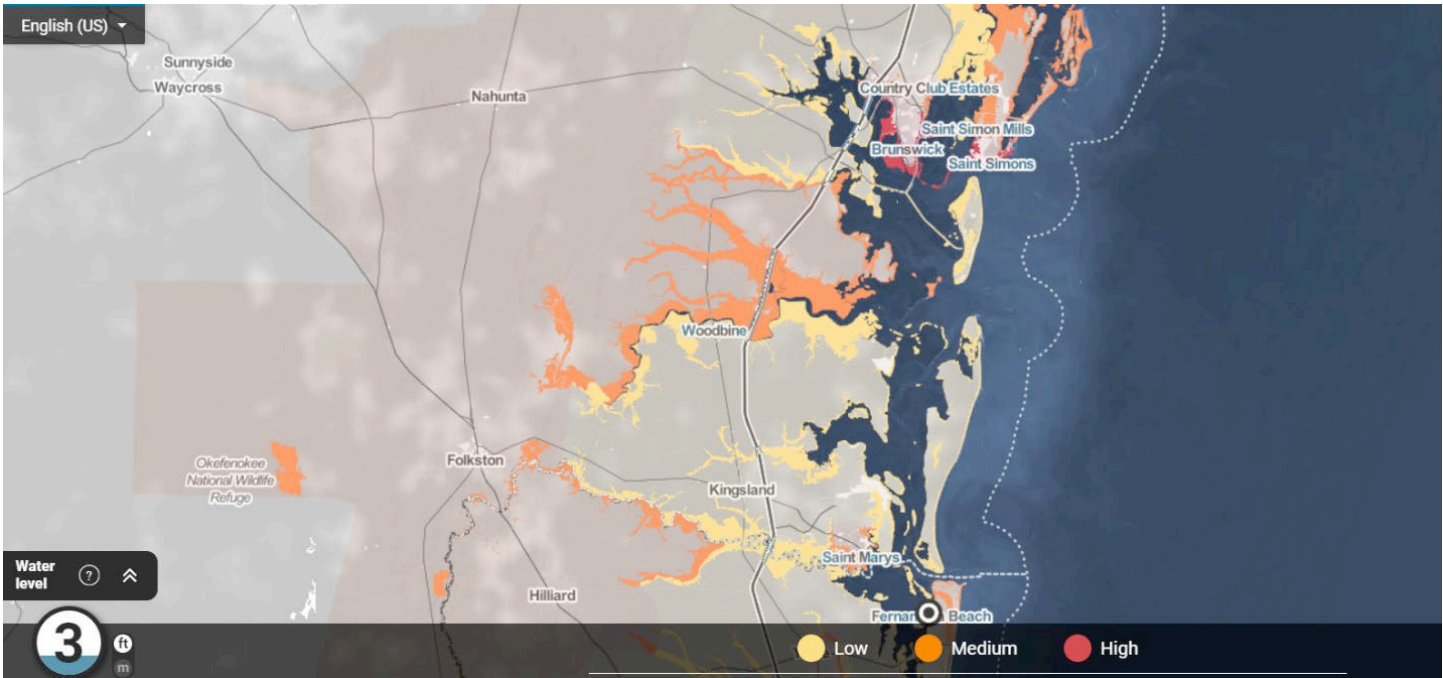


Table 2-40. Population at risk to sea level rise by social vulnerability category (Climate Central)

Social Vulnerability Category	Population at Risk	Percent of Total Population at Risk
Low Social Vulnerability	1,239	68.9%
Medium Social Vulnerability	560	31.1%
High Social Vulnerability	--	--
Total	1,799	--

Table 2-41. Population at risk to sea level rise by jurisdiction (Climate Central)

Jurisdiction	Population at Risk	Percent of Total Population at Risk
Kingsland	97	5.4%
St. Marys	836	46.5%
Woodbine	26	1.4%
Unincorporated Camden County	840	46.7%
Total	1,799	--

Property

The increased number of flood days and general encroachment of shoreline associated with sea level rise will likely cause property damage, although it is unclear exactly what this will look like. Homes, businesses and vehicles will be susceptible to increased water damage. Homes within the areas that may be inundated will potentially be uninhabitable. Additionally, rising seas, and associated increased flood days, can overwhelm and undermine the effectiveness of stormwater drainage system and other infrastructure, such as roads and bridges.

Environment

Sea level rise can have numerous negative consequences on the environment including increased erosion and all impacts associated with that. Another concern is the inundation of normally dry land, which could lead to the loss of marshes and wetlands and the positive benefits associated with those areas. These areas buffer against waves and storm surge, protect from erosion and even encourage accretion, and provide natural wildlife habitats. Finally, sea level rise may lead to saltwater intrusion as the groundwater table may also rise, potentially leading to contaminated drinking and agriculture water.

Consequence Analysis

Table 2-42. Sea level rise consequence analysis

Category	Consequences
Impact on the Public	Sea Level Rise may cause increased flooding which may lead to illness, injury, or death. Additionally, sea level rise may cause psychological stress from impacts of loss.
Impact on Responders	Sea Level Rise induced flooding may cause increased burden on responders by impacting transportation and emergency response times.
Continuity of Operations (including delivery of services)	As sea levels rise and cause more regular, chronic flooding, continuity of operations, such as delivery of services may be interrupted due to localized disruption of roads, facilities, and/or utilities.
Property, Facilities, and Infrastructure	Sea level rise can cause damage to property as flooding becomes more regular in the short term and as sea levels continue to rise in the long term. SLR can also compromise infrastructure such as drainage systems and roads.
Impact of Environment	Sea level rise can lead to increased erosion, salt water intrusion, and inundation of wetlands and previous dry land.
Economic Conditions	Sea level rise can severely disrupt the economy, particularly in a region that relies so heavily on tourism.
Public Confidence in Governance	Sea level rise is unlikely to impact public confidence.

2.6.7.8 Changes in Development

New development at a local scale will not necessarily impact the rate of sea level rise. Increased development in potentially inundated areas, however, will increase vulnerability. Future development plans guiding where the County will grow currently consider sea level rise under the umbrella of coastal hazards necessitating the preservation of natural resources. Such plans must consider sea level rise and areas of the County that will be inundated by sea level rise.

2.6.7.9 Multi-Jurisdictional Considerations

The following table summarizes sea level rise risk by jurisdiction. Most jurisdictions face at least some risk from sea level rise, but coastal and waterfront areas have greater exposure. Spatial extent was varied by jurisdiction depending on the area exposed to sea level rise impacts.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
City of Kingsland	2	3	2	1	4	2.4
City of St. Marys	3	3	3	1	4	2.9
City of Woodbine	3	3	3	1	4	2.9
Unincorporated Camden County	3	3	3	1	4	2.9

2.6.7.10 Problem Statements

- Residential property is most likely to be affected by sea level rise, which has implications on a local economy, both permanent and season residential units may no longer be livable. Education and outreach programs could increase residential and property owner buy-in on and implementation of mitigation options on an individual property scale.
- Instances of coastal flooding and impacts due to storm surge are likely to increase as sea levels continue to rise; further assessment of local climate change impacts and incorporation into all local planning efforts can ensure Camden County is prepared; The City of St. Marys developed the Flood Resilience Project in 2017.

2.6.8 Severe Weather (thunderstorm wind, lightning, hail)

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Thunderstorm Wind	Highly Likely	Limited	Large	Less than 6 hours	Less than 6 hours	3.0
Lightning	Highly Likely	Minor	Negligible	Less than 6 hours	Less than 6 hours	2.1
Hail	Highly Likely	Minor	Small	Less than 6 hours	Less than 6 hours	2.3

2.6.8.1 Hazard Background

Thunderstorm Winds

Thunderstorms result from the rapid upward movement of warm, moist air. They can occur inside warm, moist air masses and at fronts. As the warm, moist air moves upward, it cools, condenses, and forms cumulonimbus clouds that can reach heights of greater than 35,000 feet. As the rising air reaches its dew point, water droplets and ice form and begin falling the long distance through

the clouds towards earth's surface. As the droplets fall, they collide with other droplets and become larger. The falling droplets create a downdraft of air that spreads out at earth's surface and causes strong winds associated with thunderstorms.

There are four ways in which thunderstorms can organize: single cell, multi-cell cluster, multi-cell lines (squall lines), and supercells. Even though supercell thunderstorms are most frequently associated with severe weather phenomena, thunderstorms most frequently organize into clusters or lines. Warm, humid conditions are favorable for the development of thunderstorms. The average single cell thunderstorm is approximately 15 miles in diameter and lasts less than 30 minutes at a single location. However, thunderstorms, especially when organized into clusters or lines, can travel intact for distances exceeding 600 miles.

Thunderstorms are responsible for the development and formation of many severe weather phenomena, posing great hazards to the population and landscape. Damage that results from thunderstorms is mainly inflicted by downburst winds, large hailstones, and flash flooding caused by heavy precipitation. Stronger thunderstorms are capable of producing tornadoes and waterspouts. While conditions for thunderstorm conditions may be anticipated within a few hours, severe conditions are difficult to predict. Regardless of severity, storms generally pass within a few hours.

Warning Time: 4 – Less than 6 hours

Duration: 1 – Less than 6 hours

Lightning

Lightning is a sudden electrical discharge released from the atmosphere that follows a course from cloud to ground, cloud to cloud, or cloud to surrounding air, with light illuminating its path. Lightning's unpredictable nature causes it to be one of the most feared weather elements.

All thunderstorms produce lightning, which often strikes outside of the area where it is raining and is known to fall more than 10 miles away from the rainfall area. When lightning strikes, electricity shoots through the air and causes vibrations creating the sound of thunder. A bolt of lightning can reach temperatures approaching 50,000°F. Nationwide, lightning kills 75 to 100 people each year. Lightning strikes can also start building fires and wildland fires, and damage electrical systems and equipment.

The watch/warning time for a given storm is usually a few hours. There is no warning time for any given lightning strike as they are instantaneous.

Warning Time: 4 – Less than 6 hours

Duration: 1 – Less than 6 hours

Hail

As defined by NOAA, hail is precipitation that is formed when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere causing them to freeze. The raindrops form into small frozen droplets and then continue to grow as they come into contact with super-cooled water which will freeze on contact with the frozen rain droplet. This frozen rain droplet can continue to grow and form hail. As long as the updraft forces can support or suspend the weight of the hailstone, hail can continue to grow.

At the time when the updraft can no longer support the hailstone, it will fall to the earth. For example, a ¼" diameter or pea sized hail requires updrafts of 24 mph, while a 2 ¾" diameter or baseball sized hail requires an updraft of 81 mph. The largest hailstone recorded in the United States was found in Vivian, South Dakota on July 23, 2010; it measured eight inches in diameter, almost the size of a soccer ball. While soccer-ball-sized hail is the exception, even small pea sized hail can cause damage.

Hailstorms in Georgia cause damage to property, crops, and the environment, and kill and injure livestock. In the United States, hail causes more than \$1 billion in damage to property and crops each year. Much of the damage inflicted by hail is to crops. Even relatively small hail can shred plants to ribbons in a matter of minutes. Vehicles, roofs of buildings and homes, and landscaping are the other things most commonly damaged by hail. Hail has been known to cause injury to humans; occasionally, these injuries can be fatal. The onset of thunderstorms with hail is generally rapid. However, advancements in meteorological forecasting allow for some warning. Storms usually pass in a few hours.

Warning Time: 4 – Less than 6 hours

Duration: 1 – Less than 6 hours

2.6.8.2 Location

Thunderstorm wind, lightning, and hail events do not have a defined vulnerability zone. The scope of lightning and hail is generally confined to the footprint of its associated thunderstorm.

Thunderstorm Winds

The entirety of Camden County can be affected by severe weather hazards. Thunderstorm wind events can span many miles and travel long distances, covering a significant area in one event. While any given event may not impact the entire planning area, approximately 50 percent of the planning area could be impacted by one event.

Spatial Extent: 4 – Large

Lightning

While the total area vulnerable to a lightning strike corresponds to the footprint of a given

thunderstorm, a specific lightning strike is usually a localized event and occurs randomly. It should be noted that while lightning is most often affiliated with severe thunderstorms, it may also strike outside of heavy rain and might occur as far as 10 miles away from any rainfall. All of Camden County is exposed to lightning.

Spatial Extent: 1 – Negligible

Hail

Hailstorms frequently accompany thunderstorms, so their locations and spatial extents coincide. However, large-scale hail tends to occur in a more localized area within the storm.

Spatial Extent: 2 – Small

2.6.8.3 Extent

Thunderstorm Winds

The magnitude of a thunderstorm event can be defined by the storm's maximum wind speed and its impacts. NCEI divides wind events into several types including High Wind, Strong Wind, Thunderstorm Wind, Tornado and Hurricane. For this severe weather risk assessment, High Wind, Strong Wind and Thunderstorm Wind data was collected. Hurricane Wind and Tornadoes are addressed as individual hazards. The following definitions come from the NCEI Storm Data Preparation document.

- High Wind: Sustained non-convective winds of 40 mph or greater lasting for one hour or longer or winds (sustained or gusts) of 58 mph for any duration on a widespread or localized basis.
- Strong Wind: Non-convective winds gusting less than 58 mph, or sustained winds less than 40 mph, resulting in a fatality, injury, or damage.
- Thunderstorm Wind: Winds, arising from convection (occurring within 30 minutes of lightning being observed or detected), with speeds of at least 58 mph, or winds of any speed (non-severe thunderstorm winds below 58 mph) producing a fatality, injury or damage.

The strongest recorded thunderstorm wind events in the County had estimated wind gusts of approximately 69 mph. An event of such magnitude occurred twice: on March 13, 2003 in the City of St. Marys and again on August 11, 2003 in the City of Kingsland. These events reportedly caused no fatalities, injuries, or damages.

Impact: 2 – Limited

Lightning

Lightning is measured by the Lightning Activity Level (LAL) scale, created by the NWS to define lightning activity into a specific categorical scale. The LAL, shown in Table 2-43, is a common parameter that is part of fire weather forecasts nationwide.

Table 2-43. Lightning Activity Level scale (NWS)

Lightning Activity Level Scale	
LAL 1	No thunderstorms
LAL 2	Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud to ground lightning strikes in a five-minute period
LAL 3	Widely scattered thunderstorms. Light to moderate rain will reach the ground. Lightning is infrequent, 6 to 10 cloud to ground strikes in a five-minute period
LAL 4	Scattered thunderstorms. Moderate rain is commonly produced. Lightning is frequent, 11 to 15 cloud to ground strikes in a five-minute period
LAL 5	Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 cloud to ground strikes in a five-minute period
LAL 6	Dry lightning (same as LAL 3 but without rain). This type of lightning has the potential for extreme fire activity and is normally highlighted in fire weather forecasts with a Red Flag warning

With the right conditions in place, the entire County is susceptible to each lightning activity level as defined by the LAL. Most lightning strikes cause limited damage to specific structures in a limited area, and cause very few injuries or fatalities, and minimal disruption on quality of life.

Impact: 1 – Minor

Hail

The NWS classifies hail by diameter size, and corresponding everyday objects to help relay scope and severity to the population. The Tornado and Storm Research Organization has further described hail sizes by their typical damage impacts. Table 2-44 describes hail sizes and the potential damage caused by each.

Table 2-44. Hail intensity scale (Tornado and Storm Research Organization)

Intensity Category	Diameter (mm)	Diameter (inches)	Size Description	Typical Damage Impacts
Hard Hail	5-9	0.2-0.4	Pea	No damage
Potentially Damaging	10-15	0.4-0.6	Mothball	Slight general damage to plants, crops
Significant	16-20	0.6-0.8	Marble, grape	Significant damage to fruit, crops, vegetation
Severe	21-30	0.8-1.2	Walnut	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored

Severe	31-40	1.2-1.6	Pigeon's egg > squash ball	Widespread glass damage, vehicle bodywork damage
Destructive	41-50	1.6-2.0	Golf ball > Pullet's egg	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
Destructive	51-60	2.0-2.4	Hen's egg	Bodywork of grounded aircraft dented, brick walls pitted
Destructive	61-75	2.4-3.0	Tennis ball > cricket ball	Severe roof damage, risk of serious injuries
Destructive	76-90	3.0-3.5	Large orange > softball	Severe damage to aircraft bodywork
Super Hailstorms	91-100	3.6-3.9	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
Super Hailstorms	>100	4.0+	Melon	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

The average hailstone size recorded between 2000 and 2024 in Camden County was a little over 1-inch in diameter; the largest hailstone recorded was 2 inches, recorded on April 24, 2000.

Impact: 1 – Minor

2.6.8.4 Historical Occurrences

Thunderstorm Winds

NCEI began recordkeeping for thunderstorm wind in 1955. Between 1955 and August 2025, NCEI recorded 265 incidents of thunderstorm winds, occurring on 189 separate days. These events caused \$312,010 in recorded property damage and \$1,500 in crop damages. No injuries or fatalities were recorded. The recorded gusts averaged 45 knots, with the highest gusts recorded at 60 knots on multiple dates. There were 75 days with events that caused property damage. Wind events with property damage recorded averaged \$3,506 in damage, with eight events causing \$10,000 or more in reported damage. The County received FEMA Major Disaster Declarations in 1994 and 2009 for severe storms that included heavy rains and high winds.

In addition to recorded thunderstorm wind events, NCEI reports 2 days with strong wind events during this same period that caused \$20,000 in property damage and two fatalities, when two young women were killed when a tree fell on their car near Blythe Island along State Road 303 near the entrance to the regional park.

Table 2-45. NCEI recorded strong wind events (1955 to 2025) (NCEI)

Location	Date	Wind Speed (kts)	Fatalities	Injuries	Property Damage
Inland Camden	4/15/2007	39	0	0	\$20,000
Coastal Camden	11/27/2013	30	2	0	\$0
Total			2	0	\$20,000

Lightning

NCEI recordkeeping of lightning began in 1996. According to NCEI data, there were 12 lightning strikes reported from 1996 to August 2025. Of these, 9 recorded property damage totaling approximately \$249,000, which was mostly recorded as fire damage ignited by lightning. The highest rate of property damage recorded for a single incident was \$200,000. One event caused an injury, and none caused fatalities or crop damage. It should be noted that lightning events recorded by the NCEI are only those that are reported; it is certain that additional lightning incidents have occurred in Camden County. Table 2-46 details NCEI-recorded lightning strikes from 1996 to August 2025.

Table 2-46. Recorded lightning strikes in Camden County (1996 to 2025) (NCEI)

Location	Date	Time	Deaths	Injuries	Property Damage
CUMBERLAND ISLAND	6/15/1996	1600	0	1	\$ 0
ST MARYS	7/12/1999	1800	0	0	\$30,000
ST MARYS	8/17/2004	1500	0	0	\$ 0
ST MARYS	8/4/2009	1540	0	0	\$ 200,000
KINGSLAND	6/29/2010	1415	0	0	\$ 3,000
MIDRIVER	8/13/2011	1838	0	0	\$ 2,000
KINGSLAND	5/1/2012	1428	0	0	\$ 3,000
ST MARYS ARPT	5/6/2012	1428	0	0	\$ 2,000
SILCO	5/22/2012	2105	0	0	\$ 2,000
ST MARYS ARPT	7/14/2016	1515	0	0	\$ 5,000
KINGSLAND	7/16/2023	1620	0	1	\$ 0
SCOTCHVILLE	5/28/2025	1610	0	0	\$ 2,000

The following are a selection of narrative descriptions recorded in NCEI for lightning events that occurred in Camden County:

- August 4, 2009:** A surface ridge axis was just south of the forecast area with a light southwest flow regime in place over a moist and unstable airmass. High moisture content was also in place which resulted in storms that yielded heavy rainfall. Lightning struck Henry's Cabinets in St. Marys. Numerous explosions occurred due to lacquers and other chemicals exploding inside the shop. All persons evacuated safely with no injuries. The shop was destroyed.
- August 13, 2011:** A short wave trough moved across the area during the afternoon. This feature combined with an unstable air mass and the sea breeze fueled scattered severe storms across the region. Lightning struck a 10x10-foot utility building located at the 3R Fish Camp on 99 Sadie Jackson Road in White Oak. The building was totaled.
- May 1, 2012:** Scattered to numerous afternoon and evening storms with prevailing dry conditions sparked fires from lightning strikes and wildfires continued to burn in the area. A

house was struck by lightning at 33 Cooner Road in Kingsland. A small fire started in a wooded area.

- **May 22, 2012:** A mid and upper level trough moved over the area during the afternoon and evening which triggered scattered severe storms. Upper level temperatures at 500 mb were around -13°C to -15°C which provided significant destabilization. Lightning struck a transformer at Highway 110 and Springhill Road in Woodbine. Several trees caught on fire.

Hail

NCEI began recordkeeping of hail events in 1955. NCEI records 95 hail incidents across 68 days between 1955 and August 2025 in Camden County. These events caused a reported \$6,500 in property damage and \$5,200 in crop damage. No deaths or injuries were reported. The largest diameter hail recorded in the County was 2 inches, which occurred in the City of St. Marys on April 24, 2000. The average hail size of all events in the County was just over one inch in diameter. Table 2-47 summarizes hail events by location. In some cases, hail was reported for multiple locations on the same day.

Table 2-47. NCEI recorded hail events (1955 to 2025)

Location	Date	Diameter	Deaths	Injuries	Property Damage	Crop Damage
Camden County	4/15/1961	1.75	0	0	\$0	\$0
Camden County	7/11/1963	1.75	0	0	\$0	\$0
Camden County	5/25/1980	1.75	0	0	\$0	\$0
Camden County	4/25/1988	1.75	0	0	\$0	\$0
Woodbine	3/31/1993	1.75	0	0	\$0	\$0
Waverly	4/5/1993	1.75	0	0	\$0	\$0
St. Mary	9/9/1994	1.75	0	0	\$500	\$5,000
Spring Bluff	7/17/1995	0.75	0	0	\$0	\$200
St Marys	5/3/1997	0.88	0	0	\$0	\$0
Kingsland	4/8/1998	0.88	0	0	\$0	\$0
Spring Bluff	5/8/1998	0.75	0	0	\$0	\$0
St Marys	6/25/1998	1	0	0	\$0	\$0
St Marys	5/7/1999	0.75	0	0	\$0	\$0
Waverly	5/19/1999	1	0	0	\$0	\$0
St Marys	6/3/1999	0.75	0	0	\$0	\$0
Kingsland	3/27/2000	1	0	0	\$3,000	\$0
Kingsland	3/27/2000	0.75	0	0	\$0	\$0
St Marys	3/27/2000	1.75	0	0	\$0	\$0
St Marys	3/27/2000	1.75	0	0	\$0	\$0
St Marys	3/27/2000	1.75	0	0	\$0	\$0
Kingsland	3/30/2000	1	0	0	\$3,000	\$0
St Marys	4/24/2000	2	0	0	\$0	\$0
St Marys	4/24/2000	1	0	0	\$0	\$0
Kingsland	4/24/2000	1	0	0	\$0	\$0

White Oak	5/14/2000	0.75	0	0	\$0	\$0
Colesburg	5/12/2001	0.75	0	0	\$0	\$0
Kingsland	5/28/2001	0.75	0	0	\$0	\$0
White Oak	6/6/2001	0.75	0	0	\$0	\$0
Harriets Bluff	7/7/2001	0.75	0	0	\$0	\$0
St Marys	8/18/2001	0.75	0	0	\$0	\$0
St Marys	7/20/2002	0.75	0	0	\$0	\$0
St Marys	10/21/2002	0.75	0	0	\$0	\$0
Kingsland	8/11/2003	1	0	0	\$0	\$0
Kingsland	8/11/2003	0.75	0	0	\$0	\$0
Kingsland	8/11/2003	0.75	0	0	\$0	\$0
Colesburg	4/8/2004	1	0	0	\$0	\$0
Kingsland	5/1/2004	0.75	0	0	\$0	\$0
Harriets Bluff	8/17/2004	0.75	0	0	\$0	\$0
Woodbine	10/3/2004	0.75	0	0	\$0	\$0
Kingsland	3/25/2005	1.75	0	0	\$0	\$0
Harriets Bluff	3/25/2005	1.75	0	0	\$0	\$0
Kingsland	3/25/2005	0.75	0	0	\$0	\$0
St Marys	1/13/2006	0.75	0	0	\$0	\$0
Kingsland	2/3/2006	0.75	0	0	\$0	\$0
St Marys	5/15/2006	1.75	0	0	\$0	\$0
St Marys	5/15/2006	1	0	0	\$0	\$0
St Marys	5/15/2006	1	0	0	\$0	\$0
St Marys	5/15/2006	0.75	0	0	\$0	\$0
Woodbine	5/15/2006	0.75	0	0	\$0	\$0
Kingsland	5/15/2006	1	0	0	\$0	\$0
St Marys	5/15/2006	0.88	0	0	\$0	\$0
Kingsland	5/28/2006	0.88	0	0	\$0	\$0
Woodbine	8/4/2006	0.75	0	0	\$0	\$0
St Marys Arpt	7/13/2007	0.75	0	0	\$0	\$0
St Marys	2/26/2008	1	0	0	\$0	\$0
St Marys Arpt	2/26/2008	1	0	0	\$0	\$0
St Marys	2/26/2008	0.75	0	0	\$0	\$0
Kingsland	5/11/2008	0.75	0	0	\$0	\$0
Waverly	6/10/2008	1	0	0	\$0	\$0
Waverly	6/10/2008	0.75	0	0	\$0	\$0
White Oak	7/6/2008	1.75	0	0	\$0	\$0
Colesburg	10/9/2008	0.75	0	0	\$0	\$0
Waverly	4/5/2009	0.75	0	0	\$0	\$0
Harriets Bluff	4/13/2009	0.75	0	0	\$0	\$0
Seals	4/13/2009	1.75	0	0	\$0	\$0
Harriets Bluff	4/13/2009	1.75	0	0	\$0	\$0
Harriets Bluff	4/13/2009	1.75	0	0	\$0	\$0
Tarboro	4/13/2009	0.88	0	0	\$0	\$0

Kingsland	6/22/2009	1	0	0	\$0	\$0
St Marys	7/2/2009	1	0	0	\$0	\$0
Scarlet	7/9/2009	0.88	0	0	\$0	\$0
White Oak	4/25/2010	1	0	0	\$0	\$0
Scotchville	5/14/2011	0.88	0	0	\$0	\$0
Greenville	6/6/2011	1	0	0	\$0	\$0
Midriver	6/6/2011	1.75	0	0	\$0	\$0
Kingsland	6/23/2011	0.88	0	0	\$0	\$0
Waverly	5/15/2012	1	0	0	\$0	\$0
Woodbine	5/31/2012	0.75	0	0	\$0	\$0
Kingsland	5/20/2013	0.75	0	0	\$0	\$0
Colesburg	5/19/2015	0.75	0	0	\$0	\$0
Woodbine	6/19/2015	0.75	0	0	\$0	\$0
St Marys	7/2/2015	0.75	0	0	\$0	\$0
Kingsland	5/30/2017	1	0	0	\$0	\$0
Kingsland	5/30/2017	1	0	0	\$0	\$0
Kingsland	5/30/2017	0.88	0	0	\$0	\$0
Kingsland	5/30/2017	1.25	0	0	\$0	\$0
Silco	3/20/2018	1	0	0	\$0	\$0
Colesburg	6/20/2018	0.75	0	0	\$0	\$0
Kingsland	12/2/2018	1	0	0	\$0	\$0
Woodbine	6/4/2019	1.75	0	0	\$0	\$0
Colesburg	6/19/2020	0.75	0	0	\$0	\$0
Scotchville	4/7/2022	1	0	0	\$0	\$0
Woodbine	1/4/2023	1.75	0	0	\$0	\$0
Colesburg	7/3/2023	1	0	0	\$0	\$0
Kingsland	5/25/2025	0.75	0	0	\$0	\$0

The following narratives provide detail on select hailstorms from the above list of NCEI recorded events:

- **April 8, 2004:** Nickel to quarter sized hail covered the ground in Colesburg area.
- **February 3, 2006:** Three-quarter inch hail was observed in Browntown along County Road 40, west of Kingsland.
- **July 13, 2007:** Mean layer southwest flow focused the sea breeze collision along the Interstate 95 corridor in the afternoon. A short-wave trough moved through the region and destabilized the atmosphere in concert with daytime heating. Scattered severe storms developed across the region in the afternoon and evening. Penny size hail was reported at Kings Bay Submarine Base. Large tree limbs were blown down about 4 miles northwest of the base.
- **July 6, 2008:** Morning soundings indicated a moist and unstable airmass over the local area with low wind shear and a light southwest steering flow. An upper level low pressure system approached the eastern seaboard during the afternoon which pushed a surface trough over Georgia, which, in concert with the sea breezes, sparked numerous severe

storms across the local forecasted area. In Camden County, golf ball size hail was observed on Interstate 95 at mile marker 21 between Woodbine and Dover Bluff.

- **April 13, 2009:** An upper level short wave and surface squall line moved across the Weather Forecast Office Jacksonville area of responsibility during the afternoon and evening. In Camden County, there were five separate reports of hail ranging from 0.75 inches to 1.75 inches in diameter. Penny sized hail, along with debris, was reported on the southbound side of Interstate 95; golf ball sized hail was also reported near Harriets Bluff.
- **June 6, 2011:** The combination of a sagging surface front across south Georgia and the sea breeze fronts over a very unstable low level air mass produced widespread severe storms. A passing upper level short wave trough through also aided convection which enhanced mid-level lapse rates during the afternoon. Quarter to nickel size hail was reported west of Kingsland on Highway 49. In the Midriver area, golf ball size hail lasted for 20 minutes and caused major damage to a residential garden.

2.6.8.5 Probability of Future Occurrence

Based on historical occurrences recorded by NCEI for the 25-year period from 2000 to 2025, Camden County averages 6 days with wind events per year. Over this same period, 9 lightning events were reported as having caused death, injury, or property damage, which equates to an average of 0.36 damaging lightning strikes per year.

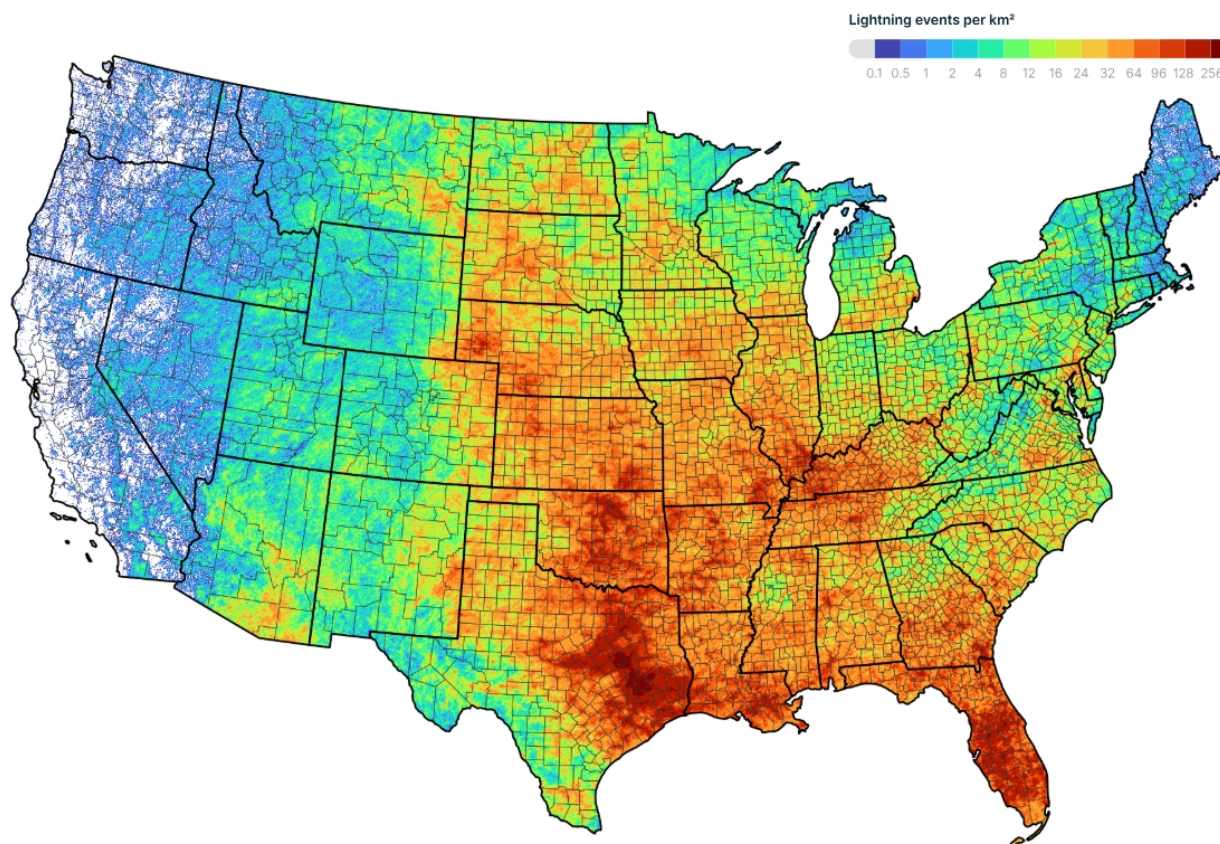
The average hail storm in Camden County occurs in the afternoon and has a hail stone with a diameter of just over one inch. Over the 20-year period from 2000 to 2025, Camden County experienced 53 days with reported hail incidents; this averages to over two days per year with reported incidents somewhere in the planning area, or a 100 percent chance that the County will experience a hail incident each year.

According to the Vaisala 2024 Annual Lightning Report, Georgia had the ninth most lightning counts in 2024. The City of Kingsland was the State lightning capital of 2024 with 377 lightning events per square kilometer, the third highest value for the entire United States for 2024. According to Vaisala's flash density map, shown in Figure 2-39, the majority of Camden County is located in an area that experiences between 64 to 96 lightning events per square kilometer per year.

Based on these historical occurrences, there is a 100 percent chance that the County will experience severe weather each year. The probability of a damaging impact is highly likely.

Probability: 4 – Highly Likely

Figure 2-39. Total lightning density (2016 to 2023) (Vaisala)



2.6.8.6 Climate Change

Higher temperatures and humidity may increase atmospheric variability associated with the origination of severe thunderstorms and tornadoes. Decreases in vertical wind shear can result in fewer or weaker severe thunderstorms and tornadoes. However, this decrease is most likely to occur when convective available potential energy is high in spring and summer, which could result in more frequent severe storms. There has been a surge in the number of severe storms reported over the past 50 years, but this increase could at least be partially attributed to technological developments that allow for better identification and reporting of such storms.

2.6.8.7 Vulnerability Assessment

People

People and populations exposed to the elements are most vulnerable to severe weather. A common hazard associated with wind events is falling trees and branches. Risk of being struck by lightning is greater in open areas, at higher elevations, and on the water.

Lightning can also cause cascading hazards, including power loss. Loss of power could critically impact those relying on energy to service, including those that need powered medical devices. Additionally, the ignition of fires is always a concern with lightning strikes.

The availability of sheltered locations such as basements, buildings constructed using hail-resistant materials and methods, and public storm shelters, all reduce the exposure of the population. Residents living in mobile homes are more vulnerable to hail events due to the lack of shelter locations and the vulnerability of the housing unit to damages. Individuals who work outdoors may also face increased risk.

Since 2000, the NCEI records two fatalities related to strong winds when winds caused a tree to fall on a car, killing two young women. No fatalities or injuries can be attributed to lightning or hail events in Camden County. However, there is a potential for injury or fatality from such events.

Property

Property damage caused by lightning usually occurs in one of two ways: either by direct damages through fires ignited by lightning, or by secondary impacts due to power loss. According to data collected on lightning strikes in Camden County, the vast majority of recorded property damage was due to fires.

NCEI records lightning impacts over 29 years (1996 to 2025), with \$249,000 in property damage recorded. Based on these records, the planning area experiences an annualized loss of \$8,586 in property damage.

General damages to property from hail are direct, including destroyed windows, dented cars, and building, roof and siding damage in areas exposed to hail. Hail can also cause enough damage to cars to cause them to be totaled. The level of damage is commensurate with both a material's ability to withstand hail impacts, and the size of the hailstones that are falling. Construction practices and building codes can help maximize the resistance of the structures to damage. Large amounts of hail may need to be physically cleared from roadways and sidewalks, depending on accumulation. Hail can cause other cascading impacts, including power loss.

NCEI reported \$6,500 in property damage and \$5,200 in crop damage from 1955 to 2025 as a direct result of hail. This damage was from only four storms.

It should be noted that property damage due to hail is usually insured loss, with damages covered under most major comprehensive insurance plans. Because of this, hail losses are notoriously underreported by the NCEI. It is difficult to find an accurate repository of hail damages in Camden County, thus the NCEI is still used to form a baseline.

Wind events reported in NCEI from 1955 to 2025 totaled \$309,200 in property damage, which equates to an annualized loss of \$4,757 across the planning area.

Environment

The main environmental impact from wind is damage to trees or crops. Wind events can also bring down power lines, which could cause a fire and result in even greater environmental impacts. Lightning may also result in the ignition of wildfires. This is part of a natural process, however, and the environment will return to its original state in time.

Hail can cause extensive damage to the natural environment, pelting animals, trees and vegetation with hailstones. Melting hail can also increase both river and flash flood risk.

Consequence Analysis

Table 2-48. Severe weather consequence analysis

Category	Consequences
Impact on the Public	Injuries; fatalities
Impact on Responders	Injuries; fatalities; potential impacts to response capabilities due to storm impacts
Continuity of Operations (including delivery of services)	Potential impacts to continuity of operations due to storm impacts; delays in providing services
Property, Facilities, and Infrastructure	Possibility of structure fire ignition; potential for disruptions in power and communications infrastructure; destruction and/or damage to any exposed property, especially windows, cars and siding; mobile homes see increased risk
Impact of Environment	Potential fire ignition from lightning; hail damage to wildlife and foliage
Economic Conditions	Lightning damage contingent on target; can severely impact/destroy critical infrastructure and other economic drivers
Public Confidence in Governance	Public confidence is not generally affected by severe weather events.

2.6.8.8 Changes in Development

Development is not expected to impact the incidence of severe weather. As the county grows, overall asset exposure will increase, which may increase risk.

2.6.8.9 Multi-Jurisdictional Considerations

Severe weather risk do not vary substantially by jurisdiction.

2.6.8.10 Problem Statements

- Severe weather events are highly likely to continue to occur in Camden County. Communities should consider examining power redundancy and surge protection solutions for critical facilities to maintain operations in the event of a power outage.
- Past severe weather events caused injuries to individuals outside and/or in high-risk locations during these events. Solutions might include an awareness campaign to educate the public on severe weather risk and preparedness.
- Populations living in mobile homes are more vulnerable to thunderstorm and high wind impacts. Areas that have higher concentrations of mobile home units should take this into consideration.
- Related Hazards: Flood, Hurricane, Tornado

2.6.9 Severe Winter Weather

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Severe Winter Weather	Possible	Limited	Large	Greater than 24 hours	Less than 1 week	2.4

2.6.9.1 Hazard Background

A winter storm can range from a moderate snow over a period of a few hours to blizzard conditions with blinding wind-driven snow that lasts for several days. Events may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation and can be accompanied by extreme cold temperatures. Some winter storms might be large enough to affect several states, while others might affect only localized areas. Occasionally, heavy snow might also cause significant property damages, such as roof collapses on older buildings.

All winter storm events have the potential to present dangerous conditions to the affected area. Larger snowfalls pose a greater risk, reducing visibility due to blowing snow and making driving conditions treacherous. A heavy snow event is defined by the NWS as an accumulation of 4 or more inches in 12 hours or less.

Ice storms are defined as storms with significant amounts of freezing rain and are a result of cold air damming (CAD). CAD is a shallow, surface-based layer of relatively cold, stably-stratified air entrenched against the eastern slopes of a north-south oriented mountain range. With warmer air above, falling precipitation in the form of snow melts, then becomes either super-cooled (liquid below the melting point of water) or re-freezes. In the former case, super-cooled droplets can freeze on impact (freezing rain), while in the latter case, the re-frozen water particles are ice pellets (or sleet). Sleet is defined as partially frozen raindrops or refrozen snowflakes that form into small ice pellets before reaching the ground. They typically bounce when they hit the ground and do not stick to the surface. However, it does accumulate like snow, posing similar problems and

has the potential to accumulate into a layer of ice on surfaces. Freezing rain, conversely, usually sticks to the ground, creating a sheet of ice on the roadways and other surfaces. All of the winter storm elements, including snow, low temperatures, sleet, and ice, have the potential to cause significant hazard to a community. Even small accumulations can down power lines and tree limbs, create hazardous driving conditions, and disrupt communication and power for days.

Advancements in meteorology and forecasting usually allow for mostly accurate forecasting a few days in advance of an impending storm. Most storms have a duration of a few hours; however, impacts can sometimes last several days after the initial incident until cleanup is completed.

Warning Time: 1 – More than 24 hours

Duration: 3 – Less than 1 week

2.6.9.2 Location

Severe winter weather is usually a countywide or regional hazard, impacting the entire County at the same time. The entirety of the planning area is susceptible to winter storm and freeze events. Some ice and winter storms may be large enough to affect several states, while others might affect limited, localized areas. The degree of exposure typically depends on the normal expected severity of local winter weather. Camden County is accustomed to smaller scale severe winter weather conditions and is most likely to receive winter weather during the winter months. Given the atmospheric nature of the hazard, severe winter weather can occur anywhere in the County.

Spatial Extent: 4 – Large

2.6.9.3 Extent

NOAA uses the Regional Snowfall Index (RSI), shown in Table 2-49 for Camden County, to assess the societal impact of winter storms in the six easternmost regions in the United States. The index makes use of population and regional differences to assess the impact of snowfall. For example, areas which receive very little snowfall on average may be more adversely affected than other regions, resulting in a higher severity. The County may experience any level on the RSI scale. An event of any extent in the County may cause disruption as the County is less prepared to manage such events.

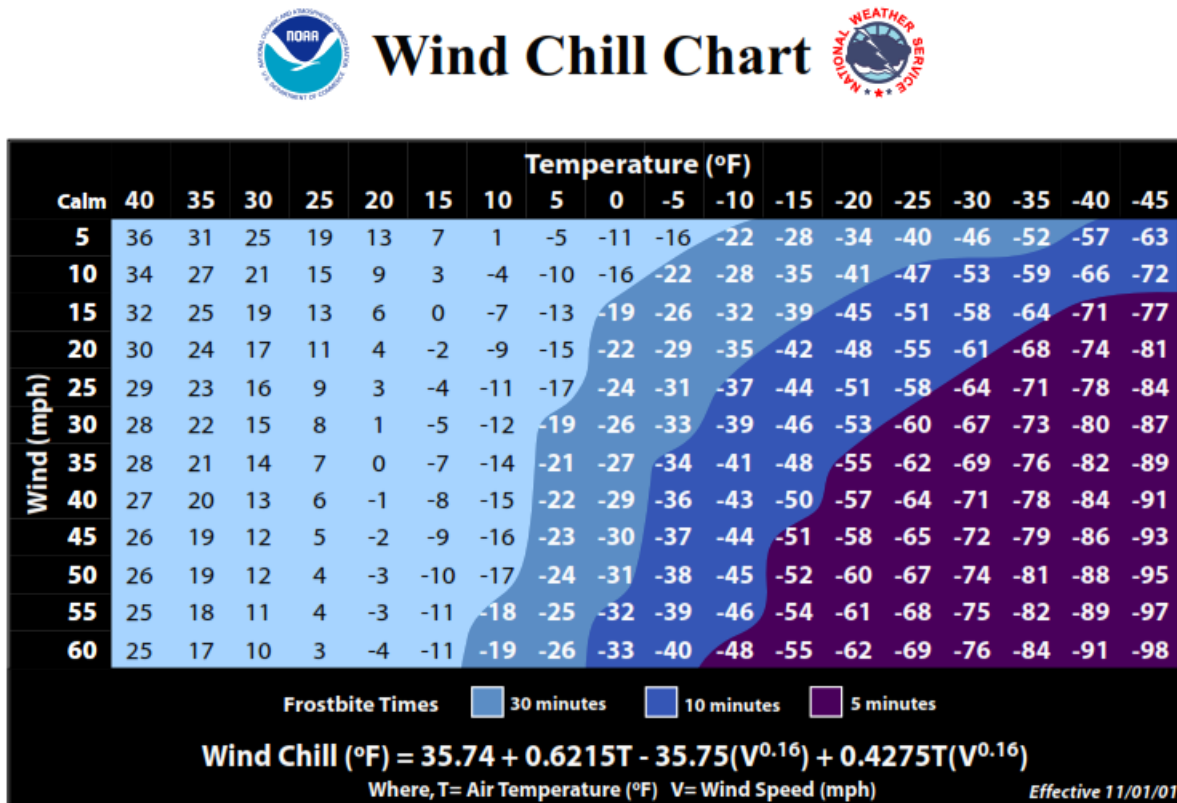
Table 2-49. Regional Snowfall Index values (NOAA)

Category	RSI Value	Description
1	1-3	Notable
2	3-6	Significant
3	6-10	Major
4	10-18	Crippling

5	18+	Extreme
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Severe winter weather often involves a mix of hazardous weather conditions. The magnitude of an event can be defined based on the severity of each of the involved factors, including precipitation type, precipitation accumulation amounts, temperature, and wind. The NWS Wind Chill Temperature index, shown in Figure 2-40, provides a formula for calculating the dangers of winter winds and freezing temperatures.

Figure 2-40. Wind Chill Temperature index (NWS)



Impact: 2 – Limited

2.6.9.4 Historical Occurrences

To obtain a full picture of the range of impacts of a severe winter weather, data for the following weather types as defined by the NWS and tracked by NCEI were collected:

- **Cold/Wind Chill:** Period of low temperatures or wind chill temperatures reaching or exceeding locally/regionally defined advisory conditions of 0°F to -14°F with wind speeds 10 mph (9 knots) or greater.
- **Extreme Cold/Wind Chill:** A period of extremely low temperatures or wind chill temperatures reaching or exceeding locally/regionally defined warning criteria, defined as wind chill -15°F or lower with wind speeds 10 mph (9 knots) or greater.

- **Frost/Freeze:** A surface air temperature of 32°F or lower, or the formation of ice crystals on the ground or other surfaces, for a period of time long enough to cause human or economic impact, during the locally defined growing season.
- **Heavy Snow:** Snow accumulation meeting or exceeding 12 and/or 24 hour warning criteria of 3 and 4 inches, respectively.
- **Ice Storm:** Ice accretion meeting or exceeding locally/regionally defined warning criteria of ¼ inch or greater resulting in significant, widespread power outages, tree damage and dangerous travel. Issued only in those rare instances where just heavy freezing rain is expected and there will be no "mixed bag" precipitation meaning no snow, sleet or rain.
- **Sleet:** Sleet accumulations meeting or exceeding locally/regionally defined warning criteria of ½ inch or more.
- **Winter Storm:** A winter weather event that has more than one significant hazard and meets or exceeds locally/regionally defined 12 and/or 24 hour warning criteria for at least one of the precipitation elements. Defined by NWS Raleigh Forecast Office as snow accumulations 3 inches or greater in 12 hours (4 inches or more in 24 hours); Freezing rain accumulations ¼ inch (6 mm) or greater; Sleet accumulations ½ inch (13 mm) or more. Issued when there is at least a 60% forecast confidence of any one of the three criteria being met.
- **Winter Weather:** A winter precipitation event that causes a death, injury, or a significant impact to commerce or transportation, but does not meet locally/regionally defined warning criteria.

The County has received one Major Disaster Declaration for a freeze event in 1977 and an additional Emergency Declaration for Severe Snowfall in 1993. As a state, Georgia has received three disaster declarations related to severe winter weather.

According to the NCEI Storm Events Database, there have only been two winter weather events in the 29-year period from 1996, when recordkeeping began, to 2025. These events, on January 3, 2018 and January 21, 2025, did not cause any fatalities, injuries, property damage, or crop damage as reported by NCEI, although these types of impacts may not have been reported and are possible in future events.

2.6.9.5 Probability of Future Occurrence

NCEI records two severe winter weather related event during the 25-year period from 2000 to 2025, which equates to an 8 percent probability in any given year.

Probability: 2 – Possible

2.6.9.6 Climate Change

Per the 2024 Georgia Hazard Mitigation Strategy, the impacts of climate change on winter storms are unclear. Winter storms have increased in frequency and intensity since the 1950s, which could

suggest greater hazard impacts in the future. However, winter storm tracks have shifted northward over the United States; therefore, the increase in intensity may be offset in Georgia by the northward shift of the storm tracks.

2.6.9.7 Vulnerability Assessment

People

Winter storms are considered deceptive killers because most deaths are indirectly related to the storm event. The leading cause of death during winter storms is from automobile or other transportation accidents due to poor visibility and/or slippery roads. Additionally, exhaustion and heart attacks caused by overexertion may result from winter storms.

Power outages during very cold winter storm conditions can also create potentially dangerous situations. Elderly people account for the largest percentage of hypothermia victims. In addition, if the power is out for an extended period, residents are forced to find alternative means to heat their homes. The danger arises from carbon monoxide released from improperly ventilated heating sources such as space or kerosene heaters, furnaces, and blocked chimneys. House fires also occur more frequently in the winter due to lack of proper safety precautions when using an alternative heating source.

Property

No property damage was reported in association with any winter weather events recorded by the NCEI between 2000 and 2025 for Camden County. Therefore, no annualized loss estimate could be calculated for this hazard.

A winter storm may cause damage to homes and vehicles when severe. Additionally, precipitation associated with winter storms may lead to flooding and cause similar damages.

Environment

Winter storm events may include ice or snow accumulation on trees which can cause large limbs, or even whole trees, to snap and potentially fall on buildings, cars, or power lines. This potential for winter debris creates a dangerous environment to be outside in; significant injury or fatality may occur if a large limb snaps while a local resident is out driving or walking underneath it.

Consequence Analysis

Table 2-50. Severe winter weather consequence analysis

Category	Consequences
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Impact on the Public	Localized impact expected to be severe for affected areas and moderate to light for other less affected areas.
Impact on Responders	Adverse impacts expected to be severe for unprotected personnel and moderate to light for trained, equipped, and protected personnel.
Continuity of Operations (including delivery of services)	Localized disruption of roads and/or utilities caused by incident may postpone delivery of some services.
Property, Facilities, and Infrastructure	Localized impact to facilities and infrastructure in the areas of the incident. Power lines and roads most adversely affected.
Impact of Environment	Environmental damage to trees, bushes, etc.
Economic Conditions	Local economy and finances may be adversely affected, depending on damage.
Public Confidence in Governance	Ability to respond and recover may be questioned and challenged if planning, response, and recovery not timely and effective.

2.6.9.8 Changes in Development

The winter weather hazard is not expected to be impacted by changes in development. Aside from increases in the overall building and infrastructure exposure in the County that comes with growth, future development will not significantly increase risk of winter weather.

2.6.9.9 Multi-Jurisdictional Considerations

Severe winter weather risk does not vary substantially by jurisdiction because these events are typically regional in nature.

2.6.9.10 Problem Statements

- Local capability to clear roads is limited. Expanding local capability could reduce hazard risk for travelers.
- With limited exposure to prior events, residents will likely be unprepared in the event of a winter storm. Education and outreach as well as adequate communication can help mitigate potential accidents, injuries, or fatalities.

2.6.10 Tornado

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Tornado	Likely	Critical	Small	Less than 6 hours	Less than 6 hours	2.7

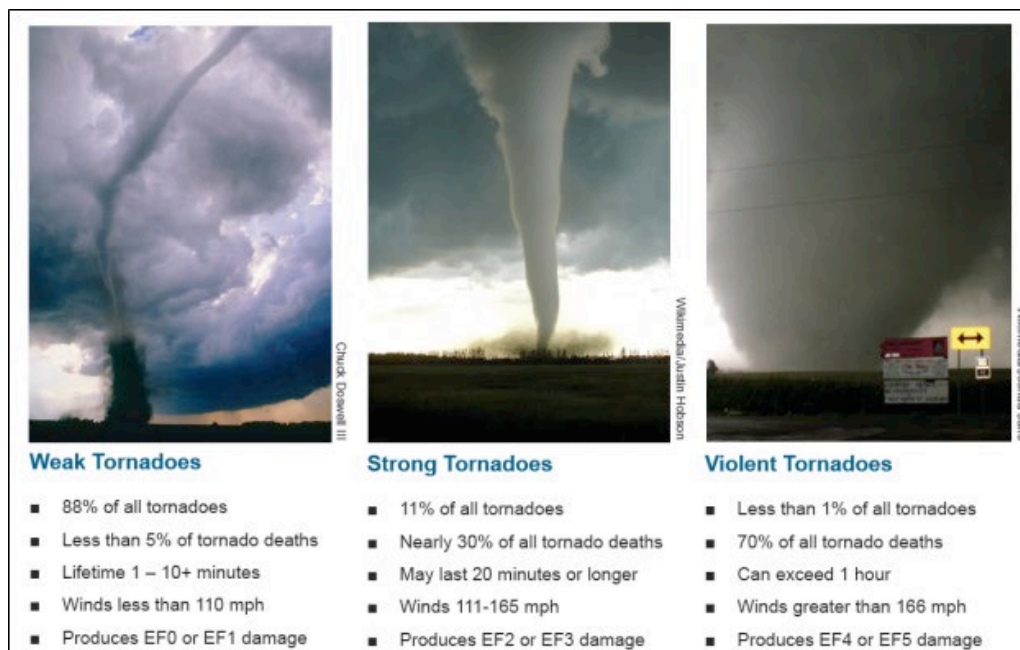
2.6.10.1 Hazard Background

A tornado is "a violently rotating column of air, pendant from a cumuliform cloud or underneath a cumuliform cloud, and often (but not always) visible as a funnel cloud." Tornadoes can appear from any direction. Most move from southwest to northeast, or west to east. Some tornadoes have changed direction amid path, or even backtracked.

Tornadoes are commonly produced by land falling tropical cyclones. Those making landfall along the Gulf coast traditionally produce more tornadoes than those along the Atlantic. Tornadoes that form within hurricanes are more common in the right front quadrant with respect to the forward direction but can occur in other areas. According to the NHC, about 10 percent of the tropical cyclone-related fatalities are caused by tornadoes. Tornadoes are more likely to be spawned within 24 hours of landfall and are usually within 30 miles of the cyclone's center.

Tornadoes have the potential to produce winds in excess of 200 mph (EF5 on the Enhanced Fujita Scale) and can be very expansive – some in the Great Plains have exceeded two miles in width. Tornadoes associated with tropical cyclones, however, tend to be of lower intensity (EF0 to EF2) and much smaller in size than ones that form in the Great Plains. Tornadoes can be divided into 3 categories: weak tornadoes, strong tornadoes, and violent tornadoes, as described below in Figure 2-41.

Figure 2-41. Tornado categories and descriptions



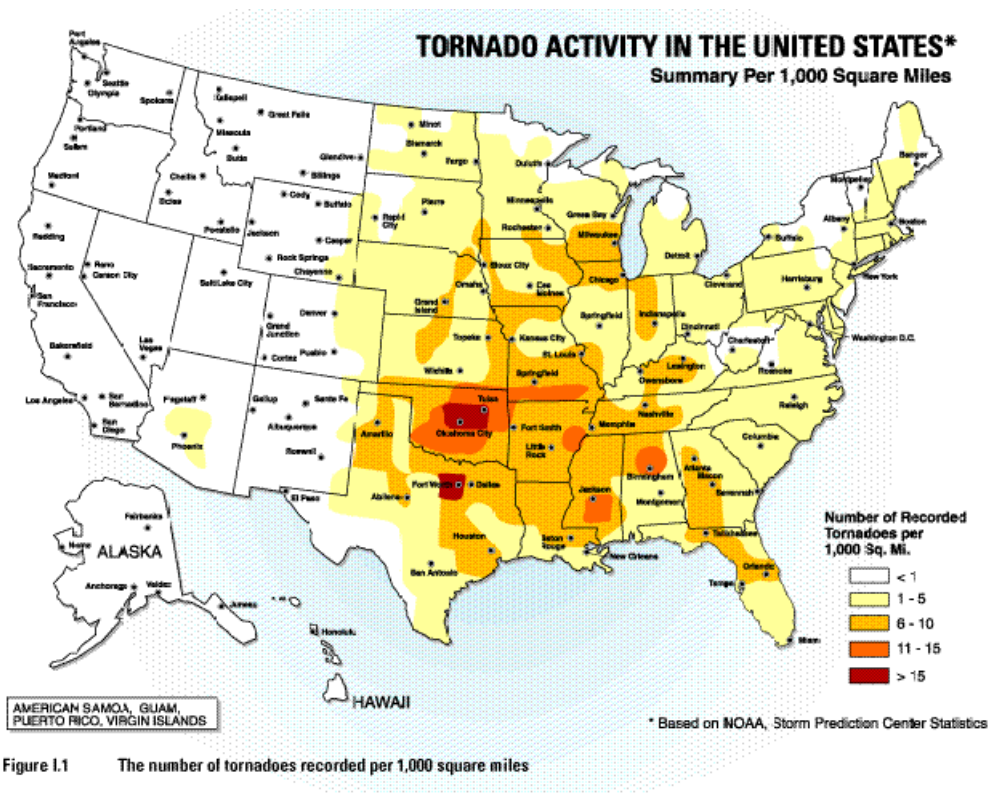
According to the NOAA Storm Prediction Center (SPC), the highest concentration of tornadoes in the United States has been in Oklahoma, Texas, Kansas and Florida, respectively. Although the Great Plains region of the Central United States does favor the development of the largest and most dangerous tornadoes (earning the designation of "tornado alley"), Camden County's

neighboring state of Florida experiences the greatest number of tornadoes per square mile of all US states. Figure 2-42 shows tornado activity in the United States based on the number of recorded tornadoes per 1,000 square miles.

Warning Time: 4 – Less than 6 hours

Duration: 1 – Less than 6 hours

Figure 2-42. Tornado activity in the United States (American Society of Civil Engineers)



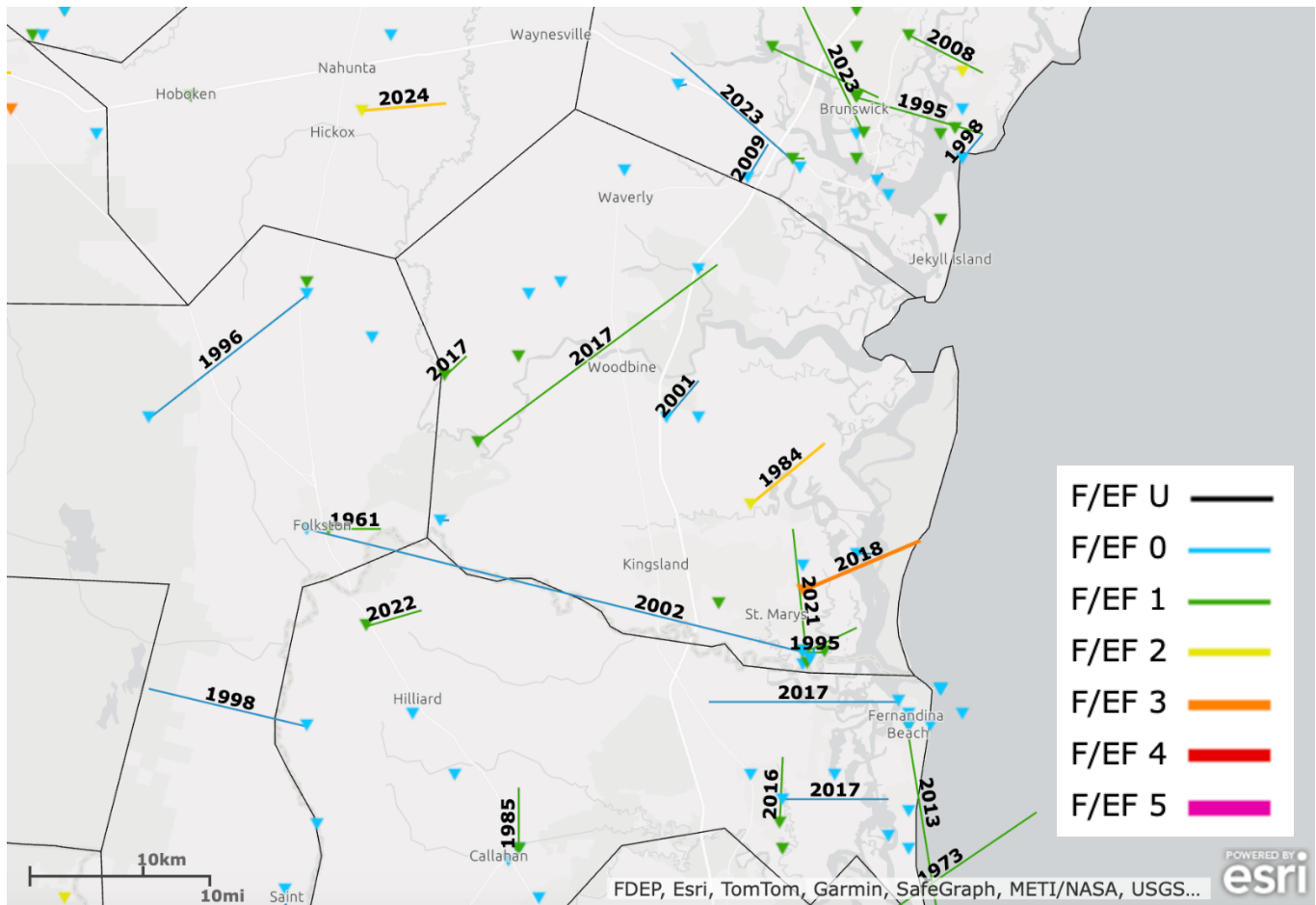
2.6.10.2 Location

Figure 2-43 reflects the tracks of past tornados in and around Camden County from 1950 to 2024 according to data from the Midwest Regional Climate Center.

Tornados can occur anywhere in the County. Tornados typically impact a small area, but damage may be extensive. Tornado locations are completely random, meaning risk to tornado isn't increased in one area of the County versus another. All of Camden County is exposed to this hazard.

Spatial Extent: 2 – Small

Figure 2-43. Tornado paths in and around Camden County (1950 to 2024) (Midwest Regional Climate Center)



2.6.10.3 Extent

Prior to February 1, 2007, tornado intensity was measured by the Fujita (F) scale. This scale was revised and is now the Enhanced Fujita (EF) scale. Both scales are sets of wind estimates (not measurements) based on damage. The new scale provides more damage indicators (28) and associated degrees of damage, allowing for more detailed analysis and better correlation between damage and wind speed. It is also more precise because it takes into account the materials affected and the construction of structures damaged by a tornado. Table 2-51 shows the wind speeds associated with the EF scale ratings and the damage that could result at different levels of intensity.

Table 2-51. Enhanced Fujita scale

EF Number	3 Second Gust (mph)	Damage
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0	65-85	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
1	96-110	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
2	111-135	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
3	136-165	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
4	166-200	Devastating damage. Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
5	Over 200	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m; high-rise buildings have significant structural deformation; incredible phenomena will occur.

The most intense tornado to pass through Camden County in the past 20 years was an EF3 in the City of St. Marys on December 2, 2018. While NCEI reports no property damage, narratives of the event note that a NWS Jacksonville Storm Survey Team approximated EF3 damage at the Naval Submarine Base Kings Bay. Four injuries were reported. The tornado was 7.09 miles long and 900 yards wide.

Impact: 3 – Critical

2.6.10.4 Historical Occurrences

NCEI storm reports were reviewed from 2000 to 2025 to assess whether recent trends varied from the longer historical record. According to NCEI, Camden County experienced 16 tornado incidents between 2000 and 2024, causing 21 injuries, \$254,500 in property damage and no fatalities or crop damage. However, this damage estimate may be under reported, as damage was reported in the narratives of many events but was not recorded in terms of a monetary value. It is likely that there have been several tornados that occurred but went unreported. Table 2-52 shows historical tornadoes in Camden County during this time period.

Table 2-52. Recorded tornadoes in Camden County (2000 to 2025) (NCEI)

Location	Date	Time	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
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Waverly	4/24/2000	1320	F0	0	0	\$500	\$0
Colesburg	5/27/2001	1316	F0	0	0	\$2,000	\$0
St Marys	9/1/2001	1556	F0	0	0	\$1,500	\$0
St Marys	12/24/2002	1155	F0	0	0	\$50,000	\$0
Kingsland	8/15/2004	1440	F0	0	0	\$0	\$0
Woodbine	1/13/2006	2030	F0	0	0	\$200,000	\$0
St Marys	6/13/2006	500	F0	0	0	\$0	\$0
St Marys	3/7/2008	1130	EF0	0	0	\$0	\$0
Tarboro	10/24/2008	1755	EF0	0	0	\$500	\$0
Silco	1/22/2017	1826	EF1	0	0	\$0	\$0
Burnt Fort	1/22/2017	1829	EF1	0	0	\$0	\$0
St Marys	12/2/2018	1510	EF3	0	4	\$0	\$0
Silco	4/19/2019	1105	EF0	0	0	\$0	\$0
White Oak	4/23/2020	1437	EF0	0	0	\$0	\$0
St Marys	7/7/2021	1643	EF1	0	17	\$0	\$0
St Marys	7/17/2023	1517	EF0	0	0	\$0	\$0
Total				0	21	\$254,500	\$0

Narratives from NCEI illustrate that damage occurred in many of these incidents even if a monetary value was not recorded. Specific incidents with some level of impact include:

- **December 24, 2002:** An F0 tornado near St. Marys took two roofs partially off of homes near Colrane Road and another half of a roof from a house at Natures End near Point Peter. It also downed multiple large trees.
- **January 13, 2006:** A weak F0 tornado touched down along I-95 about 5 miles southeast of Woodbine. Many trees were snapped off in a swath along I-95. A tractor-trailer was lifted and blown off the interstate along the southbound lanes; the driver sustained no reported injuries. The trailer was carrying other cars, which were damaged in the accident from colliding with each other. Another vehicle was hit by a snapped tree; the driver also sustained no reported injuries.
- **March 7, 2008:** A squall line with severe weather and several tornadoes moved across north Florida and southeast Georgia. A former National Weather Service employee reported a waterspout and tornado over the intra-coastal waterway and marshes between Kings Bay Submarine Base and Cumberland Island. The mesocyclone which spawned this tornado tracked across north Florida and southeast Georgia from Taylor County through Lake City to near Cumberland Island.
- **October 24, 2008:** A weak cold front extended south of a surface low over Tallahassee over the Gulf of Mexico. A warm front extended from Lake City to St. Simons Island. A strong low-level northeast flow veering quickly to the southwest in the mid levels increased low level helicities. Scattered storms broke out across the area, one of which became tornadic. A spotter saw a tornado near New Post Road and Highway 252. The debris from the vortex damaged the spotter's windshield as well as trees in the area.

- **January 22, 2017:** Three tornado touchdowns were confirmed in southeast Georgia – two in Camden County. The first, an EF1 tornado with peak winds of 110 mph started in west central Camden and tracked quickly northeast at 50 to 65 mph before lifting northeast of Woodbine just east of Horseshoe Cove Road. The main path was along or near the Satilla River and cross the river at least three times in heavily forested areas. The tornado then crossed east of I-95 briefly before hitting the Horseshoe subdivision which suffered significant damage. Significant tree damage and homes with fallen tree damage occurred along and at the end of the tornado path. Another EF1 tornado was observed near Woodbine.
- **December 2, 2018:** A National Weather Service Storm Survey revealed damage from tornadoes consistent with an EF-3 tornado at Naval Submarine Base Kings Bay, confirmed by a 144 mph maximum wind gust measured from a docked Coast Guard vessel. Four injuries were reported by officials at Kings Bay Base. The tornado continued on an east-northeast path across Cumberland Island, beginning from Old House Creek and exiting into the Atlantic just south of the Stafford Beach campground. Significant tree damage occurred within the tornado path across Cumberland Island with no structural damage reported. The main park road and several trails were left impassable by tree damage. This was one of the strongest tornadoes in recent memory within the National Weather Service Jacksonville’s area of responsibility.
- **July 7, 2021:** An EF1 tornado with peak winds near 100 mph touched down along East St. Marys River Street, just north of the St. Marys River, where tree trunks were snapped. The tornado strengthened to peak EF1 intensity and produced significant damage to residences along E. Conyers and Norris Streets in St. Marys before pivoting north-northeastward. The tornado then damaged homes and apartments along Point Peter Road. The tornado reached maximum width near the Eagle Hammock RV Park at EF1 intensity. Multiple recreational vehicles were flipped over, with two completely flipped upside down. One RV was flipped and blown about 200 yards into a lake on the north side of the park. Several hardwood trees at the park were snapped. There was debris from the RVs scattered throughout the RV park area. The last of tornado damage included solar panel damage just south of Crooked River State Park. There were 17 reported injuries and 11 of the 17 had to be transported to a hospital.

In 1994 and 2009, Camden County received Major Disaster Declarations for severe storm events that included incidences of tornadoes.

2.6.10.5 Probability of Future Occurrence

Probability of future occurrence was calculated based on past occurrences and was assumed to be uniform across the County.

In a 25-year span between 2000 and 2025, Camden County experienced 16 separate tornado incidents over 15 separate days. This correlates to a 64 percent annual probability that the region

will experience a tornado somewhere in its boundaries. Only one of these past tornado events was a magnitude EF2 or greater; therefore, the annual probability of a significant tornado event is much lower.

Probability: 3 – Likely

2.6.10.6 Climate Change

There presently is not enough data or research to quantify the magnitude of change that climate change may have related to tornado frequency and intensity. National Aeronautics and Space Administration's (NASA) Earth Observatory has conducted studies which aim to understand the interaction between climate change and tornadoes. Based on these studies meteorologists are unsure why some thunderstorms generate tornadoes and others don't, beyond knowing that they require a certain type of wind shear. Tornadoes spawn from approximately one percent of thunderstorms, usually supercell thunderstorms that are in a wind shear environment that promotes rotation. Some studies show a potential for a decrease in wind shear in mid-latitude areas. Because of uncertainty with the influence of climate change on tornadoes, future updates to the mitigation plan should include the latest research on how the tornado hazard frequency and severity could change.

2.6.10.7 Vulnerability Assessment

People

People and populations exposed to the elements are most vulnerable to tornados. The availability of sheltered locations such as basements, buildings constructed using tornado-resistant materials and methods, and public storm shelters, all reduce the exposure of the population..

Since 2000, the NCEI database records no fatalities and 21 injuries attributed to tornadoes in Camden County. The most significant event occurred in the City of St. Marys on July 7th, 2021, which caused 17 injuries.

Property

General damages to property are both direct (what the tornado physically destroys) and indirect, which focuses on additional costs, damages and losses attributed to secondary hazards spawned by the tornado, or due to the damages caused by the tornado. Depending on the size of the tornado and its path, a tornado is capable of damaging and eventually destroying almost anything. Construction practices and building codes can help maximize the resistance of the structures to damage.

Secondary impacts of tornado damage often result from damage to infrastructure. Downed power and communications transmission lines, coupled with disruptions to transportation, create difficulties in reporting and responding to emergencies. These indirect impacts of a tornado put

tremendous strain on a community. In the immediate aftermath, the focus is on emergency services.

Since 1999, damaging tornadoes in the County are directly responsible for \$254,500 worth of damage to property according to NCEI data. This equates to an annualized loss of \$12,725.

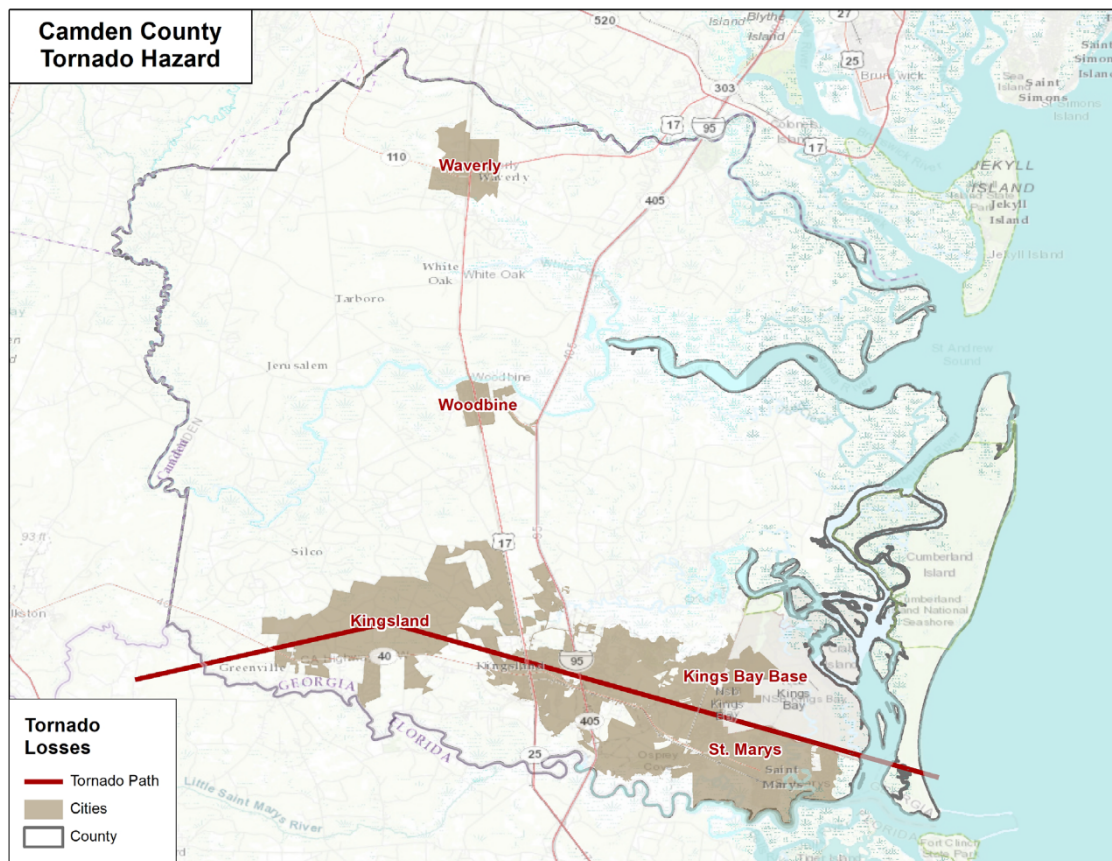
The CRC ran an additional analysis in Hazus to simulate tornado impacts. For the analysis, an EF3 tornado was modeled to illustrate the potential impacts of tornadoes of this magnitude in the County. The analysis used a hypothetical path based upon an EF3 tornado event running along the predominant direction of historical tornados (southeast to northwest). The tornado path was placed to travel through the City of Kingsland and the City of St Marys, shown in Figure 2-44. The selected widths were modeled after a re-creation of the Fujita scale guidelines based on conceptual wind speeds, path widths, and path lengths.

This analysis estimates that approximately 1,897 buildings could sustain damages, totaling over \$105.3 million. Building losses are an estimate of replacement cost multiplied by the percentage of damage based on the tornado zone and a damage curve. Table 2-53 details the estimated building losses by occupancy type for this hypothetical EF3 tornado.

Table 2-53. Estimated building losses by occupancy type (CRC)

Occupancy	Buildings Damaged	Building Losses
Commercial	74	\$12,350,652
Educational	2	\$1,118,950
Governmental	5	\$272,477
Industrial	8	\$1,340,367
Religious	8	\$723,316
Residential	1800	\$89,520,399
Total	1,459	\$105,326,161

Figure 2-44. Hypothetical EF3 tornado risk analysis (CRC)



This scenario would also result in major damages to four critical facilities. The full analysis can be seen in Appendix B.

Environment

Tornadoes can cause massive damage to the natural environment, uprooting trees and other debris within the tornado's path. This is part of a natural process, however, and the environment will return to its original state in time.

Consequence Analysis

Table 2-54. Tornado consequence analysis

Category	Consequences
Impact on the Public	Injuries; fatalities
Impact on Responders	Injuries; fatalities; potential impacts to response capabilities due to storm impacts
Continuity of Operations (including delivery of services)	Potential impacts to continuity of operations due to storm impacts; delays in providing services

Property, Facilities, and Infrastructure	The weakest tornadoes, EF0, can cause minor roof damage, while strong tornadoes can destroy frame buildings and even badly damage steel reinforced concrete structures. Buildings are vulnerable to direct impact from tornadoes and also from wind borne debris. Mobile homes are particularly susceptible to damage during tornadoes.
Impact of Environment	Potential devastating impacts in storm's path
Economic Conditions	Contingent on tornado's path; can severely impact/destroy critical infrastructure and other economic drivers
Public Confidence in Governance	Public confidence in the jurisdiction's governance may be influenced by severe tornado events if response and recovery are not timely and effective.

2.6.10.8 Changes in Development

Development is not expected to impact the incidence of tornado events. As the County grows, overall asset exposure will increase, which may increase risk.

2.6.10.9 Multi-Jurisdictional Considerations

There are not significant differences in tornado risk between jurisdictions.

2.6.10.10 Problem Statements

- Wind-borne debris can become a dangerous hazard during tornado events. Educating the public on tornado risk and severe storms preparedness, including the need to secure loose items outdoors, may reduce potential damages in the event that a tornado spawns.
- Related Hazards: Hurricane, Severe Weather

2.6.11 Wildfire

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Wildfire	Likely	Limited	Moderate	12-24 hours	Less than 1 week	2.3

2.6.11.1 Hazard Background

A wildfire is an uncontained fire that spreads through the environment. Wildfires have the ability to consume large areas, including infrastructure, property, and resources. When massive fires, or conflagrations, develop near populated areas, evacuations possibly ensue. Not only do the flames impact the environment, but the massive volumes of smoke spread by certain atmospheric conditions also impact the health of nearby populations. There are three general types of fire spread that are recognized.

- **Ground fires:** Ground fires burn organic matter in the soil beneath surface litter and are sustained by glowing combustion.
- **Surface fires:** Surface fires spread with a flaming front and burn leaf litter, fallen branches and other fuels located at ground level.
- **Crown fires:** Crown fires burn through the top layer of foliage on a tree, known as the canopy or crown fires. Crown fires, the most intense type of fire and often the most difficult to contain, need strong winds, steep slopes and a heavy fuel load to continue burning.

Generally, wildfires are started by humans, either through arson or carelessness. Fire intensity is controlled by both short-term weather conditions and longer-term vegetation conditions. During intense fires, understory vegetation, such as leaves, small branches, and other organic materials that accumulate on the ground, can become additional fuel for the fire. The most explosive conditions occur when dry, gusty winds blow across dry vegetation.

Weather plays a major role in the birth, growth and death of a wildfire. In support of forecasting for fire weather, the NWS Fire Weather Program emerged in response to a need for weather support to large and dangerous wildfires. This service is provided to federal and state land management agencies for the prevention, suppression, and management of forest and rangeland fires. The National Weather Service Jacksonville office reports on fire-weather forecasts in a tabular way.

Weather conditions favorable to wildfire include drought, which increases flammability of surface fuels, and winds, which aid a wildfire's progress. The combination of wind, temperature, and humidity affects how fast wildland fires can spread. Rapid response can contain wildfires and limit their threat to property.

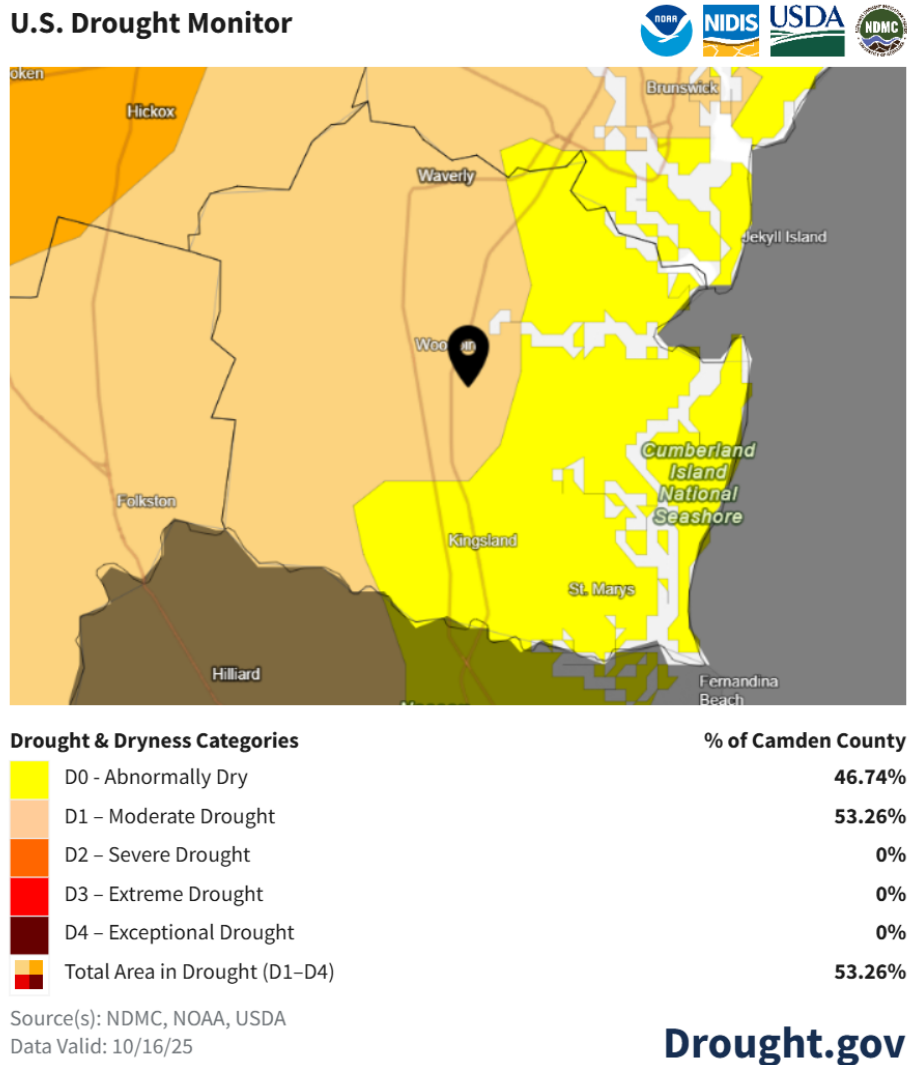
Camden County experiences a variety of wildfire conditions found in the Keetch-Byram Drought Index (KBDI), which is described in **Error! Reference source not found.** At the time of this report, more than 50 percent of Camden County was between 200 and 400 KBDI. The KBDI for October 15, 2025 is shown in Figure 2-45.

Table 2-55. KBDI fire danger rating system

KBDI	Description
0-200	Soil and fuel moisture are high. Most fuels will not readily ignite or burn. However, with sufficient sunlight and wind, cured grasses and some light surface fuels will burn in spots and patches.
200-400	Fires more readily burn and will carry across an area with no gaps. Heavier fuels will still not readily ignite and burn. Also, expect smoldering and the resulting smoke to carry into and possibly through the night.
400-600	Fire intensity begins to significantly increase. Fires will readily burn in all directions exposing mineral soils in some locations. Larger fuels may burn or smolder for several days creating possible smoke and control problems.

600-800	Fires will burn to mineral soil. Stumps will burn to the end of underground roots and spotting will be a major problem. Fires will burn through the night and heavier fuels will actively burn and contribute to fire intensity
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Figure 2-45. KBDI for Camden County, October 2025 (USDA)



Warning Time: 2 – 12 to 24 hours

Duration: 3 – Less than 1 week

2.6.11.2 Location

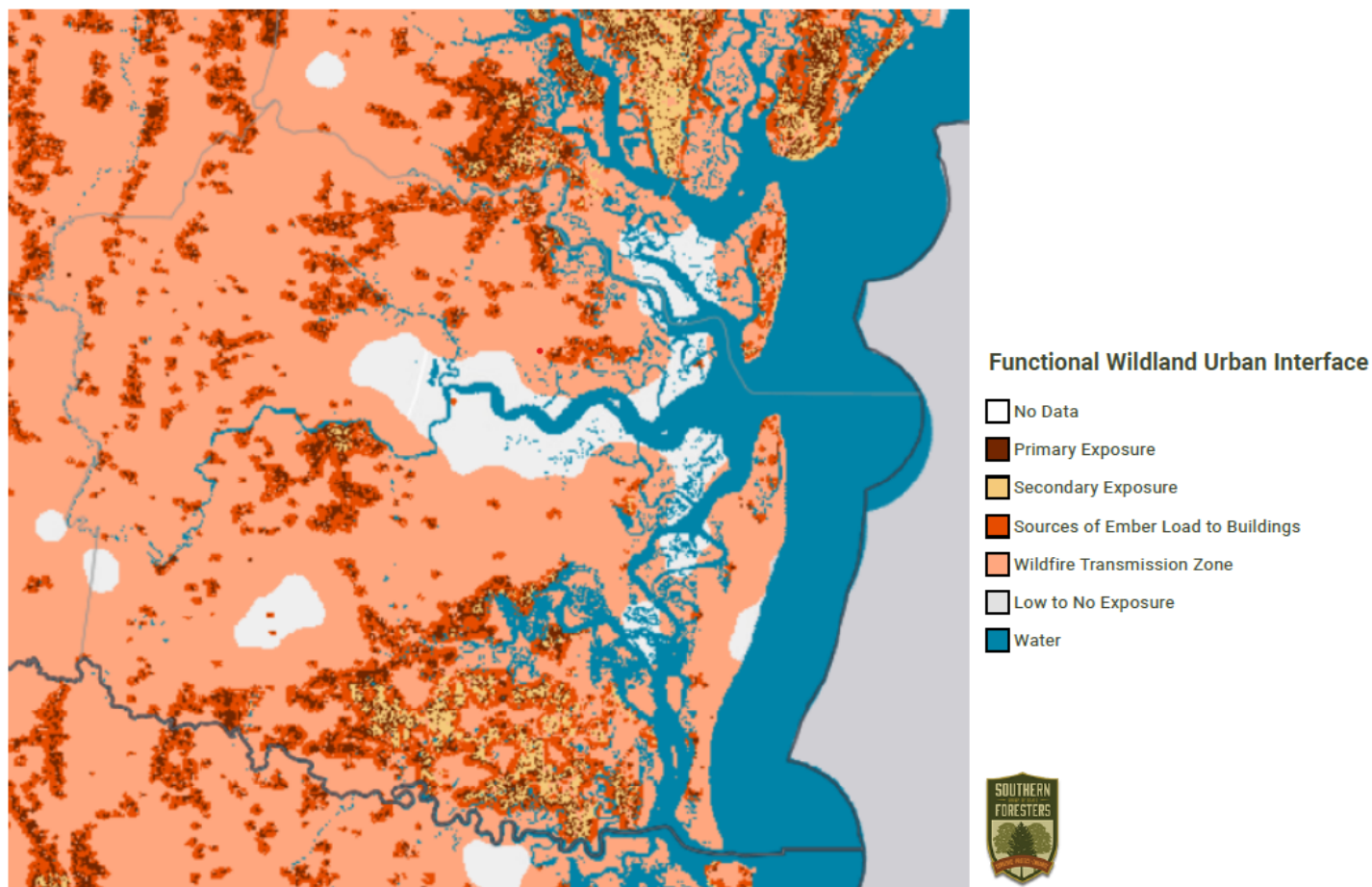
The location of wildfire risk can be defined by the acreage of Wildland Urban Interface (WUI). The WUI is described as the area where structures and other human improvements meet and intermingle with undeveloped wildland or vegetative fuels, and thus demarcates the spatial extent of wildfire risk. The WUI is essentially all the land in the County that is not heavily urbanized. The Southern Wildfire Risk Assessment (SWRA) estimates that majority of the Camden County

population lives within the WUI. The expansion of residential development from urban centers out into rural landscapes increases the potential for wildland fire threat to public safety and the potential for damage to forest resources and dependent industries. Population growth within the WUI substantially increases the risk of wildfire. Figure 2.43 maps the WUI in Camden County.

Spatial Extent: 3 – Moderate

Figure 2-46. WUI in Camden County 2025 (SWRA)

Camden County Wildland Urban Interface



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SGSF Wildfire Risk Assessment Portal
<https://wrap.southernwildfirerisk.com>

2.6.11.3 Extent

Wildfire extent can be defined by the fire's intensity and measured by the Characteristic Fire Intensity Scale, which identifies areas where significant fuel hazards which could produce dangerous fires exist. Fire Intensity ratings identify where significant fuel hazards and dangerous fire behavior potential exist based on fuels, topography, and a weighted average of four percentile weather categories. The Fire Intensity Scale, shown in Table 2-56, consists of five classes, as defined by SWRA. Figure 2-47 shows the potential fire intensity within the WUI across Camden County.

Table 2-56. Fire Intensity scale (SWRA)

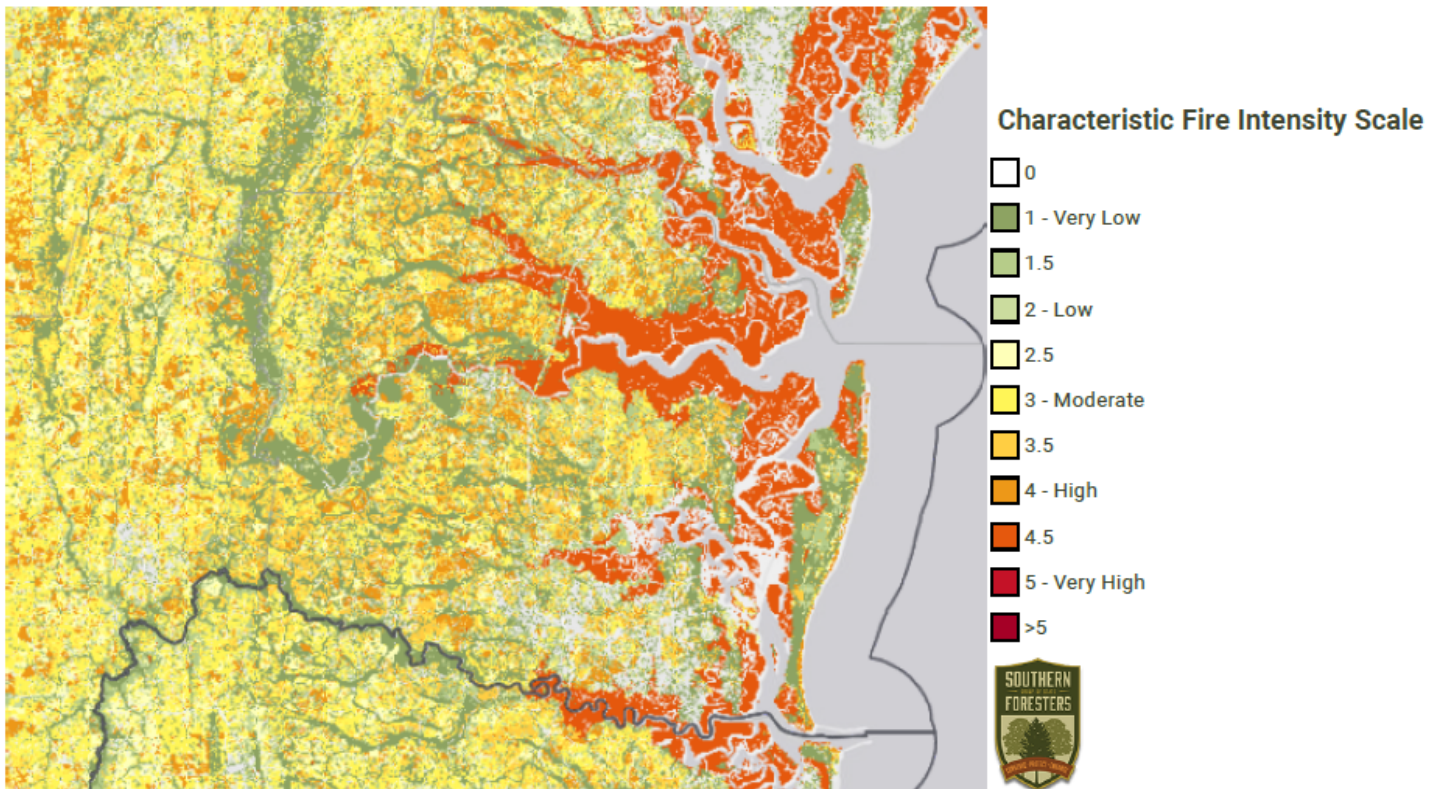
Class	Description
1, Very Low	Very small, discontinuous flames, usually less than 1 foot in length; very low rate of spread; no spotting. Fires are typically easy to suppress by firefighters with basic training and non-specialized equipment.
2, Low	Small flames, usually less than two feet long; small amount of very short range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.
3, Moderate	Flames up to 8 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozer and plows are generally effective. Increasing potential for harm or damage to life and property.
4, High	Large Flames, up to 30 feet in length; short-range spotting common; medium range spotting possible. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective. Significant potential for harm or damage to life and property.
5, Very High	Very large flames up to 150 feet in length; profuse short-range spotting, frequent long-range spotting; strong fire-induced winds. Indirect attack marginally effective at the head of the fire. Great potential for harm or damage to life and property.

A significant portion, approximately 52.6 percent, of Camden County's total land area may experience up to a Class 4 or 4.5 Fire Intensity, which poses significant harm or damage to life and property. However, the areas with greatest potential fire intensity are largely outside the WUI. These areas are generally located outside of the incorporated jurisdictions. Over 14 percent of the County may experience Class 3 Fire Intensity, which has potential for harm to life and property but is easier to suppress with dozer and plows. The remainder of the region is either non-burnable (32.6 percent) or would face a Class 1 or Class 2 Fire Intensity, which are easily suppressed.

Impact: 2 – Limited

Figure 2-47. Characteristic Fire Intensity scale in Camden County (SWRA)

Camden County Characteristic Fire Intensity



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SGSF Wildfire Risk Assessment Portal
<https://wrap.southernwildfirerisk.com>

2.6.11.4 Historical Occurrences

The Georgia Forestry Commission maintains monthly records of acreage burned and number of fires burned that are accessible to the public under the Georgia Open Records Law. The Commission also created a Community Wildfire Protection Plan for Camden County, which was most recently updated in November 2025. The purpose of this plan is to assess wildfire risks in the County and plan to mitigate such risks as funding becomes available.

According to the most updated Camden County Community Wildfire Protection Plan, between 2015 and 2024, the County experienced 170 reported wildland fires, burning 1,286 acres. Table 2-57 summarizes Camden County's wildfire history as reported by the Georgia Forestry Commission from 2015 to 2025. From 2015 to 2024, the average number of fires was 17, annually, with an average annual acreage burned of 128 acres.

Table 2-57. Camden County 10-year fire history (2015 to 2024) (Camden County Community Wildfire Protection Plan)

Year	Number of Fires	Total Acreage Burned	Average Fire Size (Acres)
2015	12	165.56	13.8
2016	31	398.01	12.84
2017	24	239.95	9.99
2018	8	79.96	9.96
2019	10	39.72	3.97
2020	9	55.92	6.21
2021	28	160.76	5.74
2022	18	30.41	1.68
2023	23	72.55	3.15
2024	7	43.31	6.18
Totals	170	1,285.89	7.56

Actual number of fires and acreage burned is likely higher because smaller fires within jurisdictional boundaries are managed by local fire departments. The causes of these fires, as identified by Georgia Forestry Commission, are summarized in Table 2-58. The greatest causes of fire by acreage burned and number of fires are debris burning and lightning.

Table 2-58. Camden County 10-year fire history by ignition cause (Camden County Community Wildfire Protection Plan)

Ignition Cause	Count	Total Acreage	Average Size	Percent of Total Acreage
Children	2	2.7	0.9	0.2
Debris-Agriculture	2	2.4	1.2	0.1
Debris-Construction	5	0.2	0.1	<0.1
Debris-Escaped Prescribed Burn	30	8.35	1.67	0.6
Debris-Household Garbage	2	372.29	12.4	28.9
Debris-Residential Burning	17	2.1	1.05	0.1
Debris-Forestry Site Prep	4	53.46	3.14	4.2
Incendiary	18	3.2	0.8	0.2
Lightning	49	48.46	2.85	3.8
Machine Use	5	735.58	15.01	57.7
Miscellaneous-Structure/Vehicle Fires	13	7.72	1.54	0.6
Undetermined	20	26.68	2.05	2.1
Campfire	3	22.31	1.12	1.7
Totals	170	1,285.89	7.56	100

2.6.11.5 Probability of Future Occurrence

The SWRA provides a burn probability analysis which predicts the probability of an area burning based on landscape conditions, weather, historical ignition patterns, and historical fire prevention and suppression efforts. Burn probability data is generated by simulating fires under different weather, fire intensity, and other conditions. Values in the burn probability data layer indicate, for each pixel, the number of times that cell was burned by a modeled fire, divided by the total number of annual weather scenarios simulated. The simulations are calibrated to historical fire size distributions. The burn probability for Camden County is presented in Table 2-59 and illustrated in Figure 2-48.

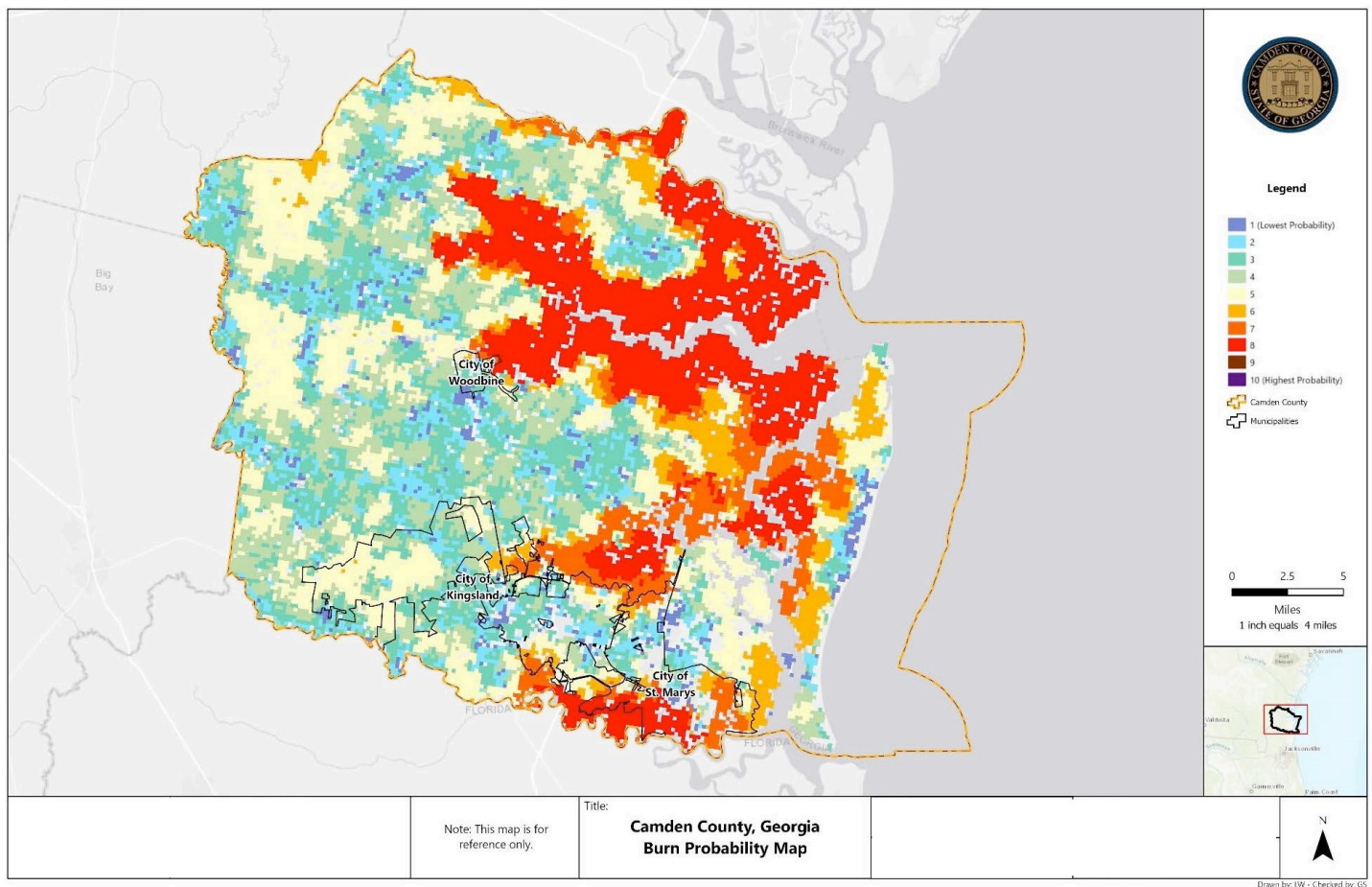
As seen in Figure 2-48, over 30 percent of Camden County has a burn probability between 6 and 8. The areas of higher burn probability are located on the coast and on the southwestern border of the County – including areas within and just north of the City of St. Marys. An additional 55 percent of the County has a burn probability between 3 and 5. Inland areas of the County have lower burn probabilities. The probability of wildfire across the County is considered possible. The communities containing a higher burn probability, as noted, have a comparatively higher probability of occurrence.

Probability: 2 – Possible

Table 2-59. Burn probability for Camden County in tabular format (SWRA)

	Class	Acres	Percent (%)
	None	7,867	2.0
	1	10,790	2.8
	2	33,488	8.5
	3	67,588	17.2
	4	60,617	15.5
	5	88,178	22.5
	6	25,616	6.5
	7	28,048	7.1
	8	70,128	17.9
	9	0	0
	10	0	0
	Total	392,320	100

Figure 2-48. Burn probability for Camden County mapped (SWRA)



2.6.11.6 Climate Change

Per the Fourth National Climate Assessment, the Southeast is projected to experience an increase in the duration and intensity of drought, which is expected to increase wildfire occurrence and reduce the effectiveness of prescribed fire. Although total area burned by wildfire is greatest in the western US, the Southeast has historically had the highest number of wildfires and the most area burned by prescribed fire.

2.6.11.7 Vulnerability Assessment

People

Wildfire can cause fatalities and human health hazards. Ensuring procedures are in place for rapid warning and evacuation are essential to reducing vulnerability. The SWRA estimates that majority of the total planning area population live within the WUI and are therefore at risk to wildfire.

Property

Wildfire can cause direct property losses, including damage to buildings, vehicles, landscaped areas, agricultural lands, and livestock. Construction practices and building codes can increase fire resistance and fire safety of structures. Techniques for reducing vulnerability to wildfire include using street design to ensure accessibility to fire trucks, incorporating fire resistant materials in building construction, and using landscaping practices to reduce flammability and the ability for fire to spread.

Environment

Wildfires have the potential to destroy forest and forage resources and damage natural habitats. Wildfire can also damage agricultural crops on private land. Wildfire is part of a natural process, however, and the environment will return to its original state in time.

Consequence Analysis

Table 2-60. Wildfire consequence analysis

Category	Consequences
Impact on the Public	In addition to the potential for fatalities, wildfire and the resulting diminished air quality pose health risks. Exposure to wildfire smoke can cause serious health problems within a community, including asthma attacks and pneumonia, and can worsen chronic heart and lung diseases. Vulnerable populations include children, the elderly, people with respiratory problems or with heart disease. Even healthy citizens may experience minor symptoms, such as sore throats and itchy eyes.
Impact on Responders	Public and firefighter safety is the first priority in all wildland fire management activities. Wildfires are a real threat to the health and safety of the emergency services. Most fire-fighters in rural areas are 'retained'. This means that they are part-time and can be called away from their normal work to attend to fires.
Continuity of Operations (including delivery of services)	Wildfire events can result in a loss of power which may impact operations. Downed trees, power lines and damaged road conditions may prevent access to critical facilities and/or emergency equipment.
Property, Facilities, and Infrastructure	Wildfires frequently damage community infrastructure, including roadways, communication networks and facilities, power lines, and water distribution systems. Restoring basic services is critical and a top priority. Efforts to restore roadways include the costs of maintenance and damage assessment teams, field data collection, and replacement or repair costs. Direct impacts to municipal water supply may occur through contamination of ash and debris during the fire, destruction of aboveground distribution lines, and soil erosion or debris deposits into waterways after the fire. Utilities and communications repairs are also necessary for equipment damaged by a fire. This includes power lines, transformers, cell phone towers, and phone lines.
Impact of Environment	Wildfires cause damage to the natural environment, killing vegetation and animals. The risk of floods and debris flows increases after wildfires due to the exposure of bare ground and the loss of vegetation. In addition, the secondary

	effects of wildfires, including erosion, landslides, introduction of invasive species, and changes in water quality, are often more disastrous than the fire itself.
Economic Conditions	Wildfires can have significant short-term and long-term effects on the local economy. Wildfires, and extreme fire danger, may reduce recreation and tourism in and near the fires. If aesthetics are impaired, local property values can decline. Extensive fire damage to trees can significantly alter the timber supply, both through a short-term surplus from timber salvage and a longer-term decline while the trees regrow. Water supplies can be degraded by post-fire erosion and stream sedimentation.
Public Confidence in Governance	Wildfire events may cause issues with public confidence because they have very visible impacts on the community. Public confidence in the jurisdiction's governance may be influenced by actions taken pre-disaster to mitigate and prepare for impacts, including the amount of public education provided; efforts to provide warning to residents; response actions; and speed and effectiveness of recovery.

2.6.11.8 Changes in Development

Increased development on the wildland fringe, areas immediately adjacent to the WUI, will expand the WUI itself and further increase vulnerability. Conversely, as infill development occurs and urban areas become more densely developed, fuel sources may be removed such that these areas may fall out of the WUI.

2.6.11.9 Multi-Jurisdictional Considerations

There are not significant differences in wildfire risk between jurisdictions.

2.6.11.10 Problem Statements

- Small areas with moderate to high potential fire intensity exist in all participating jurisdictions and the unincorporated county; concentrations are higher in western Kingsland and unincorporated Camden County. Fuels management can greatly reduce potential fire intensity as well as burn probability.
- Comprehensive education for property owners, especially residential, could help mitigate losses in the event of a wildfire.
- Related Hazards: Drought, Severe Weather

2.6.12 Active Assailant

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Active Assailant	Likely	Critical	Moderate	Less than 6 hours	Less than 6 hours	2.9

2.6.12.1 Hazard Background

An active assailant incident is defined by the US Federal Bureau of Investigation (FBI) as “one or more individuals actively engaged in killing or attempting to kill people in a populated area.” Unlike other hazards, active assailant events are typically unpredictable, evolve quickly, and are often over within 10 to 15 minutes, sometimes before law enforcement can arrive on scene. Active assailant incidents pose a significant risk to communities, causing death and serious injuries, psychological trauma, property damage, and disruption of critical services. These incidents may involve firearms, but can also include other weapons and tactics designed to cause mass casualties.

Although rare compared to natural hazards, active assailant incidents have increased in frequency in the United States over the past two decades. This hazard is particularly concerning for local governments because it can occur with little to no warning and requires a rapid, coordinated response among law enforcement, emergency medical services, and the community. Secondary impacts of active assailant events include extended closures of affected facilities, long-term recovery costs, and reduced public sense of safety.

2.6.12.2 Location

Active assailant events can occur in anywhere a group of people are located. These incidents can occur in schools, government buildings, businesses, houses of worship, healthcare facilities, or public gathering spaces, making the need for a detailed response that can be applied to a variety of different contexts.

2.6.12.3 Extent

Multiple deaths and injuries are possible during an active assailant event. Active shooting events can greatly disrupt community well-being by creating an environment of fear and a reduced public sense of safety. These events can impact an entire region, with people fearful for their safety.

Impact: 3 – Critical

Spatial Extent: 3 – Moderate

2.6.12.4 Historical Occurrences

The FBI’s Office of Partner Engagement tracks statistics of the active assailant events in the United States between 2000 and 2019. This report describes 333 active assailant events in 43 states and the District of Columbia, with a total of 2,851 casualties between 2000 and 2019. This report described businesses open to pedestrian traffic with the largest amount of incidents at 96, followed by open spaces with 50 incidents and schools representing 44 incidents.

There have been several significant active assailant events in Georgia in recent years:

- **March 2021:** An identified shooter, Robert Aaron Long, struck at multiple locations in Cherokee County and the Atlanta area at massage parlors. 8 people were killed and one person was injured. Many of the victims were Asian women, which brought attention to hate crime potential, targeting of businesses, and “roving” shooter behavior.
- **September 4, 2024:** An identified male shooter, age 14, armed with a rifle, began shooting people inside Apalachee High School in Winder, Georgia. Four people were killed (two students and two teachers); nine people were wounded (eight students and one teacher). The shooter was apprehended by law enforcement at the scene.
- **August 8, 2025:** An identified shooter, Patrick Joseph White, fired nearly 500 rounds during a shooting at a US Centers for Disease Control and Prevention facility. A Dekalb County police officer was killed while responding to the scene, and the shooter also died in the shooting. This event showed that high profile locations can be vulnerable to shootings.

2.6.12.5 Probability of Future Occurrence

Active assailant events have increased in frequency over the last 20 years, making the probability of future occurrence likely.

Probability: 3 – Likely

2.6.12.6 Climate Change

There is no connection between climate change and active assailant events.

2.6.12.7 Vulnerability Assessment

People

Active assailant events can cause significant loss of life and severe injuries within minutes. These events can instill fear in the community and make citizens feel unsafe, especially when in large crowds, which can disrupt social events and the people’s mental well-being.

Property

Active assailant events have the potential to damage property. Damage can include bullet strikes, broken glass, and structural impacts from tactical response efforts. Facilities may require security retrofits to address weak security points at the facility.

Environment

Active assailant events do not appear to impact the environment.

Consequence Analysis

Table 2-61. Active assailant consequence analysis

Category	Consequences
Impact on the Public	Significant loss of life and severe injuries can take place within minutes. During a shooting event and directly after there can be a public sense of fear and decrease in sense of safety, especially when people are in highly-populated spaces
Impact on Responders	Law enforcement, fire, and emergency medical services (EMS) are placed at high risk when responding to an active assailant. A rapid response is necessary, which can be difficult for local responders that may not have all information about the event. Local responders may face challenges in safely accessing injured victims.
Continuity of Operations (including delivery of services)	Can disrupt the continuity of operations, both by damaging infrastructure and for the emotional weight of this type of hazard. Normal operations may be suspended due to ongoing investigations.
Property, Facilities, and Infrastructure	Damage can include bullet strikes, broken glass, and structural impacts from tactical response efforts. Facilities may require security retrofits to address weak security points at the facility.
Impact of Environment	Active assailant events do not appear to impact the environment.
Economic Conditions	Active assailant events can have wide-reaching economic consequences. Costs include emergency response, medical treatment, mental health services, property repairs, litigation, and long-term recovery assistance.
Public Confidence in Governance	The jurisdiction is expected to respond quickly to events to prevent injury and loss of life and local leaders can lose credibility if they are unable to do so.

2.6.12.8 Changes in Development

As population density increases, there can be larger potential target populations for active assailant incidents and an increase in the number of potential casualties in a single event. Additionally, growth will drive expansion of the locations where active assailant events may occur, leading to a wider set of locations at risk and greater demand of security measures.

2.6.12.9 Multi-Jurisdictional Considerations

There are no expected differences between jurisdictions for an active assailant event.

2.6.12.10 Problem Statements

- Camden County is vulnerable to active shooter incidents in schools, businesses, houses of worship, and government facilities as well as public event sites. Planning, training and resourcing are necessary to mitigate occurrence and or respond to incidents.
- Active assailant events have increased in frequency in the United States over the past 20 years.
- These events can cause significant loss of life and severe injuries within minutes, requiring a rapid response to minimize loss of life and also to maintain public confidence in the jurisdiction's governance.
- Related hazards: Terrorism

2.6.13 Cyber Attack

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Cyber Attack	Likely	Critical	Moderate	Less than 6 hours	Less than 24 hours	3.0

2.6.13.1 Hazard Background

A Cyber attack is a malicious attempt to access or damage a computer system, potentially leading to loss of data or money, or theft of personal information. Such attacks can occur on individual computers or larger computer networks, mobile phones, gaming systems, and other devices.

Cyber attacks use malicious code to alter computer operations or data. The vulnerability of computer systems to attacks is a growing concern as people and institutions become more dependent upon networked technologies. The FBI reports that "cyber intrusions are becoming more commonplace, more dangerous, and more sophisticated," with implications for private- and public-sector networks.

There are many types of cyber attacks. Among the most common is a direct denial of service attack. This is when a server or website will be queried or pinged rapidly with information requests, overloading the system and causing it to crash.

Malware, or malicious software, can cause numerous problems once on a computer or network, from taking control of users' machines to discreetly sending out confidential information. Ransomware is a specific type of malware that blocks access to digital files and demands a payment to release them. Hospitals, school districts, state and local governments, law enforcement agencies, businesses, and even individuals can be targeted by ransomware. Ransomware is the most likely cyber threat for Camden County based on incidents reported by Verizon and the FBI.

Cyber spying or espionage is the act of illicitly obtaining intellectual property, government secrets, or other confidential digital information, and often is associated with attacks carried out by professional agents working on behalf of a foreign government or corporation. According to the cybersecurity firm, Symantec, in 2016 "...the world of cyber espionage experienced a notable shift towards more overt activity, designed to destabilize and disrupt targeted organizations and countries."

Major data breaches, when hackers gain access to large amounts of personal, sensitive, or confidential information, have become increasingly common. The Symantec report says more than seven billion identities have been exposed in data breaches over the last eight years. In addition to networked systems, data breaches can occur due to the mishandling of external drives, as has been the case with losses of some state employee data.

Cyber crime can refer to any of the above incidents when motivated primarily by financial gain or other criminal intent.

The most severe type of attack is cyber terrorism, which aims to disrupt or damage systems in order to cause fear, injury, and loss to advance a political agenda.

The Georgia Technology Authority (GTA) has been working to keep Georgia's information technology infrastructure secure from cyber threats both internal and external. In July 2019, the GTA recently strengthened its position as a nation leader in cybersecurity with the opening of the Georgia Cyber Center in Augusta. The Center not only trains cybersecurity professionals, but houses the Georgia Bureau of Investigation's cybercrime unit. Camden County plans to align its cyber-hazard mitigation with the National Institute of Standards and Technology (NIST) Cybersecurity Framework 2.0, which is a framework that helps organizations manage and reduce cybersecurity risk. Additionally, the County will align with GTA guidance. These efforts can help the County set priorities and support requests for future mitigation resources.

Warning Time: 4 – Less than 6 hours

Duration: 2 – Less than 24 hours

2.6.13.2 Location

Cyber disruption events can occur and/or impact virtually any location in the State where computing devices are used. Incidents may involve a single location or multiple geographic areas. A disruption can have far-reaching effects beyond the location of the targeted system; disruptions that occur far outside the County can still impact people, businesses, and institutions within the County.

2.6.13.3 Extent

The extent or magnitude/severity of a cyber disruption event is variable depending on the nature of the event. A disruption affecting a small, isolated system could impact only a few functions or processes. Disruptions of large, integrated systems could impact many functions or processes, as well as many individuals that rely on those systems.

There is no universally accepted scale to quantify the severity of cyber attacks. The strength of a direct denial of service attack is sometimes explained in terms of a data transmission rate. One of the largest direct denial of service disruptions ever, which brought down some of the internet's most popular sites on October 21, 2016, peaked at 1.2 terabytes per second.

Recovery Point Objective (RPO) and Recovery Time Objective (RTO) are two key metrics used in cybersecurity and disaster recovery planning to measure an organization's ability to recover from a cyber incident, such as a ransomware attack, data breach, or system failure. RPO describes how much data an organization can afford to lose when it goes offline, which determines the frequency of system backups. RTO describes the maximum time to get back online following an interruption. These metrics can help to determine recovery priorities following an attack.

Data breaches are often described in terms of the number of records or identities exposed. However, the impact can be determined by which critical services are affected. Within the County, a serious data cyber attack could impact service delivery, impacting continuity of operations, revenue cycles, and public confidence, which would have a critical impact on the County.

Impact: 3 – Critical

Spatial Extent: 3 – Moderate

2.6.13.4 Historical Occurrences

Symantec reports there were a total of 1,209 data breaches worldwide in 2016, 15 of which involved the theft of more than 10 million identities. While the number of breaches has remained relatively steady, the average number of identities stolen has increased to almost one million per incident. The report also found that one in every 131 emails contains malware, and the company's software blocked an average of 229,000 web attacks every day.

The Privacy Rights Clearinghouse, a nonprofit organization based in San Diego, maintains a timeline of 75,365 data breaches resulting from computer hacking incidents in the United States from 2005 to 2025. The database lists 877 data breaches in Georgia over the last 20 years. Although none of these reported hacks were recorded in the planning area, residents of the County were almost certainly included in some of the breaches that occurred across the State.

2.6.13.5 Probability of Future Occurrence

Cyber attacks occur daily, but most have negligible impacts at the local or county level. The possibility of a larger disruption affecting systems within the County is a constant threat, but it is difficult to quantify the exact probability due to such highly variable factors as the type of attack and intent of the attacker. Minor attacks against business and government systems have become a commonplace occurrence but are usually stopped with minimal impact. Similarly, data breaches impacting the information of residents of Camden County are almost certain to happen in coming years. Major attacks or breaches specifically targeting systems in the County are less likely but since they have been becoming more common in recent years, this risk cannot be ruled out.

Probability: 3 – Likely

2.6.13.6 Climate Change

There is no connection between climate change and cyber attack events.

2.6.13.7 Vulnerability Assessment

As discussed above, the impacts from a cyber attack vary greatly depending on the nature, severity, and success of the attack.

People

Cyber attacks in Camden County primarily threaten the community by disrupting essential services that residents rely on daily. A successful cyber intrusion can interrupt access to public safety systems, delay emergency response, compromise personal information, and hinder the delivery of critical government functions. While physical injuries or fatalities are unlikely except in cases involving cyber attacks on critical infrastructure, the indirect effects, such as service outages, communication failures, or financial harm from identity theft, can significantly affect residents' well-being. A major incident may also reduce public confidence in the County's ability to protect sensitive data and maintain reliable operations.

Property

Outside of large-scale cyber terrorism affecting critical infrastructure, property damage within Camden County is usually limited to compromised or disabled computer systems, servers, or networks. Physical damage to buildings or equipment is generally uncommon unless a cyber attack directly impacts operational technology systems.

Environment

A major cyber terrorism attack in Camden County could negatively impact the environment if it triggered the release of hazardous materials, disrupted industrial control systems, or interfered with transportation or utility infrastructure. For example, a cyber intrusion affecting traffic-control

or facility-management systems could result in accidents or spills involving hazardous substances.

Consequence Analysis

Table 2-62. Cyber attack consequence analysis

Category	Consequences
Impact on the Public	Cyber attacks can impact personal data and accounts. Injuries or fatalities could potentially result from a major cyber terrorist attacks against critical infrastructure.
Impact on Responders	Cyber attacks can impact personal data and accounts. Injuries or fatalities could potentially result from a major cyber terrorist attacks against critical infrastructure.
Continuity of Operations (including delivery of services)	Agencies that rely on electronic backup of critical files are vulnerable. The delivery of services can be impacted since governments rely, to a great extent, upon electronic delivery of services.
Property, Facilities, and Infrastructure	Rare. Most attacks affect only data and computer systems. Sabotage of utilities and infrastructure from a major cyber terrorist attacks could potentially result in system failures that damage property on a scale equal with natural disasters. Facilities and infrastructure may become unusable as a result of a cyber-attack.
Impact of Environment	Rare. A major attack could theoretically result in a hazardous materials release.
Economic Conditions	Could greatly affect the economy. In an electronic-based commerce society, any disruption to daily activities can have disastrous impacts to the economy. It is difficult to measure the true extent of the impact.
Public Confidence in Governance	The government's inability to protect critical systems or confidential personal data could impact public confidence. An attack could raise questions regarding the security of using electronic systems for government services.

2.6.13.8 Changes in Development

Increased development will not necessarily lead to increased incidents of cyberattack. However, increased population puts more records at risk in the event of a cyber attack.

2.6.13.9 Multi-Jurisdictional Considerations

There are no expected differences between jurisdictions for a cyber attack event.

2.6.13.10 Problem Statements

- Cyber attacks are becoming increasingly common and advanced around the world, with the potential to cause significant economic impacts to the local economy.
- Plans and controls for continuity, recovery, and protection against cyber disruptions are not fully defined, are applied inconsistently, and are not tested on a regular basis.
- Cyber risk management and governance are currently fragmented and have not been integrated into the county's overall hazard mitigation efforts.
- Related hazards: Terrorism

2.6.14 Hazardous Materials Incident

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Hazardous Materials Incident	Likely	Limited	Moderate	Less than 6 Hours	Less than 6 hours	2.6

2.6.14.1 Hazard Background

A hazardous substance is any substance that may cause harm to persons, property, or the environment when released to soil, water, or air. Chemicals are manufactured and used in increasing types and quantities. Each year over 1,000 new synthetic chemicals are introduced and as many as 500,000 products pose physical or health hazards and can be defined as "hazardous chemicals". Hazardous substances are categorized as toxic, corrosive, flammable, irritant, or explosive. Hazardous material incidents generally affect a localized area.

Generally, a hazardous material is a substance or combination of substances which, because of quantity, concentration, or physical, chemical, or infectious characteristics, may either cause or significantly contribute to an increase in mortality or serious illness. Hazardous materials may also pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Hazardous material incidents can occur while a hazardous substance is stored at a fixed facility, or while the substance is being transported along a road corridor or railroad line or via an enclosed pipeline or other linear infrastructure.

The US Department of Transportation (USDOT), US Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA) all have responsibilities relating to the transportation, storage, and use of hazardous materials and waste. The Right to Know Network (RTK NET), maintained by the EPA's NRC is a primary source of information on the use and storage of hazardous materials, as well as data regarding spills and releases.

Hazardous materials are typically divided into the following classes:

- Explosives
- Compressed gases: flammable, non-flammable compressed, poisonous
- Flammable or combustible liquids
- Flammable solids: spontaneously combustible, dangerous when we
- Oxidizers and organic peroxides
- Toxic materials: poisonous material, infectious agents
- Radioactive material
- Corrosive material: destruction of human skin, corrodes steel

It is common to see hazardous materials releases as escalating incidents resulting from other hazards such as floods, wildfires, and earthquakes that may cause containment systems to fail or affect transportation infrastructure. The release of hazardous materials can greatly complicate or even eclipse the response to the natural hazards disaster that caused the spill.

Fixed Hazardous Materials Incident

A fixed hazardous materials incident is the release of chemical substances or mixtures during production or handling at a fixed facility. Hazardous materials releases can be accidental or intentional, as with a terror attack.

Fixed facilities with hazardous materials can include industrial, commercial, and federal facilities. The Emergency Planning and Community Right-to-Know Act (EPCRA) created several methods for tracking facilities with hazardous materials. Section 313 of the EPCRA created the Toxics Release Inventory (TRI). The TRI tracks toxic chemical releases and pollution prevention activities reported by industrial and federal facilities. TRI data is made publicly available by the EPA. Section 312 of the EPCRA mandated additional reporting of hazard materials by businesses and organizations with quantities of hazardous materials over a certain threshold. Tier II reports must be submitted annually, and help local fire departments, Local Emergency Planning Committees and State Emergency Response Commissions plan for and respond to chemical emergencies.

Transportation Hazardous Materials Incident

A transportation hazardous materials incident is the accidental release of chemical substances or mixtures during transport. Transportation hazardous materials incidents in Camden County can occur during highway, rail, or waterway transport. Highway accidents involving hazardous materials pose a great potential for public exposures. Both nearby populations and motorists can be impacted and become exposed by accidents and releases. If airplanes carrying hazardous cargo crash, or otherwise leak contaminated cargo, populations and the environment in the impacted area can become exposed.

Pipeline Incident

A pipeline transportation incident occurs when a break in a pipeline creates the potential for an explosion or leak of a dangerous substance (oil, gas, etc.) possibly requiring evacuation. An underground pipeline incident can be caused by environmental disruption, accidental damage, or sabotage. Incidents can range from a small, slow leak to a large rupture where an explosion is possible. Inspection and maintenance of the pipeline system along with marked gas line locations and an early warning and response procedure can lessen the risk to those near the pipelines.

Warning Time: 4 – Less than 6 hours

Duration: 1 – Less than 6 hours

2.6.14.2 Location

In transit, hazardous materials generally follow major transportation routes, including road, rail and pipelines, creating a risk area immediately adjacent to these routes. There are no designated or restricted hazardous materials routes in the planning area; all the area's roads have the potential for hazardous material incidents, particularly state and US highways, including Interstate 95, Highways 110 and 17, Spur 25, and State Highway 252. Railroad lines may also transport hazardous materials. Although rail lines are limited in the planning area, the First Coast Railroad passes through the City of Kingsland coming from Fernandina Beach. Lastly, many hazardous materials are transported through waterways, especially given the County's coastal geography and the Kings Bay Naval Substation within its boundaries. Figure 2-49 shows the major transportation routes through the planning area.

The TRI run by the EPA maintains a database of industrial facilities across the country and the type and quantity of toxic chemicals they release. The TRI also tracks pollution prevention activities and which facilities are reducing toxic releases. The TRI reports 2 sites reporting hazardous materials in Camden County in the last three years. These sites are shown in Figure 2-50 and detailed by sector in Table 2-63 .

The PHMSA maintain an inventory of the location of all gas transmission and hazardous liquid pipelines as well as liquid natural gas plants and hazardous liquid breakout tanks. The location of gas transmission pipelines in Camden County are also shown in Figure 2-49 as reported in the public viewer of the National Pipeline Mapping System. Figure 2-50 displays the location of Hazardous Materials fixed sites in the County.

Figure 2-49. Hazardous materials transportation infrastructure and natural gas pipelines (PHMSA)

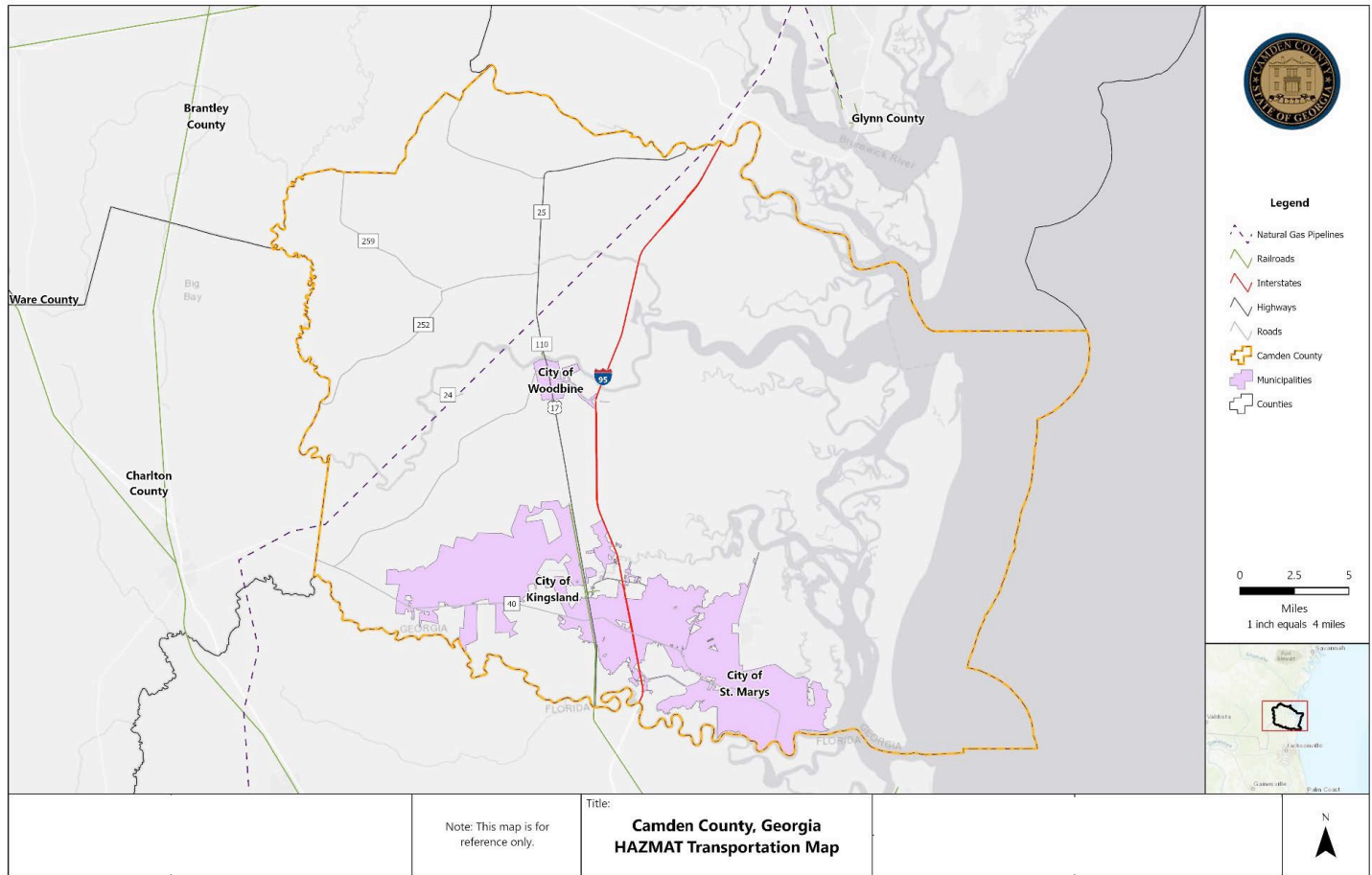
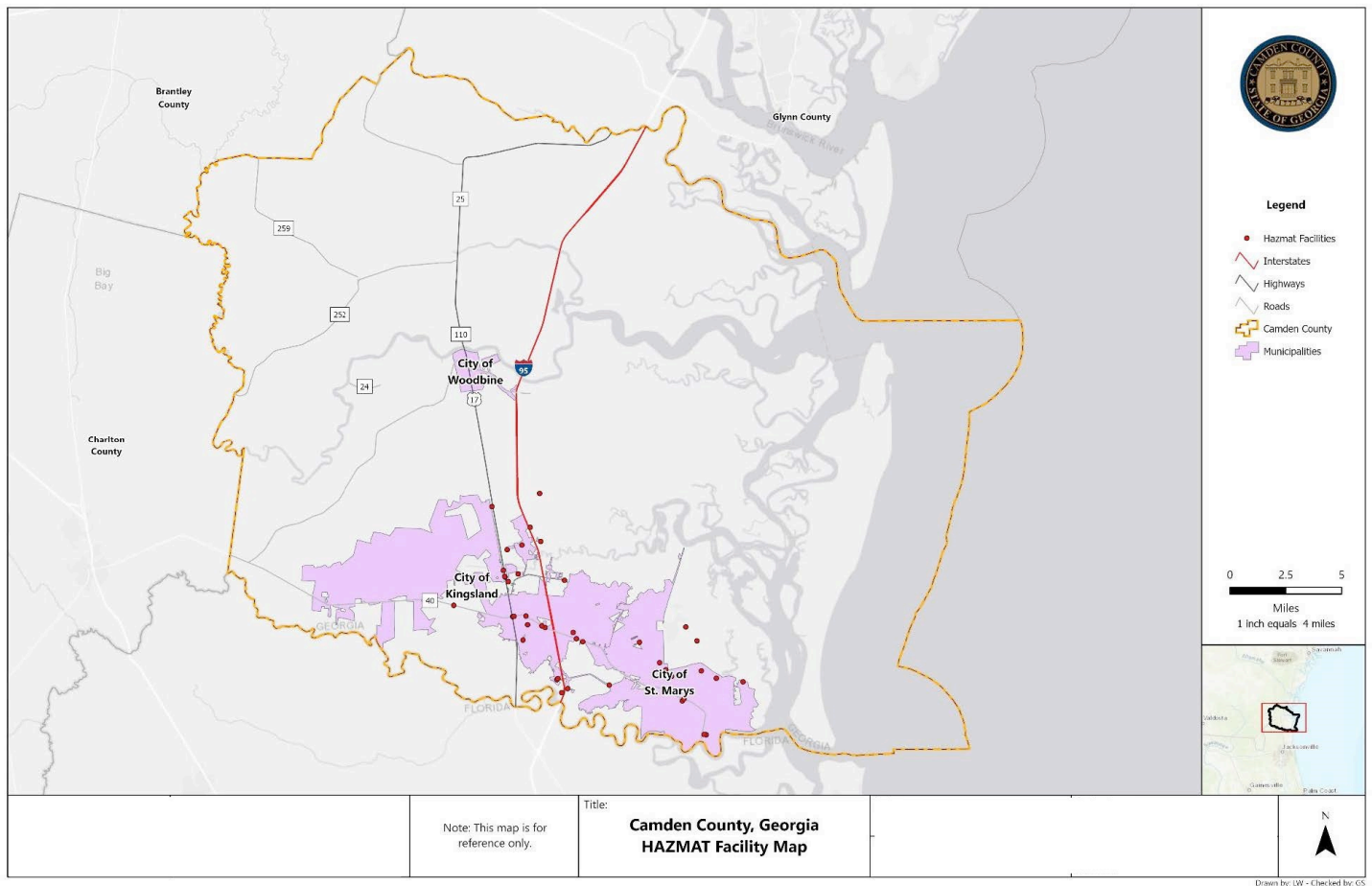


Table 2-63. Hazardous materials sites in Camden County (EPA)

Facility Name	Sector
Aglogic Chemical LLC – Camden Plant	Chemicals
US Navy Kings Bay Naval Submarine Base	National Security and International Affairs

Figure 2-50. Hazardous materials facilities (EPA)



2.6.14.3 Extent

The magnitude of a hazardous materials incident can be defined by the material type, the amount released, and the location of the release. The USDOT Pipeline and Hazardous Materials Safety Administration (PHMSA), which records hazardous material incidents across the country, defines a “serious incident” as a hazardous materials incident that involves:

- a fatality or major injury caused by the release of a hazardous material,
- the evacuation of 25 or more persons as a result of release of a hazardous material or exposure to fire,
- a release or exposure to fire which results in the closure of a major transportation artery,
- the alteration of an aircraft flight plan or operation,
- the release of radioactive materials from Type B packaging,
- the release of over 11.9 gallons or 88.2 pounds of a severe marine pollutant, or
- the release of a bulk quantity (over 199 gallons or 882 pounds) of a hazardous material.

Impact: 2 – Limited

Spatial Extent: 3 – Moderate

2.6.14.4 Historical Occurrences

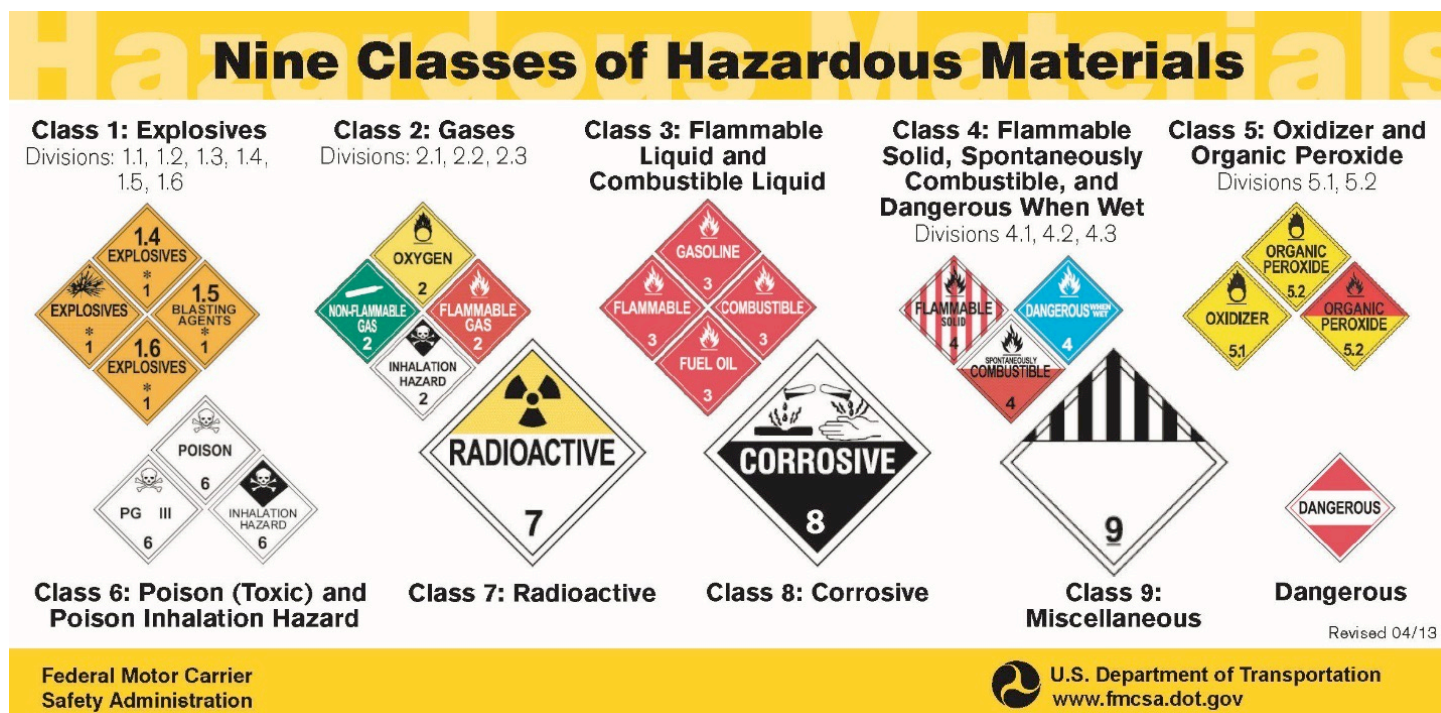
PHMSA maintains a database of reported hazardous materials incidents. According to PHMSA records, there were 9 recorded releases in Camden County from 2000 to October 2025. Table 2-64 summarizes these events by locations. One event was considered a serious incident.

The most common materials spilled in the planning area are Class 3 (Flammable and Combustible Liquids) and Class 8 (Corrosives). Figure 2-51 describes all nine hazard classes.

Table 2-64. PHMSA recorded hazardous materials incidents (2000 to 2025) (PHMSA)

Carrier Reporter Name	Date Of Incident	Hazardous Class	Incident Route	Causes of Failure	Incident Result
Kings Bay					
KENAN TRANSPORT CO INC	6/19/2004	3	SPUR 40	Loose Closure, Component, or Device	Spillage
Kingsland					
AIR PRODUCTS & CHEMICALS INC	10/4/2002	2.1	I-95 SOUTH MMG	Rollover Accident; Vehicular Crash or Accident Damage	Vapor(Gas) Dispersion
TRANSPORTATION SERVICES INC	1/21/2011	8		Impact with Sharp or Protruding Object (e.g., nails)	Spillage
St. Marys					
SCHNEIDER NAT'L BULK CARRIERS	5/6/2000	8	OSHBOURNE ST	Overfilled	Spillage
QUALITY CARRIERS INC	2/15/2002	3			Spillage
Florida Rock & Tank Lines, Inc.	11/3/2008	3		Overfilled	Spillage
YRC INC.	5/31/2023	8	491 ST MARVS RD	Inadequate Blocking and Bracing	Spillage
Woodbine					
EMPIRE EXPRESS INC	5/22/2000	6.1	HARRIETS BLUFF ROAD	Rollover Accident; Rollover Accident; Vehicular Crash or Accident Damage; Vehicular Crash or Accident Damage	Spillage

Figure 2-51. Hazardous materials classes (USDOT)



The following narratives highlight some of the potential damages caused by a hazardous material incident:

- May 22, 2000:** The vehicle was travelling westbound on Harriets Bluff Road when the driver entered a curve and lost control of the vehicle, which then overturned causing the cargo contains to rupture. The cargo consisted of 15 super sacks, which contained 3,000 pounds of aldicarb each. Almost all of the sack ruptured, spilling product onto the ground and inside the trailer. An environmental vac was called to the scene to clean the spilled product. Product that was salvageable was repowered. Response included: Aventis Cropscience Dart Team, Georgia State Patrol, Camden Sheriff's Department, Camden County Fire Department, Environmental Protection Department, Empire Express, Inc., TBS Cable Service, Telecom Telephone Company, and property owners.
- October 4, 2002:** The driver lost control of the vehicle and ran off the highway on the right side into a wooded area. The front vessel pressure gauge was knocked off the cargo tank. A small amount of gaseous hydrogen was vented until the gauge shut off valve was closed. This incident occurred on I-95 southbound in Kingsland and reported \$95,010 in total damages.
- November 3, 2008:** Florida Rock & Tank Lines, Inc. driver was delivering fuel to a customer location. The station's veeder root was down and the station had no tank charts. The driver was instructed prior to delivery to use the Oilmans chart book and driver was told that the station has 12k tanks. The driver however, used the wrong tank charts and while unloading fuel he noticed the product leaking out of the tank. The driver immediately stopped the flow of product but approximately 5-8 gallons came out of the top of the tank. All product was

contained on concrete and no product reached drains or soil. The spill was cleaned up by the driver and on-site personnel. Our regional safety supervisor inspected the site to ensure satisfactory cleanup.

2.6.14.5 Probability of Future Occurrence

Based on historical occurrences recorded by PHMSA, there have been 9 incidents of hazardous materials release, only one of which was considered serious, in the 25-year period from 2000 to 2025. Using historical occurrences as an indication of future probability, there is a 36 percent annual probability of an incident occurring and a 5 percent annual probability of a serious incident occurring.

Probability: 3 – Likely

2.6.14.6 Climate Change

Climate change does not directly cause hazardous materials incidents; however, it may increase conditions that contribute to them. More frequent extreme weather events, such as flooding, storm surge, or high winds, can damage facilities, transportation routes, or storage structures that contain hazardous materials, increasing the likelihood of accidental releases.

2.6.14.7 Vulnerability Assessment

People

Hazardous materials incidents can cause injuries, hospitalizations, and even fatalities to people nearby. People living near hazardous facilities and along transportation routes may be at a higher risk of exposure, particularly those living or working downstream and downwind from such facilities. For example, a toxic spill or a release of an airborne chemical near a populated area can lead to significant evacuations and have a high potential for loss of life. Individuals working with or transporting hazardous materials are also at heightened risk.

In addition to the immediate health impacts of releases, a handful of studies have found long term health impacts such as increased incidence of certain cancers and birth defects among people living near certain chemical facilities. However, there has not been sufficient research done on the subject to allow detailed analysis.

The primary economic impact of hazardous material incidents results from lost business, delayed deliveries, property damage, and potential contamination. Large and publicized hazardous material-related events can deter tourists and could potentially discourage residents and businesses. Economic effects from major transportation corridor closures can be significant.

Property

The impact of a fixed hazardous facility, such as a chemical processing facility is typically

localized to the property where the incident occurs. The impact of a small spill (i.e. liquid spill) may also be limited to the extent of the spill and remediated if needed. While cleanup costs from major spills can be significant, they do not typically cause significant long-term impacts to property.

Impacts of hazardous material incidents on critical facilities are most often limited to the area or facility where they occurred, such as at a transit station, airport, fire station, hospital, or railroad. However, they can cause long-term traffic delays and road closures resulting in major delays in the movement of goods and services. These impacts can spread beyond the planning area to affect neighboring counties, or vice-versa. While cleanup costs from major spills can be significant, they do not typically cause significant long-term impacts to critical facilities, but there is a chance they may be impacted.

Environment

Hazardous material incidents may affect a small area at a regulated facility or cover a large area outside such a facility. Widespread effects occur when hazards contaminate the groundwater and eventually the municipal water supply, or they migrate to a major waterway or aquifer. Impacts on wildlife and natural resources can also be significant.

Consequence Analysis

Figure 2-52. Hazardous materials incident consequence analysis

Category	Consequences
Impact on the Public	Contact with hazardous materials could cause serious illness or death. Those living and working closest to hazardous materials sites face the greatest risk of exposure. Exposure may also occur through contamination of food or water supplies.
Impact on Responders	Responders face similar risks as the general public but a heightened potential for exposure to hazardous materials.
Continuity of Operations (including delivery of services)	A hazardous materials incident may cause temporary road closures or other localized impacts but is unlikely to affect continuity of operations.
Property, Facilities, and Infrastructure	Some hazardous materials are flammable, explosive, and/or corrosive, which could result in structural damages to property. Impacts would be highly localized.
Impact of Environment	Consequences depend on the type of material released. Possible ecological impacts include loss of wildlife, loss of habitat, and degradation of air and/or water quality.

Economic Conditions	Clean up, remediation, and/or litigation costs may apply. Long-term economic damage is unlikely.
Public Confidence in Governance	A hazardous materials incident may affect public confidence if the environmental or health impacts are enduring.

2.6.14.8 Changes in Development

While hazardous material sites are occasionally located near incompatible uses such as residential development, increases in risk can be mitigated through land use planning and zoning practices to direct the development of future hazardous materials facilities away from existing residential uses and discourage new residential development near existing hazardous materials sites and transport routes.

2.6.14.9 Multi-Jurisdictional Considerations

There are no expected differences between jurisdictions for a hazardous material event.

2.6.14.10 Problem Statements

- Although the County overall has seen relatively few hazardous materials incidents, they have occurred in all incorporated jurisdictions.
- Interstate 95 and Highway 17 run through the City of Kingsland; Highway 17 also passes through the City of Woodbine. The presence of these major thoroughfares raises the likelihood of a transportation based hazardous materials incident, including spills or rollover accidents like those that have happened in the County in the past.
- A natural gas pipeline runs from the southwestern corner of the County northeast into Glynn County, crossing the Satilla River while passing through unincorporated areas of the County just west of the City of Woodbine. These areas may be exposed to pipeline incidents, including fires or explosions caused by ignition of the natural gas; however, these incidents are rare. Pipeline age is an indicator of risk, as corrosion over time can lead to pipeline failure. Therefore, monitoring and maintenance may mitigate this risk.

2.6.15 Infectious Disease

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Infectious Disease	Likely	Limited	Moderate	More than 24 hours	More than 1 week	2.3

2.6.15.1 Hazard Background

Infectious diseases are illnesses caused by pathogens such as bacteria, fungi, viruses, or parasites, that can be transmitted through a community. Transmission can be from person to person, via animals, through contaminated food or water, and through vectors such as insects like

mosquitos. Infectious disease outbreaks can lead to illness, hospitalizations, and elevated death rates, placing a high burden on local healthcare systems. Outbreaks can arise unexpectedly and spread quickly, posing a risk to public health and safety, as well as impacting the local economy.

Infectious diseases can be classified as endemic, epidemic, outbreak or pandemic depending on their size and scale. Endemic diseases create ongoing community health burdens, whereas epidemics or outbreaks can emerge suddenly and have the potential to quickly escalate. Pandemics are the largest-scale outbreaks, crossing local borders and having large impacts on daily life and economic systems.

Warning time: 1 – More than 24 hours

Duration: 4 – More than 1 week

2.6.15.2 Location

Infectious disease outbreaks can occur wherever people are in contact with one another. Schools, hospitals, and assisted living facilities are areas of heightened concern. Areas with dense populations should also be closely monitored.

2.6.15.3 Extent

Infectious diseases can range from small, localized clusters to widespread events impacting entire towns, regions, or even crossing international borders. Since infectious diseases can spread quickly, they have been evaluated in this Plan for their potential to impact the entire County.

Spatial extent: 3 – Moderate

Impact: 2 – Limited

2.6.15.4 Historical Occurrences

The most notable recent infectious disease was the coronavirus, or COVID-19, caused by the novel coronavirus SARS-CoV-2. As of September 2025, the Georgia Department of Public Health reported 11,095 confirmed cases of COVID-19 in Camden County, with 125 deaths attributed to the disease and 23 probable deaths.

Another significant disease outbreak in the County was the 2009 to 2010 H1N1 Swine Flu pandemic, which had 1,286 confirmed cases and caused 33 deaths in the State. This outbreak of the swine flu greatly impacted individuals between the ages of 5 to 29.

2.6.15.5 Probability of Future Occurrence

The probability of future infectious disease outbreaks in Camden County is likely, occurring every 5 to 20 years. Increased population density and global movement create the conditions for new infectious diseases to spread quickly.

Probability: 3 – Likely

2.6.15.6 Climate Change

Scientific data supports the position that climate change impacts the spread of many infectious diseases, as warmer temperatures and milder winters can expand the habitable zones for insect vectors such as mosquitos or ticks. Additionally, extreme weather events such as flooding or heavy rainfall can create breeding grounds for vectors like mosquitos, and allow insect vectors to spread into new geographic areas.

2.6.15.7 Vulnerability Assessment

People

The population may face widespread illness, hospitalization, and increased mortality rates. This is especially true of vulnerable populations, such as the elderly, young children, and those who are immunocompromised. Infected persons may face long-term health impacts including chronic conditions.

Property

Property is not directly impacted by infectious diseases, however, infectious disease outbreaks have the potential to strain local hospital infrastructure and to greatly impact the local economy.

Environment

Soil and water quality could potentially be impacted by improper disposal of medical waste, personal protective equipment, or disinfectants, and increased cleaning chemicals may place stress on the wastewater treatment systems.

Consequence Analysis

Table 2-65. Infectious disease consequence analysis

Category	Consequences
Impact on the Public	Widespread illness, hospitalization, and increased mortality rates, especially for vulnerable populations.
Impact on Responders	Increased exposure risk for first responders who may become ill themselves, reducing available workforce capacity. Personal protective equipment may not be readily available to meet needs.
Continuity of Operations (including delivery of services)	Critical service sectors may experience staff shortages, and service disruptions may occur if facilities are forced to close due to outbreaks or quarantine restrictions.

Property, Facilities, and Infrastructure	Property is not directly impacted by infectious diseases, however, infectious disease outbreaks have the potential to greatly impact the local economy.
Impact of Environment	Possible impacts to soil and water quality from improper disposal of medical waste, personal protective equipment, or disinfectants, and possible stress on the wastewater treatment systems from increased cleaning chemicals.
Economic Conditions	Loss of workforce productivity to illness, caregiving or fatalities, as well as possible temporary business closures, supply chain disruptions, and decreased consumer spending.
Public Confidence in Governance	Rapid response, transparent communication, and effective mitigation efforts can increase community members' trust in the local government. This trust can assist with community compliance to slow the spread of infections.

2.6.15.8 Changes in Development

Increased population density can lead to increased contact between people, allowing diseases to spread more quickly. Additionally, expansion into undeveloped areas can bring humans into closer contact with wildlife, increasing the risk of pathogens crossing from animals to humans.

2.6.15.9 Multi-Jurisdictional Considerations

The impact of an infectious disease outbreak is expected to be lower in Unincorporated Camden County due to a lower population density. The other effects of infectious disease are expected to be the same amongst jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
City of Kingsland	2	2	3	1	4	2.3
City of St. Marys	2	2	3	1	4	2.3
City of Woodbine	2	2	3	1	4	2.3
Unincorporated Camden County	2	1	3	1	4	2

2.6.15.10 Problem Statements

- The COVID-19 pandemic highlighted the need for preparation to address infectious disease outbreaks.
- Development and population increases in the County will continue to increase the risk for the spread of infectious diseases.

2.6.16 Infrastructure Failure

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Infrastructure Failure	Likely	Critical	Moderate	6–12 hours	Less than 24 hours	2.9

2.6.16.1 Hazard Background

Infrastructure failure refers to the breakdown or disruption of essential systems that support a community's daily functioning, health, safety, and economy. Critical infrastructure includes lifelines such as transportation networks, water and wastewater systems, energy and utility services, communication networks, and public facilities. When these systems fail, which can happen for a variety of reasons, the impacts can cascade across multiple sectors of the community.

FEMA identifies infrastructure systems as “community lifelines” because their failure can significantly disrupt normal life and hinder emergency response and recovery. A localized disruption, such as a power outage, may create inconvenience, while a large-scale failure, such as a regional water system collapse or prolonged utility outage, can lead to life-threatening conditions, economic losses, and long-term community disruption.

Infrastructure failure can occur for a variety of reasons:

- Natural hazards can damage or disable physical systems.
- Aging or deteriorating assets (such as bridges, dams, or pipelines) can collapse or leak without warning.
- Technological or mechanical failure, including system overloads, software malfunctions, or cyberattacks on digital infrastructure.
- Industrial or utility fires or explosions.
- Mass casualty incidents can put extra burden on local healthcare resources.
- Human error or negligence, such as poor maintenance or inadequate design standards.

The impacts of infrastructure failure can include:

- Disruption of essential services, such as electricity, water, and sanitation.
- Reduced capacity for emergency response, healthcare, and public safety.
- Economic disruption, including business closures, supply chain interruptions, and loss of productivity.
- Public health risks from unsafe water, loss of medical facilities, or exposure to extreme heat or cold without utilities.
- Community isolation due to loss of transportation or communications networks.

Resiliency planning, which can include system redundancy, hardening critical facilities, investing in modernization, and improving maintenance programs, can reduce the likelihood and impact of infrastructure failure.

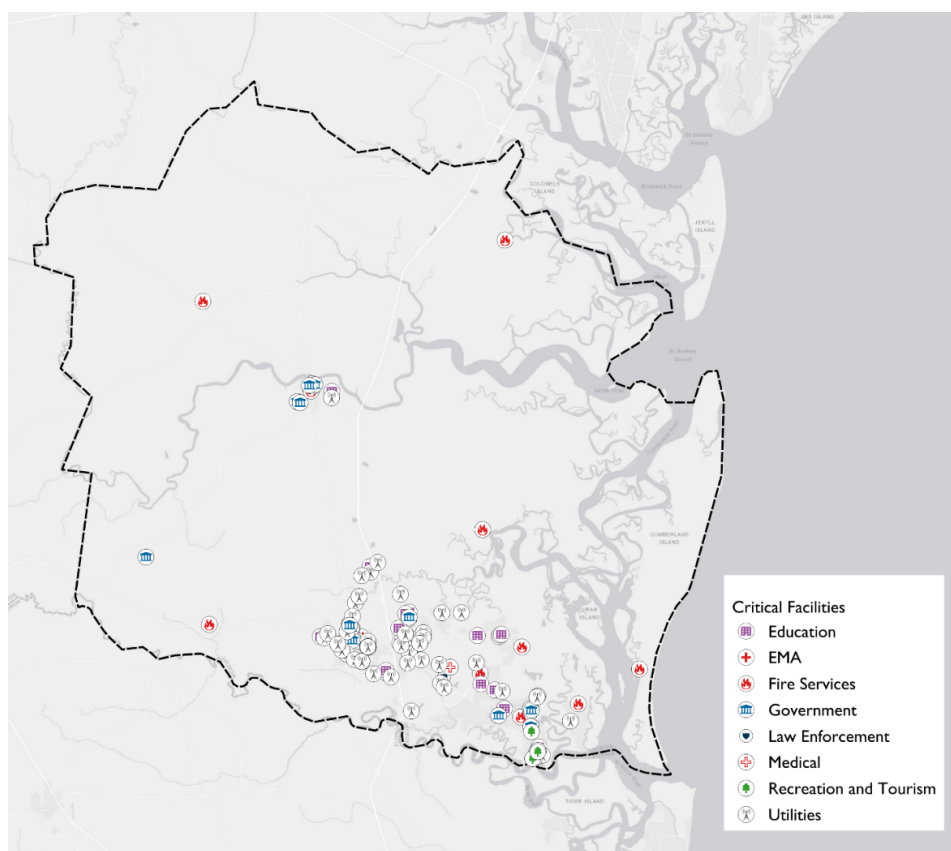
Warning Time: 3 – 6 to 12 hours

Duration: 2 – Less than 24 hours

2.6.16.2 Location

Critical infrastructure are located throughout the County and often form part of a larger regional network. As such, infrastructure failures can impact the entire County in diverse ways. Some major critical infrastructure facilities for the County, including EMA, educational institutions, fire services, local government buildings, law enforcement, medical facilities and utility locations can be found in Figure 2-53 below.

Figure 2-53. Critical facilities in Camden County



2.6.16.3 Extent

The extent of an infrastructure failure event can range from a minor, localized service interruption to a widespread, multi-system breakdown that disrupts essential community lifelines. Minor failures, such as short-term power outages, water main breaks, or small bridge closures, may cause inconvenience but are typically resolved within hours or days. Moderate or severe failures

can impact large portions of the community, causing extensive economic loss, threatening public health and safety, and delaying recovery efforts.

Infrastructure failure is considered a high-consequence hazard because it can magnify the effects of other hazards, delay response and recovery, and create cascading failures across systems.

Impact: 3 – Critical

Spatial Extent: 3 – Moderate

2.6.16.4 Historical Occurrences

Minor infrastructure and utility failures often occur as a secondary impact from a natural disaster, such as a temporary power outage due to a thunderstorm or a communications outage from downed lines following a hurricane. Camden County experiences these minor disruptions routinely and manages them through coordination across agencies and with the private sector. Utility providers generally respond quickly to restore service, reducing the impact on residents' daily life. However, depending on the cause of the utility disruption, events of prolonged outages do occur.

2.6.16.5 Probability of Future Occurrence

While routine maintenance and capital improvements reduce the likelihood of major failures, widespread aging infrastructure and growing exposure to severe weather events pose a risk to infrastructure throughout the County. As critical infrastructure are regularly exposed to more extreme weather conditions, this places additional stress on infrastructure that were not designed to withstand these conditions, increasing the probability of infrastructure failure. Minor infrastructure failures, such as short-term power outages or water main breaks, occur regularly and are expected to continue, while major, multi-system failures are less frequent but remain a credible threat within the planning area.

Probability: 3 – Likely

2.6.16.6 Climate Change

Climate change is expected to increase the frequency and severity of hazards that place stress on critical infrastructure systems. Extreme weather events can accelerate infrastructure deterioration, reduce structure reliability, and increase the likelihood of system failure. These events shorten the lifespan of critical infrastructure, increase maintenance and upgrade costs, increase the likelihood of cascading system disruptions, and create more complexity in continuity of operations after a disaster.

2.6.16.7 Vulnerability Assessment

People

Infrastructure failures can directly and indirectly threaten public health and safety. Power outages may expose residents to extreme heat or cold, disrupt medical care, and limit access to safe food and water. Failures in water or wastewater systems can cause illness, while transportation breakdowns may isolate vulnerable populations and delay emergency response. Prolonged disruptions erode public confidence in government services and create disproportionate impacts on at-risk populations, including older adults, children, and those with limited financial resources.

Property

Different types of infrastructure failure can damage both public and private property. For example, failing dams can lead to flooding in the area. Ruptured pipelines can cause fires that can destroy homes and businesses. Repeated or prolonged failures can reduce property values and increase annual insurance costs.

Environment

Infrastructure failure can impact the local environment. Wastewater system breakdowns can release untreated sewage into rivers, streams, and groundwater. Hazardous materials spills from broken pipelines can contaminate land, air and water. Environmental impacts from these types of failures can take years to rectify, with sometimes permanent impacts on natural habitats and ecosystems.

Consequence Analysis

Table 2-66. Infrastructure failure consequence analysis

Category	Consequences
Impact on the Public	Possible injury and death from loss of essential services such as clean water, sanitation, electricity, transportation, and communications.
Impact on Responders	Impassable transportation routes, power outages or downed communication systems can slow response times, reduce situational awareness, and hinder rescue and recovery operations.
Continuity of Operations (including delivery of services)	Disruptions to facilities, utilities, and even IT systems from infrastructure failure can cause significant downtime, impacting the continued delivery of services to the public.
Property, Facilities, and Infrastructure	Physical damage to private and public infrastructure from collapsed bridges, dam breaches, ruptured pipelines, or grid failures. Possible cascading system disruptions.

Impact of Environment	As systems break down, sewage, hazardous materials or other contaminants may be released into local habitats.
Economic Conditions	Infrastructure failure can greatly impact the local economy. Interruptions to supply chains, business closures, and decreased tourism can negatively impact the local economy. Repeated or prolonged failures can reduce local property values.
Public Confidence in Governance	If the public perceives that failures were preventable through maintenance or upgrades, it may lead to distrust of the local government. Prolonged disruptions erode public confidence in the local government's ability to protect public safety.

2.6.16.8 Changes in Development

As communities grow and development expands, increased demand is placed on aging or undersized infrastructure systems such as water supply, wastewater treatment, stormwater management, roads, bridges, and power distribution networks. Rapid development without corresponding infrastructure upgrades can lead to system overloads, maintenance backlogs, and higher vulnerability to failure. Additionally, as expansion occurs in areas that were previously underdeveloped, such as building near dams, levees, or pipelines, people and property may be at risk if those systems fail.

2.6.16.9 Multi-Jurisdictional Considerations

There are no expected differences between jurisdictions for an infrastructure failure event.

2.6.16.10 Problem Statements

- Much of the County's critical infrastructure is aging and requires ongoing maintenance and upgrades. Deferred maintenance and limited funding can increase vulnerability to failure, particularly during extreme weather events.
- Vulnerable populations, such as the elderly or those who are medically dependent, are especially at-risk to be negatively impacted by prolonged infrastructure failures, such as a loss of electricity or telecommunications, as this can inhibit these residents' ability to keep medications refrigerated, heat or cool homes, or receive necessary medical attention (such as dialysis or life support).
- Related Hazards: Severe Weather, Hurricane

2.6.17 Radiological Incident

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
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Radiological Incident	Unlikely	Critical	Small	Less than 6 hours	Less than 1 Week	2.3
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2.6.17.1 Hazard Background

A radiological incident is an occurrence resulting in the release of radiological material at a fixed facility (such as power plants, hospitals, laboratories, etc.) or in transit. The release could affect the natural environment as well as the health and safety of anyone in its path.

Radiological incidents related to transportation are described as an incident resulting in a release of radioactive material during transportation. Transportation of radioactive materials through Georgia over the interstate highway system is considered a radiological hazard. The transportation of radioactive material by any means of transport is licensed and regulated by the federal government. As a rule, there are two categories of radioactive materials that are shipped over the interstate highways:

- Low level waste consists primarily of materials that have been contaminated by low level radioactive substances but pose no serious threat except through long-term exposure. These materials are shipped in sealed drums within placarded trailers. The danger to the public is no more than a wide array of other hazardous materials.
- High level waste, usually in the form of spent fuel from nuclear power plants, is transported in specially constructed casks that are built to withstand a direct hit from a locomotive.

Radiological emergencies at nuclear power plants are divided into classifications. Table 2-67 shows these classifications, as well as descriptions of each.

Table 2-67. Radiological emergency classifications (US Nuclear Regulatory Commission)

Emergency Classification	Description
Notification of Unusual Event	Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.
Alert	Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life-threatening risk to site personnel or damage to site equipment because of hostile action. Any releases are expected to be limited to small fractions of the EPA Protective Action Guides (PAG)
Site Area Emergency	Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or hostile action that results in intentional damage or malicious acts; 1) toward site personnel or equipment that could lead to the likely failure of or; 2) that prevent effective access to, equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA PAG exposure levels beyond the site boundary.

General Emergency	Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or hostile action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA PAG exposure levels offsite for more than the immediate site area.
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More pertinent to Camden County, nuclear releases may occur from anywhere radioactive materials are used, including nuclear submarines and nuclear weapons. A nuclear submarine, first used by the Navy in 1954, uses radioactive material as a power source to reduce the need to refuel. Nuclear submarines are powered by onboard nuclear reactors, where atoms are split, releasing energy as heat, which is used to create high-pressure steam, which turns the propulsion turbines and powers the propellers. Transport and disposal of reactive parts must meet USDOT and EPA standards.

Warning Time: 4 – Less than 6 hours

Duration: 3 – Less than 1 week

2.6.17.2 Location

The Kings Bay Naval Submarine Base is located in southern Camden County adjacent to the City of St. Marys. The base covers about 16,000 acres, of which 4,000 acres are protected wetlands. The Base is the US Atlantic Fleet's home port for the Navy fleet ballistic missile nuclear submarines.

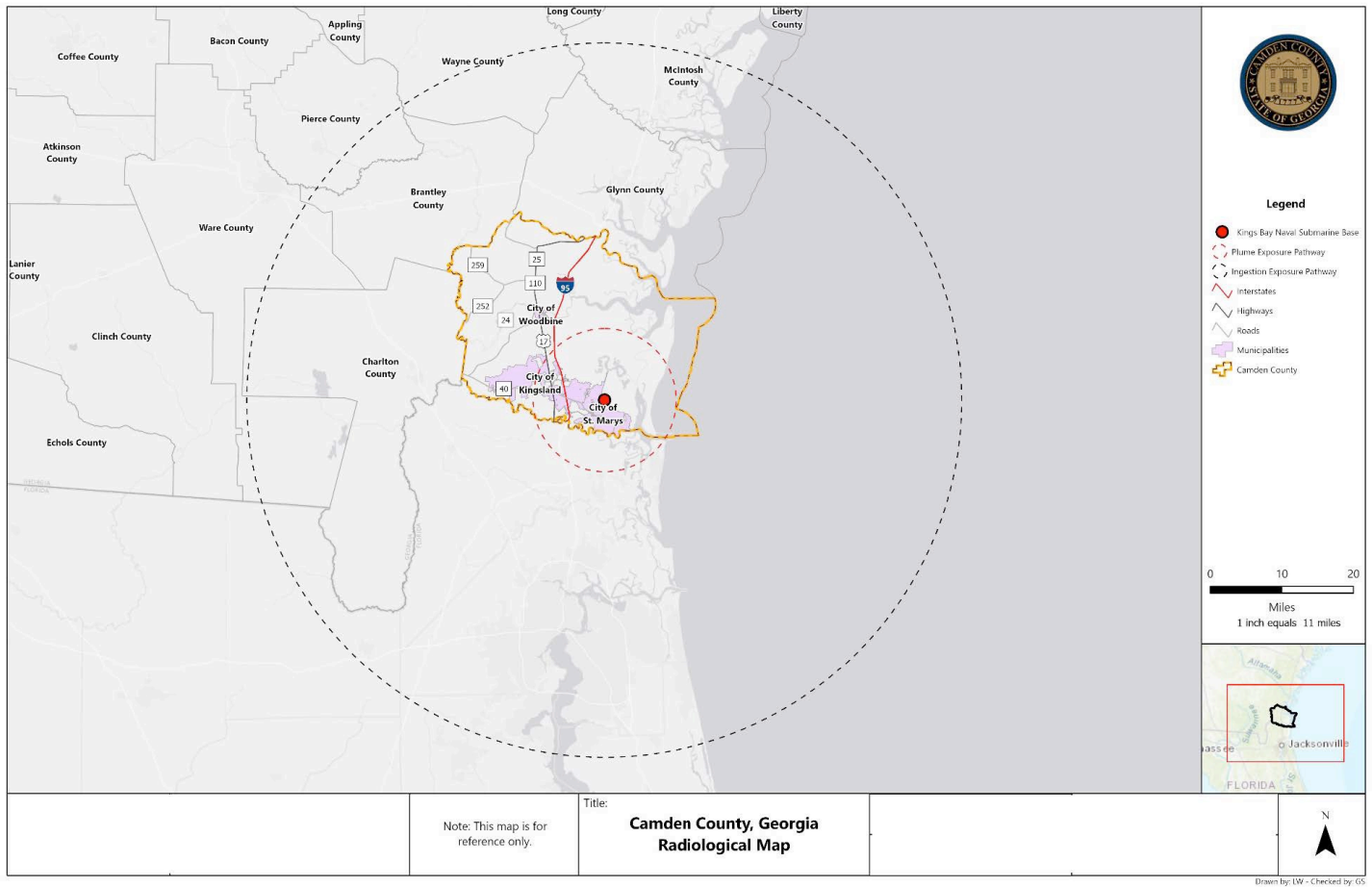
The Nuclear Regulatory Commission defines two emergency planning zones around nuclear plants:

- **Emergency Planning Zone (EPZ):** The EPZ is a 10-mile radius around nuclear facilities. It is also known as the Plume Exposure Pathway. Areas located within this zone are at highest risk of exposure to or inhalation of radioactive materials. Within this zone, the primary concern is exposure to and inhalation of radioactive contamination. Predetermined action plans within the EPZ are designed to avoid or reduce dose from such exposure. This is the designated evacuation radius recommended by the Nuclear Regulatory Commission and residents within this zone would be expected to evacuate in the event of an emergency. Other actions such as sheltering and the use of potassium-iodide must be taken to avoid or reduce exposure in the event of a nuclear incident.
- **Ingestion Pathway Zone (IPZ):** The IPZ is delineated by a 50-mile radius around nuclear facilities as defined by the federal government. Also known as the Ingestion Exposure Pathway, the IPZ has been designated to mitigate contamination in the human food chain resulting from a radiological accident at a nuclear power facility. Contamination of fresh produce, water supplies, and other food produce may occur when radionuclides are deposited on surfaces.

Although the Base does not have a nuclear power plant, it has multiple nuclear reactors fueling

approximately eight submarines assigned to the Base. Figure 2-54 shows the location of the Submarine Base with the EPZ and IPZ.

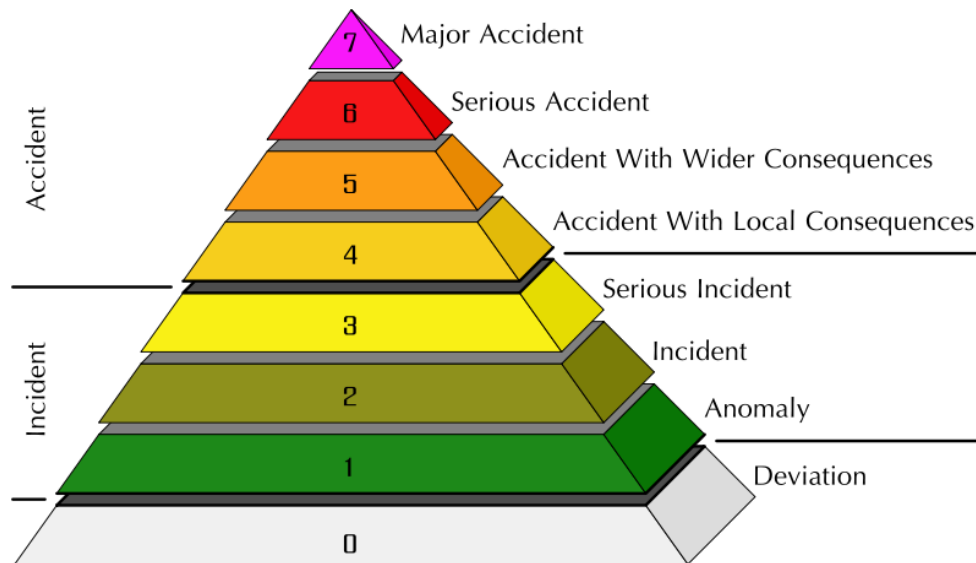
Figure 2-54. Kings Bay Naval Submarine base location in relation to planning area (Camden County Multi-Jurisdictional Hazard Mitigation Plan 2021)



2.6.17.3 Extent

The International Atomic Energy Association (IAEA) developed the International Nuclear and Radiological Event Scale to quantify the magnitude of radiological events. This scale is logarithmic, meaning each increasing level represents a 10-fold increase in severity compared to the previous level.

Figure 2-55. International nuclear and radiological event scale (IAEA)



An important note is that in addition to the nuclear reactors used to power and electrify the submarines, the Base also stores numerous nuclear weapons, an incident involving such weapons could have catastrophic consequences.

Impact: 3 – Critical

Spatial Extent: 2 – Small

2.6.17.4 Historical Occurrences

Though there have been incidences of nuclear reactor failures around the country, particularly at nuclear power plants, there have been no such occurrences reported at Kings Bay Nuclear Submarine Base.

2.6.17.5 Probability of Future Occurrence

Radiological hazards are highly unpredictable. Nuclear reactors present the possibility of catastrophic damages, yet the operation of such reactors on nuclear submarines is highly regulated and historical precedence suggests an incident is unlikely.

Probability: 1 – Unlikely

2.6.17.6 Climate Change

Climate change is not projected to have any impact on a potential nuclear power plant incident.

2.6.17.7 Vulnerability Assessment

People

People within the 10-mile EPZ are at risk of direct exposure to radioactive material. People within

the 50-mile IPZ are at risk of exposure through ingestion of contaminated food and water. Low levels of radiation are not considered harmful, but a high exposure to radiation can cause serious illness or death.

Property

A radiological incident could cause severe damage to the power station itself but would not cause direct property damage outside the station, especially with the distance between the reactor and the planning area. However, property values could drop substantially if a radiological incident resulted in contamination of nearby areas.

Environment

A radiological incident could result in the spread of radioactive material into the environment, which could contaminate water and food sources and harm animal and plant life. These impacts are lessened the further an area is to the plant site.

Consequence Analysis

Table 2-68. Radiological incident consequence analysis

Category	Consequences
Impact on the Public	High levels of radiation could cause serious illness or death. Those living and working closest to the nuclear plant would face the greatest risk of exposure.
Impact on Responders	Responders face potential for heightened exposure to radiation, which could cause severe chronic illness and death.
Continuity of Operations (including delivery of services)	An incident at the nuclear plant could interrupt power generation and cause power shortages. Regular operations would likely be affected by the response effort an event would require.
Property, Facilities, and Infrastructure	The plant itself could be damaged by a radiological incident. Nearby property and facilities could be affected by contamination.
Impact of Environment	Water supplies, food crops, and livestock within 50 miles of the nuclear plant could be contaminated by radioactive material in the event of a major incident.
Economic Conditions	The local economy could be affected if a radiological incident caused contamination of nearby areas. Property values and economic activity could decline as a result.
Public Confidence in Governance	A radiological incident would likely cause severe loss of public confidence given that the hazard is

human-caused and highly regulated. Public confidence can also be affected by false alarms.
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2.6.17.8 Changes in Development

Increased development will not increase the detrimental impacts of a radiological impact. However, increased development in close proximity to radiological sites will increase exposure in the event of an incident.

2.6.17.9 Multi-Jurisdictional Considerations

There are no expected differences between jurisdictions for a radiological incident.

2.6.17.10 Problem Statements

- All of the City of St. Marys and eastern City of Kingsland is within a 10-mile radius of Kings Bay Naval Submarine Base, in the event of an incidence, the population in these jurisdictions would be most at risk. The entirety of Camden County, as well as many surrounding counties are within a 50-mile radius of the naval base – impacting food and water supplies.
- The impacts of an incident with the nuclear weapons stored on the naval base are unclear.

2.6.18 Supply Chain Disruption

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Supply Chain Disruption	Possible	Critical	Moderate	12 to 24 Hours	Less than 1 Week	2.6

2.6.18.1 Hazard Background

A supply chain disruption is an interruption in the normal flow of goods, services, people, information or critical inputs that a community depends on for daily life. This may include food, medicine, fuel, construction materials, medical supplies, electronics, or replacement parts. Disruptions can be caused by natural hazards, public health emergencies, infrastructure failure, cyber incidents, labor shortages, single-source supplier failures, or international trade interruptions. When supply chains break down, the community can experience shortages, delayed recovery, higher prices, and reduced delivery of essential services.

Warning Time: 2 – 12 to 24 hours

Duration: 3 – Less than 1 week

2.6.18.2 Location

Supply chain disruptions can affect a county on both the local and regional level, depending on the source, type, and duration of the disruption. Unlike natural hazards such as floods or wildfires, which are confined to a specific geographic area, supply chain disruptions are systemic and can impact the entire jurisdiction simultaneously. Additionally, these disruptions can cause cascading effects across community systems.

2.6.18.3 Extent

Supply chain disruptions can impact many sectors of a community, including public health, medical care, basic needs of food and water, the local economy, infrastructure, and the ability of first responders to respond quickly and effectively to emergencies. Goods and services are not often obtained regionally but nationally and internationally, so even small delays on the front end can create significant challenges on a county level.

Impact: 3 – Critical

Spatial Extent: 3 – Moderate

2.6.18.4 Historical Occurrences

During the COVID-19 pandemic, supply chain disruptions were at the forefront of conversations throughout the United States. Critical shortages emerged in personal protective equipment, ventilators, pharmaceuticals, cleaning supplies, and testing materials, forcing healthcare providers and local governments to compete for limited resources. Communities across the US faced delays in emergency response supplies, infrastructure repair materials, and everyday consumer goods, which complicated pandemic response and recovery efforts. Disruptions revealed vulnerabilities in “just-in-time” logistics systems, dependence on foreign suppliers, and lack of domestic production capacity for critical items.

2.6.18.5 Probability of Future Occurrence

The increasing frequency of natural disasters, cyber incidents, geopolitical conflicts, and transportation system stresses makes disruptions to critical goods and services more common. Additionally, since global and national supply chains are highly interconnected and dependent on long-distance transport, “just-in-time” inventories, and limited domestic manufacturing capacity for key items such as pharmaceuticals, semiconductors, and energy products, even short-term interruptions have the potential to have cascading local effects. Supply chain disruptions are expected to continue to occur periodically, making this hazard possible in Camden County.

Probability: 2 – Possible

2.6.18.6 Climate Change

Climate change can intensify supply chain disruptions by increasing the frequency and severity of extreme weather events that affect transportation networks, manufacturing facilities, and critical infrastructure. Flooding, hurricanes, heat waves, and wildfires can damage roads, rail lines, ports, and warehouses, delaying the movement of goods and increasing transportation costs. Rising temperatures may also reduce energy reliability, strain water resources, and impact agricultural production, further stressing supply chains that depend on stable environmental conditions.

2.6.18.7 Vulnerability Assessment

People

The populations most at risk during a supply chain disruption in Camden County include low-income households, older adults, individuals with limited mobility, and those with underlying medical needs. These groups often have fewer transportation options and limited financial resources to seek alternative suppliers when essential goods become scarce. Residents who depend on daily medications, medical equipment, or specialized supplies, such as oxygen, dialysis materials, insulin, or mobility aids, are especially vulnerable, as delays in deliveries can quickly lead to serious health consequences.

Property

Supply chain disruptions can delay or pause the repair, maintenance, and construction of public and private property. Shortages of building materials, equipment parts, or fuel can prolong recovery after disasters, increase construction costs, and leave homes and infrastructure vulnerable to further damage.

Environment

Environmental impacts may occur when supply shortages prevent timely repairs to infrastructure such as wastewater facilities, stormwater systems, or pipelines, leading to spills or untreated discharges.

Consequence Analysis

Table 2-69. Supply chain disruption consequence analysis

Category	Consequences
Impact on the Public	Disruptions tend to hit low-income, elderly, and residents with limited mobility the hardest since they have fewer alternatives and resources. Shortages of medicines, medical devices, or PPE can limit health care delivery and surge capacity, leading to increased sicknesses and deaths.
Impact on Responders	Shortages of PPE can put first responders at risk when tending to patients. Emergency responders may face delays getting critical equipment, vehicle

	fuel, or replacement parts, which can slow response times and reduce operational capability.
Continuity of Operations (including delivery of services)	Government functions may be disrupted depending on the type of supply chain issues. Delayed procurement, IT outages, or vendor failures can impair essential government functions.
Property, Facilities, and Infrastructure	Loss of parts or specialized contractors can delay repair of power, wastewater, or transportation systems—prolonging outages and recovery time.
Impact of Environment	Supply shortages prevent timely repairs to infrastructure such as wastewater facilities, stormwater systems, or pipelines, which can cause spills or untreated discharges.
Economic Conditions	Businesses dependent on timely deliveries, such as manufacturers, retailers, construction, and others, may close or reduce operations, causing layoffs and lost tax revenue.
Public Confidence in Governance	Extended or visible shortages of essential goods such as food, medical supplies, or fuel can reduce public confidence in local and state government.

2.6.18.8 Changes in Development

Changes in population growth, land use, and commercial or industrial development can increase a community's vulnerability to supply chain disruptions. This development can increase demand for critical goods and reliance on complex, extended supply networks which may become disrupted for a variety of reasons.

2.6.18.9 Multi-Jurisdictional Considerations

There are no expected differences between jurisdictions for a supply chain disruption event.

2.6.18.10 Problem Statements

- The County relies heavily on regional, national, and global supply chains for important resources such as food, fuel, medical supplies, utilities components, and construction materials. Disruptions outside the County's control can rapidly impact essential services and daily life.
- When public and private sectors operate with minimal stockpiles and "just-in-time" supply systems, this can increase risk when supply shortages or delivery delays occur.
- Related Hazards: Infrastructure Failure

2.6.19 Terrorism

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Terrorism	Unlikely	Catastrophic	Small	Less than 6 Hours	Less than 24 hours	2.5

2.6.19.1 Hazard Background

Terrorism is the unlawful use of force or violence by individuals or a group against people or property to intimidate or coerce a government or civilian population for ideological, political, or religious purposes. Acts of terrorism may include bombings, shootings, cyberattacks, biological or chemical threats, and complex coordinated attacks such as drone attacks. Attacks may target people, critical infrastructure, public spaces, or symbolic sites with the intention of causing mass casualties, disrupt critical infrastructure, and instill fear within the public.

Warning Time: 4 – Less than 6 hours

Duration: 2 – Less than 24 hours

2.6.19.2 Location

Camden County's proximity to Kings Bay Submarine Base makes it a high-visibility area for potential terrorism-related activities, particularly those intended to cause cascading disruption to defense operations or community confidence. Critical infrastructure (transportation corridors, utilities, communication systems), public gathering spaces (schools, churches, retail centers, and government facilities), and special events are considered at-risk soft targets for a terrorist attack.

2.6.19.3 Extent

Since the civilian and military populations are interwoven, an attack within the community could affect thousands of military dependents, contractors, and essential support staff. In addition to the psychological impacts of an attack, a successful attack could disrupt base operations, delay fleet readiness, and generate significant economic effects across the County.

Impact: 4 – Catastrophic

Spatial Extent: 2 – Small

2.6.19.4 Historical Occurrences

While no recent incidents have occurred locally, the combination of strategic military presence and regional growth heightens the risk of both direct and indirect terrorism-related threats, including cyber, insider, and lone-actor incidents.

2.6.19.5 Probability of Future Occurrence

Camden County faces an elevated risk of terrorism due to the presence of Naval Submarine Base Kings Bay, home to Submarine Group Ten, the Trident Refit Facility, and Strategic Weapons Facility Atlantic, all critical components of the nation's strategic defense. While the Base itself is protected

by layered military security, potential adversaries may target softer civilian sites within the County to disrupt military operations, instill fear, or undermine national security. The concentration of military and civilian personnel, along with their families who live, work, and attend schools, churches, and community events throughout Camden County, creates indirect vulnerabilities that could significantly impact mission readiness and community resilience. Despite Camden County's heightened risk in comparison to other areas due to the presence of the Base, this hazard is currently described as unlikely.

Probability: 1 – Unlikely

2.6.19.6 Climate Change

Climate change may indirectly influence terrorism by intensifying the social, economic, and political stresses that can contribute to radicalization and instability. Increasingly frequent extreme weather events, resource scarcity, and climate-driven displacement can heighten competition for food, water, and land, creating conditions that extremist groups may exploit for recruitment or territorial control. In vulnerable regions, weakened governance and strained security forces may further expand opportunities for terrorist activity. While climate change is not a direct cause of terrorism, its cascading impacts can amplify the underlying drivers of conflict, thereby increasing the risk and complexity of terrorist threats.

2.6.19.7 Vulnerability Assessment

People

There are both immediate and secondary impacts to a terrorist attack. Death, serious injuries, mass casualties, and psychological trauma are the immediate impacts to the public. Secondary impacts may include fear and reduced use of public spaces.

Property

Property damage is common during a terrorist attack. Critical infrastructure (transportation corridors, utilities, communication systems) and public gathering spaces (schools, churches, retail centers, and government facilities) are considered at-risk soft targets for a terrorist attack.

Environment

Methods that are explosive, chemical, or radiological may impact the local environment. There can be contamination, air quality impacts, or long-term remediation needs that affect land use and public health, depending on the type of attack. Environmental cleanup increases the cost and length of recovery efforts.

Consequence Analysis

Table 2-70. Terrorism consequence analysis

Category	Consequences
Impact on the Public	Death, serious injuries, mass casualties, and psychological trauma are the immediate impacts on the public. Secondary impacts may include fear and reduced use of public spaces.
Impact on Responders	Attacks may lead to surge demand for emergency medical care at local facilities.
Continuity of Operations (including delivery of services)	Following an attack there may be disruption to local government operations, schools, transit, utilities, and critical services. Prolonged closure is possible depending on the type of attack.
Property, Facilities, and Infrastructure	Possible direct damage to buildings, transit systems, utilities, and commercial centers. Damage can have cascading effects, such as a power or communications loss that can impact other sectors.
Impact of Environment	Depending on the method (explosive, chemical, radiological), there can be contamination, air quality impacts, or long-term remediation needs that affect land use and public health. Environmental cleanup increases the cost and length of recovery.
Economic Conditions	Short-term economic closures and lost tourism, long-term investor and merchant uncertainty, cost of rebuilding and security upgrades, and increased insurance costs. Even a single high-profile event can depress economic activity regionally.
Public Confidence in Governance	Public trust can erode if response and recovery are delayed, communication is poor, or prevention efforts are perceived as ineffective.

2.6.19.8 Changes in Development

Increased development can increase potential targets for a terrorist attack.

2.6.19.9 Multi-Jurisdictional Considerations

There are no expected differences between jurisdictions for a terrorism event.

2.6.19.10 Problem Statements

- Camden County faces an elevated risk of terrorism due to the presence of Naval Submarine Base Kings Bay, home to Submarine Group Ten, the Trident Refit Facility, and Strategic Weapons Facility Atlantic, all critical components of the nation's strategic defense. While the installation itself is protected by layered military security, potential adversaries may target softer civilian sites within the County to disrupt military operations, instill fear, or

undermine national security. The concentration of military and civilian personnel, along with their families who live, work, and attend schools, churches, and community events throughout Camden County, creates indirect vulnerabilities that could significantly impact mission readiness and community resilience.

- Related Hazards: Cyber Attack, Active Assailant

2.6.20 Water Contamination

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Water Contamination	Unlikely	Limited	Small	Less than 6 Hours	Less than 1 Week	2.0

2.6.20.1 Hazard Background

Groundwater supplies over 50 percent of the US population with drinking water and is also an important source of water for irrigation. Groundwater, however, is susceptible to pollution. Water contamination refers to the degradation of groundwater when surface water carries contaminants downward, infiltrating through the soil to the groundwater without being adequately filtered or naturally treated. Contamination occurs when manmade products, including gasoline, oil, road salts, and chemicals, among others, get into groundwater and cause it to be unsafe for human use. Potential sources of contamination include underground storage tanks, septic systems, uncontrolled hazardous waste, landfills, chemicals and road salts, and atmospheric contaminants.

Once a groundwater aquifer is contaminated, all water wells drawing water from that aquifer are at risk of being polluted. Contamination can cause public health issues and require costly cleanup.

Natural hazard events, such as floods, hurricanes, tornadoes, and earthquakes, can disrupt and contaminate water supplies. Floods may damage drinking water wells and lead to contamination by transporting contaminants on the ground into water supplies. Flood waters might also transport debris, with unknown contaminants further than it might otherwise travel, into local or regional waterways. The introduction of such debris and associated contamination will likely throw off the balance of the waterway and contaminate water supply. Further, treatment plants can be inundated or overwhelmed during extreme rain events. Plants that are only designed to handle a certain amount of volume may not have the processing capacity for the excess precipitation. Water and wastewater treatment plants also require electricity to operate and could be impacted in a power outage. Although many are outfitted with backup power supply, depending on the length of the disaster, this may cause further issue.

Saltwater intrusion into the Floridan Aquifer System (FAS) can also lead to water contamination. The FAS extends from coastal areas in southeastern South Carolina and continues southward and westward across the coastal plain of Georgia and Alabama and underlies all of Florida. This issue, which is gaining national attention, would impact Camden County.

Warning Time: 4 – Less than 6 hours

Duration: 3 – Less than 1 week

2.6.20.2 Location

Many sources can cause contamination to the water supply in Camden County, including a spill on a local roadway or debris from a storm. As contamination at or from a water or wastewater treatment plant is of concern, Table 2-71 below lists the current water and wastewater sites in the County. Areas not served by the systems below utilize individual wells and on-site septic disposal systems.

Table 2-71. Municipal water and wastewater system locations

Jurisdiction	Water Systems	Wastewater Treatment Plants
Kingsland	South Grove Road, East Colerain Rd., Harriett’s Bluff Road, and Gross Road	Grove Blvd Facility
St. Marys	North Dandy St., Douglas Dr., Colerain Rd., and Cumberland Harbor Development Systems	Point Peter and Scrubby Bluff
Woodbine	105 East 8 th St., 220 Conservation Lane, and 264 Plantation Road	220 Conservation Lane Facility
Unincorporated Camden County	Browntown and Flea Hill	--

Although contaminants themselves may come from specific sources, a water contamination issue would likely impact the entirety of Camden County, particularly given the interconnected nature of such an event with other large scale and regional events.

2.6.20.3 Extent

The extent of a water contamination issue is variable and depends on the cause and source of the contaminant. A small discharge of a contaminant would impact the community differently than a larger discharge, or a large-scale disaster event would.

There is no universally accepted scale to quantify the severity of water contamination, although Camden County and its incorporated jurisdictions do test and measure water quality, as does the USGS. As such, the extent of a water contamination issue might be measured in terms of the amount of a given contaminant per unit of water.

Impact: 2 – Limited

Spatial Extent: 2 – Small

2.6.20.4 Historical Occurrences

There are no historical occurrences of water contamination that have been recorded in Camden County. However, the groundwater aquifer that serves the County and surrounding region has received national attention for saltwater intrusion issues.

2.6.20.5 Probability of Future Occurrence

A water contamination issue is difficult to predict given the various sources of contamination that might cause such an issue. The probability of a water contamination issue occurring is rated as unlikely.

Probability: 1 – Unlikely

2.6.20.6 Climate Change

Climate change can worsen water contamination by altering precipitation patterns, increasing temperatures, and intensifying extreme weather events that overwhelm natural and engineered water systems. Heavy rainfall and flooding can mobilize pollutants, sewage, industrial chemicals, and agricultural runoff into rivers, lakes, and groundwater. Heat waves may accelerate harmful algal blooms and reduce dissolved oxygen levels, degrading water quality and stressing ecosystems. Drought conditions can concentrate contaminants in shrinking water supplies, while infrastructure damaged by storms or erosion may allow additional pollutants to enter drinking water systems.

2.6.20.7 Vulnerability Assessment

People

The people of Camden County will be most severely impacted in the event of contaminated water. Ingesting contaminated water may cause serious health effects. These include, but are not limited to, diseases such as hepatitis and dysentery caused by bacteria in the water, or poisoning caused by toxins that have entered the water supply.

Property

It is unlikely physical property will be damaged due to water contamination; however, crops that are irrigated with contaminated water would likely be damaged.

Environment

Wildlife and larger ecosystems are likely to be harmed if water sources, such as rivers, ponds, and lakes, are contaminated by human-created runoff.

Consequence Analysis

Table 2-72. Water contamination consequence analysis

Category	Consequences
Impact on the Public	Water contamination can lead to illness or fatality if it goes undetected or the population is not quickly alerted.
Impact on Responders	First responders, and especially EMS, may face challenges in responding to emergencies without potable water. Responders may risk getting sick themselves.
Continuity of Operations (including delivery of services)	Services such as water utilities will be significantly impacted. Other services, including hospitals and healthcare, are also likely to be impacted.
Property, Facilities, and Infrastructure	Rare. It is unlikely instances of contaminated water will impact property, facilities, or infrastructure.
Impact of Environment	Agriculture and other environmental resources may be impacted by a contaminated water supply.
Economic Conditions	A water contamination issue would likely impact the food and beverage, healthcare, and agriculture industries. This could cause significant disruption to economic conditions.
Public Confidence in Governance	Since the jurisdictional governments manage the communities' water supply, a water contamination incident would likely impact public confidence in the government.

2.6.20.8 Changes in Development

Increased development will not increase the likelihood of a water contamination event. However, increased population and development place more residents at risk in the event of such an incident.

2.6.20.9 Multi-Jurisdictional Considerations

There are no expected differences between jurisdictions for a water contamination incident.

2.6.20.10 Problem Statements

- Water contamination as it relates to natural hazard events can pose a risk to the health and safety of the residents of Camden County.
- Related Hazards: Flooding

2.7 Conclusions on Hazard Vulnerability

As discussed in 2.4 Risk Assessment, the Priority Risk Index was used to rate each hazard on a set of risk criteria and determine an overall standardized score for each hazard. The conclusions drawn from this process are summarized below in Table 2-73.

Table 2-73. Summary of PRI results

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Flood	Highly Likely	Critical	Moderate	6 to 12 hours	Less than 1 week	3.3
Hurricane	Likely	Catastrophic	Large	More than 24 hours	Less than 1 week	3.3
Sea Level Rise	Likely	Critical	Large	More than 24 hours	More than 1 week	3.1
Thunderstorm Wind	Highly Likely	Limited	Large	Less than 6 hours	Less than 6 hours	3.0
Cyber Attack	Likely	Critical	Moderate	Less than 6 hours	Less than 24 hours	3.0
Active Assailant	Likely	Critical	Moderate	Less than 6 hours	Less than 6 hours	2.9
Infrastructure Failure	Likely	Critical	Moderate	6 to 12 hours	Less than 24 hours	2.9
Drought	Likely	Limited	Large	More than 24 hours	More than 1 week	2.8
Extreme Heat	Likely	Limited	Large	6 to 12 hours	Less than 24 hours	2.8
Tornado	Likely	Critical	Small	Less than 6 hours	Less than 6 hours	2.7
Hazardous Materials Incident	Likely	Limited	Moderate	Less than 6 hours	Less than 6 hours	2.6
Supply Chain Disruption	Possible	Critical	Moderate	12 to 24 hours	Less than 1 Week	2.6
Terrorism	Unlikely	Catastrophic	Small	Less than 6 hours	Less than 24 hours	2.5
Erosion	Likely	Limited	Small	More than 24 hours	More than 1 week	2.4
Severe Winter Weather	Possible	Limited	Large	Greater than 24 hours	Less than 1 week	2.4
Hail	Highly Likely	Minor	Small	Less than 6 hours	Less than 6 hours	2.3
Wildfire	Likely	Limited	Moderate	12 to 24 hours	Less than 1 week	2.3

Infectious Disease	Likely	Limited	Moderate	More than 24 hours	More than 1 week	2.3
Radiological Incident	Unlikely	Critical	Small	Less than 6 hours	Less than 1 week	2.3
Lightning	Highly Likely	Minor	Negligible	Less than 6 hours	Less than 6 hours	2.1
Earthquake	Unlikely	Limited	Moderate	Less than 6 hours	Less than 6 hours	2.0
Water Contamination	Unlikely	Limited	Small	Less than 6 hours	Less than 1 week	2.0

The results from the PRI have been classified into three categories based on the assigned risk value:

- **High Risk (PRI greater than or equal to 3):** Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread.
- **Moderate Risk (PRI greater than 2):** Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **Low Risk (PRI less than or equal to 2):** Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal. This is not a priority hazard.

Chapter 3 Capability Assessment

3.1 Summary of Updates for Chapter 3

The following table provides a description of each section of this chapter and a summary of the changes that have been made to the Camden County Multi-Jurisdictional Hazard Mitigation Plan 2021.

Table 3-1. Summary of Updates

Chapter 3 Section	Updates
Overview	Revised outdated information and incorporated the most recent data
Capability Assessment Findings	Updated figures, tables, and other relevant content to ensure the Plan reflects current conditions and priorities, added volunteer organizations and sheltering locations
Conclusions on Local Capability	Amended outdated information to reflect the latest data

3.2 Overview

The purpose of conducting a capability assessment is to determine the ability of a local jurisdiction to implement a comprehensive mitigation strategy, and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs, or projects. As in any planning process, it is important to try to establish which goals, objectives, and actions are feasible, based on an understanding of the organizational capacity of those agencies or departments tasked with their implementation. The capability assessment provides a structured evaluation of each jurisdiction's ability to implement mitigation actions effectively over time. It considers a variety of factors, including local planning and regulatory frameworks, the availability and capacity of administrative and technical staff, the range of fiscal resources, and the political climate within the County and individual municipalities. By examining these elements, the assessment helps determine which mitigation initiatives are realistic, achievable, and sustainable, ensuring that proposed actions align with existing governance structures, resource availability, and community priorities. This process supports the development of a mitigation strategy that is both practical and responsive to the unique needs and capacities of each participating jurisdiction. The capability assessment serves as a critical planning step toward developing an effective mitigation strategy. Coupled with the risk assessment, the capability assessment helps identify and target effective goals, objectives, and mitigation actions that are realistically achievable under given local conditions.

3.3 Capability Assessment Findings

The findings of the capability assessment are summarized in this Plan to provide a comprehensive understanding of the capacity of Camden County and its incorporated

municipalities to implement hazard mitigation activities. This assessment evaluates the ability of local governments to plan for, fund, and execute mitigation initiatives, considering existing administrative, technical, and fiscal resources, as well as policy frameworks and political support. The information presented is based on input provided by community representatives serving on the Hazard Mitigation Planning Committee (HMPC), supplemented by research and analysis conducted by the planning consultant. By documenting both strengths and gaps in local capability, the assessment informs the development of mitigation actions that are realistic, achievable, and aligned with the unique needs of each jurisdiction.

3.3.1 Planning and Regulatory Capability

Planning and regulatory capability 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. Regulatory capability also includes 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 hazard mitigation principles and practices into the local decision-making process.

This assessment provides a general overview of the key planning and regulatory tools or programs in place or under development for the Camden County planning area. This information will help identify opportunities to address gaps, weaknesses, or conflicts with other initiatives and integrate the implementation of this Plan with existing planning mechanisms where appropriate.

Table 3-2 summarizes the relevant local plans, ordinances, and programs already in place or under development for the Camden County planning area. A checkmark (✓) indicates that the given item is currently in place and being implemented. An asterisk (*) indicates that the given item is currently being developed for future implementation. A plus sign (+) indicates that a jurisdiction is covered for that item under a County-implemented version. Each of these local plans, ordinances, and programs should be considered available mechanisms for incorporating the requirements of the Hazard Mitigation Plan.

Table 3-2. Relevant plans, ordinances, and programs

	Camden County	City of Kingsland	City of St. Marys	City of Woodbine
Hazard Mitigation Plan	✓	✓	✓	✓
Comprehensive Plan	✓	✓	✓	✓
Land Use Plan	✓	+	✓	✓
Zoning Ordinance	✓	✓	✓	✓
Subdivision Ordinance	✓	✓	✓	✓
Floodplain Ordinance	✓	✓	✓	✓
Erosion, Sedimentation, and Pollution Control Ordinance	✓	✓	✓	
Other Special Purpose Ordinance (stormwater, growth management, wildfire)	✓	✓	✓	✓
Building Code	✓	✓	✓	✓
Fire Department ISO Rating	4	2	2	
Building Code Effectiveness Grading Schedule Rating	5/5	*	5/5	*
Stormwater Management Program	*	✓	✓	
Site Plan Review Requirements	✓	✓	✓	✓
Capital Improvements Plan	✓	✓	✓	
Economic Development Plan	✓	+	✓	✓
Local Emergency Operations Plan	✓	✓	✓	✓
Flood Insurance Study or Other Engineering Study for Streams	✓	✓	+	+
Transportation Plan	*	+	✓	*
Other Special Plans				
Elevation Certificates	✓		✓	

Additional planning tools in the County include the Camden Kings Bay Joint Land Use Study, which is applicable to all incorporated jurisdictions, and the Camden County Bicycle and Pedestrian Plan. The Camden County Joint Comprehensive Plan also includes all incorporated jurisdictions. Additionally, the City of St. Marys has additional planning capability, including the Transportation Plan element included in the City's Master Plan as well as the City's Flood Resilience Report.

Other special purpose ordinances in place within the County and incorporated jurisdictions include Emergency Management and Emergency Services, Floodplain Management, Environment/Natural Resources Protection, Fire Prevention and Protection, and Utilities ordinances.

Based upon the responses summarized in the above table, jurisdictions in Camden County have significant planning and regulatory capability. Jurisdictions could improve this capability by creating economic development plans that incorporate post-disaster economic recovery. The communities might also consider developing stormwater management programs to better address the County's high priority hazards. Beyond the planning and regulatory tools listed above,

communities in the County could increase their resilience to hazards through developing local post-disaster recovery plans.

A more detailed discussion on the region's planning and regulatory capability follows.

3.3.1.1 Plans and Ordinances

Hazard mitigation is widely recognized as one of the four primary phases of emergency management. Mitigation is interconnected with all other phases and is an essential component of effective preparedness, response, and recovery. Opportunities to reduce potential losses through mitigation practices are most often implemented before a disaster event, such as through the elevation of flood prone structures or by regular enforcement of policies that regulate development. However, mitigation opportunities can also be identified during immediate preparedness or response activities, such as installing storm shutters in advance of a hurricane. Furthermore, incorporating mitigation during the long-term recovery and redevelopment process following a disaster event is what enables a community to become more resilient.

The implementation of hazard mitigation also often involves agencies and individuals beyond the emergency management profession. Stakeholders may include local planners, public works officials, economic development specialists, and others. In many instances, concurrent local planning efforts will help to achieve or complement hazard mitigation goals, even though they may not be designed as such.

The following list defines some of the different plans and ordinances available to Camden County and its incorporated jurisdictions to implement hazard mitigation.

- **Hazard Mitigation Plan:** A hazard mitigation plan is a community's blueprint for how it intends to reduce the impact of natural, and in some cases human-caused, hazards on people and the built environment. The essential elements of a hazard mitigation plan include a risk assessment, capability assessment, and mitigation strategy. All participating jurisdictions in this multi-jurisdictional planning effort have previously been covered by the Camden County Joint Hazard Mitigation Plan 2021 and continue to be covered under this update – making each community eligible for the associated hazard mitigation funding mechanisms.
- **Comprehensive/Land Use Plan:** A comprehensive land use plan, or general plan, establishes the overall vision for what a community wants to be and serves as a guide for future governmental decision making. Typically, a comprehensive plan contains sections on demographic conditions, land use, transportation elements, and community facilities. Given the broad nature of the plan and its regulatory standing in many communities, the integration of hazard mitigation measures into the comprehensive plan can enhance the likelihood of achieving risk reduction goals, objectives, and actions. Some jurisdictions have their own comprehensive plans and land use mapping in place, and all participating jurisdictions are part of Camden County's Joint Comprehensive Plan. Regular updates of

comprehensive plans are important for guiding the growth and development of a community.

- **Zoning Ordinance:** Zoning represents the primary means by which land use is controlled 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 governments to limit the type and density of development, a zoning ordinance can serve as a powerful tool when applied in identified hazard areas. All participating jurisdictions have a zoning ordinance in place.
- **Subdivision Ordinance:** A subdivision ordinance is intended to regulate the development of residential, 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. All participating jurisdictions have a subdivision ordinance in place.
- **Building Codes, Permitting, and Inspections:** Building codes regulate construction standards. In many communities, permits and inspections are required for new construction. 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 the jurisdictions have a building code in place based on the International Building Code (IBC). Camden County, the City of St. Marys, and the City of Kingsland all adhere to the International Code Council (ICC) and employ the 2018 IBC as well as the International Residential Code (IRC) among other codes; the City of Woodbine employs the 2006 IBC and IRC.

The adoption and enforcement of building codes by local jurisdictions is routinely assessed through the Building Code Effectiveness Grading Schedule (BCEGS) program, developed by the Insurance Services Office, Inc. (ISO). The results of BCEGS assessments are routinely provided to ISO's member private insurance companies, which in turn may offer ratings credits for new buildings constructed in communities with strong BCEGS classifications. The expectation is that communities with well-enforced, up-to-date codes should experience fewer disaster-related losses, and as a result should have lower insurance rates.

- **Capital Improvements Plan:** A capital improvements 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. Capital improvement plans can also address problems within hazardous areas; for example, a jurisdiction might obligate money to address site-specific drainage related problems. All participating jurisdictions except for the City of Woodbine have a capital improvements plan or program in place.
- **Emergency Operations Plan:** An emergency operations plan outlines the responsibilities of different departments and how resources will be deployed during and following an

emergency or disaster. The County and all jurisdictions have an emergency operations plan.

- **Stormwater Management Plan:** A stormwater management plan is designed to address flooding associated with stormwater runoff. The stormwater management plan is typically focused on design and construction measures that are intended to reduce the impact of minor urban flooding more frequently occurring. Currently, only the City of Kingsland and the City of St Marys have stormwater management plans. The City of Kingsland has adopted the Georgia Stormwater Management Manual and the Coastal Stormwater Supplement via Ordinance No. 2010-07 which is overseen by the Public Works Department. Residents of the City of St. Marys have identified gaps in stormwater management. In response, the City established a stormwater utility in 2020, along with a Stormwater Task Force overseen by the Public Works Department. The enabling ordinance created the Stormwater Utility Enterprise Fund and established the user fee structure, a credit program, and dedicated funding to support stormwater management initiatives. Improving this infrastructure as a utility with user fees in the City of Woodbine and Camden County would help mitigate overflow, buildup, and insufficient retention during flood events. The expanded use of bioswales and upgraded pipe infrastructure would help reduce the runoff beyond current levels.

3.3.1.2 Floodplain Management

Flooding represents the greatest natural hazard facing the nation, yet the tools available to reduce the impacts associated with flooding are among the most developed when compared to other hazard-specific mitigation techniques. In addition to approaches that cut across hazards such as education, outreach, and the training of local officials, the National Flood Insurance Program (NFIP) contains specific regulatory measures that enable government officials to determine where and how growth occurs relative to flood hazards. Participation in the NFIP is voluntary for local governments; however, program participation is strongly encouraged by the Federal Emergency Management Agency (FEMA) as a first step for implementing and sustaining an effective hazard mitigation program. It is therefore used as part of this capability assessment as a key indicator for measuring local capability.

For a county or incorporated municipality to participate in 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 be protected from damage by a 100-year flood event, and that new development in the floodplain not exacerbate existing flood problems or increase damage to other properties.

A key service provided by the NFIP is the mapping of identified flood hazard areas. Once completed, the Flood Insurance Rate Maps (FIRM) 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. Camden County has access to the Georgia Flood Map Program that can identify areas at risk of flooding and guide development, floodplain regulation, and flood insurance requirements. The program provides interactive maps that show flood-prone areas, including 100-year floodplains, storm surge, and sea-level rise, helping residents and officials understand local flood risk. To support community awareness and resilience, the County also offers a “Flood Awareness Tool” that visualizes current and future risk, taking into account riverine flooding, storm surge, sea-level rise, and more. Table 3-3 provides NFIP policy and claim information for each participating jurisdiction in the Camden County planning area.

All jurisdictions in the County participate in the NFIP and will continue to comply with all required provisions of the program. Floodplain management is managed through zoning ordinances, building code restrictions, and the County and municipal building inspection programs. The jurisdictions will coordinate with the Georgia Emergency Management Agency (GEMA) and FEMA to develop maps and regulations related to Special Flood Hazard Areas within their jurisdictional boundaries and, through a consistent monitoring process, will design and improve their floodplain management program in a way that reduces the risk of flooding to people and property.

Table 3-3. NFIP policy and claim information

Jurisdiction	Initial FIRM Date	CRS Entry	CRS Class	Current Effective Map Date	NFIP Policies in Force	Total Coverage	Written Premium in Force	Total Annual Payments
Camden County	06/01/84	2013	6	12/21/17	834	\$254,426,000	\$652,555	\$812,392
Kingsland	06/01/84	2024	8	12/21/17	776	\$251,618,000	\$499,753	\$623,031
St. Marys	06/01/84	2016	6	12/21/17	1475	\$459,045,000	\$1,156,096	\$1,436,514
Woodbine	06/01/84	-	-	12/21/17	23	\$6,812,000	\$23,263	\$28,956
Total	-	-	-	-	3108	\$971,901,000.00	\$2,331,667.00	\$2,900,893.00

Community Rating System

An additional indicator of floodplain management capability is active participation in the Community Rating System (CRS). The CRS is an incentive-based program that encourages communities to undertake defined flood mitigation activities that go beyond the minimum requirements of the NFIP. Each of the CRS mitigation activities is assigned a point value. As a community earns points and reaches identified thresholds, they can apply for an improved CRS class. Class ratings, which range from 9 to 1 and increase on 500-point increments, are tied to flood insurance premium reductions. Every improvement in class earns an additional 5 percent

discount for NFIP policyholders as shown by Table 3-4, with a starting discount of 5 percent for Class 9 communities and a maximum possible discount of 45 percent for Class 1 communities.

Table 3-4. CRS Credit Points, Classes and Premium Discounts

CRS Credit Points	CRS Class	CRS Discount (Premium Reduction)
4500+	1	45%
400-4499	2	40%
3500-3999	3	35%
3000-3499	4	30%
2500-2999	5	25%
2000-2499	6	20%
1500-1999	7	15%
1000-1499	8	10%
500-999	9	5%
0-499	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 comments intended to make the CRS more user friendly, and extensive technical assistance available for communities who request it. Camden County, the City of Kingsland, and the City of St. Marys participate in the CRS. Table 3-3 lists each community's CRS entry date and current CRS class. Under the current ratings, property owners in the City of Kingsland receive a 10 percent discount on flood insurance, while residents of Camden County and the City of St. Marys benefit from a 20% percent discount. The City of Woodbine could benefit from participating, helping residents access discounted rates. The City of St Marys and Camden County jumping to a Class 5 rating would raise the discount to 25%, based on the CRS discount schedule. Residents across jurisdictions would benefit from additional education on potential mitigation measures to take during flooding events.

3.3.2 Administrative and Technical Capability

The ability of a local government to develop and implement mitigation projects, policies, and programs is directly tied to its ability to direct staff time and resources for that purpose. Administrative capability can be evaluated by determining how mitigation-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 capability for the implementation and success of proposed mitigation activities. Technical capability can generally be evaluated by assessing the knowledge and expertise of local government employees, including skills in geographic information systems (GIS) for analyzing community hazard vulnerability.

Table 3-5 below provides a summary of the capability results for the planning area regarding relevant staff and personnel resources. A checkmark (✓) indicates the presence of a staff member(s) in that jurisdiction with the specified knowledge or skill, an asterisk (*) indicates a County staff member provides the specified knowledge or skill for the jurisdiction.

Note that in multiple instances, one individual staff member fills multiple roles listed below. In these cases, these individuals may be overburdened during emergency events, disaster recovery, or planning process updates. Certain communities might contract out services where there is no in-house capacity. Camden County assists communities lacking certain capabilities. Specific areas for improvement might include employing or outsourcing planners with specific understanding of natural hazards and land use practices to mitigate the impacts of hazards as well as individual communities maintaining GIS databases to identify hazard prone areas and build community-specific, detailed risk and vulnerability assessments.

Table 3-5. Relevant staff, personnel, and data resources

	Camden County	City of Kingsland	City of St. Marys	City of Woodbine
Planner and/or Engineer (with knowledge of land development and land management practices)	✓	✓	✓	
Engineer and/or Professional (trained in construction practices related to buildings and/or infrastructure)	✓	✓	✓	✓
Planner, Engineer, and/or Scientist (with an understanding of natural hazards)	✓	✓	✓	
Personnel Skilled in GIS	✓	✓	✓	✓
Full-Time Building Official		✓	✓	✓
Floodplain Manager	✓	✓	✓	✓
Emergency Manager	✓	✓	✓	✓
Grant Writer	✓	+	✓	
Public Information Officer	✓		✓	✓
Warning Systems	✓	✓	✓	✓
GIS Data: Flood Zones/Hazard Areas	✓	✓	✓	✓
GIS Data: Critical Facilities		✓	✓	
GIS Data: Current and/or Future Land Use	✓	✓	✓	
GIS Data: Building Footprints		✓	✓	
GIS Data: Links to Assessor's Data			✓	

below shows the locations of fire departments in Camden County that would be ready and able to effectively respond and cover emergencies in the event of a local disaster.

Figure 3-1. Fire departments throughout Camden County



3.3.2.1 Volunteer and Housing Assistance Resources

Camden County and its partnering jurisdictions have established volunteer organizations as well as several key partners that provide shelter and housing assistance to individuals and families experiencing homelessness or in crisis including:

- Camden County Emergency Management Agency (EMA): Provides disaster response and evacuation assistance
- The Salvation Army, St. Marys: Provides disaster relief and community recovery
- University of Georgia (UGA) Cooperative Extension, Camden County: Provides environmental and stormwater education programs
- The City of St. Marys, Camden House: Offers emergency shelter specifically for survivors of domestic violence and their children; the organization operates a 24/7 crisis line and provides confidential support and safe housing
- The City of Kingsland, Totally Free, Inc.: Provides the Department of Housing and Urban Development (HUD)-approved housing assistance programs to residents in need

These essential organizations enhance the County's ability to respond to natural hazards, provide recovery support, and educate the public on mitigation practices. They collectively enhance the community's capacity to provide safe shelter and support during emergencies and are valuable partners in local disaster preparedness and recovery efforts.

3.3.3 Fiscal Capability

The ability of local governments to carry out mitigation actions is largely dependent on the availability of financial resources. These resources may be derived from a combination of external

funding awards, such as federal and state grants, or locally generated revenues and financing mechanisms, including general funds, bonds, and special-purpose taxes. The costs associated with implementing mitigation policies and projects vary widely across jurisdictions. For some mitigation measures, expenses are limited to staff time and administrative costs required to design, implement, and monitor programs. Activities such as ordinance development, enforcement, and public education initiatives primarily rely on existing personnel and operational budgets. In contrast, larger-scale mitigation projects, such as the acquisition of flood-prone properties, construction of stormwater improvements, or the retrofit of public infrastructure, require significant financial investment and typically depend on partnerships between local, state, and federal funding sources. The variability of costs highlights the importance of aligning mitigation strategies with available fiscal capacity, while also emphasizing the need for communities to actively pursue diverse funding opportunities. By strategically leveraging both internal and external resources, jurisdictions can maximize their ability to implement sustainable mitigation actions that reduce long-term hazard risk and enhance community resilience.

Table 3-6 provides a summary of the capability assessment results for the respective jurisdictions and County regarding relevant fiscal resources. A checkmark (✓) indicates that the given fiscal resource is locally available for hazard mitigation purposes (including match funds for state and federal mitigation grant funds). An asterisk (*) indicates that the given item is currently being developed for future implementation.

Jurisdictions with limited fiscal capacity are encouraged to explore strategies that enhance their ability to secure and manage the financial resources necessary for implementing mitigation initiatives. One approach is to hire or designate grant writers and resource development staff who can identify, apply for, and administer federal and state funding opportunities. Communities may also consider establishing local revenue streams, such as stormwater utility fees, special-purpose taxes, or dedicated reserve funds, to provide a more stable and predictable source of funding for mitigation activities. In addition, jurisdictions should actively seek alternative funding options through partnerships with nonprofit organizations, private sector stakeholders, and regional collaborations. By diversifying revenue sources and building internal capacity to manage them, communities can improve their fiscal resilience and strengthen their ability to implement effective, long-term strategies.

Table 3-6. Relevant fiscal resources

	Camden County	City of Kingsland	City of St. Marys	City of Woodbine
Community Development Block Grants	✓	✓	✓	✓
Capital Improvement Project Funding	✓	✓	✓	✓
Authority to Levy Taxes for Specific Purposes		✓	✓	✓
Fees for Water, Sewer, Gas, or Electric Services		✓	✓	✓
Impact Fees for New Development	✓	✓		✓

Incur Debt through General Obligation Bonds		✓	✓	✓
Incur Debt through Special Tax Bonds			✓	
Incur Debt through Private Activities		✓		
Stormwater Utility Fees		*	✓	
Other				

3.3.4 Education and Outreach Capability

This type of local capability encompasses the education and outreach programs, communication channels, and public engagement methods that are already established within the community and can be leveraged to implement hazard mitigation activities. It not only includes the resources currently in place to share hazard-related information with residents, businesses, and stakeholders, but also highlights opportunities for improvement through the development of new initiatives, the expansion of existing programs, and the adoption of innovative strategies designed to enhance public awareness, preparedness, and resilience. Examples would include natural disaster or safety related school programs to educate the youth; participation in community programs such as Firewise or StormReady; and activities conducted as part of hazard awareness campaigns such as a Tornado Awareness Month. Camden County and its jurisdictions could benefit from using and promoting statewide resources, such as the Georgia Flood Map Program, which offers a Lunch 'n Learn series on YouTube, the Coordinated Highway Assistance & Maintenance Program (CHAMP) which is a complimentary statewide interstate highway assistant for motorists. Launched in 2017, the CHAMP program can also serve Camden County by deploying operators who respond to emergencies, assist stranded drivers, clear roadway debris, and address maintenance concerns reported through the 511 system. Another tool that would be useful in the event of a disaster is the web-based monitoring software BridgeWatch®. BridgeWatch® is an online tool that helps bridge owners keep track of bridge conditions and prepare for problems caused by severe weather. It provides real-time monitoring so issues can be spotted early, helping to prevent dangerous and costly damage.

The following is a brief list of education and information programs within each community:

- Camden County: Camden County participates in the StormReady Program; Outreach efforts are implemented via social media, such as their Facebook, YouTube, Instagram, X account, as well as the County website and include CRS outreach events with campaigns related to hazards. The Agriculture and Natural Resources Program and the 4-H Program of the Camden County Extension Office offer a wide variety of natural resources, natural hazards, and environmental education programming. Camden County, as mentioned above, also provides a Flood Awareness Tool that helps residents and planners understand, map, and reduce flood risks using local data, future projections, and practical preparedness resources.
- City of Kingsland: The City employs a variety of communication platforms to engage with residents and ensure the timely dissemination of important information. Its official website serves as a central resource for City services, council meeting updates, public notices, and

contact information, allowing residents to access essential information in a convenient and organized manner. In addition to the website, the City of Kingsland maintains an active social media presence, including Facebook, which is used to highlight community news, local events, and area features, further promoting engagement and awareness within the community. To enhance emergency preparedness and response, the City utilizes the CodeRED Emergency Notification System, a high-speed communication service designed to deliver critical alerts promptly. This system can send notifications through phone calls, emails, text messages, social media updates, and mobile alerts, allowing residents to receive real-time information about severe weather events, public safety concerns, or other emergencies. Residents can also register for CodeRED to receive customized alerts tailored to their needs, ensuring that the right information reaches the right people at the right time.

- **City of St. Marys:** The City of St. Marys actively maintains official communication channels, including its website and verified social media platforms like their YouTube channel and Facebook, to support both community engagement and emergency management efforts. Existing education and outreach programs, along with these digital platforms, are leveraged to implement hazard mitigation activities and disseminate hazard-related information to residents, businesses, and stakeholders. For example, the City's Fire Department provides fire safety educational programming at schools every year. During emergency events, social media and the City's website provide rapid, real-time updates, ensuring that critical information reaches the community promptly. By integrating these communication tools into its overall preparedness and mitigation strategy, the City not only strengthens public awareness and resilience but also identifies opportunities to enhance existing programs and develop new initiatives aimed at improving overall community safety and disaster readiness. Residents of the City of St. Marys hope to receive education on the effects of littering, stormwater retention, local flood risks, and proper drainage management for property owners.
- **City of Woodbine:** The City of Woodbine utilizes multiple communication platforms to engage with residents and provide timely information. Its official website serves as a central hub for City services, council meeting updates, and contact information. The City also maintains an active social media presence on Facebook, which highlights community news, local events, and area features. For emergencies, the City of Woodbine employs the CodeRED Emergency Notification System, a high-speed communication service that ensures residents receive critical alerts promptly. In addition, the City of Woodbine is recognized as a Firewise Community, reflecting its proactive efforts to reduce wildfire risk through community education, planning, and mitigation initiatives. By integrating these tools, the city strengthens public awareness, improves community engagement, and supports the timely dissemination of important information.

Although not exhaustive, the County and its incorporated jurisdictions maintain a variety of hazard- and non-hazard-related education and outreach capabilities that support community awareness and resilience. These capabilities include ongoing public information efforts,

partnerships with schools, collaboration with civic organizations, and the use of local media and social media platforms to distribute timely information. By leveraging these existing resources, communities can expand their reach and deliver consistent messaging about hazard risks, preparedness measures, and available mitigation options. In addition, jurisdictions can develop new initiatives, such as community workshops, public safety campaigns, and interactive educational programs, to engage residents of all ages and varying backgrounds. Strengthening both existing and emerging outreach efforts not only enhances public understanding of hazard risk but also empowers individuals and households to take proactive steps toward risk reduction, thereby contributing to a more informed and resilient community.

3.3.5 Political Capability

One of the most difficult capabilities to evaluate involves the political will of a jurisdiction to enact meaningful policies and projects designed to reduce the impact of future hazard events. Hazard mitigation may not be a local priority, or it may conflict with or 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 mitigation strategies, as it could be the most difficult hurdle to overcome in accomplishing their adoption and implementation.

Table 3-7 below summarizes the different government structures in the jurisdictions as well as whether the governing bodies are supportive of mitigation efforts.

Table 3-7. Jurisdictional government structure and political climate

Jurisdiction	Government Structure	Political Climate Supportive of Mitigation Efforts?
Camden County	5-member Board of Commissioners, elected by district, with appointed Chair and Vice-Chair for staggered, four-year terms	The Board of Commissioners is supportive of mitigation efforts and usually meets on the first and third Tuesday of each month
City of Kingsland	5-member City Council including the Mayor; City Manager serves as Chief Administrative Officer (CAO)	The City Council is supportive of mitigation efforts
City of St. Marys	6-member City Council and Mayor; City Manager serves as CAO	The Council and Mayor are supportive of building resiliency and mitigating future disasters
City of Woodbine	5-member City Council including the Mayor	The City Council is supportive of mitigation efforts to build resiliency and handle future disasters

The governing bodies of the City of St. Marys, the City of Woodbine, the City of Kingsland, and Camden County actively engage in coordinated efforts to address regional challenges and promote effective governance across jurisdictions. Since 1923, the City of Woodbine serves as the

administrative center of Camden County. This designation indicates that the City of Woodbine is the location where the County's government offices and officials are based, and where official County business is conducted while housing the Camden County Board of Commissioners and various County departments. By fostering intergovernmental communication and cooperation, the boards strengthen local decision-making, ensure efficient use of resources, and support consistent and equitable delivery of services to residents. Through structured collaboration, these municipalities and the County work to align policies, share resources, and implement strategies that enhance public safety, infrastructure management, environmental stewardship, and community services. This integrated approach enhances community resilience, encourages proactive planning, and reinforces the capacity of the region to respond to and recover from a variety of social, economic, and environmental challenges.

3.4 Conclusions on Local Capability

The primary purpose of conducting a capability assessment is to systematically evaluate the existing capabilities of local governments and identify any gaps, limitations, or deficiencies in ongoing operations that could impede the effective implementation of proposed mitigation activities or contribute to heightened community vulnerability. Through this assessment, participating jurisdictions were able to assess the adequacy of current resources, organizational structures, policies, and programs, and identify areas where capacity enhancements, training, or additional resources are warranted. The findings of the capability assessment directly informed the development of mitigation actions, allowing each jurisdiction to target improvements, expand existing capacities, and enhance the overall effectiveness of hazard mitigation initiatives.

All participating jurisdictions demonstrated varying levels of capacity to implement hazard mitigation projects. This assessment serves as a valuable tool for jurisdictions to benchmark current capabilities, identify vulnerabilities, and prioritize opportunities to strengthen local capacity for planning, funding, and executing mitigation measures. By leveraging this information, jurisdictions are better positioned to implement mitigation strategies that are both feasible and sustainable, while simultaneously reducing risk and enhancing community resilience.

The conclusions derived from the Risk Assessment and Capability Assessment form the foundation for the formulation of a comprehensive hazard mitigation strategy. In identifying specific mitigation actions, the HMPC considered each jurisdiction's exposure to hazards alongside its existing capacity to address those risks effectively. This integrated approach ensures that selected mitigation actions are grounded in the practical capabilities of the jurisdictions, targeted to address vulnerabilities, and designed to improve long-term preparedness, public safety, and resilience across all participating communities. As new opportunities emerge, the County will evaluate its available resources and capacity, collaborating closely with its cities and neighboring communities to ensure a coordinated and comprehensive approach to identifying, mitigating, and managing potential hazards.

Chapter 4 Mitigation Strategy

4.1 Summary of Updates for Chapter 4

The following table provides a description of each section of this chapter and a summary of the changes made to the 2021 Camden County Multi-Jurisdictional Hazard Mitigation Plan.

Chapter 4 Section	Updates
Goals and Objectives	Added a fourth goal and updated to reflect current conditions and priorities
Identification and Analysis of Mitigation Activities	Updated to include the identified mitigation activities and to establish a ranking system based on FEMA's STAPLEE criteria, assigning each action an average score from 1 to 5 to reflect its overall feasibility and priority.
Mitigation Action Plans	Updated to reflect current statuses of 2026 mitigation actions and to include new mitigation actions

4.2 Goals and Objectives

Chapter 2 documents the hazards and associated risks that threaten Camden County, including the vulnerability of people, structures, infrastructure, and critical facilities. Based on this understanding of risks, the Hazard Mitigation Planning Committee (HMPC) must identify mitigation actions to reduce exposure, vulnerability, and overall risk. The intent of goal setting is to guide the review of possible mitigation actions. This Plan needs to make sure that recommended actions are consistent with what is appropriate for the County. Mitigation goals should reflect community priorities and should be consistent with other plans in the County.

- Goals are general guidelines that explain what is to be achieved. They are usually broad-based, long-term policy type statements that represent global visions. Goals help define the benefits that the Plan is trying to achieve.
- Objectives are short term aims which, when combined, form a strategy or course of action to meet a goal. Objectives provide more specific methods for achieving goals.

4.2.1 Goal Setting

At the first HMPC meeting, held on July 15, 2025, the HMPC reviewed and discussed the goals from the 2021 Plan. The goals and objectives were revised to better align with current and emerging priorities, informed by recent hazard events, technological advancements, and evolving community needs. While the original framework focused primarily on property protection, government continuity, and public education, the updated goals expand the scope to emphasize sustainability, digital resilience, and equity. Notably, Goal 4 was added to address the growing importance of communication systems and digital infrastructure in both emergency response and daily operations. This includes proactive planning for system disruptions, promoting

information integrity, and ensuring secure and reliable connectivity. Existing goals were also enhanced to reflect a more comprehensive understanding of risk, with added emphasis on preserving natural systems, supporting local business continuity, and fostering long-term community resilience. These updates ensure the plan remains forward-looking and adaptable to both current conditions and future challenges.

4.2.2 Goals and Objectives

- Goal 1: Prevent and reduce hazard damage to property.
 - Objective 1.1: Protect and update existing and future property, critical facilities, and infrastructure.
 - Objective 1.2: Use planning and regulatory tools to keep hazard problems from worsening.
 - Objective 1.3: Preserve natural areas that provide hazard risk reduction or other beneficial functions.
- Goal 2: Build and support local capacity and commitment to become continuously less vulnerable to hazards.
 - Objective 2.1: Provide public safety related prevention programs.
 - Objective 2.2: Ensure that the continuity of local government operations will not be significantly disrupted by disaster.
 - Objective 2.3: Support the resiliency of and sustainability of businesses, including the continuity of business operations against disaster events.
- Goal 3: Protect health and safety of residents of Camden County.
 - Objective 3.1: Improve preparedness, response, and recovery capability to minimize hazard impacts.
 - Objective 3.2: Provide education and outreach to inform the public of hazards and ways to protect themselves and their property.
- Goal 4: Proactively strengthen communication systems and digital infrastructure to ensure continuity of services and effective coordination before, during, and after disruptions.
 - Objective 4.1: Establish connectivity and communication amongst the public and resources during blue skies.
 - Objective 4.2: Develop and maintain redundant and resilient communication systems to ensure operational continuity and rapid information sharing during emergencies.
 - Objective 4.3: Promote the integrity of communications by supporting secure, reliable information-sharing systems and amplifying accurate messaging from trusted sources during disasters.

4.3 Identification and Analysis of Mitigation Activities

To identify and select mitigation projects, the HMPC targeted those hazards considered high and

moderate priorities for the planning area, based on the analysis provided in Chapter 2. Hazard Identification and Risk Assessment. The following hazards were determined based on the Priority Risk Index (PRI) scores to be high and moderate priority hazards (in order of priority):

- Flood
- Hurricane
- Sea Level Rise
- Cyber Attack
- Active Assailant
- Infrastructure Failure
- Drought
- Extreme Heat
- Tornado
- Hazardous Materials Incident
- Supply Chain Disruption
- Terrorism
- Severe Weather
- Erosion
- Severe Winter Weather
- Hail
- Wildfire
- Infectious Disease
- Radiological Incident
- Lightning

Once it was determined which hazards warranted the development of specific mitigation actions, the HMPC analyzed viable mitigation options that supported the identified goals and objectives.

The HMPC was provided with the following list of mitigation categories:

- Prevention
- Property Protection
- Natural Resource Protection
- Emergency Services
- Structural Projects
- Public Information and Outreach

4.3.1 Prioritization Process

In the process of identifying continuing and new mitigation actions, the HMPC was provided with a set of criteria to assist in deciding why one action might be more important, more effective, or more likely to be implemented than another. HMPC members were asked to rate each action with an approach modified from the FEMA STAPLEE criteria. Actions were assigned an average score ranging from 1 to 5, with 1 indicating lower feasibility or priority and 5 representing the highest level

of feasibility and benefit based on STAPLEE factors. The considerations for action prioritization were as follows:

- **Socially Acceptable:** Is the action acceptable to the community? Does it have a greater impact on a certain segment of the population? Are the benefits fair?
- **Technically Feasible:** Is the action technically feasible? Is it a long-term solution to the problem? Does it capitalize on existing planning mechanisms for implementation?
- **Administrative Resources:** Are there adequate staffing, funding and other capabilities to implement the project? Is there adequate additional capability to ensure ongoing maintenance?
- **Politically Supported:** Will there be adequate political and public support for the project? Does the project have a local champion to support implementation?
- **Legally Allowable:** Does the community have the legal authority to implement the action?
- **Economically Sound:** Can the action be funded locally? Will the action need to be funded by an outside entity, and has that funding been secured? How much will the project cost? Can the benefits be quantified, and do they outweigh the costs?
- **Environmentally Sound:** Does the action comply with environmental regulations? Does the action meet the community's environmental goals? Does the action impact land, water, endangered species, or other natural assets?

In accordance with the Disaster Mitigation Act of 2000 requirements, an emphasis was placed on the importance of a benefit-cost analysis in determining action priority, as reflected in the prioritization criteria above. For each action, the HMPC considered the benefit-cost analysis in terms of:

- Ability of the action to address the problem
- Contribution of the action to save life or property
- Technical and administrative resources available for implementation
- Availability of funding and perceived cost-effectiveness

The consideration of these criteria helped to prioritize and refine mitigation actions but did not constitute a full benefit-cost analysis. The cost-effectiveness of any mitigation alternative will be considered in greater detail through performing benefit-cost project analyses when seeking Federal Emergency Management Agency (FEMA) mitigation grant funding for eligible actions associated with this Plan. The prioritization ranking, simplified as High, Medium, or Low, for each mitigation action considered by the HMPC is provided in the Mitigation Action Plans below.

4.3.2 Action Costs and Time Frames

Project costs and time frames vary depending on the scope and level of effort required. Costs are generally categorized as Low (< \$100K), Medium (\$100K to \$1M), High (> \$1M), or Variable, depending on the complexity and scale of implementation. In certain cases, the primary expense is limited to staff time, particularly for actions that can be completed internally without significant

financial investment. Time frames are considered variable and are influenced by the availability of resources, staffing capacity, and project priorities.

4.4 Mitigation Action Plans

4.4.1 2021 Mitigation Action Plan

Before developing new mitigation actions, the HMPC reviewed the mitigation action plan from the 2021 Plan to evaluate the status of each mitigation action. Below lists the actions from the previous Plan that have been completed.

Table 4-1. 2021 Plan completed actions

2021 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department
10	Use results of NOAA sea level rise study to adjust local plans - When available utilize NOAA sea level and flood hazard mitigation study findings in future required updates to the Comprehensive Plan (2018) and Hazard Mitigation Plan (2015); and to the extent possible, coordinate with DCA and GEMA to align plan updates to concurrently address land use planning and hazard mitigation planning in the community.	1.2	Flood, Hurricane, Severe Weather, Sea Level Rise	All Jurisdictions	Preventive	County and City Administration
55	Develop a special evacuation plan for tourists.	3.1	Hurricane	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director
61	Maintain Code Red System.	3.1	All Hazards	All Jurisdictions	Emergency Services	Emergency Management Director
127	Camden County has experienced a pandemic and must plan for future occurrences. Camden County must address training, resources, equipment, and facilities to mitigate future incidents.	3.1	Infectious Disease	Camden County	Preventive	Emergency Management Director

2021 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department
132	Establish appropriate freeboard requirements in current ordinance.	1.2	Flood, Hurricane, Sea Level Rise, Severe Weather	The City of Kingsland	Preventive	City Administration
135	Force sewer main enhancement: The single 14" sewer line serving Kingsland east of I-95 could potentially break from undue stress on the sewer pipes due to flooding. To remedy this, the City will install an 18" sewer force main to run parallel to the existing pipe to provide redundancy and increased capacity.	1.1	Flood, Hurricane	The City of Kingsland	Structural Projects	City Administration; Department of Public Works
136	Lift station rehabilitation: Creekwood (neighborhood bordered by Little Catfish Creek, impacted by Irma) lift station - raise the walls of the wet well and adjust top plate, change pumps and hardware as needed. Greentree Lift Station (surrounded on three sides by wetlands, inaccessible during Irma because the drainage system was overburdened) - raise the wet well and change out pumps and hardware. Project would require more filling and moving or replacing fence.	1.1	Flood, Hurricane, Sea Level Rise	The City of Kingsland	Structural Projects	City Administration; Department of Public Works

The remaining actions from the 2021 Plan have been carried over to this Plan update; their statuses are included in the 2026 Mitigation Action Plan below.

4.4.2 2026 Mitigation Action Plan

This section provides the updated Mitigation Action Plan, which was developed to present the HMPC's recommendations for how the participating communities can reduce the risk and vulnerability of people, property, infrastructure, and natural and cultural resources to future disaster losses. Emphasis was placed on both future and existing development. Each mitigation action recommended for implementation is listed in Table 4-8 below along with details on the

goal and objective addressed, the hazards addressed, the applicable jurisdictions, the mitigation category, the lead agency responsible for implementation, and a status update for actions from the 2021 Mitigation Action Plan. TABLE outlines the priority rating calculation. All of the actions are also listed in text format, with additional information, including the potential funding sources for the action, a projected implementation timeline, and a qualitative analysis of the action benefits.

Table 4-2. Mitigation Action Plan for the Camden County Multi-Jurisdiction Hazard Mitigation Plan 2026

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
1	Use a hybrid of hard/soft engineering techniques (i.e., combine low-profile rock, rubble, oyster reefs, or wood structures with vegetative planting or other soft stabilization techniques).	1.3	Coastal Erosion	All Jurisdictions	Natural Resource Protection	County and City Administration	In Progress, Carry Over
2	Develop an inventory of public buildings and infrastructure that may be particularly vulnerable to sea level rise.	1.1	Coastal Erosion	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
3	Establish setbacks in high-risk areas that account for potential sea level rise.	1.2	Coastal Erosion	All Jurisdictions	Property Protection	County and City Administration	In Progress, Carry Over
4	Continue to enforce erosion and sedimentation control statutes.	1.3	Coastal Erosion	All Jurisdictions	Natural Resource Protection	Planning and Development	In Progress, Carry Over
5	Follow guidelines as established in the Coastal Regional Water Plan for usage of surface artesian flow for irrigation.	1.3	Drought	All Jurisdictions	Preventive	Camden County Extension Service Agent, County and City Administration	Not Started, Carry Over
6	Develop a drought emergency plan.	3.1	Drought	All Jurisdictions	Preventive	Camden County-Extension Service Agent, County and City Administration	In Progress, Carry Over
7	Develop a drought communication plan and early warning system to facilitate timely communication of relevant information to officials, decision makers, emergency managers, and the general public.	4.3	Drought	All Jurisdictions	Emergency Services	Camden County-Extension Service Agent, County and City Administration	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
8	Educate the public during a drought; ask them to delay outside burning.	3.2	Drought; Wildfire	All Jurisdictions	Public Education and Outreach	Georgia Forestry; Emergency Management Agency Director	In Progress, Carry Over
9	Identify the critical facilities, roads and bridges in potential flood and surge zones and develop a plan to relocate or retrofit to withstand hazards.	1.1	Flood, Hurricane, Severe Weather	All Jurisdictions	Structural Projects	County and City Administration	In Progress, Carry Over
10	Strengthen current Comprehensive Plan policies in the Natural Resources section to include groundwater, surface water, and aquifer recharge areas as high priorities for protection. Link source water protection to stormwater management within the Comprehensive Plan as well as within key county and city ordinances. These policies should be tied to financial benefits and demonstrate how successful protection can cap and reduce flood management and treatment costs over time.	1.3	Flood, Hurricane, Severe Weather, Sea Level Rise	All Jurisdictions	Natural Resource Protection	County and City Administration	In Progress, Carry Over
11	When LIDAR mapping is available, ensure well head elevations are above known flooding levels.	2.1	Flood, Hurricane, Severe Weather	All Jurisdictions	Structural Projects	County and City Administration	In Progress, Carry Over
12	Implement the findings of the Joint Land Use Study (JLUS) MIRR***	1.2	Flood, Hurricane, Severe Weather, Sea Level Rise	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
13	Improve litter law enforcement.	1.2	Flood, Hurricane, Severe Weather, Sea Level Rise	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
14	Raise future structures above Base Flood Elevations.	1.1	Flood, Hurricane, Severe Weather, Sea Level Rise	All Jurisdictions	Property Protection	County and City Administration	In Progress, Carry Over
15	Examine the vulnerability of Stormwater infrastructure and evaluate the costs and benefits of possible interventions.	1.1	Flood, Hurricane, Severe Weather, Sea Level Rise	All Jurisdictions	Structural Projects	County and City Administration	In Progress, Carry Over
16	Continue to participate in the National Flood Insurance Program by reviewing and updating flood ordinances to protect existing and new developments, to ensure new buildings and infrastructure are not in harm's way, and to ensure continued compliance with NFIP requirements.	1.2	Flood, Hurricane, Severe Weather, Sea Level Rise	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
17	Implement the Stormwater Master Plan.	1.2	Flood, Hurricane, Severe Weather, Sea Level Rise	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
18	Require more trees be preserved and planted in landscape designs to reduce the amount of stormwater runoff.	1.3	Flood, Hurricane, Severe Weather	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
19	Implement flood resistance measures for existing buildings such as acquisition, relocation, retrofitting, and maintenance of drainage ways and retention basins.	1.1	Flood, Hurricane, Severe Weather, Sea Level Rise	All Jurisdictions	Property Protection	County and City Administration	In Progress, Carry Over
20	Increase drainage or absorption capacities with detention and retention basins, relief drains, spillways, drain widening/dredging or rerouting, logjam and debris removal, extra culverts, bridge modification, dike setbacks, flood gates and pumps, or channel redirection.	1.1	Flood, Hurricane, Severe Weather, Sea Level Rise	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
21	Flood proof wastewater treatment facilities located in flood hazard areas.	1.1	Flood, Hurricane, Severe Weather, Sea Level Rise	All Jurisdictions	Property Protection	County and City Administration	In Progress, Carry Over
22	Install back-up generators for pumping and lift stations in sanitary sewer systems along with other measures (e.g., alarms, meters, remote controls, and switchgear upgrades).	1.1	Flood, Hurricane, Severe Weather	All Jurisdictions	Property Protection	County and City Administration	In Progress, Carry Over
23	Install a weather station in southern end of county to better predict storm and flooding events.	3.1	Flood, Hurricane, Severe Weather	All Jurisdictions	Emergency Services	County Administration	In Progress, Carry Over
24	Encourage development in line with best environmental practices.	1.2	Flood, Hurricane, Sea Level Rise, Wildfire, Severe Weather, Drought, Erosion	All Jurisdictions	Natural Resource Protection	County and City Administration	In Progress, Carry Over
25	Protect and maintain riparian buffers along urban streams.	1.3	Flood, Hurricane, Severe Weather	All Jurisdictions	Natural Resource Protection	County and City Administration	In Progress, Carry Over
26	Continue to support the St. Marys River Management Committee.	1.3	Flood, Hurricane, Severe Weather	All Jurisdictions	Natural Resource Protection	County and City Administration	In Progress, Carry Over
27	Review Unified Development Code: Land Use Map.	1.2	Flood, Hurricane, Severe Weather, Sea Level Rise, Erosion, Wildfire	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
28	Reduce flood loss claims against NFIP through the mitigation of repetitive loss properties.	1.1	Flood, Hurricane, Sea Level Rise, Severe Weather	All Jurisdictions	Property Protection	County and City Administration	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
29	Include watershed resilience and improve waterways within existing and future public funding programs for land acquisition and restoration.	1.3	Flood, Water Contamination	All Jurisdictions	Natural Resource Protection	County and City Administration	In Progress, Carry Over
30	Institute a countywide Purchase and/or Transfer of Development Rights Program to conserve working waterfronts and tidal and freshwater wetlands beyond the 25-foot buffer zone. This program will require a county ordinance and administrative process that is specific to identifying receiver areas for transferred rights.	1.3	Flood, Sea Level Rise, Hurricane	All Jurisdictions	Natural Resource Protection	County and City Administration	In Progress, Carry Over
31	Strengthening Subdivision and Development Regulations - Require greenspace for parks, trails and greenways, water storage, and set-asides within developments that also connect to countywide networks.	1.2	Flood, Sea Level Rise, Hurricane	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
32	Acquire, demolish or relocate structures located in high- risk areas.	1.1	Flood, Hurricane, Severe Weather, Sea Level Rise	All Jurisdictions	Property Protection	County and City Administration	In Progress, Carry Over
33	Continuing the practice of encouraging developers to provide open space in their developments that links together into a publicly accessible open space network through PD zoning.	1.2	Flood, Sea Level Rise, Hurricane	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
34	Encourage developers to consider linking open spaces together into a publicly accessible open space network.	1.2	Flood, Sea Level Rise, Hurricane, Severe Weather	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
35	Consider updating the Green Print/Open Space recommendations.	1.2	Flood, Sea Level Rise, Hurricane, Severe Weather	All Jurisdictions	Preventive	County and City Administration	In Progress,

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
							Carry Over
36	Develop a land banking program for the preservation and management of the natural and beneficial functions of flood hazard areas.	1.3	Flood, Sea Level Rise, Hurricane, Severe Weather, Erosion	All Jurisdictions	Natural Resource Protection	County and City Administration	In Progress, Carry Over
37	Identify critical facilities and those facilities that shelter vulnerable populations; seek funding to retrofit structures to strengthen resistance to damage. Include these buildings in plan: (1) Sheriff's Office Main Center, (2) Camden County Schools, (3) St. Marys Fire Department, (4) Kingsland Water Treatment Plant, (5) Kingsland Fire Department, (6) St. Marys Water Treatment Plant, (7) Kingsland Water Treatment Plant, (8) Woodbine Water Treatment Plant, (9) All Water City Systems and wells, (10) St. Marys Public Works, (11) Camden County Road Department, (12) Kingsland Public Works, (13) Camden Fire and Rescue, (14) Southeast Georgia Health System Camden Campus, (15) Woodbine City Hall, (16) St. Marys City Hall, (17) Kingsland City Hall, (18) Health Department.	1.1	All Hazards	All Jurisdictions	Property Protection	County and City Administration	In Progress, Carry Over
38	Promote structural retrofits for structures that are vulnerable to wind events.	1.1	Hurricane, Tornado, Severe Weather	All Jurisdictions	Property Protection	County and City Administration	In Progress, Carry Over
39	Review Undergrounding utilities: Evaluation, goals, directions, and county actions DCA will conduct training builder inspector workshops on the disaster resilient building codes.	1.1	Hurricane, Tornado, Severe Weather	All Jurisdictions	Structural Projects	County and City Administration	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
40	Encourage the location of new and existing overhead utility wiring underground, as feasible.	1.1	Hurricane, Tornado, Severe Weather	All Jurisdictions	Structural Projects	County and City Administration	In Progress, Carry Over
41	Promote Safe Room construction at all levels.	3.1	Hurricane, Tornado, Severe Weather	All Jurisdictions	Property Protection	County and City Administration, Emergency Management Director	In Progress, Carry Over
42	Promote mitigation activities on properties that are located in areas vulnerable to hazards.	1.1	All Hazards	All Jurisdictions	Property Protection	County and City Administration	In Progress, Carry Over
43	Effective advance planning for evacuation events - 1. Publicize preferred routes, recommend additional alternative routes (from Camden County EMA to GEMA); 2. Continue coordinated emergency management/response efforts with SUBASE Kings Bay, and address evacuation routes in the next Camden County Hazard Mitigation Plan update (2015) and the regional hazard plan underway by the Coastal Regional Commission (CRC).	3.1	Hurricane	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director	In Progress, Carry Over
44	Develop educational materials (television and print media) for residents that identify and define their risk to multi hazards: define and offer mitigation measures that residents can take home or share, determine method of distribution of the educational materials and coordinate with the media to reduce conveyance of misinformation. (education, outreach).	3.2	All Hazards	All Jurisdictions	Public Education and Outreach	Emergency Management Director	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
45	Educate public on the effects of littering and Stormwater management laws.	3.2	Flood, Hurricane, Sea Level Rise, Severe Weather	All Jurisdictions	Public Education and Outreach	Emergency Management Director	In Progress, Carry Over
46	Conduct Builders/Outreach Program.	3.2	Hurricanes, Tornado, Severe Weather, Wildfire	All Jurisdictions	Public Education and Outreach	County and City Administration	In Progress, Carry Over
47	Provide lightning suppression protection to all DPS buildings.	1.1	Hurricanes, Tornado, Severe Weather	All Jurisdictions	Property Protection	County and City Administration, Emergency Management Director	In Progress, Carry Over
48	Provide watertight document storage for assets in SLOSH and Flooding/Velocity Zones.	1.1	Hurricane, Flood, Sea Level Rise, Severe Weather	All Jurisdictions	Property Protection	County and City Administration, Emergency Management Director	Not Started, Carry Over
49	Investigate and implement obtaining additional governmental facilities via either renovation of an acquired existing structure or a new structure.	1.1	Hurricanes, Tornado, Severe Weather	All Jurisdictions	Property Protection	County and City Administration, Emergency Management Director	In Progress, Carry Over
50	Develop County Infrastructure Plan "transportation plan".	1.2	Hurricane, Flood, Tornado, Severe Weather, Sea Level Rise	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director	In Progress, Carry Over
51	Determine percentage of population coverage by current alarm system.	3.1	Hurricanes, Coastal Storms, Tornado, Severe Weather	All Jurisdictions	Emergency Services	Emergency Management Director	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
52	Plan implemented needed improvements to evacuation routes - Secure funding for needed improvements to evacuation routes as identified in future transportation planning, comprehensive planning and hazard mitigation planning.	3.1	Hurricane	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director	In Progress, Carry Over
53	Protect the integrity of evacuation routes - Protect evacuation routes in general and specifically routes that connect to SUBASE Kings Bay and peripheral residential areas, through zoning enforcement, transportation planning with traffic analysis, and application of long-term planning strategies. While these regulatory and strategic approaches may impact developments proposed for evacuation corridors, the advantages of preserving evacuation routes for adequate functionality in emergency events take precedence.	3.1	Hurricane	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director	In Progress, Carry Over
54	Develop a way-finding program with uniform signage throughout the County.	3.2	Hurricane	All Jurisdictions	Public Education and Outreach	County and City Administration, Emergency Management Director	In Progress, Carry Over
55	Work with GEMA and GDOT to resolve the negative economic impact of inadequate evacuation routes in event of a natural or man-made disaster.	3.1	Hurricane	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director; GEMA; GDOT	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
56	Work with GDOT and GEMA to implement emergency evacuation routes as soon as possible.	3.1	Hurricane	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director; GEMA; GDOT	In Progress, Carry Over
57	Implement Public Safety Communications Plan (public works, school board, sheriff, police, fire, EMS) with cities.	3.2	All Hazards	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director	In Progress, Carry Over
58	Continue to update all Emergency Response Plans.	3.1	All Hazards	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director	In Progress, Carry Over
59	Coordinate emergency planning with the Cities.	3.1	All Hazards	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director	In Progress, Carry Over
60	Provide multiple frequency backup portable and enhanced repeater tower for communications.	3.1	All Hazards	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director	In Progress, Carry Over
61	Develop a plan for special needs populations during hazard events, considering low- and moderate-income populations, populations without access to a vehicle, populations living in mobile homes, and populations under age 5 or over age 65.	3.1	All Hazards	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
62	Develop a plan for animal rescue centers.	3.1	Hurricane	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director	In Progress, Carry Over
63	Develop local area long term recovery group to plan for post-disaster clean-up.	3.1	Hurricane, Tornado, Severe Weather, Flood, Wildfire, Radiological Incident, Severe Winter Weather	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director	In Progress, Carry Over
64	Continuing coordinated emergency planning efforts with Naval Submarine Base Kings Bay.	3.1	All Hazards	All Jurisdictions	Emergency Services	Emergency Management Director; Kings Bay Emergency Management Director	In Progress, Carry Over
65	Encourage and support development of continuing care communities. The Hospital plans for a facility of this type at an unknown time in the future.	3.1	Hurricane, Tornado, Severe Weather, Flood, Wildfire, Radiological Incident, Severe Winter Weather	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director	In Progress, Carry Over
66	Promote the development of safe areas in public and private schools.	3.1	Tornado, Severe Weather	All Jurisdictions	Property Protection	Emergency Management Agency	In Progress, Carry Over
67	Educating public on Tornado Awareness and Safety Tips.	4.1	Tornado, Severe Weather	All Jurisdictions	Public Education and Outreach	Emergency Management Agency	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
68	Educate public about the different roofing materials and select the material that addresses hail, high wind and fire risks.	3.2	Tornado, Severe Weather, Wildfire	All Jurisdictions	Public Education and Outreach	Emergency Management Agency	In Progress, Carry Over
69	Educating public on safety procedures to follow during hail events.	3.2	Severe Weather	All Jurisdictions	Public Education and Outreach	Emergency Management Agency	In Progress, Carry Over
70	Build upon past mapping efforts and the development of the Welstrom database to develop a full inventory of septic systems in unincorporated Camden County.	1.1	Water Contamination	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
71	Leverage State and federal funding to conduct a broad septic assessment, repair and upgrade program.	1.1	Water Contamination	All Jurisdictions	Structural Projects	County and City Administration, Emergency Management Director; County Environmental Health	In Progress, Carry Over
72	Develop a local water quality monitoring program to improve understanding of the sources of contamination and local hydrology.	1.3	Water Contamination	All Jurisdictions	Natural Resource Protection	City and County Administration; Environmental Protection Division	In Progress, Carry Over
73	Consider land use and green infrastructure policies to reduce the impacts of failing septic systems.	1.2	Water Contamination	All Jurisdictions	Preventive	City and County Administration; Environmental Health	In Progress, Carry Over
74	Create an advisory committee to consider a long-term septic management policy.	1.2	Water Contamination	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
75	Consider an incentive program to get people to tie into municipal sewer system.	1.3	Water Contamination	All Jurisdictions	Natural Resource Protection	City and County Administration; Environmental Health	In Progress, Carry Over
76	Consider measures to promote increase infiltration of Stormwater to reduce nutrient and other pollutant runoff.	1.3	Water Contamination	All Jurisdictions	Natural Resource Protection	County and City Administration	In Progress, Carry Over
77	Continuing to operate Water Pollution Control Programs to remain compliant with NPDES Discharge permits.	1.3	Water Contamination	All Jurisdictions	Natural Resource Protection	County and City Administration	In Progress, Carry Over
78	Identify area vulnerable to spillage and determine what types of plans need to be put in place to effectively avoid water contamination during a flood event.	1.3	Water Contamination	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director	In Progress, Carry Over
79	Educate public about proper disposal of hazardous waste products that have the potential to contaminate water sources after a disaster.	3.2	Water Contamination	All Jurisdictions	Public Education and Outreach	Emergency Management Director; Environmental Health; UGA Cooperative Extension	In Progress, Carry Over
80	Create minimum of 30-feet of defensible space-trim shrubs and vines to 30 feet from structures, trim overhanging limbs, and replace flammable plants near homes with less flammable varieties, remove vegetation around chimneys.	1.2	Wildfires	All Jurisdictions	Property Protection	County and City Administration	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
81	Reduce structural ignitability - clean flammable vegetative material from roofs and gutters, store firewood appropriately, install skirting around raised structures, store water hoses for ready access, and replace pine straw and mulch around plantings with less flammable landscaping materials.	1.1	Wildfires	All Jurisdictions	Property Protection	County and City Administration	In Progress, Carry Over
82	Right of way clearance - maintain vertical and horizontal clearance for emergency equipment. See that adequate lengths of culverts are installed to allow emergency vehicle access.	1.1	Wildfires	All Jurisdictions	Structural Projects	County and City Administration	In Progress, Carry Over
83	Seeking grant for WUI mitigation team	2.1	Wildfires	All Jurisdictions	Preventive	Georgia Forestry; Emergency Management Agency Director	In Progress, Carry Over
84	Seek grant for prescribed burning in WUI areas.	2.1	Wildfires	All Jurisdictions	Property Protection	Georgia Forestry; Emergency Management Agency Director	In Progress, Carry Over
85	Locate and pre-clear helicopter dip sites.	2.1	Wildfires	All Jurisdictions	Emergency Services	County and City Administration, Emergency Management Director	In Progress, Carry Over
86	Create up to date mapping of roads and water sources.	1.2	Wildfires	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
87	Increase participation in fire hazard mitigation programs such as Firewise.	2.1	Wildfires	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director; Georgia Forestry	In Progress, Carry Over
88	Complete the Southern Wildfire Risk Assessment	1.2	Wildfires	All Jurisdictions	Preventive	Georgia Forestry	In Progress, Carry Over
89	Support Georgia Forestry Commission's water quality program consisting of Best Management Practices Development, education/outreach, implementation/compliance monitoring, complaint resolution process.	1.2	Wildfires, Water Contamination	All Jurisdictions	Natural Resource Protection	County and City Administration	In Progress, Carry Over
90	Develop and implement protocols for defining and mapping Wildland Urban Interface Zones and develop recommended policies, regulations and landscape options for incorporation into City plans and programs.	1.2	Wildfires	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director; Georgia Forestry	In Progress, Carry Over
91	Continue to implement the Firewise Community Initiative - interactive workshop engaging developers, planners, Fire Service, and govt. officials about Firewise concepts within the county.	2.1	Wildfires	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director; Georgia Forestry; Fire Chiefs	In Progress, Carry Over
92	Continuing hazardous fuel reduction by prescribed burning, mechanical or chemical treatment carried out and promoted by GFC guidelines.	1.1	Wildfires	All Jurisdictions	Preventive	Georgia Forestry	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
93	Amend and enforce existing building codes as they relate to skirting, propane tank locations, public nuisances (trash/debris on property), Property address marking standards and other relevant concerns.	1.2	Wildfires	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
94	Review Subdivision and development ordinances for public safety concerns.	1.2	Wildfires	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director; Georgia Forestry	In Progress, Carry Over
95	Enforce uniform addressing ordinance.	1.2	Wildfires	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
96	Greater Burn Permit enforcement and education from the Georgia Forestry Commission.	2.1	Wildfires	All Jurisdictions	Preventive	Georgia Forestry; Emergency Management Agency Director	In Progress, Carry Over
97	Encourage prescribed burning for private landowners and industrial timberlands particularly adjacent to residential areas.	2.1	Wildfires	All Jurisdictions	Property Protection	Georgia Forestry; Emergency Management Agency Director	In Progress, Carry Over
98	Inspect, maintain and improve access to existing dry hydrants. Add signage along road to mark the hydrants.	3.1	Wildfires	All Jurisdictions	Structural Projects	Fire Chiefs; Emergency Management Director	In Progress, Carry Over
99	Locate additional viable water sources as needed.	3.1	Wildfires, Drought, Water Contamination	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director; Georgia Forestry; Fire Chiefs	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
100	Improve road signage at Crossroads. "Dead End" or "No Outlet" tags on road signs.	3.2	Wildfires	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director	In Progress, Carry Over
101	Seeking funding for more fire tankers (2000 to 3000 gallons) for local fire departments.	3.1	Wildfires	All Jurisdictions	Emergency Services	Fire Chiefs; Emergency Management Director	In Progress, Carry Over
102	Seeking funds to acquire additional fire equipment.	3.1	Wildfires	All Jurisdictions	Emergency Services	Fire Chiefs; Emergency Management Director	In Progress, Carry Over
103	Seek funds to train firefighters on tactics and equipment.	3.1	Wildfires	All Jurisdictions	Emergency Services	Fire Chiefs; Emergency Management Director	In Progress, Carry Over
104	Public outreach to notify residents of planned prescribed burns - continue to publicize the schedule for prescribed burning on base via local news outlets, local government websites, digital newsletters, email notifications and other effective outreach methods.	3.2	Wildfires	All Jurisdictions	Public Education and Outreach	Georgia Forestry; Emergency Management Agency Director	In Progress, Carry Over
105	Seeking additional training for fire, police, sheriff, EMS, and 911 concerning hazmat events.	3.1	Hazardous Material Incident	All Jurisdictions	Emergency Services	Emergency Management Director	In Progress, Carry Over
106	Provide river spill control for contaminants in rivers and creeks (St. Marys River, North River, Borrell Creek, Dark Entry Creek, etc.).	1.3	Hazardous Material Incident	All Jurisdictions	Natural Resource Protection	Emergency Management Director; Kings Bay Emergency Management Director	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
107	Continue to train local government officials on proper enactment procedures for hazardous material spill events.	1.3	Hazardous Material Incident	All Jurisdictions	Emergency Services	Emergency Management Director; County and City Administration	In Progress, Carry Over
108	Relocate the airport to a new location, close all airport functions at its current location and redevelop the airport property in accordance with a master plan and coordinated zoning to provide for a mix of residential development and industrial park expansion.	1.1	Hazardous Material Incident	All Jurisdictions	Structural Projects	County Administration	In Progress, Carry Over
109	Prepare a multi-jurisdictional comprehensive Camden County Long Range Transportation Plan - The long-range transportation plan is an effective tool in many communities to guide strategic improvements to the transportation system that are needed to maintain effectiveness and level of service.	1.2	Hazardous Material Incident, Hurricane	All Jurisdictions	Preventive	Emergency Management Director	In Progress, Carry Over
110	Draft a development plan for Exits 1, 3 and 6.	1.2	Hazardous Material Incident	All Jurisdictions	Preventive	County and City Administration, Emergency Management Director	In Progress, Carry Over
111	Draft a master plan for the commercial corridors and entranceways.	1.2	Hazardous Material Incident	All Jurisdictions	Preventive	County and City Administration	In Progress, Carry Over
112	Seeking additional training for fire, police, sheriff, EMS, and 911 concerning radioactive accident events.	3.1	Radiological Accidents	All Jurisdictions	Emergency Services	Emergency Management Director	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
113	Continuing coordinated emergency planning efforts with Naval Submarine Base Kings Bay.	3.1	Radiological Accidents	All Jurisdictions	Emergency Services	Emergency Management Director; Kings Bay Emergency Management Director	In Progress, Carry Over
114	Continuing to train local government officials on proper enactment procedures for radioactive spill events.	3.1	Radiological Accidents	All Jurisdictions	Emergency Services	Emergency Management Director; County and City Administration	In Progress, Carry Over
115	Upgrade Fire Station #2 for use as a field emergency communication center (hurricane shutters for windows and doors, and other miscellaneous items).	3.1	Hurricane, Severe Weather, Tornado, Flood, Wildfire, Severe Winter Weather	The City of St. Marys	Property Protection	Emergency Management Director; County Administration	In Progress, Carry Over
116	Complete Regional Septic Tank Assessment Report.	1.1	Water Contamination	Camden County	Preventive	County Environmental Health	Not Started, Carry Over
117	Review of ROW Land Acquisition for County Roads, Evaluation, Direction, Funding.	1.1	Hazardous Material Incident	Camden County	Structural Projects	County Administration	In Progress, Carry Over
118	Complete a master plan for airport once the airport is relocated.	1.2	Hazardous Material Incident	Camden County	Preventive	County Administration	In Progress, Carry Over
119	Identify, / develop site for 'safe haven' supporting COOP COG Public Safety OPS for all-jurisdictions with supporting equipment and systems.	2.1	Hurricanes, Tornado, Severe Weather	Camden County	Emergency Services	Emergency Management Director	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
120	Mitigate cyber-security incidents from occurring, as well as provide response plans for incidents. Sustain current mitigation measures, while supporting future initiatives.	2.2	Cyber Attack	Camden County	Preventive	Camden Emergency Management Director/ Camden CIO	In Progress, Carry Over
121	Camden County is vulnerable to acts of Terrorism enhanced with presence of SUBASE Kings Bay. Planning, Training and Resourcing e.g., mobile command, mobile CCTV, Mobile Alert Warning, Sensors and command and control are necessary to mitigate occurrence and or respond to incidents.	1.1	Radiological Incident	Camden County	Preventive	Camden Emergency Management Director/ Camden Sheriff	In Progress, Carry Over
122	Camden County is vulnerable to active shooter incidents in schools, businesses, and government facilities as well as public event sites. Planning, Training and Resourcing are necessary to mitigate occurrence and or respond to incidents.	2.3	Active Shooter	Camden County	Preventive	Camden Emergency Management Director/ Camden Sheriff	In Progress, Carry Over
123	Camden County as a Coastal Community is vulnerable to loss of Public Safety Communications System including 911 system. Hardening, redundancy and interoperability must be incorporate to ensure survivability to achieve resiliency and ability to meet community lifelines.	2.2	Hurricanes, Coastal Storms, Tornado, Severe Weather	Camden County	Emergency Services	Emergency Management Director	In Progress, Carry Over
124	Adapt Zoning Ordinance to current opportunities/issues.	1.2	Flooding, Hurricane, Coastal Storms	The City of Kingsland	Preventive	City Administration	In Progress, Carry Over
125	Replace dilapidated sanitary sewers in downtown and old city areas.	1.1	Water Contamination	The City of Kingsland	Structural Projects	City Administration	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
126	Build north, west and east sewer force mains.	1.1	Water Contamination	The City of Kingsland	Structural Projects	City Administration	In Progress, Carry Over
127	Widen Colerain-St. Marys Road to four lanes from SR 40 west to Kings Bay Road in St. Marys; improve the intersection of North Old Jefferson.	1.1	Hazardous Material Spills/ Transportation Accidents	The City of Kingsland	Structural Projects	GDOT; City Administration	In Progress, Carry Over
128	Promote Kingsland's participation in the FEMA Community Rating System program, leading to discounts on flood insurance premiums.	1.2	Flood, Hurricane, Sea Level Rise, Severe Weather	The City of Kingsland	Preventive	City Administration	In Progress, Carry Over
129	Support Colerain Road Widening Phase II from I-95 to Hwy 40.	1.1	Flood, Hurricane, Sea Level Rise, Severe Weather	The City of Kingsland	Structural Projects	City Administration	In Progress, Carry Over
130	Manhole and sewer pipe lining: Upgrade liner (insert or spray liner in manholes); Slip line pipes in old section of the city that still utilizes terracotta pipes.	1.1	Flood, Hurricane, Sea Level Rise	The City of Kingsland	Structural Projects	City Administration; Department of Public Works	In Progress, Carry Over
131	The City of St. Marys to adopt an ordinance requiring the use of the Coastal Stormwater Supplement for design and post construction Stormwater management systems.	1.2	Flood, Hurricane, Sea Level Rise, Severe Weather	The City of St. Marys	Preventive	City Administration	In Progress, Carry Over
132	Promote St. Marys participation in the FEMA Community Rating System program, leading to discounts in flood insurance premiums.	1.2	Flood, Hurricane, Sea Level Rise, Severe Weather	The City of St. Marys	Preventive	City Administration	In Progress, Carry Over
133	Review and update ordinances and codes to incorporate design guidelines, landscaping, use-based restrictions and performance-based regulations.	1.2	Flood, Sea Level Rise	The City of St. Marys	Preventive	City Administration	In Progress, Carry Over

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
134	Develop an infrastructure master plan to keep pace with population growth.	1.2	Water Contamination	The City of St. Marys	Preventive	City Administration	Not Started, Carry Over
135	Take preventative measures to protect Orange Hall from threat of fire.	1.1	Wildfires	The City of St. Marys	Structural Projects	City Administration	Not Started, Carry Over
136	Improve the intersection of St. Marys Road and Highway 40 with a fly over ramp.	1.1	Hazardous Materials Incident	The City of St. Marys	Structural Projects	City Administration	Not Started, Carry Over
137	Work with GDOT to provide a direct off ramp of I-95 north to the existing Haddock Road traffic light to improve safety.	1.1	Hazardous Materials Incident	The City of St. Marys	Structural Projects	GDOT; City Administration	In Progress, Carry Over
138	Complete railroad crossing of Mickler Drive.	1.1	Hazardous Materials Incident	The City of St. Marys	Structural Projects	City Administration	Not Started, Carry Over
139	Protect the St. Marys downtown Riverfront from sea level rise and abnormal king tide events.	1.1	Sea Level Rise, Flood	The City of St. Marys	Structural Projects	Community Development Department	In Progress, Carry Over
140	Review opportunities/ create incentives, to acquire properties that are suitable for providing public access to the rivers, streams and marshes and keep existing public access at street ends into the marsh, rivers, or streams.	1.3	Flood, Sea Level Rise	The City of Woodbine	Natural Resource Protection	City Administration	In Progress, Carry Over
141	Encourage appropriate non-profit agencies who acquire land suitable for conservation as opportunities arise.	1.3	Flood, Sea Level Rise	The City of Woodbine	Preventive	City Administration	In Progress,

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
							Carry Over
142	Draft a water and sewer master plan.	1.2	Water Contamination	The City of Woodbine	Preventive	City Administration	In Progress, Carry Over
143	Enhance community health resilience; reduce morbidity and mortality during infectious disease outbreaks.	3.1	Infectious Disease	All Jurisdictions	Planning / Public Health	Health Department / Emergency Management	In Progress, Carry Over
144	Ensure continuity of essential services and reduce economic/social disruption.	1.1	Infrastructure Failure	All Jurisdictions	Structural Projects	Public Works / Engineering	In Progress, Carry Over
145	Identify and map critical supply chain nodes and dependencies so the County will better understand vulnerabilities in the supply chain.	2.3	Supply Chain Disruption	All Jurisdictions	Preventive	City Administration	New
146	Train local government officials on appropriate response procedures for a terrorism incident. This could include organizing a multi-jurisdictional exercise to test capabilities and discover vulnerabilities.	2.2	Terrorism	All Jurisdictions	Preventive	City Administration	New
147	Set up a county-wide cybersecurity risk management program that works with the County's broader hazard mitigation and risk management plans.	2.2	Cyber Attack	Camden County	Preventive	Camden Emergency Management Director/ Camden CIO	New
148	Create and update a list of County information systems, applications, cloud services, and third-party providers that support key services and emergency operations.	2.2	Cyber Attack	Camden County	Preventive	Camden Emergency Management Director/ Camden CIO	New

2026 Action ID	Description	Goal and Objective Addressed	Hazard Addressed	Jurisdiction	Mitigation Category	Responsible Department	2026 Update
149	Create, approve, and practice formal plans for responding to cyber incidents and recovering from disasters to keep government operations running.	2.2	Cyber Attack	Camden County	Preventive	Camden Emergency Management Director/ Camden CIO	New
150	Set up centralized security monitoring and vulnerability management for County networks and systems to help detect and respond to cyber threats quickly.	4.2	Cyber Attack	Camden County	Preventive	Camden Emergency Management Director/ Camden CIO	New

Table 4-3. Priority score calculation for 2026 Mitigation Action Plan

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
1	Use a hybrid of hard/soft engineering techniques for coastal erosion	5	5	5	5	5	4	5	4.86	High
2	Inventory vulnerable public buildings and infrastructure	5	5	4	5	5	4	4	4.57	High
3	Establish setbacks for sea level rise	4	4	3	4	4	3	5	3.86	High
4	Enforce erosion and sedimentation controls	4	4	5	4	5	4	5	4.43	Medium
5	Follow Coastal Regional Water Plan irrigation guidelines	3	3	3	3	4	3	4	3.29	Medium

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
6	Develop drought emergency plan	5	5	4	5	5	4	4	4.57	High
7	Create drought communication and early warning system	5	5	4	5	5	4	4	4.57	High
8	Educating public on drought and burning restrictions	5	4	5	5	5	5	5	4.86	High
9	Identify and retrofit critical facilities in flood/surge zones	5	5	4	5	5	3	5	4.57	High
10	Strengthening Comp Plan policies for water protection	5	5	4	5	5	4	5	4.71	High
11	Use LIDAR to ensure well head elevations above flood levels	4	5	4	4	5	4	5	4.43	High
12	Implement findings of Joint Land Use Study (JLUS)	5	5	4	5	5	4	5	4.71	High
13	Improve litter law enforcement	4	3	4	4	5	4	4	4.00	Medium
14	Raise future structures above Base Flood Elevation	5	5	4	5	5	4	5	4.71	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
15	Assess stormwater infrastructure vulnerability	5	5	4	5	5	4	5	4.71	High
16	Continue NFIP participation and update ordinances	5	5	5	5	5	4	5	4.86	High
17	Implement Stormwater Master Plan	5	5	4	5	5	4	5	4.71	High
18	Preserve/plant trees in landscape designs	5	4	4	5	5	4	5	4.57	High
19	Retrofit or relocating flood-prone facilities	5	5	4	5	5	3	5	4.57	High
20	Increase drainage/retention capacity	5	5	4	5	5	3	5	4.57	High
21	Flood-proof wastewater facilities	5	5	4	5	5	3	5	4.57	High
22	Install backup generators for sewer systems	5	5	4	5	5	3	4	4.43	High
23	Install weather station for storm prediction	5	5	4	5	5	5	4	4.71	Medium
24	Encourage environmentally responsible development	5	4	4	5	5	4	5	4.57	Medium

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
25	Protect and maintain riparian buffers	5	4	4	5	5	4	5	4.57	Medium
26	Support St. Marys River Management Committee	5	4	5	5	5	5	5	4.86	Medium
27	Review Unified Development Code and Land Use Map	5	4	4	5	5	4	5	4.57	Medium
28	Mitigate repetitive loss properties	5	5	4	5	5	3	5	4.57	High
29	Include watershed resilience in funding programs	5	4	4	5	5	4	5	4.57	High
30	Establish Purchase/Transfer of Development Rights	4	4	3	4	5	3	5	4.00	High
31	Strengthen subdivision/development greenspace regs	5	4	4	5	5	4	5	4.57	High
32	Acquire/demolish/relocate high-risk structures	5	5	4	5	5	3	5	4.57	High
33	Encourage developers to link open spaces via PD zoning	5	4	4	5	5	4	5	4.57	Medium

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
34	Encourage linking open spaces into network	5	4	4	5	5	4	5	4.57	Medium
35	Update Green Print/Open Space recommendations	5	4	4	5	5	4	5	4.57	Medium
36	Develop land banking program for flood hazard areas	5	4	3	5	5	3	5	4.29	Medium
37	Identify/retrofit critical facilities (all hazards)	5	5	4	5	5	3	5	4.57	High
38	Promote structural retrofits for wind resistance	5	5	4	5	5	4	5	4.71	High
39	Review undergrounding utilities and training	5	5	4	5	5	4	5	4.71	High
40	Encourage underground utilities where feasible	5	5	4	5	5	4	5	4.71	High
41	Promote Safe Room construction	5	5	4	5	5	4	4	4.57	High
42	Promote mitigation for hazard-vulnerable properties	5	5	4	5	5	4	5	4.71	High
43	Advance evacuation route planning and coordination	5	5	5	5	5	4	5	4.86	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
44	Develop multi-hazard educational materials	5	5	5	5	5	5	5	5.00	High
45	Educating public on littering and stormwater laws	5	4	5	5	5	5	5	4.86	High
46	Conduct builder outreach program	5	4	5	5	5	5	5	4.86	High
47	Provide lightning suppression for DPS buildings	5	5	4	5	5	3	4	4.43	High
48	Provide watertight document storage	5	5	4	5	5	4	5	4.71	High
49	Obtain additional government facilities	5	5	3	5	5	3	4	4.29	High
50	Develop County Infrastructure (Transportation) Plan	5	5	4	5	5	4	5	4.71	High
51	Determine population coverage by alarm system	5	4	5	5	5	4	4	4.57	High
52	Plan improvements to evacuation routes	5	5	4	5	5	4	5	4.71	High
53	Protect integrity of evacuation routes	5	5	4	5	5	4	5	4.71	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
54	Develop uniform way-finding signage countywide	5	5	5	5	5	4	5	4.86	High
55	Work with GEMA/GDOT on evacuation route economics	5	5	4	5	5	4	5	4.71	High
56	Work with GDOT/GEMA to implement evacuation routes	5	5	5	5	5	4	5	4.86	High
57	Implement Public Safety Communications Plan	5	5	4	5	5	4	5	4.71	High
58	Update all Emergency Response Plans	5	5	5	5	5	4	5	4.86	High
59	Coordinate emergency planning with cities	5	5	5	5	5	5	5	5.00	High
60	Provide backup communications repeater tower	5	5	4	5	5	4	5	4.71	High
61	Develop plan for special needs population	5	5	4	5	5	4	5	4.71	High
62	Develop a plan for animal rescue centers	5	3	5	4	5	3	3	4.00	High
63	Plan for post-disaster clean-up program	5	5	5	5	5	3	3	4.43	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
64	Continue coordinated emergency planning with Naval Sub Base Kings Bay	5	5	5	4	4	3	2	4.00	High
65	Encourage/support development of continuing care communities	3	3	3	3	3	3	3	3.00	Low
66	Promote the development of safe areas in public and private schools	5	3	5	5	5	3	2	4.00	High
67	Educating public on Tornado Awareness and Safety Tips	5	5	5	5	5	2	2	4.14	High
68	Educate public about roofing materials and select material for hazards	3	5	5	4	5	2	2	3.71	Medium
69	Educating public on safety procedures during hail events	3	5	5	4	5	2	2	3.71	Medium
70	Build inventory of septic systems in Camden County	5	3	5	4	5	3	3	4.00	High
71	Leverage State/federal funding for septic assessment, repair and upgrade	5	5	5	5	4	3	5	4.57	High
72	Developing local water quality monitoring program	5	5	5	4	5	3	5	4.57	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
73	Consider land use and green infrastructure policies	3	3	3	3	3	3	5	3.29	Medium
74	Create advisory committee for long-term septic management policy	3	5	5	4	5	2	3	3.86	Medium
75	Consider incentive program for municipal sewer tie-in	3	3	3	3	3	3	3	3.00	Low
76	Promote measures to increase stormwater infiltration	5	3	3	4	3	3	5	3.71	Medium
77	Continuing Water Pollution Control Programs	5	5	5	4	5	3	5	4.57	High
78	Identify areas vulnerable to spillage for flood events	5	3	5	4	5	3	5	4.29	High
79	Educating public on proper disposal of hazardous waste	5	5	5	4	5	2	5	4.43	High
80	Create minimum 30-ft defensible space around homes	5	3	3	5	5	3	5	4.14	High
81	Reduce structural ignitability around homes	5	3	3	5	5	3	5	4.14	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
82	Right of Way Clearance – maintain emergency access	5	3	5	5	5	3	3	4.14	High
83	Seeking grant for WUI mitigation team	4	4	4	4	5	3	4	4.00	High
84	Seeking grant for prescribed burning in WUI areas	4	5	4	4	5	3	5	4.29	High
85	Locate and pre-clear helicopter dip sites	5	5	5	5	5	3	3	4.43	High
86	Create up-to-date mapping of roads and water sources	5	5	5	5	5	4	4	4.71	High
87	Increase participation in fire hazard mitigation programs (Firewise)	5	4	4	5	5	3	5	4.43	High
88	Complete Southern Wildfire Risk Assessment	5	5	5	4	5	3	4	4.43	High
89	Support Georgia Forestry water quality program	5	4	4	4	5	3	5	4.29	High
90	Develop protocols for defining and mapping WUI zones	5	5	5	5	5	3	5	4.71	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
91	Implement Firewise Community Initiative workshops	5	4	4	5	5	3	5	4.43	High
92	Continuing hazardous fuel reduction via prescribed burning, mechanical/chemical	5	5	5	4	5	3	5	4.57	High
93	Amend/enforce building codes related to wildfire hazards	5	4	4	5	5	3	4	4.29	High
94	Review of subdivision and development ordinances for public safety	5	4	4	5	5	3	4	4.29	High
95	Enforce uniform addressing ordinance	5	4	4	5	5	3	3	4.14	High
96	Greater Burn Permit enforcement and education	5	4	4	5	5	3	4	4.29	High
97	Encourage prescribed burning for private/industrial lands	5	5	4	5	5	3	5	4.57	High
98	Inspect, maintain, improve access to dry hydrants	5	5	5	5	5	4	4	4.71	High
99	Locate additional viable water sources as needed	5	5	5	5	5	3	5	4.71	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
100	Improve road signage at Crossroads	5	4	4	5	5	3	4	4.29	High
101	Seek funding for more fire tankers (2000–3000 gal)	5	5	4	5	5	5	3	4.57	High
102	Seeking funds to acquire additional fire equipment	5	5	4	5	5	3	3	4.29	High
103	Seek funds to train firefighters in tactics and equipment	5	5	5	5	5	3	3	4.43	High
104	Public outreach for planned prescribed burns	5	4	4	5	5	3	4	4.29	High
105	Seek additional training for fire, police, sheriff, EMS, 911 for hazmat events	5	5	5	5	5	3	3	4.43	High
106	Provide river spill control for contaminants	5	5	5	4	5	3	5	4.57	High
107	Continue training local officials on hazmat spill procedures	5	5	5	5	5	3	3	4.43	High
108	Relocate airport and redevelop property	4	4	4	4	5	3	4	4.00	High
109	Prepare Camden County Long Range Transportation Plan	5	5	5	5	5	4	4	4.71	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
110	Draft development plan for Exits 1, 3, 6	5	4	4	4	5	3	3	4.00	High
111	Draft master plan for commercial corridors and entranceways	5	4	4	4	5	3	3	4.00	High
112	Seeking additional training for fire/police/EMS/911 for radioactive accident events	5	5	5	5	5	3	3	4.43	High
113	Continue coordinated emergency planning with Naval Submarine Base Kings Bay	5	5	5	4	4	3	2	4.00	High
114	Continue training local officials on radioactive spill procedures	5	5	5	5	5	3	3	4.43	High
115	Upgrade Fire Station #2 as field emergency communication center	5	5	5	4	5	3	4	4.43	High
116	Complete Regional Septic Tank Assessment Report	5	5	5	4	5	3	5	4.57	High
117	Review of ROW Land Acquisition for County Roads	5	4	4	4	5	3	3	4.00	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
118	Complete master plan for airport once relocated	5	4	4	4	5	3	3	4.00	High
119	Identify/develop site for 'safe haven' supporting COOP/COG operations	5	5	5	5	5	3	4	4.57	High
120	Mitigate cyber-security incidents and provide response plans	5	5	5	5	5	3	4	4.57	High
121	Mitigate acts of terrorism including SUBASE Kings Bay	5	5	5	5	5	3	4	4.57	High
122	Mitigate active shooter incidents	5	5	5	5	5	3	4	4.57	High
123	Harden and ensure redundancy of Public Safety Communications/911	5	5	5	5	5	3	4	4.57	High
124	Adapt Zoning Ordinance to current opportunities/issues	5	4	4	5	5	3	4	4.29	High
125	Replace dilapidated sanitary sewers in downtown/old city areas	5	5	5	5	5	4	4	4.71	High
126	Build north, west, east sewer force mains	5	5	5	5	5	4	4	4.71	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
127	Widen Colerain–St. Marys Rd; improve N Old Jefferson intersection	5	4	5	5	5	4	4	4.57	High
128	Promote Kingsland’s participation in FEMA Community Rating System	5	4	4	5	5	3	4	4.29	High
129	Support Colerain Road Widening Phase II	4	4	4	4	4	3	3	3.71	Medium
130	Manhole and sewer pipe lining in old city sections	5	5	5	5	5	4	4	4.71	High
131	St. Marys ordinance adopting Coastal Stormwater Supplement	5	4	4	5	5	3	4	4.29	High
132	Promote St. Marys participation in FEMA CRS program	4	4	4	5	5	3	4	4.14	Medium
133	Review/update ordinances for design guidelines and regulations	5	4	4	5	5	3	4	4.29	High
134	Develop an infrastructure master plan for population growth	5	4	4	5	5	3	4	4.29	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
135	Take preventative measures to protect Orange Hall from fire	5	4	5	5	5	3	4	4.43	High
136	Improve intersection of St. Marys Rd and Hwy 40 with flyover ramp	5	4	5	5	5	4	4	4.57	High
137	Work with GDOT for direct off-ramp I-95 north to Haddock Rd light	5	4	5	5	5	4	4	4.57	High
138	Complete railroad crossing of Mickler Drive	5	4	5	5	5	4	4	4.57	High
139	Protect St. Marys downtown Riverfront from sea level rise and king tides	5	5	5	5	5	5	5	5.00	High
140	Create/acquire public access to rivers, streams, marshes	5	4	4	5	5	3	4	4.29	High
141	Encourage non-profits to acquire land for conservation	5	4	4	5	5	3	4	4.29	High
142	Draft water and sewer master plan	5	5	5	5	5	3	4	4.57	High

2026 Action ID	Description (Summary)	Social	Technical	Admin	Political	Legal	Economic	Enviro	Average	Feasibility
143	Enhance community health resilience during infectious disease outbreaks	5	5	5	5	5	4	4	4.71	High
144	Ensure continuity of essential services and reduce economic/social disruption	5	5	5	5	5	5	5	5.00	High
145	Map critical supply chain nodes to identify county vulnerabilities	3	4	3	2	2	1	3	2.57	High
146	Train local officials on terrorism response and test readiness through joint exercises	4	3	4	3	2	1	3	2.86	Medium
147	County-wide cybersecurity risk management program	3	4	4	3	3	1	3	3.0	Medium
148	List of County information systems, applications, cloud services, and third-party providers that support key services and emergency operations.	2	3	4	2	3	1	2	2.43	High
149	Create, approve, and practice formal plans to respond to and recover from cyber incidents	3	4	4	3	3	1	3	3.0	Medium
150	Centralized security and vulnerability management county networks and systems	3	5	4	3	3	1	4	3.29	Medium

Action 2026-1 Use a hybrid of hard/soft engineering techniques (i.e., combine low-profile rock, rubble, oyster reefs, or wood structures with vegetative planting or other soft stabilization techniques).

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.86
- Lead: County and City Administration
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General Funds; grant funds
- Cost Estimate: Variable; staff time
- Benefit: Using a hybrid of hard and soft engineering techniques provides both structural protection and ecological benefits. The hard elements (rock, rubble, oyster reefs, or wood structures) reduce wave energy and erosion, while the soft techniques (vegetative planting and natural stabilization) enhance habitat, improve water quality, and increase resilience to future hazards. This balanced approach promotes long-term shoreline stability while supporting environmental sustainability.
- Vulnerable Area: All Jurisdictions

Action 2026-2 Develop an inventory of public buildings and infrastructure that may be particularly vulnerable to sea level rise.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Preventative
- Time Frame: 2026 to 2031
- Financing Options: General Funds
- Cost Estimate: Variable; staff time
- Benefit: Creating a detailed inventory helps communities identify and prioritize assets most at risk from rising seas, such as schools, hospitals, fire stations, utilities, and transportation corridors. This information supports informed decision-making for adaptation measures, funding applications, and emergency response planning. By proactively mapping vulnerabilities, communities can reduce potential service disruptions, safeguard critical facilities, and ensure the long-term safety and resilience of residents.
- Vulnerable Area: All Jurisdictions

Action 2026-3 Establish setbacks in high-risk areas that account for potential sea level rise.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 3.86
- Lead: County and City Administration
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031

- Financing Options: General Funds
- Cost Estimate: Variable; staff time
- Benefit: Implementing setbacks reduces future exposure to development to flooding, erosion, and storm surge impacts. By requiring construction further inland from vulnerable shorelines, communities can lower long-term damage costs, preserve natural buffers such as dunes and wetlands, and enhance public safety. This proactive measure also provides room for natural shoreline migration, supporting ecological resilience in the face of rising seas.
- Vulnerable Area: All Jurisdictions

Action 2026-4 Continue to enforce erosion and sedimentation control statutes

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: Planning and Development
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General Funds
- Cost Estimate: Staff Time
- Benefit: Enforcing these statutes helps prevent soil loss, protect water quality, and reduce downstream flooding and infrastructure damage. Consistent enforcement also maintains the stability of natural systems, safeguards habitats, and minimizes costly repairs from uncontrolled erosion.
- Vulnerable Area: All Jurisdictions

Action 2026-5 Follow guidelines as established in the Coastal Regional Water Plan for usage of surface artesian flow for irrigation.

- 2026 Action Status: Not Started, Carry Over
- Priority Score: 3.29
- Lead: Camden County- Extension Service Agent, County and City Administration
- Mitigation Category: Preventative
- Time Frame: 2026 to 2031
- Financing Options: General Funds
- Cost Estimate: Variable; Staff time
- Benefit: Adhering to established water plan guidelines ensures sustainable use of artesian resources, protects groundwater quality, and prevents over-extraction that could worsen saltwater intrusion. This practice supports long-term water availability for agriculture while preserving coastal ecosystems and community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-6 Develop a drought emergency plan

- 2026 Action Status: In Progress, Carry Over

- Priority Score: 4.57
- Lead: Camden County- Extension Service Agent, County and City Administration
- Mitigation Category: Preventative
- Time Frame: 2026 to 2031
- Financing Options: General Funds
- Cost Estimate: Staff time
- Benefit: A drought emergency plan helps communities prepare for water shortages by identifying conservation measures, alternative water supplies, and response protocols. This reduces economic disruption, protects public health, and ensures essential services can continue during prolonged dry periods.
- Vulnerable Area: All Jurisdictions

Action 2026-7 Develop a drought communication plan and early warning system to facilitate timely communication of relevant information to officials, decision makers, emergency managers, and the general public.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: Camden County- Extension Service Agent, County and City Administration
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General Funds
- Cost Estimate: Staff time
- Benefit: A drought communication plan and early warning system provide timely, accurate information that allows leaders and the public to take proactive measures, reduce water use, and protect critical resources. This minimizes economic losses, enhances coordination among agencies, and strengthens community resilience during drought events.
- Vulnerable Area: All Jurisdictions

Action 2026-8 Educate public during periods of drought; ask them to delay outside burning

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.86
- Lead: Georgia Forestry; Emergency Management Agency Director
- Mitigation Category: Public Education and Outreach
- Time Frame: 2026 to 2031
- Financing Options: General Funds
- Cost Estimate: Staff time
- Benefit: Public education during drought reduces the risk of accidental wildfires, protects property and natural resources, and promotes community safety. Encouraging delayed burning also conserves emergency response resources and minimizes air quality impacts.
- Vulnerable Area: All Jurisdictions

Action 2026-9 Identify the critical facilities, roads and bridges in potential flood and surge zones and develop a plan to relocate or retrofit to withstand hazards.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: General Fund
- Cost Estimate: Variable; Staff time
- Benefit: Assessing and strengthening vulnerable infrastructure ensures continuity of essential services during floods and storm surges. Relocating or retrofitting critical facilities, roads, and bridges reduces damage costs, protects public safety, and enhances community resilience to future hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-10 Strengthen current Comprehensive Plan policies in the Natural Resources section to include groundwater, surface water, and aquifer recharge areas as high priorities for protection. Link source water protection to stormwater management within the Comprehensive Plan as well as within key county and city ordinances. These policies should be tied to financial benefits and demonstrate how successful protection can cap and reduce flood management and treatment costs over time.

- 2026 Action Status: In progress, carry over
- Priority Score: 4.71
- Lead: County and City Administration
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General Fund
- Cost Estimate: Staff time
- Benefit: Enhancing policies to protect water resources ensure sustainable water supply, reduce long-term flood management and treatment costs, and safeguards public health and ecosystems. By integrating source water protection with stormwater management, communities can achieve both environmental and economic resilience over time.
- Vulnerable Area: All Jurisdictions

Action 2026-11 When LIDAR mapping is available, ensure well head elevations are above known flooding levels

- 2026 Action Status: In progress, carry over
- Priority Score: 4.43
- Lead: County and City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031

- Financing Options: General Fund
- Cost Estimate: Staff time
- Benefit: Using precise elevation data to protect wellheads from flooding safeguards drinking water supply, prevents contamination, and ensures public health and safety during flood events.
- Vulnerable Area: All Jurisdictions

Action 2026-12 Implement the findings of the Joint Land Use Study (JLUS) MIRR***

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration
- Mitigation Category: Preventative
- Time Frame: 2026 to 2031
- Financing Options: General Funds
- Cost Estimate: Staff time
- Benefit: Applying JLUS recommendations enhances coordination between military and civilian land uses, reduces conflicts, and supports sustainable development. This proactive approach improves community resilience, protects critical infrastructure, and ensures compatible growth while maintaining operational readiness of military installations.
- Vulnerable Area: All Jurisdictions

Action 2026-13 Improve litter law enforcement

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.0
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General Fund
- Cost Estimate: Staff time
- Benefit: Stronger litter law enforcement reduces debris that can clog storm drains, exacerbate flooding, and harm local ecosystems. It also promotes public awareness of environmental stewardship and contributes to overall community health and resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-14 Raise future structures above Base Flood Elevations

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: Grant funds; PDM funds; general funds

- Cost Estimate: Staff time
- Benefit: Elevating new structures above Base Flood Elevations reduces flood damage, protects property and lives, lowers insurance costs, and enhances long-term community resilience to flood hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-15 Examine the vulnerability of Stormwater infrastructure and evaluate the costs and benefits of possible interventions

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.7
- Lead: County and City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Assessing stormwater infrastructure vulnerabilities allows communities to prioritize upgrades, reduce flood risks, and optimize investment by implementing cost-effective interventions. This proactive approach enhances resilience, protects public safety, and minimizes long-term repair and recovery costs.
- Vulnerable Area: All Jurisdictions

Action 2026-16 Continue to participate in the National Flood Insurance Program by reviewing and updating flood ordinances to protect existing and new developments, to ensure new buildings and infrastructure are not in harm's way, and to ensure continued compliance with NFIP requirements

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.86
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Maintaining NFIP participation ensures that existing and new developments are protected from flood risks, reduces potential property damage, and keeps the community eligible for federal flood insurance and disaster assistance. Regular ordinance updates enhance resilience, safeguard public safety, and promote responsible land use in flood-prone areas.
- Vulnerable Area: All Jurisdictions

Action 2026-17 Implement the Stormwater Master Plan

- 2026 Action Status: In Progress, Carry Over

- Priority Score: 4.71
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Executing the Stormwater Master Plan improves drainage, reduces flooding and erosion, protects water quality, and enhances community resilience. Strategic management of stormwater infrastructure also lowers long-term maintenance costs and safeguards public safety.
- Vulnerable Area: All Jurisdictions

Action 2026-18 Require more trees be preserved and planted in landscape designs to reduce the amount of stormwater runoff

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Variable; Staff Time
- Benefit: Increasing tree preservation and planting reduces stormwater runoff, mitigates flooding, improves water quality, and enhances urban cooling and air quality. It also strengthens community resilience by leveraging natural solutions to manage stormwater sustainably.
- Vulnerable Area: All Jurisdictions

Action 2026-19 Implement flood resistance measures for existing buildings such as acquisition, relocation, retrofitting, and maintenance of drainage ways and retention basins

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund; SPLOST; grant funds
- Cost Estimate: Variable; Staff Time
- Benefit: Applying flood resistance measures reduces property damage, protects public safety, and minimizes economic losses during flood events. Proactive retrofitting, relocation, and proper maintenance of drainage systems and retention basins enhance overall community resilience and long-term flood management.
- Vulnerable Area: All Jurisdictions

Action 2026-20 Increase drainage or absorption capacities with detention and retention basins, relief drains, spillways, drain widening/dredging or rerouting, logjam and debris removal, extra culverts, bridge modification, dike setbacks, flood gates and pumps, or channel redirection.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund; SPLOST; grant funds
- Cost Estimate: Variable; Staff Time
- Benefit: Enhancing drainage and absorption capacity reduces flood risk, protects property and infrastructure, and improves public safety. These measures also help maintain natural water flow, minimize erosion, and increase the community's resilience to both frequent and extreme storm events.
- Vulnerable Area: All Jurisdictions

Action 2026-21 Flood proof wastewater treatment facilities located in flood hazard areas

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund; SPLOST; grant funds
- Cost Estimate: Medium
- Benefit: Protecting wastewater facilities from flooding prevents service disruptions, reduces the risk of contamination, safeguards public health, and minimizes costly emergency repairs. Flood-proofing these critical facilities also enhances community resilience during flood events.
- Vulnerable Area: All Jurisdictions

Action 2026-22 Install back-up generators for pumping and lift stations in sanitary sewer systems along with other measures (e.g., alarms, meters, remote controls, and switchgear upgrades)

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: County and City Administration
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: Grant funds; PDM funds; general fund
- Cost Estimate: Low
- Benefit: Providing backup power and modern control systems ensures continuous operation of sanitary sewer systems during power outages or emergencies, protecting

public health, preventing environmental contamination, and minimizing costly service disruptions.

- Vulnerable Area: All Jurisdictions

Action 2026-23 Install a weather station in southern end of county to better predict storm and flooding events

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County Administration
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General fund; grant funds
- Cost Estimate: Low
- Benefit: A localized weather station improves the accuracy and timeliness of storm and flood predictions, enabling proactive emergency response, reducing property damage, and enhancing public safety and community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-24 Encourage development in line with best environmental practices.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Promoting environmentally responsible development reduces impacts on natural resources, minimizes flood and erosion risks, and supports long-term community resilience. It also enhances public health, preserves ecosystems, and can lower costs associated with disaster recovery and infrastructure maintenance.
- Vulnerable Area: All Jurisdictions

Action 2026-25 Protect and maintain riparian buffers along urban streams

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund; grant funds
- Cost Estimate: Low

- Benefit: Riparian buffers reduce flooding and erosion, filter pollutants, improve water quality, and provide habitat for wildlife. Maintaining these buffers also enhances community resilience, supports stormwater management, and preserves the ecological integrity of urban waterways.
- Vulnerable Area: All Jurisdictions

Action 2026-26 Continue to support the St. Marys River Management Committee

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.86
- Lead: County and City Administration
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Ongoing support for the committee promotes coordinated management of the river, protects water quality and natural habitats, reduces flood and erosion risks, and enhances community resilience. Collaboration also ensures that environmental and hazard mitigation efforts are informed, effective, and sustainable.
- Vulnerable Area: All Jurisdictions

Action 2026-27 Review Unified Development Code: Land Use Map

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026-2027
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Regularly reviewing the Land Use Map ensures that development aligns with hazard mitigation goals, reduces risks to vulnerable areas, and supports sustainable growth. It also helps integrate land use planning with flood, storm, and environmental resilience strategies, enhancing overall community safety.
- Vulnerable Area: All Jurisdictions

Action 2026-28 Reduce flood loss claims against NFIP through the mitigation of repetitive loss properties

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031

- Financing Options: PDM funds; general fund
- Cost Estimate: Variable
- Benefit: Mitigating repetitive loss properties decreases future flood damage, lowers insurance claims, reduces taxpayer and community costs, and enhances public safety. These efforts strengthen community resilience and promote long-term financial and structural sustainability in flood-prone areas.
- Vulnerable Area: All Jurisdictions

Action 2026–29 Include watershed resilience and improve waterways within existing and future public funding programs for land acquisition and restoration

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Incorporating watershed resilience into funding programs protects water quality, reduces flood and erosion risks, and enhances ecosystem health. Strategic land acquisition and restoration improve long-term community resilience, support sustainable water management, and maximize the effectiveness of public investments.
- Vulnerable Area: All Jurisdictions

Action 2026–30 Institute a countywide Purchase and/or Transfer of Development Rights Program to conserve working waterfronts and tidal and freshwater wetlands beyond the 25-foot buffer zone. This program will require a county ordinance and administrative process that is specific to identifying receiver areas for transferred rights

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.0
- Lead: County and City Administration
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: A PDR/TDR program protects critical wetlands and waterfronts from development, preserves natural flood mitigation and water quality functions, and supports sustainable land use. By directing growth to designated receiver areas, the program balances development with environmental conservation, enhancing long-term community resilience and ecosystem health.
- Vulnerable Area: All Jurisdictions

Action 2026-31 Strengthen Subdivision and Development Regulations – Require greenspace for parks, trails and greenways, water storage, and set-asides within developments that also connect to countywide networks

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Strengthen Subdivision and Development Regulations to require greenspace for parks, trails, greenways, water storage, and set asides within developments that connect to countywide networks.
- Vulnerable Area: All Jurisdictions

Action 2026-32 Acquire, demolish or relocate structures located in high- risk areas

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund; SPLOST; grant funds
- Cost Estimate: Variable; Staff Time
- Benefit: Removing or relocating structures from high-risk areas reduces future flood and hazard damage, protects public safety, and decreases long-term recovery and insurance costs. This proactive approach enhances community resilience and allows natural floodplains to function effectively.
- Vulnerable Area: All Jurisdictions

Action 2026-33 Continue the practice of encouraging developers to provide open space in their developments that link together into a publicly accessible open space network through PD zoning

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Creating connected open spaces enhances stormwater management, reduces flood risk, supports recreation and wildlife habitat, and strengthens community resilience.

Linking open spaces into a public network also promotes environmental stewardship and sustainable land use.

- Vulnerable Area: All Jurisdictions

Action 2026-34 Encourage developers to consider linking open spaces together into a publicly accessible open space network

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Connecting open spaces enhances stormwater management, reduces flood risks, supports recreation and wildlife habitat, and promotes sustainable land use. A connected network also strengthens community resilience and environmental stewardship.
- Vulnerable Area: All Jurisdictions

Action 2026-35 Consider updating the Green Print/Open Space recommendations

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Variable; Staff Time
- Benefit: Updating open space recommendations ensures that land conservation, recreation, and stormwater management strategies reflect current conditions and community needs. This supports flood mitigation, habitat preservation, and long-term resilience while guiding sustainable development
- Vulnerable Area: All Jurisdictions

Action 2026-36 Develop a land banking program for the preservation and management of the natural and beneficial functions of flood hazard areas.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: County and City Administration
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Variable; Staff Time

- Benefit: A land banking program protects floodplains from development, preserves natural flood mitigation and water filtration functions, and reduces future flood damage. This approach enhances community resilience, safeguards ecosystems, and provides opportunities for strategic, long-term land management.
- Vulnerable Area: All Jurisdictions

Action 2026-37 Identify critical facilities and those facilities that shelter vulnerable populations; seek funding to retrofit structures to strengthen resistance to damage. Include these buildings in plan: (1) Sheriff's Office Main Center, (2) Camden County Schools, (3) St. Marys Fire Department, (4) Kingsland Water Treatment Plant, (5) Kingsland Fire Department, (6) St. Marys Water Treatment Plant, (7) Kingsland Water Treatment Plant, (8) Woodbine Water Treatment Plant, (9) All Water City Systems and wells, (10) St. Marys Public Works, (11) Camden County Road Department, (12) Kingsland Public Works, (13) Camden Fire and Rescue, (14) Southeast Georgia Health System Camden Campus, (15) Woodbine City Hall, (16) St. Marys City Hall, (17) Kingsland City Hall, (18) Health Department

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund; GEMA; grants funds; GEFA
- Cost Estimate: Variable; Staff Time
- Benefit: Retrofitting critical facilities and serving vulnerable populations reduces the risk of operational disruptions and damage during disasters. Strengthening these structures enhances public safety, ensures continuity of essential services, protects infrastructure investments, and increases overall community resilience to hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-38 Promote structural retrofits for structures that are vulnerable to wind events

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Encouraging retrofits strengthens buildings against wind damage, reduces property losses, protects occupants, and enhances community resilience during hurricanes, tornadoes, or severe storms.
- Vulnerable Area: All Jurisdictions

Action 2026-39 Review Undergrounding utilities: Evaluation, goals, directions, and county actions
DCA will conduct training builder inspector workshops on the disaster resilient building codes

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Undergrounding utilities reduces vulnerability to wind and storm damage, enhances service reliability, and minimizes power outages during disasters. Combined with training on resilient building codes, this action improves construction quality, protects public safety, and strengthens community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-40 Encourage the location of new and existing overhead utility wiring underground, as feasible

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Placing utility lines underground reduces damage from storms, wind, and falling trees, improves service reliability, and enhances public safety. This proactive measure also strengthens community resilience and reduces long-term maintenance and repair costs.
- Vulnerable Area: All Jurisdictions

Action 2026-41 Promote Safe Room construction at all levels

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Constructing safe rooms provides secure shelter during severe storms, tornadoes, or other hazards, protecting lives and reducing injury. Widespread implementation enhances community resilience and confidence in emergency preparedness.
- Vulnerable Area: All Jurisdictions

Action 2026-42 Promote mitigation activities on properties that are located in areas vulnerable to hazards

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Encouraging hazard mitigation on at-risk properties reduces potential damage to structures, protects residents, lowers recovery and insurance costs, and enhances overall community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-43 Effective advance planning for evacuation events – 1. Publicize preferred routes, recommend additional alternative routes (from Camden County EMA to GEMA); 2. Continue coordinated emergency management/response efforts with SUBASE Kings Bay, and address evacuation routes in the next Camden County Hazard Mitigation Plan update (2015) and the regional hazard plan underway by the Coastal Regional Commission (CRC)

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.86
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Proactive evacuation planning ensures timely and orderly movement of residents during emergencies, reduces risk to life and property, improves coordination among agencies, and enhances overall community preparedness and resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-44 Develop educational materials (television and print media) for residents that identify and define their risk to multi hazards: define and offer mitigation measures that residents can take home or share, determine method of distribution of the educational materials and coordinate with the media to reduce conveyance of misinformation. (education, outreach)

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 5.0
- Lead: Emergency Management Director
- Mitigation Category: Public Education and Outreach
- Time Frame: 2026 to 2031

- Financing Options: General fund; grant funds
- Cost Estimate: Low
- Benefit: Providing clear, accurate educational materials empowers residents to understand their risks, take proactive mitigation actions, and make informed decisions during emergencies. This strengthens community preparedness, reduces potential damage and loss, and fosters a culture of hazard awareness and resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-45 Educate public on the effects of littering and Stormwater management laws

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.86
- Lead: Emergency Management Director
- Mitigation Category: Public Education and Outreach
- Time Frame: 2026 to 2031
- Financing Options: General fund; grant funds
- Cost Estimate: Low
- Benefit: Public education reduces litter and pollution, protects water quality, minimizes stormwater-related flooding, and promotes environmental stewardship. Increased awareness supports compliance with regulations and enhances community resilience to water-related hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-46 Conduct Builders/Outreach Program

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.86
- Lead: Emergency Management Director
- Mitigation Category: Public Education and Outreach
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Engaging builders and stakeholders through outreach programs promote the adoption of resilient construction practices, ensure compliance with disaster-resistant building codes, and reduce structural damage during hazards. This proactive approach strengthens community resilience and public safety.
- Vulnerable Area: All Jurisdictions

Action 2026-47 Provide lightning suppression protection to all DPS buildings

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: Emergency Management Director
- Mitigation Category: Property Protection

- Time Frame: 2026 to 2031
- Financing Options: General fund; grant funds
- Cost Estimate: Low
- Benefit: Installing lightning protection reduces the risk of fire, structural damage, and equipment loss, ensuring uninterrupted operations and protecting personnel. This measure enhances the safety and resilience of critical public safety infrastructure.
- Vulnerable Area: All Jurisdictions

Action 2026-48 Provide watertight document storage for assets in SLOSH and Flooding/Velocity Zones

- 2026 Action Status: Not Started, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund; grant funds
- Cost Estimate: Low
- Benefit: Watertight storage protects critical records and assets from water damage during storms and flooding, ensuring continuity of operations, safeguarding important information, and reducing recovery costs.
- Vulnerable Area: All Jurisdictions

Action 2026-49 Investigate and implement obtaining additional governmental facilities via either renovation of an acquired existing structure or a new structure

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable
- Benefit: Expanding or improving government facilities ensures adequate capacity for emergency operations, supports continuity of essential services, and enhances community resilience during disasters. Strategically locating and upgrading facilities also strengthens operational efficiency and public safety.
- Vulnerable Area: All Jurisdictions

Action 2026-50 Develop County Infrastructure Plan "transportation plan"

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration, Emergency Management Director

- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable
- Benefit: A coordinated transportation plan improves evacuation routes, enhances emergency response, reduces congestion during disasters, and strengthens overall community resilience. It also supports long-term planning for safe, efficient, and sustainable mobility throughout the county.
- Vulnerable Area: All Jurisdictions

Action 2026-51 Determine percentage of population coverage by current alarm system

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General funds
- Cost Estimate: Staff Time
- Benefit: Assessing alarm system coverage identifies gaps in early warning capabilities, enabling targeted improvements to ensure timely alerts, enhance public safety, and increase community preparedness during emergencies.
- Vulnerable Area: All Jurisdictions

Action 2026-52 Improvements to evacuation routes – Secure funding for needed improvements to evacuation routes as identified in future transportation planning, comprehensive planning and hazard mitigation planning

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable
- Benefit: Upgrading evacuation routes ensures safe, efficient, and timely movement of residents during emergencies, reduces risk to life and property, and strengthens overall community preparedness and resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-53 Protect the integrity of evacuation routes – Protect evacuation routes in general and specifically routes that connect to SUBASE Kings Bay and peripheral residential areas, through zoning enforcement, transportation planning with traffic analysis, and application of long-term

planning strategies. While these regulatory and strategic approaches may impact developments proposed for evacuation corridors, the advantages of preserving evacuation routes for adequate functionality in emergency

events take precedence

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable
- Benefit: Ensuring evacuation routes remain functional during emergencies preserves safe, efficient movement of residents and military personnel, reduces risk to life and property, and enhances overall community and regional resilience. Strategic planning outweighs potential development constraints by prioritizing public safety.
- Vulnerable Area: All Jurisdictions

Action 2026-54 Develop a way-finding program with uniform signage throughout the county

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.86
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Public Education and Outreach
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate:
- Benefit: A countywide way-finding program improves navigation for residents, visitors, and emergency responders, enhancing safety during daily activities and evacuation events. Consistent signage reduces confusion, supports efficient traffic flow, and strengthens community preparedness and resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-55 Work with GEMA and GDOT to resolve the negative economic impact of inadequate evacuation routes in event of a natural or man-made disaster

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration, Emergency Management Director; GEMA; GDOT
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable

- Benefit: Coordinating with state agencies to improve evacuation routes minimizes economic disruption, ensures timely movement of people and goods, reduces disaster-related losses, and strengthens overall community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-56 Work with GDOT and GEMA to implement emergency evacuation routes as soon as possible

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.86
- Lead: County and City Administration, Emergency Management Director; GEMA; GDOT
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable
- Benefit: Rapid implementation of designated evacuation routes ensures safe and efficient movement of residents during emergencies, reduces risk to life and property, and enhances overall community preparedness and resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-57 Implement Public Safety Communications Plan (public works, school board, sheriff, police, fire, EMS) with Cities

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable
- Benefit: A coordinated communications plan ensures timely and accurate information sharing among emergency services, improves response efficiency, protects public safety, and enhances community resilience during disasters.
- Vulnerable Area: All Jurisdictions

Action 2026-58 Continue to update all Emergency Response Plans

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.86
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time

- Benefit: Regularly updating emergency response plans ensure procedures remain current, effective, and aligned with evolving hazards. This enhances preparedness, improves response efficiency, protects public safety, and strengthens overall community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-59 Coordinate emergency planning with the Cities

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 5.0
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Collaboration between county and city authorities improves the effectiveness of emergency response, ensures consistency in procedures, reduces duplication of efforts, and enhances public safety and community resilience during disasters.
- Vulnerable Area: All Jurisdictions

Action 2026-60 Provide multiple frequency backup portable and enhanced repeater tower for communications

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable
- Benefit: Enhanced and backup communication systems ensure reliable connectivity for emergency responders during disasters, reduce downtime, and improve coordination and response efficiency, ultimately protecting public safety and strengthening community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-61 Develop plan for special needs population during hazard events.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable; Staff Time

- Benefit: A targeted plan ensures vulnerable populations receive timely assistance and evacuation support, reduces risk to life and injury, addresses equity in emergency response, and strengthens overall community resilience during hazard events.
- Vulnerable Area: All Jurisdictions

Action 2026-62 Develop a plan for animal rescue centers

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.0
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable
- Benefit: A dedicated plan ensures the safety and care of animals during disasters, protects staff and volunteers, reduces public health risks, and supports orderly emergency operations. Coordinated animal rescue efforts also enhance community resilience and preparedness.
- Vulnerable Area: All Jurisdictions

Action 2026-63 Plan for post-disaster clean-up program

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: A structured post-disaster clean-up program accelerates debris removal, restores critical infrastructure, reduces public health hazards, and supports rapid community recovery. Effective planning enhances overall resilience and minimizes long-term economic and environmental impacts.
- Vulnerable Area: All Jurisdictions

Action 2026-64 Continue coordinated emergency planning efforts with Naval Submarine Base Kings Bay

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.0
- Lead: Emergency Management Director; Kings Bay Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General fund

- Cost Estimate: Staff Time
- Benefit: Ongoing coordination with the base ensures alignment of civilian and military emergency response, enhances evacuation efficiency, reduces risk to life and property, and strengthens overall community and regional resilience during disasters.
- Vulnerable Area: All Jurisdictions

Action 2026-65 Encourage and support development of continuing care communities. The Hospital plans for a facility of this type at an unknown time in the future

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 3.0
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Supporting continuing care communities provides safe, accessible housing and medical services for aging and vulnerable populations, reduces strain on emergency services, and enhances public health and community resilience over time.
- Vulnerable Area: All Jurisdictions

Action 2026-66 Promote the development of safe areas in public and private schools

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.0
- Lead: Emergency Management Agency
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Creating safe areas in schools protects students and staff during severe weather or emergency events, reduces injury and fatalities, and enhances overall community preparedness and resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-67 Educate public on Tornado Awareness and Safety Tips

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.14
- Lead: Emergency Management Agency
- Mitigation Category: Public Education and Outreach
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time

- Benefit: Providing tornado education increases public knowledge of risks and proper safety measures, reduces injuries and fatalities, and enhances community preparedness and resilience during severe wind events.
- Vulnerable Area: All Jurisdictions

Action 2026-68 Educate public about the different roofing materials and select the material that addresses hail, high wind and fire risks

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 3.71
- Lead: Emergency Management Agency
- Mitigation Category: Public Education and Outreach
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Informing residents about resilient roofing options reduces property damage, lowers repair costs, protects occupants, and enhances overall community resilience against multiple hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-69 Educate public on safety procedures to follow during hail events

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 3.71
- Lead: Emergency Management Agency
- Mitigation Category: Public Education and Outreach
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Providing guidance on hail safety reduces injuries, protects property, and ensures residents are prepared to take appropriate action during severe weather, enhancing overall community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-70 Build upon past mapping efforts and the development of the Welstrom database to develop a full inventory of septic systems in unincorporated Camden County

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.0
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time

- Benefit: Creating a comprehensive septic system inventory helps identify at-risk systems, supports targeted maintenance and upgrades, prevents contamination of water resources, and enhances public health and environmental resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-71 Leverage State and federal funding to conduct a broad septic assessment, repair and upgrade program

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration, Emergency Management Director; County Environmental Health
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund; USDA
- Cost Estimate: Variable; Low
- Benefit: Securing funding for septic system improvements reduces the risk of system failures, protects water quality, safeguards public health, and enhances community resilience against flooding and environmental hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-72 Develop a local water quality monitoring program to improve understanding of the sources of contamination and local hydrology

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: City and County Administration; Environmental Protection Division
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: A water quality monitoring program identifies pollution sources, informs targeted mitigation strategies, protects public health, and supports sustainable water resource management. Enhanced understanding of local hydrology also strengthens resilience to flooding and environmental hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-73 Consider land use and green infrastructure policies to reduce the impacts of failing septic systems

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 3.57
- Lead: City and County Administration; Environmental Health
- Mitigation Category: Preventive

- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Implementing thoughtful land use and green infrastructure strategies mitigate pollution from failing septic systems, protects water quality, reduces flood and contamination risks, and enhances environmental and community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-74 Create an advisory committee to consider a long-term septic management policy

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 3.86
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Establishing an advisory committee ensures informed, coordinated planning for septic system management, protects water quality, reduces environmental and public health risks, and strengthens community resilience over the long term.
- Vulnerable Area: All Jurisdictions

Action 2026-75 Consider an incentive program to get people to tie into municipal sewer system

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 3.0
- Lead: City and County Administration; Environmental Health
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Variable; Staff Time
- Benefit: Offering incentives to connect to municipal sewer reduces reliance on failing septic systems, protects water quality, minimizes environmental and public health risks, and enhances long-term community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-76 Consider measures to promote increase infiltration of Stormwater to reduce nutrient and other pollutant runoff

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 3.86
- Lead: County and City Administration
- Mitigation Category: Natural Resource Protection

- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Enhancing stormwater infiltration reduces surface runoff, lowers pollutant loads entering waterways, improves water quality, mitigates flooding, and strengthens environmental and community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-77 Continue to operate Water Pollution Control Programs to remain compliant with NPDES Discharge permits

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Maintaining compliance with NPDES permits protects water quality, prevents environmental degradation, reduces public health risks, and ensures sustainable management of wastewater. Continued operation also supports regulatory compliance and enhances community resilience to water-related hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-78 Identify areas vulnerable to spillage and determine what types of plans need to be put in place to effectively avoid water contamination during a flood event

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Assessing spill-prone areas and implementing protective plans reduces the risk of water contamination, protects public health and ecosystems, and strengthens community resilience during flooding events.
- Vulnerable Area: All Jurisdictions

Action 2026-79 Educate public about proper disposal of hazardous waste products that have the potential to contaminate water sources after a disaster

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43

- Lead: Emergency Management Director; Environmental Health; UGA Cooperative Extension
- Mitigation Category: Public Education and Outreach
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Raising public awareness on hazardous waste disposal reduces post-disaster water contamination, protects public health and the environment, and enhances community resilience and recovery efforts.
- Vulnerable Area: All Jurisdictions

Action 2026-80 Create minimum of 30-foot of defensible space-trim shrubs and vines to 30 feet from structures, trim overhanging limbs, and replace flammable plants near homes with less flammable varieties, remove vegetation around chimneys

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.14
- Lead: County and City Administration
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Establishing defensible space reduces wildfire risk to structures, protects lives and property, slows fire spread, and improves the effectiveness of firefighting efforts, enhancing overall community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-81 Reduce structural ignitability - Clean flammable vegetative material from roofs and gutters, store firewood appropriately, install skirting around raised structures, store water hoses for ready access, and replace pine straw and mulch around plantings with less flammable landscaping materials.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.14
- Lead: County and City Administration
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Minimizing structural ignitability decreases the risk of wildfire damage, protects lives and property, and enhances the effectiveness of fire suppression efforts, strengthening community resilience against wildfires.
- Vulnerable Area: All Jurisdictions

Action 2026-82 Right of Way Clearance - Maintain vertical and horizontal clearance for emergency equipment. See that adequate lengths of culverts are installed to allow emergency vehicle access.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.14
- Lead: County and City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Proper right-of-way clearance and culvert installation improve emergency response times, ensure access for emergency equipment, enhance public safety, and strengthen overall community resilience during hazard events.
- Vulnerable Area: All Jurisdictions

Action 2026-83 Seek grant for Wildland-Urban Reference (WUI) mitigation team

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.0
- Lead: Georgia Forestry; Emergency Management Agency Director
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Low; Staff Time
- Benefit: Funding a WUI mitigation team enhances the community's capacity to prevent and respond to wildfires, reduces property and environmental damage, protects lives, and strengthens overall community resilience in high-risk areas.
- Vulnerable Area: All Jurisdictions

Action 2026-84 Seek grant for prescribed burning in WUI areas

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: Georgia Forestry; Emergency Management Agency Director
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: PDM funds
- Cost Estimate: Low
- Benefit: Implementing prescribed burns reduces fuel loads, lowers the risk of catastrophic wildfires, protects structures and natural resources, and enhances community and ecosystem resilience in high-risk areas.
- Vulnerable Area: All Jurisdictions

Action 2026-85 Locate and pre-clear helicopter dip sites

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Variable
- Benefit: Pre-clearing helicopter dip sites ensure rapid and effective aerial firefighting operations, reduces response time during wildfires, protects lives and property, and strengthens overall community and wildfire resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-86 Create up to date mapping of roads and water sources

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: Grant funds; PDM funds; general fund
- Cost Estimate: Variable
- Benefit: Maintaining accurate maps of roads and water sources improves emergency response efficiency, ensures effective planning for firefighting and disaster operations, and enhances public safety and community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-87 Increase participation in fire hazard mitigation programs such as Firewise

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: County and City Administration, Emergency Management Director; Georgia Forestry
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Greater community involvement in fire mitigation programs reduces wildfire risk, protects property and lives, promotes awareness and preparedness, and strengthens overall community resilience in high-risk areas.
- Vulnerable Area: All Jurisdictions

Action 2026-88 Complete the Southern Wildfire Risk Assessment

- 2026 Action Status: In Progress, Carry Over

- Priority Score: 4.43
- Lead: Georgia Forestry
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Conducting a comprehensive wildfire risk assessment identifies vulnerable areas, informs mitigation strategies, prioritizes resource allocation, and enhances community preparedness and resilience against wildfires.
- Vulnerable Area: All Jurisdictions

Action 2026-89 Support Georgia Forestry Commission's water quality program consisting of Best Management Practices Development, education/outreach, implementation/compliance monitoring, complaint resolution process

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: County and City Administration
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Supporting this program protects water quality, reduces sediment and pollutant runoff, ensures sustainable forestry practices, and enhances environmental and community resilience to flooding and contamination hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-90 Develop and implement protocol for defining and mapping Wildland Urban Interface Zones and develop recommended policies, regulations and landscape options for incorporation into City plans and programs

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration, Emergency Management Director; Georgia Forestry
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Mapping WUI zones and establishing policies reduces wildfire risk to structures and communities, guides development in high-risk areas, promotes defensible landscaping, and strengthens overall community and ecosystem resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-91 Continue to implement the Firewise Community Initiative – interactive workshop engaging developers, planners, Fire Service, and govt. officials about Firewise concepts within the county

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: County and City Administration, Emergency Management Director; Georgia Forestry; Fire Chiefs
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Low
- Benefit: Ongoing Firewise engagement educates key stakeholders on wildfire mitigation, promotes best practices in development and landscaping, reduces structural and environmental fire risks, and strengthens community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-92 Continue hazardous fuel reduction by prescribed burning, mechanical or chemical treatment carried out and promoted by Georgia Forestry Guidelines (GFC) guidelines

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: Georgia Forestry
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Low
- Benefit: Reducing hazardous fuels decreases wildfire intensity and spread, protects structures and natural resources, improves firefighter safety, and enhances overall community and ecosystem resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-93 Amend and enforce existing building codes as they relate to skirting, propane tank locations, public nuisances (trash/debris on property), Property address marking standards and other relevant concerns

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time

- Benefit: Strengthening and enforcing building codes reduce vulnerability to fire, structural damage, and hazards, improve emergency response efficiency, protect public safety, and enhance overall community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-94 Review Subdivision and development ordinances for public safety concerns

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: County and City Administration, Emergency Management Director; Georgia Forestry
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Regularly reviewing ordinances ensures that new developments meet safety standards, reduces vulnerability to hazards, improves emergency access, and enhances overall community resilience and public safety.
- Vulnerable Area: All Jurisdictions

Action 2026-95 Enforce uniform addressing ordinance

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.0
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Consistent and clearly marked addresses improve emergency response times, enhance public safety, reduce confusion during disasters, and strengthen overall community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-96 Greater Burn Permit enforcement and education from the Georgia Forestry Commission

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: Georgia Forestry; Emergency Management Agency Director
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time

- Benefit: Enhanced enforcement and education reduce the risk of uncontrolled fires, protect lives and property, promote safe burning practices, and strengthen community resilience to wildfire hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-97 Encourage prescribed burning for private landowners and industrial timberlands particularly adjacent to residential areas

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: Georgia Forestry; Emergency Management Agency Director
- Mitigation Category: Property Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Promoting prescribed burns reduces fuel loads, lowers wildfire risk to homes and communities, protects lives and property, and enhances overall environmental and community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-98 Inspect, maintain and improve access to existing dry hydrants. Add signage along road to mark the hydrants

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: Fire Chiefs; Emergency Management Director
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: Grant funds; PDM funds; general fund
- Cost Estimate: Low
- Benefit: Ensuring dry hydrants are accessible and well-marked improves firefighting efficiency, reduces response times, protects lives and property, and strengthens community resilience against fire hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-99 Locate additional viable water sources as needed

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: County and City Administration, Emergency Management Director; Georgia Forestry; Fire Chiefs
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund

- Cost Estimate: Staff Time
- Benefit: Identifying and securing additional water sources ensures adequate supply for firefighting and emergency response, reduces risk to life and property, and enhances overall community resilience during hazard events.
- Vulnerable Area: All Jurisdictions

Action 2026-100 Improve Road signage at Crossroads. "Dead End" or "No Outlet" tags on road signs

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Low
- Benefit: Enhanced road signage improves navigation for residents, visitors, and emergency responders, reduces confusion and delays during emergencies, and strengthens public safety and community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-101 Seek funding for more fire tankers (2000 to 3000 gallons) for local fire departments

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: Fire Chiefs; Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General fund; SPLOST; PDM funds
- Cost Estimate: Medium
- Benefit: Increasing tanker capacity improves firefighting capabilities, enhances response to wildfires and structural fires, protects lives and property, and strengthens overall community resilience to fire hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-102 Seek funds to acquire additional fire equipment

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: Fire Chiefs; Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General fund

- Cost Estimate: Staff time
- Benefit: Acquiring more fire equipment enhances the capacity and effectiveness of fire departments, improves response to emergencies, protects lives and property, and strengthens overall community resilience to fire hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-103 Seek funds to train firefighters on tactics and equipment

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: Fire Chiefs; Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Enhanced firefighter training improves emergency response effectiveness, reduces risk to personnel and the public, increases operational efficiency during fires, and strengthens overall community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-104 Public outreach to notify residents of planned prescribed burns – Continue to publicize the schedule for prescribed burning on base via local news outlets, local government websites, digital newsletters, email notifications and other effective outreach methods

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: Georgia Forestry; Emergency Management Agency Director
- Mitigation Category: Public Education and Outreach
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Timely and effective communication about prescribed burns reduces public confusion and safety risks, ensures community awareness, and enhances preparedness, supporting safer and more effective wildfire mitigation efforts.
- Vulnerable Area: All Jurisdictions

Action 2026-105 Seek additional training for fire, police, sheriff, EMS, and 911 concerning hazmat events

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031

- Financing Options: PDM funds; general fund
- Cost Estimate: Variable; staff time
- Benefit: Enhanced hazmat training improves emergency response effectiveness, reduces risk to responders and the public, ensures proper containment and mitigation of hazardous incidents, and strengthens overall community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-106 Provide River spill control for contaminants in rivers and creeks (St. Marys River, North River, Borrell Creek, Dark Entry Creek, etc.)

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: Emergency Management Director; Kings Bay Emergency Management Director
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable; staff time
- Benefit: Implementing spill control measures to prevent hazardous substances from contaminating waterways, protects public health and aquatic ecosystems, reduces environmental damage, and strengthens community resilience to water-related hazards.
- Vulnerable Area: All Jurisdictions

Action 2026-107 Continue to train local government officials on proper enactment procedures for hazardous material spill events

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: Emergency Management Director; County and City Administration
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable; staff time
- Benefit: Ongoing training ensures officials can respond quickly and effectively to hazardous material incidents, reducing risks to public health and the environment, minimizing damage, and enhancing overall community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-108 Relocate the airport to a new location, close all airport functions at its current location and redevelop the airport property in accordance with a master plan and coordinated zoning to provide for a mix of residential development and industrial park expansion

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.0
- Lead: County Administration

- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable; staff time
- Benefit: Relocating and redeveloping the airport reduces safety risks in its current location, optimizes land use for community growth, supports economic development, and enhances long-term community resilience and hazard mitigation planning.
- Vulnerable Area: All Jurisdictions

Action 2026-109 Prepare a multi-jurisdictional comprehensive Camden County Long Range Transportation Plan - The long-range transportation plan is an effective tool in many communities to guide strategic improvements to the transportation system that are needed to maintain effectiveness and level of service.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: Emergency Management Director
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Low; Staff Time
- Benefit: Developing a long-range transportation plan guides strategic improvements, ensures efficient traffic flow, enhances emergency evacuation routes, supports economic development, and strengthens overall community resilience and safety.
- Vulnerable Area: All Jurisdictions

Action 2026-110 Draft a development plan for Exits 1, 3 and 6

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.0
- Lead: County and City Administration, Emergency Management Director
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund; SPLOST; PDM funds
- Cost Estimate: Variable; staff time
- Benefit: Creating a targeted development plan guides land use, promotes safe and sustainable growth, improves infrastructure planning, and enhances community resilience by reducing risks associated with congestion, flooding, and other hazards in these key areas.
- Vulnerable Area: All Jurisdictions

Action 2026-111 Draft a master plan for the commercial corridors and entranceways

- 2026 Action Status: In Progress, Carry Over

- Priority Score: 4.0
- Lead: County and City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund; SPLOST; PDM funds
- Cost Estimate: Low; Staff Time
- Benefit: Developing a master plan guides cohesive and safe commercial development, enhances traffic flow and accessibility, reduces hazard exposure, and promotes long-term community resilience and economic vitality.
- Vulnerable Area: All Jurisdictions

Action 2026-112 Seek additional training for fire, police, sheriff, EMS, and 911 concerning radioactive accident events

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable; staff time
- Benefit: Improves preparedness and coordination among first responders, ensures proper handling of radioactive incidents, enhances public safety, and reduces risk of contamination or injury.
- Vulnerable Area: All Jurisdictions

Action 2026-113 Continue coordinated emergency planning efforts with Naval Submarine Base Kings Bay

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.0
- Lead: Emergency Management Director; Kings Bay Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Enhances joint preparedness, improves response coordination during emergencies, and strengthens public safety for both the community and base personnel.
- Vulnerable Area: All Jurisdictions

Action 2026-114 Continue to train local government officials on proper enactment procedures for radioactive spill events

- 2026 Action Status: In Progress, Carry Over

- Priority Score: 4.43
- Lead: Emergency Management
- Director; County and City Administration
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable; staff time
- Benefit: Ensures officials are prepared to implement protocols effectively, reduces risks to public health and safety, and improves overall emergency response coordination.
- Vulnerable Area: All Jurisdictions

Action 2026-115 Upgrade Fire Station #2 for use as a field emergency communication center (hurricane shutters for windows and doors, and other miscellaneous items)

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: Emergency Management Director; County Administration
- Mitigation Category: Property Protection
- Time Frame: 201-2026
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable
- Benefit: Enhances emergency communication capabilities during disasters, provides a secure and resilient operations center, and improves coordination and response efficiency for first responders.
- Vulnerable Area: City of St Marys

Action 2026-116 Complete Regional Septic Tank Assessment Report

- 2026 Action Status: Not Started, Carry Over
- Priority Score: 4.57
- Lead: County Environmental Health
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Identifies vulnerabilities in septic systems, reduces risk of environmental contamination and public health hazards, and informs targeted mitigation and infrastructure improvement efforts.
- Vulnerable Area: Camden County

Action 2026-117 Review Right of Way (ROW) Land Acquisition for County Roads, Evaluation, Direction, Funding

- 2026 Action Status: In Progress, Carry Over

- Priority Score: 4.0
- Lead: County Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Ensures timely and cost-effective acquisition of land needed for road improvements, reduces potential delays in transportation projects, and enhances infrastructure resilience and public safety.
- Vulnerable Area: Camden County

Action 2026-118 Complete a master plan for airport once the airport is relocated

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.0
- Lead: County Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Provides strategic guidance for airport development, ensures efficient use of resources, enhances operational safety, and supports long-term transportation and emergency response needs.
- Vulnerable Area: Camden County

Action 2026-119 Identify / develop site for 'safe haven' supporting COOP COG Public Safety OPS for all-jurisdictions with supporting equipment and systems

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General fund; grant funds
- Cost Estimate: Variable
- Benefit: Ensures uninterrupted public safety and government functions during emergencies, provides a secure location with essential resources, and strengthens regional resilience and coordination among jurisdictions.
- Vulnerable Area: Camden County

Action 2026-120 Mitigate cyber-security incidents from occurring, as well as provide response plans for incidents. Sustain current mitigation measures, while supporting future initiatives.

- 2026 Action Status: In Progress, Carry Over

- Priority Score: 4.43
- Lead: Camden Emergency Management Director/Camden CIO
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund; grant funds
- Cost Estimate: Variable
- Benefit: Reduces the likelihood and impact of cybersecurity breaches, ensures rapid and effective incident response, protects critical infrastructure and sensitive data, and strengthens long-term organizational resilience.
- Vulnerable Area: Camden County

Action 2026-121 Camden County is vulnerable to acts of Terrorism enhanced with presence of SUBASE Kings Bay. Planning, Training and Resourcing e.g., mobile command, mobile CCTV, Mobile Alert Warning, Sensors and command and control are necessary to mitigate occurrence and or respond to incidents.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: "Camden Emergency Management Director/Camden Sheriff
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund; grant funds
- Cost Estimate: Variable
- Benefit: Strengthens the county's ability to prevent, respond to, and manage terrorism-related incidents, improves situational awareness, enhances public safety, and ensures coordinated response across agencies.
- Vulnerable Area: Camden County

Action 2026-122 Camden County is vulnerable to active shooter incidents in schools, businesses, and government facilities as well as public event sites. Planning, Training and Resourcing are necessary to mitigate occurrence and or respond to incidents.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: Camden Emergency Management Director/Camden Sheriff
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund; grant funds
- Cost Estimate: Variable
- Benefit: Improves preparedness and response capabilities, reduces risk to life and property, ensures coordinated multi-agency response, and enhances public safety during critical incidents.
- Vulnerable Area: Camden County

Action 2026-123 Camden County as a Coastal Community is vulnerable to loss of Public Safety Communications System including 911 system. Hardening, redundancy and interoperability must be incorporate to ensure survivability to achieve resilience and ability to meet community lifelines.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: Emergency Management Director
- Mitigation Category: Emergency Services
- Time Frame: 2026 to 2031
- Financing Options: General fund; SPLOST
- Cost Estimate: Variable
- Benefit: Ensures survivability and resiliency of critical communication infrastructure, maintains essential emergency services, and supports the county's ability to sustain community lifelines during disasters.
- Vulnerable Area: Camden County

Action 2026-124 Adapt Zoning Ordinance to current opportunities/issues

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff Time
- Benefit: Ensures land use regulations are aligned with present and future needs, supports sustainable development, reduces conflict between land uses, and enhances community resilience.
- Vulnerable Area: City of Kingsland

Action 2026-125 Replace dilapidated sanitary sewers in downtown and old city areas

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable; Medium
- Benefit: Reduces the risk of sewer failures and backups, protects public health, prevents environmental contamination, and improves overall infrastructure reliability.
- Vulnerable Area: City of Kingsland

Action 2026-126 130 Build north, west and east sewer force mains

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund; USDA
- Cost Estimate: Variable; Medium
- Benefit: Enhances wastewater conveyance capacity, reduces risk of system overflows or failures, supports future growth, and improves public health and environmental protection.
- Vulnerable Area: City of Kingsland

Action 2026-127 Widen Colerain–St. Marys Road to four lanes from SR 40 west to Kings Bay Road in St. Marys; improve the intersection of North Old Jefferson

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: GDOT; City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund; GDOT
- Cost Estimate: Medium
- Benefit: Increases traffic capacity and safety, reduces congestion, improves emergency response access, and enhances overall transportation efficiency for residents and businesses.
- Vulnerable Area: City of Kingsland

Action 2026-128 Promote Kingsland’s participation in the FEMA Community Rating System program, leading to discounts on flood insurance premiums

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Encourages proactive floodplain management, reduces financial burden on property owners, enhances community resilience to flooding, and supports sustainable development practices.
- Vulnerable Area: City of Kingsland

Action 2026-129 Support Colerain Road Widening Phase II from I-95 to Hwy 40

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 3.71
- Lead: City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable; Staff time
- Benefit: Improves traffic flow and safety, enhances emergency response access, supports regional growth, and strengthens overall transportation infrastructure.
- Vulnerable Area: City of Kingsland

Action 2026-130 Manhole and sewer pipe lining: Upgrade liner (insert or spray liner in manholes); Slip line pipes in old section of the city that still utilizes terracotta pipes

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.71
- Lead: City Administration; Department of Public Works
- Mitigation Category: Structural Projects
- Time Frame: 2021-2025
- Financing Options: Grant funds
- Cost Estimate: Variable; Staff Time
- Benefit: Extends the lifespan of aging sewer infrastructure, reduces risk of leaks and failures, prevents environmental contamination, and improves overall system reliability and resilience.
- Vulnerable Area: City of Kingsland

Action 2026-131 The City of St. Marys to adopt an ordinance requiring the use of the Coastal Stormwater Supplement for design and post construction Stormwater management systems.

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Ensures stormwater systems meet enhanced coastal standards, reduce flooding and erosion risks, protects water quality, and promotes resilient infrastructure development.
- Vulnerable Area: City of St. Marys

Action 2026-132 Promote St. Marys participation in the FEMA Community Rating System program, leading to discounts in flood insurance premiums

- 2026 Action Status: In Progress, Carry Over

- Priority Score: 4.14
- Lead: City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Encourages proactive floodplain management, reduces financial burden on property owners, enhances community resilience to flooding, and supports sustainable development practices.
- Vulnerable Area: City of St. Marys

Action 2026-133 Review and update ordinances and codes to incorporate design guidelines, landscaping, use-based restrictions and performance-based regulations

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Ensures development aligns with community goals, promotes resilient and sustainable land use, reduces conflicts between land uses, and enhances overall public safety and environmental quality.
- Vulnerable Area: City of St. Marys

Action 2026-134 Develop an infrastructure master plan to keep pace with population growth

- 2026 Action Status: Not Started, Carry Over
- Priority Score: 4.29
- Lead: City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Guides strategic infrastructure investments, ensure adequate capacity for utilities and transportation, support sustainable growth, and enhance community resilience and quality of life.
- Vulnerable Area: City of St. Marys

Action 2026-135 Take preventative measures to protect Orange Hall from threat of fire

- 2026 Action Status: Not Started, Carry Over
- Priority Score: 4.43

- Lead: City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: Grant funds; PDM funds; general fund
- Cost Estimate: Low
- Benefit: Reduces risk of fire damage, preserves a historic and cultural asset, ensures public safety, and maintains community heritage for future generations.
- Vulnerable Area: City of St. Marys

Action 2026-136 Improve the intersection of St. Marys Road and Highway 40 with a fly over ramp

- 2026 Action Status: Not Started, Carry Over
- Priority Score: 4.57
- Lead: City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund; GDOT; SPLOST
- Cost Estimate: Medium
- Benefit: Enhances traffic flow and safety, reduces congestion and travel time, improves emergency response access, and supports regional transportation efficiency.
- Vulnerable Area: City of St. Marys

Action 2026-137 Work with GDOT to provide a direct off ramp of I-95 north to the existing Haddock Road traffic light to improve safety

- 2026 Action Status: Not Started, Carry Over
- Priority Score: 4.57
- Lead: GDOT; City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: PDM funds; general fund
- Cost Estimate: Variable; staff time
- Benefit: Improves traffic safety, reduces congestion and potential accident points, enhances access for local and regional traffic, and supports efficient emergency response routes.
- Vulnerable Area: City of St. Marys

Action 2026-138 Complete railroad crossing of Mickler Drive

- 2026 Action Status: Not Started, Carry Over
- Priority Score: 4.57
- Lead: City Administration
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031

- Financing Options: PDM funds; general fund; GDOT
- Cost Estimate: Medium
- Benefit: Improves traffic flow and safety, reduces delays for commuters and emergency vehicles, and enhances connectivity within the transportation network.
- Vulnerable Area: City of St. Marys

Action 2026-139 Protect the St. Marys downtown Riverfront from sea level rise and abnormal king tide events

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 5.0
- Lead: Community Development Department
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031
- Financing Options: Grant funds; SPLOST
- Cost Estimate: High
- Benefit: Reduces flood risk to infrastructure and property, preserves public spaces and economic assets, enhances community resilience, and supports long-term coastal adaptation strategies.
- Vulnerable Area: City of St Marys

Action 2026-140 Review opportunities/ create incentives, to acquire properties that are suitable for providing public access to the rivers, streams and marshes and keep existing public access at street ends into the marsh, rivers, or streams

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: City Administration
- Mitigation Category: Natural Resource Protection
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Ensures continued public access to natural waterways, supports recreational and educational opportunities, preserves environmental resources, and enhances community resilience to flooding and coastal hazards.
- Vulnerable Area: City of Woodbine

Action 2026-141 Encourage appropriate non-profit agencies who acquire land suitable for conservation as opportunities arise

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.29
- Lead: City Administration
- Mitigation Category: Preventive

- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Protects environmentally sensitive areas, preserves natural habitats, supports flood mitigation and stormwater management, and enhances long-term community and ecological resilience.
- Vulnerable Area: City of Woodbine

Action 2026-142 Draft a water and sewer master plan

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.43
- Lead: City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General fund
- Cost Estimate: Staff time
- Benefit: Guides strategic investments in water and wastewater infrastructure, ensures adequate capacity for current and future populations, reduces risk of service disruptions, and supports public health and environmental protection.
- Vulnerable Area: City of Woodbine

Action 2026-143 Enhance community health resilience; reduce morbidity and mortality during infectious disease outbreaks

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 4.57
- Lead: Health Department / Emergency Management
- Mitigation Category: Planning / Public Health
- Time Frame: 2026 to 2031
- Financing Options: CDC Public Health Preparedness Grants, FEMA
- Cost Estimate: Low
- Benefit: Improves public health preparedness, strengthens response capabilities, minimizes illness and loss of life, and ensures continuity of essential community services during outbreaks.
- Vulnerable Area: All Jurisdictions

Action 2026-144 Ensure continuity of essential services and reduce economic/social disruption

- 2026 Action Status: In Progress, Carry Over
- Priority Score: 5.0
- Lead: Public Works / Engineering
- Mitigation Category: Structural Projects
- Time Frame: 2026 to 2031

- Financing Options: FEMA Hazard Mitigation Grants, State Infrastructure Funds
- Cost Estimate: Medium
- Benefit: Maintains critical community functions, protects livelihoods, reduces societal impacts of disasters, and enhances overall community resilience.
- Vulnerable Area: All Jurisdictions

Action 2026-145 Identify and map critical supply chain nodes and dependencies so the County will better understand vulnerabilities in the supply chain

- 2026 Action Status: New
- Priority Score: 2.57
- Lead: City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General Fund
- Cost Estimate: Staff Time
- Benefit: Helps the county anticipate and reduce supply chain disruptions during disasters, ensuring faster recovery and continuity of essential services.
- Vulnerable Area: All Jurisdictions

Action 2026-146 Train local government officials on appropriate response procedures for a terrorism incident. This could include organizing a multi-jurisdictional exercise to test capabilities and discover vulnerabilities.

- 2026 Action Status: New
- Priority Score: 2.86
- Lead: City Administration
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General Fund, Homeland Security Grant Program
- Cost Estimate: Staff Time
- Benefit: Strengthens coordination, improves response efficiency, and identifies gaps in preparedness, enhancing overall community safety during terrorism incidents.
- Vulnerable Area: All Jurisdictions

Action 2026-147 Set up a county-wide cybersecurity risk management program that works with the County's broader hazard mitigation and risk management plans.

- 2026 Action Status: New
- Priority Score: 3.0
- Lead: Camden Emergency Management Director/Camden CIO
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General Fund; State and Local Cybersecurity Grant Program

- Cost Estimate: Variable
- Benefit: Tracks cyber risks that could disrupt government or emergency operations to try to prevent disruption of government services.
- Vulnerable Area: Camden County

Action 2026-148 Create and update a list of County information systems, applications, cloud services, and third-party providers that support key services and emergency operations.

- 2026 Action Status: New
- Priority Score: 2.43
- Lead: Camden Emergency Management Director/Camden CIO
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General Fund; State and Local Cybersecurity Grant Program
- Cost Estimate: Variable
- Benefit: Identifies which systems are most critical to public services and guides how to protect and recover them.
- Vulnerable Area: Camden County

Action 2026-149 Create, approve, and practice formal plans for responding to cyber incidents and recovering from disasters to keep government operations running.

- 2026 Action Status: New
- Priority Score: 3.0
- Lead: Camden Emergency Management Director/Camden CIO
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General Fund; State and Local Cybersecurity Grant Program
- Cost Estimate: Variable
- Benefit: Establishes clear roles and responsibilities, clarifies steps for handling and containing incidents, and sets recovery time and point goals for key systems.
- Vulnerable Area: Camden County

Action 2026-150 Set up centralized security monitoring and vulnerability management for County networks and systems to help detect and respond to cyber threats quickly.

- 2026 Action Status: New
- Priority Score: 3.29
- Lead: Camden Emergency Management Director/Camden CIO
- Mitigation Category: Preventive
- Time Frame: 2026 to 2031
- Financing Options: General Fund; State and Local Cybersecurity Grant Program
- Cost Estimate: Variable

- Benefit: Combines information from key systems, creates a formal process for managing vulnerabilities, and make identity and access controls stronger to lessen the chances that common cyber threats will cause long service outages or a loss of sensitive data.
- Vulnerable Area: Camden County

Chapter 5 Plan Implementation and Maintenance

5.1 Summary of Updates for Chapter 5

The following table provides a description of each section of this chapter and a summary of the changes that have been made to the Camden County Multi-Jurisdictional Hazard Mitigation Plan 2021.

Chapter 5 Section	Updates
Adoption	No changes
Implementation	No changes
Monitoring and Maintenance	No changes

5.2 Adoption

The purpose of formally adopting this Plan is to secure buy-in from all participating jurisdictions, raise awareness of the Plan, and formalize the Plan's implementation. Each participating jurisdiction will adopt the Camden County Multi-Jurisdictional Hazard Mitigation Plan by passing a resolution. Copies of these adoption resolutions are provided at the beginning of this Plan.

5.3 Implementation

Implementation and maintenance of the Plan is critical to the overall success of hazard mitigation planning. This section provides an overview of the overall strategy for Plan implementation and maintenance and outlines the method and schedule for monitoring, updating, and evaluating the Plan. The section also discusses incorporating the Plan into existing planning mechanisms and how to address continued public involvement.

Once adopted, the Plan must be implemented to be effective. While this Plan contains many worthwhile actions, each participating jurisdiction will need to decide which action(s) to undertake first. The priority assigned to the actions in the planning process and funding availability will affect that decision. Low or no-cost actions are often the easiest way to demonstrate progress toward successful Plan implementation.

Mitigation is most successful when it is incorporated into the day-to-day functions and priorities of government. Implementation will be accomplished by adhering to the schedules identified for each action and through regular, thorough, and energetic efforts to network and highlight the multi-objective, win-win benefits of mitigation. This effort is achieved through the routine actions of monitoring agendas, attending meetings, and promoting a safe, sustainable community. Additional mitigation strategies could include consistent and ongoing enforcement of existing policies and vigilant review of programs for coordination and multi-objective opportunities. Simultaneous to these efforts, it is important to maintain a constant monitoring of funding opportunities that can be leveraged to implement some of the costlier recommended actions.

This will include creating and maintaining a bank of ideas on how to meet local match or participation requirements. When funding does become available, the County and participating jurisdictions will be positioned to capitalize on the opportunity. Funding opportunities to be monitored include special pre- and post-disaster funds, state and federal earmarked funds, benefit assessments, and other grant programs, including those that can serve or support multi-objective applications.

5.3.1 Responsibility for Implementation of Goals and Activities

Each jurisdiction participating in this Plan is responsible for Plan implementation within their jurisdiction. Elected officials, officials appointed to head County, City, and Town departments, and community staff are charged with leading implementation of various activities in the Plan. During the quarterly reviews as described later in this section, an assessment of progress on each of the goals and activities in the Plan will be determined and noted. At that time, recommendations will be made to modify timeframes for completion of activities, funding resources, and responsible entities. On a quarterly basis, the priority standing of various activities may also be changed. Some activities that are found not to be feasible may be deleted from the Plan entirely and activities addressing problems unforeseen during Plan development may be added.

5.3.2 Role of Local Hazard Mitigation Planning Committee in Implementation, Monitoring and Maintenance

With adoption of this Plan, each jurisdiction, in coordination with the Camden County Emergency Management Agency (EMA), will be responsible for the Plan implementation and maintenance. As such, each jurisdiction agrees to continue its relationship with the Hazard Mitigation Planning Committee (HMPC) and:

- Act as a forum for mitigation issues;
- Disseminate mitigation ideas and activities to all participants;
- Pursue the implementation of high-priority, low/no-cost recommended actions;
- Ensure mitigation remains a consideration for community decision makers;
- Maintain a vigilant monitoring of multi-objective cost-share opportunities to help the community implement the Plan's recommended actions for which no current funding exists;
- Monitor and assist in implementation and update of this Plan;
- Report on Plan progress and recommended revisions to the local governing body; and
- Inform and solicit input from the public.

The HMPC's primary duty moving forward is to see the Plan successfully carried out and report to each local governing body, Camden County EMA, the Georgia Emergency Management and Homeland Security Agency (GEMA), and the public on the status of Plan implementation and mitigation opportunities. Other duties include reviewing and promoting mitigation proposals, considering stakeholder concerns about mitigation, passing concerns on to appropriate entities, and posting relevant information on local websites (and others as appropriate).

5.4 Monitoring and Maintenance

Plan maintenance implies an ongoing effort to monitor and evaluate Plan implementation and to update the Plan as progress, roadblocks, or changing circumstances are recognized.

5.4.1 Maintenance Schedule

Camden County EMA is responsible for initiating Plan reviews. To monitor progress and update the mitigation strategies identified in the Mitigation Action Plan, the Camden County EMA Director will reconvene the HMPC to review this Plan quarterly and following a hazard event. Camden County EMA will submit a 5-year written update to GEMA and the Federal Emergency Management Agency (FEMA) Region IV, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule. With this Plan update anticipated to be fully approved and adopted in 2026, the next Plan update for Camden County will occur in 2031.

5.4.2 Maintenance Evaluation Process

Evaluation of progress can be achieved by monitoring changes in vulnerabilities identified in the Plan. Changes in vulnerability can be identified by noting:

- Decreased vulnerability as a result of implementing recommended actions;
- Increased vulnerability as a result of failed or ineffective mitigation actions; and/or
- Increased vulnerability as a result of new development (and/or further annexation).

Updates to this Plan will:

- Consider changes in vulnerability due to action implementation;
- Document success stories where mitigation efforts have proven effective;
- Document areas where mitigation actions were not effective;
- Document any new hazards that may arise or were previously overlooked;
- Incorporate new data or studies on hazards and risks;
- Incorporate new capabilities or changes in capabilities;
- Incorporate growth and development-related changes to infrastructure inventories; and
- Incorporate new action recommendations or changes in action prioritization.

To best evaluate any changes in vulnerability as a result of Plan implementation, the HMPC will follow the following process:

- The HMPC representatives from each jurisdiction will be responsible for tracking and reporting on their mitigation actions. Jurisdictional representatives should provide input on whether the action as implemented met the defined objectives and/or is likely to be successful in reducing vulnerabilities.
- If the action does not meet identified objectives, the jurisdictional representatives will determine what additional measures may be implemented and will make any required modifications to the Plan.

- All monitoring and implementation information will be reported to the full HMPC, led by Camden County EMA, during quarterly meetings. An annual plan maintenance report may be drafted as deemed necessary.

Changes will be made to the Plan during the update process to accommodate for actions that have failed or are not considered feasible after a review of their consistency with established criteria, time frame, community priorities, and/or funding resources. Actions that were not ranked high but were identified as potential mitigation activities will be reviewed as well during the monitoring and update of this Plan to determine feasibility of future implementation. Updating of the Plan will be by written changes and submissions, as is appropriate and necessary, and as approved by local governing bodies. In keeping with the 5-year update process, the HMPC or similar committee will convene public meetings to solicit public input on the Plan and its routine maintenance and the final product will be adopted by local governing bodies.

5.4.3 Criteria for Quarterly Reviews in Preparation for 5-Year Update

The criteria recommended in 44 CFR 201 and 206 will be utilized in reviewing and updating the Plan. More specifically, quarterly reviews will monitor changes to the following information:

- Community growth or change in the past quarter.
- The number of substantially damaged or substantially improved structures by flood zone.
- The renovations to public infrastructure including water, sewer, drainage, roads, bridges, gas lines, and buildings.
- Natural hazard occurrences that required activation of the Emergency Operations Center (EOC) and whether the event resulted in a presidential disaster declaration.
- Natural hazard occurrences that were not of a magnitude to warrant activation of the EOC or a federal disaster declaration but were severe enough to cause damage in the community or closure of businesses, schools, or public services.
- The dates of hazard events descriptions.
- Documented damages due to the event.
- Closures of places of employment or schools and the number of days closed.
- Road or bridge closures due to the hazard and the length of time closed.
- Assessment of the number of private and public buildings damaged and whether the damage was minor, substantial, major, or if buildings were destroyed. The assessment will include residences, mobile homes, commercial structures, industrial structures, and public buildings, such as schools and public safety buildings.

5.4.4 Incorporation into Existing Planning Mechanisms

An important implementation mechanism that is highly effective and low-cost is incorporation of the goals, objectives, and recommendations of this Plan into other plans and policies. Where possible, plan participants will use existing plans and/or programs to implement hazard

mitigation actions. As previously stated, mitigation is most successful when it is incorporated into the day-to-day functions. It will be the responsibility of the HMPC representatives from each participating jurisdiction to determine and pursue opportunities for integrating the requirements of this Plan with other local planning documents and ensure that the goals and strategies of new and updated local planning documents for their jurisdictions or agencies are consistent with the goals and actions of the Camden County Multi-Jurisdictional Hazard Mitigation Plan and will not contribute to increased hazard vulnerability in the planning area.

The 2021 Plan was presented to committees and persons responsible for updating the Capital Improvement Plans, Future Land Use Plans, Storm Water Management Plans, and Zoning Ordinances. Additionally, the 2021 Plan was referenced in development of the Camden County Comprehensive Plan Update.

Methods for future integration may include:

- Monitoring other planning/program agendas;
- Attending other planning/program meetings;
- Participating in other planning processes; and
- Monitoring community budget meetings for other community program opportunities.

The HMPC will continue to integrate Camden County Multi-Jurisdictional Hazard Mitigation Plan updates, including the information from this Plan update, into changes to Capital Improvement Plans, Future Land Use Plans, Storm Water Management Plans, Zoning Ordinances, and other local planning and policy activities. In addition to the above opportunities that HMPC representatives of all participating jurisdictions will pursue, the Camden County Emergency Operations Plan (EOP) is due to be updated, and the Camden County EMA will incorporate findings from the Camden County Multi-Jurisdictional Hazard Mitigation Plan into the EOP update.

Opportunities to integrate the requirements of this Plan into other local planning mechanisms shall continue to be identified through future meetings of the HMPC and through the 5-year review process described herein. Although it is recognized that there are many possible benefits to integrating components of this Plan into other local planning mechanisms, the development and maintenance of this stand-alone Camden County Multi-Jurisdictional Hazard Mitigation Plan is deemed by the HMPC to be the most effective and appropriate method to implement local hazard mitigation actions at this time.

5.4.5 Continued Public Involvement

Continued public involvement is imperative to the overall success of the Plan's implementation. The annual review process provides an opportunity to solicit participation from new and existing stakeholders, publicize success stories from the Plan implementation, and seek additional public comment. The Plan maintenance and update process will include continued public and

stakeholder involvement and input through invitation to designated committee meetings, web postings, press releases to local media, and gathering of public comment, similar to the process used in the development of this Plan.

When the HMPC reconvenes for the 5-year update, they will coordinate with all stakeholders participating in the planning process, including those that joined the Committee since the planning process began, to update and revise the Plan. In reconvening, the HMPC will be responsible for coordinating the activities necessary to involve the greater public, including disseminating information through a variety of media channels detailing the Plan update process. As part of this effort, public meetings will be held and public comments will be solicited on the Plan update draft.

ORDINANCE NO. 2026-

AN ORDINANCE TO AMEND SECTION 8-30 OF THE CODE OF ORDINANCES OF THE CITY OF KINGSLAND, GEORGIA; TO UPDATE RULES AND REGULATIONS FOR OUTDOOR AND OPEN BURNING; TO PROVIDE FOR CLARIFIED PERMITTING AUTHORITY, SEASONAL BURN RESTRICTIONS, ENHANCED SAFETY STANDARDS, ADMINISTRATIVE PENALTIES, AND RELATED MATTERS; TO REPEAL CONFLICTING ORDINANCES; TO PROVIDE FOR SEVERABILITY; AND FOR OTHER PURPOSES.

WHEREAS, The Mayor and Council of the City of Kingsland find it necessary to amend Section 8-30 to enhance public safety, align local regulations with current guidance from the Georgia Department of Natural Resources Environmental Protection Division and the Georgia Forestry Commission, and provide clearer enforcement standards;

NOW, THEREFORE, BE IT ORDAINED by the Mayor and Council of the City of Kingsland, Georgia, as follows:

SECTION 1.

Section 8-30, "Rules and regulations for outdoor and open burning," is hereby amended to read as follows:

Sec. 8-30. Rules and regulations for outdoor and open burning.

- (a) In this section, *open burning* means the disposal of combustible wastes by burning outside the confines of a building, incinerator, or container designed, equipped and functioning so as to reduce the production and dissemination of smoke or fumes to a level below that which would impair the health or comfort of the inhabitants of the city, and so as to prevent the emission of sparks.
- (1) Combustible wastes shall include the combustible components of otherwise noncombustible items, such as automobile and truck bodies and shall include any ordinarily noncombustible material which is rendered combustible by the combining with it of highly combustible fuels.
 - (2) Open burning, without a permit, is prohibited and no person shall kindle or maintain any fire or authorize any such fire to be kindled or maintained without a permit or other proper authorization except as follows:

Note: All required permits shall be obtained from the City of Kingsland.

- (b) *Recreation/cooking fire*: No permit or fee required for recreational purposes such as cooking food for immediate human consumption, e.g., camp fires, barbecues, grills etc.
- (c) *Firefighter training fires*: No permit or no fee required. Fires set for the purposes of training firefighting personnel should comply with the following:
 - (1) Any asbestos containing materials should be removed in accordance with the environmental protection division's regulations governing asbestos. Call (404) 363- 7032 for further information.
 - (2) Structures should be emptied of any materials in storage that may contain heavy oils, natural or synthetic rubber, furniture, appliances or solid waste.
 - (3) Weather conditions should be such that smoke and ashes will not linger in the area or the same do not blow into residential, shopping, educational or hospital areas.
 - (4) Residuals from the suppression and containment efforts are not allowed to run off into bodies of water, i.e., streams, ponds, swimming pools, etc.
 - (5) Training should be conducted no earlier than 9:00 a.m. and concluded by 4:00 p.m. (fall and winter), or 6:00 p.m. (spring and summer).
 - (6) The person in charge of any such firefighting training exercise should make a thorough investigation of the proposed evolution and the prevailing circumstances before commencing any such burning and continuously evaluate the evolution as needed. The person in charge of such firefighting training should obtain a release and consent to conduct such training from owner(s) of the property.
- (d) *Open flame-making equipment*: For the operation of devices using open flames such as asphalt kettles, blow torches, welding torches, portable heaters and other flame-making equipment, no permit or no fee required.
- (e) *Bonfires*: Permit required, no fee required. No person shall kindle or maintain any bonfire or authorize any such fire to be kindled or maintained on any private or public land unless the location is not less than 50 feet from any structure and adequate provision is made to prevent fire from spreading within 50 feet of any structure, or the fire is contained in an approved waste burner located not less than 15 feet from any structure. Bonfires shall be constantly attended by a competent person until such fire is extinguished. Such person shall have a garden hose connected to a water supply or other approved fire extinguishing equipment.

Note: No flammable or combustible liquids shall be used to start this type of fire. Only paper, cardboard or kindling shall be used to start bonfires.

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- (f) *Land clearing*: Permit required, no fee required. The applicant shall complete the burning permit application issued by the city fire department. The applicant shall submit a plat or site plan showing the proposed location of the pit and information relating to the proximity of any occupied or unoccupied structure. Such permit shall be valid for the duration of the open burning but in any event shall not be valid beyond two months from the date of issue.
- (1) *Air curtain destructor*: Pit fires are the only type of fires permitted for the purposes of land clearing. No aboveground fires are allowed in the city. All pit fires shall be operated in strict accordance with the "Air Curtain Destructor Operating Guide and Procedures" as published by the ~~North Georgia~~ Georgia Department of Natural Resources Environmental Protection Division. Pit fires shall comply with the following requirements:
- a. The pit shall be at least 300 feet from any occupied or habitable structure or public road. Air curtain destructors used solely for utility line clearing or road clearing may be located at a lesser distance upon approval of the fire inspector.
 - b. Only wood wastes consisting of trees, logs, brush and stumps may be burned. Sawdust, other densely packed wood wastes, paper (any type), chemically treated, coated or impregnated wood, or non-wood construction materials cannot be burned.
 - c. No more than one "air curtain destructor" can be operated within a ten-acre area at one time, or there must be at least 1,000 feet between any two air curtain destructors. The air curtain destructor must be under the control of a trained operator at all times during operation.
 - d. Air curtain destructors must be able to pass an even, non-turbulent flow of air across the top of the pit. Air curtain destructors with an air duct or manifold that has been altered by bends, dents, holes, etc., and are incapable of providing an even and non-turbulent flow of air across the top of the pit shall not be approved for use.
 - e. The air curtain destructor shall be operated in a manner to prevent air, land or water pollution, safety/health hazards or nuisances.
 - f. Tires or other rubber products, plastics, heavy oils or asphaltic-based or impregnated materials shall not be used to start or maintain the operation of the air curtain destructor.
 - g. No smoke emissions exceeding 40 percent opacity may be produced during operation except for a reasonable period during ignition and charging of the pit.
 - h. When the pit is cleaned of ash, airborne particulate is to be minimized by wetting or mixing the ashes with dirt.
 - i. Diesel fuel or kerosene may be used to start pit fires.
 - j. The city has established the following operating procedures for air curtain destructors, in addition to those stated herein, and upon issuance of a permit for operation of an air curtain destructor, a copy of such procedures will be provided to the permit holder. A copy of such procedures is attached to Ordinance No. 1994-8 as Exhibit "A."

Note: The amount of dirt on or in the material being burned in such pit shall be minimized.

- (g) *Burning restrictions*:
- (1) The city may prohibit any and all outdoor fires when atmospheric conditions or local circumstances make such fires hazardous.
 - (2) Burning shall be permitted on any given day of the year provided a permit has been issued by the City of Kingsland and/or the Georgia Forestry Commission.
 - (3) No burning is permitted when prevailing winds are in the direction of populated areas.

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- (4) No burning is permitted when there is fog, rain, or cloud bases that are diffused or ill-defined or for at least one day following the passage of a cold front.
 - (5) No burning is permitted during an air pollution episode, such as an air pollution alert/warning/emergency declared by proper authorities.

Note: An air pollution episode occurs when the air contaminant concentration in an area is great enough to cause danger to public health.

(6) Burning shall be limited or prohibited as conditions warrant, when the National Weather Service and/or the Georgia Forestry Commission has issued a "Fire Weather Watch". A "Red Flag Warning" is issued by the National Weather Service (NWS) when critical fuel and weather conditions align for extreme fire risk. General criteria typically include 10-hour fuel moisture of 8% or less, relative humidity of 25% or lower, and sustained winds of 15–20 mph or gusts over 25 mph. For the NWS Jacksonville area in SE Georgia, specific coordinated criteria require relative humidity of 25% or less, 20-foot sustained winds of 15 mph or greater (or 20-foot wind gusts of 25 mph or greater), and 10-hour fuel moisture of 6% or less, all forecast to occur simultaneously for any duration.

- (h) *Enforcement:* The duly appointed fire inspectors of the city fire department are authorized to have all powers necessary to enforce this section, which includes the authority to issue or deny permits for open burning.
- (i) *Penalties:* Any person who shall violate any of the provisions of this section or fail to comply therewith shall for each and every such violation and noncompliance respectively, be guilty of a misdemeanor as defined by the state. The imposition of one penalty for any violation shall not excuse the violation or permit it to continue.
 - (1) First offense, written warning with: No fine
 - (2) Second offense, the fine shall be: \$100.00
 - (3) Third time and each reoccurring offense, the fine shall be: \$150.00
- (j) *Extinguishing of open burning:* The fire inspector and the personnel assigned to the city fire department shall have the authority to summarily extinguish any open burning which is in violation of any of the provisions of this section, and/or which constitutes an immediate threat to life and property.
- (k) *Appeals:* Any person aggrieved by an order, determination or permit revocation by the fire inspector may in writing appeal such order, determination or permit revocation within three business days to the City of Kingsland at P.O. Box 250, Kingsland, Georgia, 31548. In no event however, shall a pit fire or other open burning continue after the fire inspector has revoked such permit.
- (l) *Validity:* The mayor and city council hereby declares that should any section, subsection, sentence, clause or phrase of this section be for any reason held to be unconstitutional; such decision shall not affect the validity of the remaining portions of this section.
- (m) *Liability:* Any officer charged with the enforcement of this section, acting for the applicable governing authority in the discharge of his or her duties, shall not hereby render themselves liable for any damages that may occur to persons or property as a result of any act required or permitted in the discharge of his or her duties pursuant to this section.

(Ord. No. 2016-03, 5-9-2016)

(n) Appeals.

Any person aggrieved by a permit denial, suspension, or revocation may file a written appeal within five (5) business days to the City Manager. The City Manager's determination shall be final administrative action.

(o) Severability.

If any portion of this ordinance is held invalid, such invalidity shall not affect remaining portions.

(p) Repealer.

All ordinances or parts of ordinances in conflict herewith are repealed.

SECTION 2. Effective Date.

This Ordinance shall become effective immediately upon adoption.

SO ORDAINED AND ADOPTED this day of , 2026.

CITY OF KINGSLAND, GEORGIA

Mayor

ATTEST:

City Clerk

(SEAL)

What is an Air Curtain Destructor (ACD)?

A forced air pit incinerator, for the purpose of disposing vegetative waste and debris.

Operating Guide

No smoke emissions exceeding forty percent opacity may be produced during operation except for a reasonable period during ignition and charging of the pit.

When the pit is cleared of ash, airborne particulate is to be minimized by wetting or mixing the ashes with dirt.

No burning is authorized during the night or on Sundays or holidays, except in unusual situations; OR when there is rain; or, usually, for at least one day following the passage of a cold front.

During an air pollution episode, such as an air pollution alert/warning/emergency declared by proper authorities, the ACD is not to be operated. An air pollution episode occurs when the air contaminant concentration in an area is great enough to cause danger to public health.

Prevailing winds during operation must be away from the major portion of residential population.

Figure 1 – Site Preparation

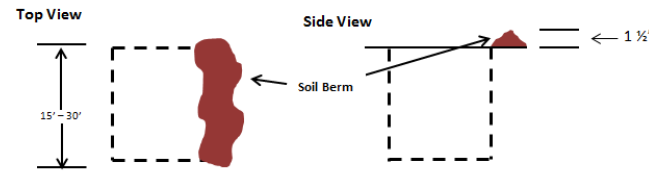


Figure 2 – Air Curtain Destructor (ACD) Set up

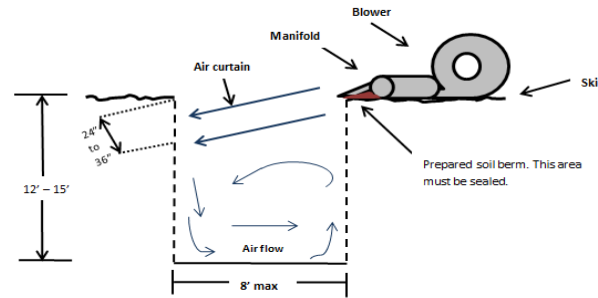


Figure 3 – Cross-section of Pit and ACD

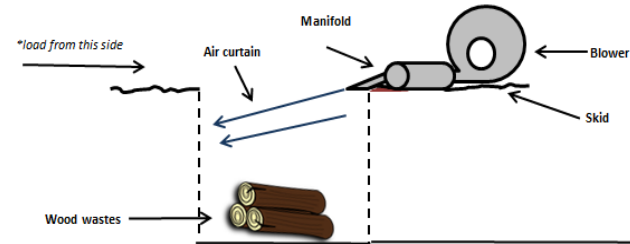


Figure 4 – Profile of Pit and ACD

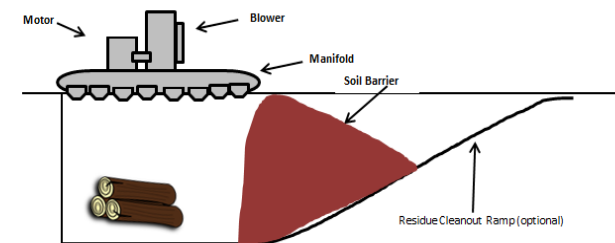
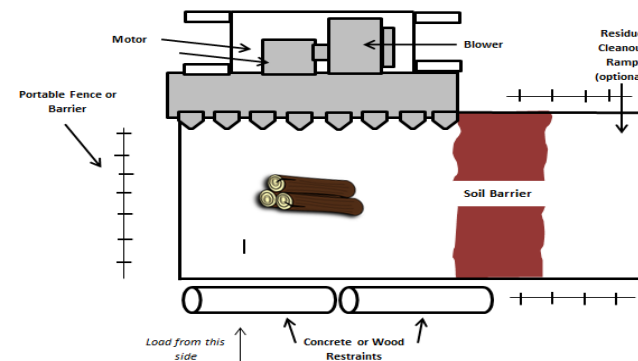


Figure 5 – Plan View of Pit and ACD



Air Curtain Destructor:

A Quick Reference Guide to achieve compliance with Georgia's Air Curtain Destructor (ACD) Regulations



Photo courtesy of AirBurners, INC.

Do not operate an ACD without the proper Georgia Forestry Commission (GFC) **Burn Permit**

Always obtain a Burn Permit

Call the GFC County Unit or

Apply online:

www.gfc.state.ga.us/online-permits

(enter your county, 'ACD', and phone number; then submit required information)

At all times, adhere to all local ordinances and regulations regarding use of an air curtain destructor.

No more than one ACD can be operated within a ten acre area at one time.

A damaged ACD with an air duct or manifold that cannot pass an even flow of air across the top of the pit is not authorized.

The ACD must be operated to prevent air, land or water pollution, safety/health hazards, or nuisances.

The amount of dirt/soil on or in the material being burned must be minimized.

Operating Procedures

1) Site Location and Preparation

-Select a site which will likely have a low water table, can be easily excavated and is no less than 300 feet from occupied structures.

2) Pit Preparation

-Excavate the pit using either a front-end loader or backhoe. The pit dimensions are 8 feet wide x 12-15 feet deep x 15-30 feet long (pit length depends on length of ACD manifold). In no case should the 8 feet width be exceeded.

-The pit must be excavated with at least three vertical sides in soil capable of maintaining vertical walls of 15 feet depth with out failure. Additional wall support may be necessary. Caution must be exercised to insure that walls are not undercut during excavations.

-If a front-end loader is used for the excavation, the end used for travel must be filled in with dirt beginning at the end of the manifold and filling up the ramp. (See Figure 4)

3) ACD Manifold Set up

-Using a small berm of soil (1 to 1/2 feet high) place the manifold (plenum and nozzles) such that the manifold is properly supported and the space between the manifold and ground is sealed. Rotate the manifold until the air curtain will be directed at an imaginary horizontal line 24 to 36 inches below the top of the opposite wall. Slide the skid containing the blower and motor into place and connect to manifold. (See Figure 2)

4) Ignition Procedures

-Get a Burn Permit from the GFC

-Load the pit half full with the homogeneous mixture of trees, logs and large brush. Douse the wood with 1/2 gallon of fuel oil putting the majority of the fuel oil on the wood at the front center side of the pit. Ignite the wood at the same point. Allow sufficient time for the fire to take hold before introducing any air from the ACD. As the fire grows in intensity, gradually bring the blower up to the optimum speed (generally between 1,100 and 1,400 RPM, depending on the size, type and make of the blower).



Do not use tires or highly volatile solvents such as mineral spirits, gasoline, etc. for ignition.

Operating Procedures

(continued)

5) Loading Procedure

-Once the fire reaches full intensity, successive intermittent charging may begin.

-The intervals between charges may be determined by observing the burning rate. Generally, if the fire is kept at its maximum intensity, it will keep one man, operating a front-end loader or clamshell bucket constantly busy. The charges should be alternated between light and heavy material. The material should be charged toward the rear of the pit under the ACD manifold.

-The pit should not be overloaded; that is the material should not be piled up so high that it will protrude above the air curtain. Also, no materials should extend outside the boundaries of the pit and air curtain where sufficient air is not available from the nozzles.

6) Maintenance and Safety Requirements

-Ash removal is required in order to maintain efficient and proper combustion. Ashes should not be allowed to build up in the pit to higher than 1/3 the pit depth or to the point where they begin to impede combustion and are blown out of the pit, whichever occurs first.

-If spalling, "cave off" occurs during operation, a new pit must be constructed and the existing pit filled with soil.

-Any accumulation of water in the pit must be removed prior to operation.

-For reasons of public safety, a fence or barrier surrounding the combustion pit is recommended.

-A "stop guide" or restraint must be provided at the loading side of the pit in order to keep the loader from getting too close to the pit during the charging operation.

NOTE:

Only wood wastes consisting of trees, logs, large brush and stumps relatively free of soil may be burned. Leaves, sawdust, other densely packed wood wastes, paper (any type), chemically treated, coated or impregnated wood CANNOT be burned.