



OFFICE OF EMERGENCY MANAGEMENT

HAZARD MITIGATION PLAN

Serving Gwinnett County and the cities and towns of:

Auburn
Berkeley Lake
Braselton
Buford
Dacula

Duluth
Grayson
Lawrenceville
Lilburn
Norcross

Peachtree Corners
Snellville
Sugar Hill
Suwanee

Gwinnett County, Georgia

HAZARD MITIGATION PLAN

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Plan Mission

The key purposes of the Gwinnett County Multi-Jurisdictional Hazard Mitigation Plan (HMP) include the following:

- Involve members of the county, cities, townships, public, and other agencies to draft and adopt a multi-jurisdictional mitigation plan that serves as the blueprint for future development and preparedness activities across the county.
- Identify risks and hazards that may affect Gwinnett County through a systematic hazard identification and risk assessment process.
- Prioritize loss reduction and emergency preparedness activities for disasters.
- Identify areas within Gwinnett County that may be vulnerable to various hazards.
- Develop strategies and the best practices to avoid and mitigate the impact of identified hazards.

Plan Organization

The scope of the HMP encompasses all areas of Gwinnett County, including all cities and townships. The HMP will identify all natural and technological hazards that could threaten life and property in these communities. The scope of this HMP includes both short-term and long-term mitigation strategies, implementation, and possible sources of project funding.

In addition, the HMP contains the following information:

- The vision of mitigation in the community
- A profile of Gwinnett County, its geography, history, physical features, and other community indicators
- The planning process and the involvement of all cities, townships, state and federal governments, the public, industry, and other community players
- Documentation of Gwinnett County's past and predicted exposure to natural hazards, including risks with the potential to impact critical infrastructure and anticipated losses resulting from such an event
- An overview of Gwinnett County's capabilities to implement hazard mitigation goals, objectives, and policies that will effectively mitigate risks to the community
- Procedures for maintaining an effective, long-range HMP and the strategy to implement it
- An assessment of Gwinnett County's current policies, goals, and regulations pertaining to hazard mitigation
- Critical facilities information
- Documentation of the process

Plan Financing

The Gwinnett County Office of Emergency Management sponsored the development of this HMP through the support of the Gwinnett County Board of Commissioners. This HMP was prepared under the direction of the Gwinnett County Multi-Jurisdictional Hazard Mitigation Steering Committee

(HMSC), a group representing a diverse cross-section of departments and agencies, with the aim of fulfilling the requirements of the Federal Disaster Mitigation Act of 2000. For additional information, please contact the Gwinnett County Office of Emergency Management.

Plan Participation

This HMP will be updated and maintained by Gwinnett County Emergency Management in order to continually address hazards determined to be of high and moderate risk, as detailed in the vulnerability assessment for Gwinnett County. Other hazards that pose a low or negligible risk will continue to be evaluated for future updates to the HMP; however, they may not be fully addressed until they are determined to be of high or moderate risk. The geographic scope for the HMP includes all incorporated and unincorporated areas of Gwinnett County.

All communities were invited to formally participate on the committee but not all attended specific meetings. All communities were provided with information and draft materials throughout the process and requested to comments and ask questions along the way, offering their input and participation by proxy, email and/or phone conversation.

*The term “all” refers to and includes the City of Auburn, City of Berkeley Lake, City of Buford, City of Dacula, City of Duluth, City of Grayson, City of Lawrenceville, City of Lilburn, City of Norcross, City of Peachtree Corners, City of Snellville, City of Sugar Hill, City of Suwanee, City of Loganville (Opted out for Walton County’s Plan Appendix B Page B-39), Town of Braselton, and Gwinnett County.

Gwinnett County utilized grant funding through the Hazard Mitigation Grant Program (HMPG) to help develop and guide the HMSC and participating jurisdictions through the planning process. The table below contains a list of Gwinnett County Multi-Jurisdictional HMSC members:

**Table ES-I
Gwinnett County Multi-Jurisdictional HMSC Members**

Name	Title	Organization
Greg Swanson	Director	Gwinnett County Office of Emergency Management
Kevin Hill	Emergency Management Specialist	Gwinnett County Office of Emergency Management
Kimberly Angel	Hazard Mitigation Planning Specialist	Georgia Emergency Management Agency
Buck Buchanan	Director of Emergency Management	Georgia Gwinnett College
Mark Reiswig	Director of Emergency Preparedness	Gwinnett, Newton, Rockdale Public Health
Misty Aguilar	Sr. Director, Human resources and Facilities	Gwinnett County Chamber of Commerce
Allan Chapman	Director	Gwinnett County Department of Transportation
Brandon Harris	Dams and Stormwater Design Engineer III	Gwinnett County Department of Water Resources
Fred Cephas	Assistant Fire Chief	Gwinnett County Fire and Emergency Services
Wayne Rikard	Police Chief	Gwinnett County School Police
Brian Hudson	Coordinator of School Safety	Gwinnett County Schools

Name	Title	Organization
Chief Butch Ayers	Police Chief	Gwinnett County Police Department
J.D. McClure	Major, Chief of Staff	Gwinnett County Police Department
Matthew Puckett	Division Director - Information Security, Information Technology Services	Gwinnett County Information Technology
Mark Patterson	Deputy Department Director	Gwinnett County Parks and Recreation
Joel Rodriguez	Inspections Manager	Gwinnett County Planning and Development
Alex Mitchem	City Administrator	City of Auburn
Pat Chapman	Deputy City Administrator	City of Berkeley Lake
Jennifer Scott	Manager	Town of Braselton
Gentry Wade	Department of Public Safety / Emergency management	City of Buford
Dan Robinson	Senior Planner	City of Duluth
Dan Preuhs	Director of Public Works	City of Grayson
Barry Mock	Director of Public Works	City of Lawrenceville
Scott Bennett	Police Captain	City of Lilburn
Carl Morrow	Fire Chief	City of Loganville
Steve Cousineau	Police Captain	City of Norcross
Greg Ramsey	Director of Public Works	City of Peachtree Corners
John Mckinney	Police Lieutenant	City of Snellville
Melisa Arnold	City Clerk Administrative Manager	City of Snellville
Joe Appling	Public Works Supervisor	City of Sugar Hill
James Miller	Public Works Director	City of Suwanee

Interagency and Intergovernmental Coordination

The geographic scope for the HMP includes the following list of all incorporated and unincorporated areas of Gwinnett County:

- City of Auburn
- City of Berkeley Lake
- City of Buford

- City of Dacula
- City of Duluth
- City of Grayson
- City of Lawrenceville
- City of Lilburn
- City of Norcross
- City of Peachtree Corners
- City of Snellville
- City of Sugar Hill
- City of Suwanee
- Town of Braselton
- City of Loganville (Opted out of Gwinnett Counties HMP for Walton Counties HMP, See Appendix B page B-39)

Hazards Identified

The following hazards have been identified as having the potential to significantly impact Gwinnett County. Hazards are listed according to their likelihood of occurrence and the local hazard rating. Detailed information regarding each hazard can be found in **Section 3, Risk and Vulnerability Assessment**.

Natural Hazards

- Severe Thunderstorms/Windstorms / Lightning
- Tornadoes
- Flooding
- Winter Storms
- Drought
- Tropical Cyclones / Hurricanes
- Wildfires
- Earthquakes

Technological Hazards

- Hazardous Materials
- Epidemics/Pandemics
- Terrorism
- Dam Failure
- Cyber Security

Plan Goals

The following goals and objectives form the basis of this plan and summarize what the Gwinnett County HMSC will accomplish as a result of implementing this plan.

- Maximize the use of all resources by promoting intergovernmental coordination and partnerships in the public and private sectors.
- Harden the communities against the impacts of disasters through the development of new mitigation strategies and strict enforcement of current regulations that have proven effective.
- Reduce and, where possible, eliminate repetitive damage and loss of life and property caused by disasters.
- Raise community awareness about potential hazards and the need for community preparedness.

Mitigation Goals, Objectives and Strategy Organization

This plan serves as our communities outline for evaluating hazards, identifying resources and capabilities, selecting appropriate actions, and developing and implementing mitigation measures to eliminate or reduce future damage from those hazards in order to protect the health, safety, and welfare of residents in our community.

Mitigation forms, or should form, the very foundation of every emergency management agency. The prevention of disasters in communities, as well as emergency management agencies that adopt mitigation practices in an effort to reduce, minimize or eliminate hazards in their community, have found the vision for the future of emergency management. The Federal Disaster Mitigation Act of 2000 has set the benchmark and outlines the criteria for communities with the vision to implement hazard mitigation practices in their communities.

Gwinnett County and its cities and townships realize the benefits of developing and implementing mitigation plans and strategies in the county. Gwinnett County elected officials, public safety organizations, planners and many others have proven that by working together toward the development and implementation of this plan, they have the vision to implement mitigation practices, thereby reducing the loss of life and property in their communities.

Plan Implementation

The Gwinnett County HMSC process is managed by the Gwinnett County Office of Emergency Management. Upon completion, the HMP will be submitted to the Georgia Emergency Management Agency (GEMA) and then to the Federal Emergency Management Agency (FEMA) for approval. Once FEMA has approved the HMP, the Gwinnett County Board of Commissioners and all incorporated cities will formally adopt the plan by resolution, in accordance with the Federal Disaster Mitigation Act of 2000.

Each jurisdiction participating in this HMP is responsible for implementing specific mitigation actions through their individual jurisdiction mitigation action plans, located in Section 6, and as prescribed in the mitigation strategies. In each mitigation strategy, every proposed action is assigned to a specific local department and/or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed and without altering the broader focus of the countywide HMP. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process.

In addition to the assignment of a local lead department or agency, an implementation time period or a specific implementation date has been assigned in order to assess whether actions are being implemented in a timely fashion. As necessary, Gwinnett County and its participating jurisdictions will seek outside funding sources to implement mitigation projects in both the pre-disaster and post-disaster environments. When applicable, potential funding sources have been identified for proposed actions listed in the mitigation strategies.

I.1 Hazard Mitigation

Disaster Mitigation Act of 2000: To support the expanded role of emergency management, Congress passed the Disaster Mitigation Act of 2000 (DMA2K), commonly known as the Stafford Act. Section 322, an amendment to the Act, deals with the development of local HMPs. DMA2K was signed into law on October 30, 2000 (Public Law 106-390). The Interim Final Rule for planning provisions (44 CFR Part 201) was published in the Federal Register in February 2002, and again in October 2002. Local hazard mitigation planning requirements are implemented in 44 CFR Part 201.6. The purpose of DMA2K is to amend the Stafford Act to establish a national program for pre-disaster mitigation, streamline administration of disaster relief, and control federal costs of disaster assistance. Congress envisioned that implementation of these new requirements would result in the following key benefits:

- Reduction of loss of life and property, human suffering, economic disruption and disaster costs
- Prioritization of hazard mitigation planning at the local level, with an increased emphasis placed on planning and public involvement, assessing risks, implementing loss reduction measures, and ensuring critical services/facilities survive a disaster
- Establishment of economic incentives, awareness and education to state, tribal and local governments that result in forming community-based partnerships, implementing effective hazard mitigation measures, leveraging additional non-federal resources, and establishing commitments to long-term hazard mitigation efforts

The DMA2K legislation requires all local, county and tribal governments to develop an HMP for their respective communities in order to be eligible to receive Hazard Mitigation Grant Program (HMGP) funds. Each community's HMP must be submitted to, and approved by, their respective state and FEMA. DMA2K requires that each plan must, at minimum, address or include the following general items:

- Plan adoption by all jurisdictions
- Planning process including public involvement
- Hazard identification and risk assessment
- Mitigation strategy
- Plan implementation and maintenance procedures
- Any specific state requirements

Hazard Mitigation Grant Program: In 1988, Congress established the Hazard Mitigation Grant Program (HMGP) by enactment of Section 404 of the Stafford Act. In 2002, regulations pertaining to the HMGP to reflect the DMA2K of 2000 were changed by 44 CFR Part 206, Subpart N. An Interim Final Rule was issued in October 2002, wherein the final compliance date was set to November 1, 2004. The HMGP assists states and local communities to implement long-term hazard mitigation measures by providing federal funding after a major disaster declaration. Eligible applicants include state and local agencies, tribal organizations and certain non-profit organizations. Examples of typical HMGP projects include the following:

- Establish school shelter-in-place programs

- Structural retrofitting to minimize damages from high winds, earthquake, flood, wildfire or other natural hazards
- Elevation of flood-prone structures
- Outfitting critical facilities with generators

Pre-Disaster Mitigation Program: The Pre-Disaster Mitigation Program (PDM) was authorized by Section 203 of the 2000 Stafford Act, 42 USC (Public Law 106-390). Funding for the program is provided through the National Pre-Disaster Mitigation Fund to assist state, local and tribal governments in implementing cost-effective hazard mitigation activities that complement a comprehensive mitigation program. The following two types of grants are offered under the PDM Program:

- Planning Grants – Allocated funds to be used for HMP development.
- Competitive Grants – Distributed funds using a competitive application process wherein all state, local and tribal governments interested in obtaining grant funds can submit applications to be reviewed and ranked by FEMA using pre-determined criteria.

The minimum eligibility requirements for jurisdictions receiving competitive PDM funds include the following:

- Participation in the National Flood Insurance Program (NFIP)
- Must not be suspended or on probation from the NFIP
- Must have a FEMA-approved HMP

Flood Mitigation Assistance Program: The Flood Mitigation Assistance Program (FMA) was created as part of the National Flood Insurance Reform Act (NFIRA) of 1994 (42 U.S.C. 4101) with the goal of reducing or eliminating claims under the NFIP. Funding for the program is provided through the National Flood Insurance Fund. FMA provides funding to assist states and communities in implementing measures to:

- Reduce the number of repetitively or substantially damaged structures and the associated claims on the National Flood Insurance Fund.
- Encourage long-term, comprehensive mitigation planning.
- Respond to the needs of communities participating in the NFIP to expand their mitigation activities beyond floodplain development review and permitting.
- Complement other federal, state and local mitigation programs with similar long-term mitigation goals.

The following three types of grants are available under FMA:

- FMA Planning Grants are available to states and communities to prepare Flood Mitigation Plans. NFIP-participating communities with approved Flood Mitigation Plans can apply for FMA Project Grants.
- FMA Project Grants are available to states and NFIP participating communities to implement measures to reduce flood losses.
- Technical Assistance Grants are a part of Project Grants. Up to 10 percent of the Project Grants funding is made available to the states for technical assistance. These funds may be used by the state to help administer the program.

The NFIRA stipulates that to be eligible to receive an FMA grant, a community must have a FEMA-approved mitigation plan and must be participating in the NFIP. Examples of eligible FMA projects include the following:

- Acquisition of NFIP-insured structures and underlying real property.
- Demolition of NFIP-insured structures on acquired or restricted real property.
- Minor physical flood mitigation projects that do not duplicate flood-prevention activities of other federal agencies lessen the frequency or severity of flooding, and decrease predicted flood damages in local flood areas. These include modification of existing culverts and bridges, installation or modification of floodgates, stabilization of stream banks, and creation of small debris or flood/storm water retention basins. Construction or improvement of major structural flood-control structures such as dikes, levees, dams, seawalls, groins and jetties, and projects consisting of channel widening or stream alignment are not eligible, as indicated in Section 1366.
- Other activities that bring an NFIP-insured structure into compliance with the authorized statutory floodplain management requirements of 44 CFR Part 60.3.
- Relocation of NFIP-insured structures from acquired or restricted real property to sites not prone to flood hazards.
- Elevation of NFIP-insured residential structures, and elevation or dry flood proofing of NFIP-insured non-residential structures, in accordance with 44 CFR Part 60.3.

1.2 Incorporating Mitigation into Existing Planning Mechanisms

Data (maps/charts) and other information from the Gwinnett County 2040 Unified Plan were incorporated into the updated hazard mitigation plan. Graphics from the 2040 Unified plan can be found throughout Section 2. The principles embodied in this plan have been incorporated to the extent possible in other countywide planning initiatives. Capital improvement plans include additional capabilities such as additional fire stations, first responder training facilities, and money for additional support services including an alternate 911 center. Each participating jurisdiction will determine additional implementation procedures when appropriate. This includes integrating the requirements of the HMP into other local planning documents, processes, or mechanisms such as the following:

- Gwinnett County 2040 Unified Plan adopted February 5, 2019
- Gwinnett County Capital Improvement Plans 2018-2022
- Growth Management Plans Gwinnett County and Local Municipalities Planning and Development
- Land Use Plans Gwinnett County Planning and Development to include flood mapping
- Ordinances, Resolutions and Regulations to include Gwinnett County and Local Municipalities
- Continuity of Operations Plans from Gwinnett County and Local Municipalities

Opportunities to integrate the requirements of this HMP into other local planning mechanisms will continue to be identified through future meetings of the HMSC and through the five-year review process.

The primary means for integrating mitigation strategies into other local planning mechanisms will be through the revision, update, and implementation of each jurisdiction's individual action plans that require specific planning and administrative tasks (e.g., plan amendments, ordinance revisions, and capital improvement projects).

The members of the HMSC will remain charged with ensuring that the goals and strategies of new and updated local planning documents for their jurisdictions and/or agencies are consistent with the goals and actions of the HMP, and will not contribute to increased hazard vulnerability in Gwinnett County or its participating municipalities.

During the planning process for new and updated local planning documents—such as a comprehensive plan, capital improvements plan, or emergency management plan—Gwinnett County will provide a copy 5 through 1-6 of the HMP to the appropriate parties and recommend that all goals and strategies of new and updated local planning documents be consistent with, and support the goals of, the HMP and will not contribute to increased hazards in the affected jurisdiction(s).

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 HMP is deemed by the Gwinnett County HMSC to be the most effective and appropriate method to ensure implementation of local hazard mitigation actions at this time.

1.3 Mitigation Planning Process

Local hazard mitigation planning is a process of organizing community resources, identifying and assessing hazard risks, and determining how to minimize or manage those risks. This process results in an HMP that identifies specific mitigation actions, each designed to achieve both short-term objectives and a long-term community vision. To ensure the functionality of mitigation actions, responsibility is assigned to a specific agency, department, or individual, along with a schedule for implementation. Plan maintenance procedures are established to monitor implementation progress and the evaluation and enhancement of plan. These plan maintenance procedures ensure that Gwinnett County's HMP remains a current, dynamic, and effective planning document over time and offers the following benefits:

- Saving lives and property
- Saving money
- Facilitating recovery following disasters
- Reducing future vulnerability through wise development and post-disaster recovery and reconstruction
- Expediting the receipt of pre- and post-disaster grant funding
- Demonstrating a commitment to improve community health and safety

Typically, mitigation planning has the potential to produce long-term and recurring benefits by breaking the repetitive cycle of disaster loss. A core assumption of hazard mitigation is that pre-disaster investments will significantly reduce the demand for post-disaster assistance by lessening the need for emergency response, repair, recovery, and reconstruction. Mitigation practices will enable residents, businesses, and industries to recover in the wake of a disaster to ensure the community economy is re-established quicker and with less interruption.

The benefits of mitigation planning go beyond reducing hazard vulnerability. Measures such as land acquisition or regulation in known hazard areas can help achieve community goals, such as preserving open space, maintaining environmental health, and enhancing recreational opportunities. It is vitally important that mitigation planning be integrated with other planning efforts, and that mitigation strategies are congruent with other community goals or initiatives.

In preparing this HMP, Gwinnett County utilized a multi-jurisdictional planning process consistent with the one recommended by FEMA. A local mitigation plan review tool, found in Appendix D, demonstrates how the HMP meets the regulation in 44 CFR §201.6 and also offers GEMA and FEMA Mitigation Planners an opportunity to provide feedback to the community. Through the use of the local mitigation plan review tool, a summary of compliance with FEMA’s current minimum standards of acceptability with the Disaster Mitigation Act of 2000 is provided, and notes the location where each requirement is met within the plan. These standards are based upon FEMA’s Interim Final Rule, as published in the Federal Register on February 26, 2002, in Part 201 of the Code of Federal Regulations (CFR). A detailed review of the 2015 Georgia Hazard Mitigation Plan was conducted as part of this update. This was done to ensure that consistency between this plan and the State-level document. Where appropriate, there are cross-references to the State HMP, and in some cases material is integrated into the County Plan. Technical data, neighboring Counties Hazard Mitigation Plans, and hazard studies as well as reports from authorities were used to build this plan.

Following the approval of the 2020 HMP, the HMSC collaborated to develop and implement an annual process for collecting and analyzing information pertinent to the five-year update of the HMP. This annual data collection has helped to streamline the HMP update process, while also keeping HMSC members and all participating jurisdictions actively engaged throughout the year. All jurisdictions and county departments are asked to submit relevant hazard data to the Gwinnett County Office of Emergency Management between June and July each year.

All cities were notified in May 2018 of the requirement concerning the five-year update of the HMP and process. The Cities of Auburn, Berkeley Lake, Buford, Dacula, Duluth, Grayson, Lawrenceville, Lilburn, Norcross, Peachtree Corners, Snellville, Sugar Hill, and Suwanee; the Town of Braselton; and Gwinnett County all have a documented commitment to the planning process and have been active participants throughout the planning update process. The City of Loganville opted out of Gwinnett County’s plan in favor of Walton County’s plan; see email in Appendix B page B-39 for email correspondence. Georgia Gwinnett College and Gwinnett County Public Schools has also been an active participant in the update process.

Gwinnett County Multi-Jurisdictional HMSC Members

Name	Title	Organization
Greg Swanson	Director	Gwinnett County Office of Emergency Management
Kevin Hill	Emergency Management Specialist	Gwinnett County Office of Emergency Management
Kimberly Angel	Hazard Mitigation Planning Specialist	Georgia Emergency Management Agency
Lucy Herring	Hazard Mitigation Planning Specialist	Georgia Emergency Management Agency/ Homeland Security
Buck Buchanan	Director of Emergency Management	Georgia Gwinnett College
Mark Reiswig	Director of Emergency Preparedness	Gwinnett, Newton, Rockdale Public Health
Misty Aguilar	Sr. Director, Human resources and Facilities	Gwinnett County Chamber of Commerce
Allan Chapman	Director	Gwinnett County Department of Transportation
Brandon Harris	Dams and Stormwater Design Engineer III	Gwinnett County Department of Water Resources

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Name	Title	Organization
Fred Cephas	Assistant Fire Chief	Gwinnett County Fire and Emergency Services
Wayne Rikard	Police Chief	Gwinnett County School Police
Brian Hudson	Coordinator of School Safety	Gwinnett County Schools
Chief Butch Ayers	Police Chief	Gwinnett County Police Department
J.D. McClure	Major, Chief of Staff	Gwinnett County Police Department
Matthew Puckett	Division Director - Information Security, Information Technology Services	Gwinnett County Information Technology
Mark Patterson	Deputy Department Director	Gwinnett County Parks and Recreation
Joel Rodriguez	Inspections Manager	Gwinnett County Planning and Development
Alex Mitchem	City Administrator	City of Auburn
Pat Chapman	Deputy City Administrator	City of Berkeley Lake
Jennifer Scott	Manager	Town of Braselton
Gentry Wade	Department of Public Safety / Emergency management	City of Buford
Dan Robinson	Senior Planner	City of Duluth
Dan Preuhs	Director of Public Works	City of Grayson
Barry Mock	Director of Public Works	City of Lawrenceville
Scott Bennett	Police Captain	City of Lilburn
Carl Morrow	Fire Chief	City of Loganville (Opted out of plan)
Steve Cousineau	Police Captain	City of Norcross
Greg Ramsey	Director of Public Works	City of Peachtree Corners
John Mckinney	Police Lieutenant	City of Snellville
Melisa Arnold	City Clerk Administrative Manager	City of Snellville
Joe Appling	Public Works Supervisor	City of Sugar Hill
James Miller	Public Works Director	City of Suwanee

The HMSC and Gwinnett County participated in the general session meeting that was open and attended by the public on July 13, 2018, at the Gwinnett Justice and Administration Center, and have worked collectively over the past months to gather data that included known hazards, flood prone areas, areas of vulnerability, existing mitigation plans and projects, and technical information for the plan. Outreach to each jurisdiction was conducted over the same timeframe. In order to give surrounding jurisdictions an opportunity to review and provide input into the updated plan, Gwinnett County solicited input from the surrounding counties that border Gwinnett County via email on 06/18/2018 (See email in Appendix B). Directors from Forsyth County, Hall County, Jackson County, Barrow County, Walton County, Rockdale County, Dekalb County and Atlanta-Fulton County were all invited to participate. No surrounding County Directors or members from surrounding Emergency Management agencies attended and no information was collected. Subsequent meetings have been held in an effort to ensure that all information is correct, and that all agencies, organizations, and the public’s input were included as presented. The final two meetings were also open to the public for review and comment and the final meeting was held after regular business hours. Resolutions documenting each jurisdiction’s support for the HMP are included in this plan. In all, the plan update process was conducted over the course of eighteen months, from July of 2018 to August 2019. Listed below is a chronology of meetings and events conducted during that timeframe.

**Table I-1
Calendar of Events**

Date	Task
January – June 2018	2018 data collection process critical facilities
July 13, 2018	Kickoff meeting with the HMSC to begin mitigation update process Public meeting #1 at Gwinnett Justice and Administration Center
Aug 3, 2018	Meeting minutes from kickoff meeting and public meeting #1
July – Nov 2018	Multijurisdictional outreach via phone calls and electronic surveys to discuss mitigation action plans for each jurisdiction
December 13, 2018	HMSC Meeting #2 at Gwinnett County Office of Emergency Management Identify and update county actions
December 20, 2018	Meeting minutes from HMSC meeting #2
January – February 2019	Updated base list of hazards and hazard profiles
February 11, 2019	One-on-one Meeting with City of Berkeley Lake
February 14, 2019	One-on-one Meeting with City of Duluth
February 15, 2019	One-on-one Meeting with City of Braselton
February 20, 2019	One-on-one Meeting with City of Snellville
February 27, 2019	One-on-one Meeting with City of Norcross
March 6, 2019	One-on-one Meeting with City of Dacula
March 8, 2019	One-on-one Meeting with City of Lawrenceville

Date	Task
March 29, 2019	HMSC Meeting #3 at Gwinnett County Office of Emergency Management discuss section 3 Risk and Vulnerability Assessment
April 2, 2019	Meeting minutes from HMSC meeting #3
April 3, 2019	One-on-one Meeting with City of Grayson
April 4, 2019	One-on-one Meeting with City of Peachtree Corners
April 23, 2019	One-on-one Meeting with City of Auburn
May 5, 2019	One-on-one Meeting with City of Sugar Hill
May 15, 2019	One-on-one Meeting with City of Suwanee
May 23, 2019	One-on-one Meeting with City of Lilburn
June 12, 2019	One-on-one Meeting with City of Buford
July 1, 2019	One-on-one Meeting with Georgia Gwinnett College
July 12, 2019	HMSC Meeting #4 open public meeting at the Gwinnett Justice and Administration Center to discuss identified county hazards and mitigation actions for public comment.
July 29, 2019	HMSC Meeting #5 open public meeting held after business hours at the Gwinnett Justice and Administration Center to discuss the current update and take comment from citizens.

Throughout the planning update process, the HMSC reviewed and analyzed each section of the plan. Table I-2 documents and summarizes how each section was updated and revised by the HMSC.

**Table I-2
Summaries of Plan Updates and Revisions**

Section	Description
Section 1, Introduction	Revised to reflect the planning update process, including revisions to the plan and multi-jurisdictional participation.
Section 2, Planning Area Profile	The HMSC updated this section by researching available historical records incorporating the County’s background and history of establishment. The HMSC also analyzed topographical data, recent census data, as well as environmental and geological data in order to display the County’s overall composition and provide a basis for later sections of the plan to identify hazards and assess risks.
Section 3, Hazard Vulnerability Assessment	The HMSC conducted a hazard vulnerability assessment for the County beginning with hazard identification. Hazard identification procedures completed by the HMSC include: <ul style="list-style-type: none"> ▪ Reviews of the State Hazard Mitigation Plan, local and regional hazard report

Section	Description
	<p>and plans, flood ordinances, and land use regulations</p> <ul style="list-style-type: none"> ▪ Discussions with experts from Federal, State, and local agencies ▪ Reviews of collected data from past events and declared disasters ▪ Searching the internet and newspapers for hazard data and statistics <p>The HMSC profiled the identified hazards by assessing the locations or geographical areas that may be affected by each hazard. The HMSC also analyzed and documented the extent of each hazard including the potential magnitude and severity, as well as the probability of occurrence utilizing HAZUS-MH Version 2.2 SPI.</p> <p>In order to estimate potential losses, the Gwinnett County Tax Assessor’s Office was asked by the HMSC to provide the monetary values of common structure types within the County (residential, commercial, industrial, agricultural /conservation, religious non-profit, government, education, utilities and historic) and to calculate loss for unincorporated and incorporated areas. These results can be found in Appendix B titled “GEMA Worksheet #3a”</p> <p>HMSC asked Gwinnett County Planning and Development to review land use and development trends, authorities, and ordinances for inclusion in the plan.</p> <p>The HMSC also compiled a list of critical facilities by category, determined their total square footage, and calculated total structural values to determine overall risk.</p>
<p>Section 4, Community Capability Assessment</p>	<p>The HMSC examined legal documents, authorities, ordinances, and plans to determine the overall capability of Gwinnett County in terms of local government and how it affects the ability to conduct mitigation-related activities. The HMSC collaborated with the Tax Assessor’s Office, Planning and Development, and County Commissioners to collect and analyze data related to the National Flood Insurance Program (NFIP) and the Community Rating System (CRS), storm water management, floodway regulations, and the like.</p> <p>The HMSC also coordinated with all County departments, including Gwinnett County Public Schools and Buford City Schools, to assess their institutional and fiscal capabilities. The County Commissioners also provided data showcasing the County’s overall fiscal and political capabilities.</p>
<p>Section 5, Mitigation Strategies</p>	<p>To update the County’s mitigation strategies, the HMSC conducted a meeting focused entirely on reviewing and updating the goals, objectives, and actions outlined in the original publication of this plan. Each strategy was assessed on its current relevance, status (completed, deleted, or deferred), cost, and timeframe. The HMSC also addressed the following criteria questions in updating the mitigation strategies:</p> <ul style="list-style-type: none"> ▪ Do the goals and objectives identified in the previously approved plan reflect the updated risk assessment? ▪ Did the goals and objectives identified in the previously approved plan lead to mitigation projects and/or changes in policy that helped the jurisdiction(s) to reduce vulnerability? ▪ Do the goals and objectives identified in the previously approved plan support any changes in mitigation priorities?

Section	Description
	<ul style="list-style-type: none"> Are goals identified in the updated plan reflective of current State goals?
<p>Section 6, Individual Jurisdiction Mitigation Action Plans</p>	<p>This section was developed to give each jurisdiction participating in the planning update process the opportunity to take an in-depth look at their own capabilities and characteristics as they relate to mitigation and reducing the impact of disasters to their communities. Each jurisdiction was responsible for collecting census data and municipal records related to economics, demographics, and legal and regulatory capabilities. Jurisdictions were also asked to assess their critical infrastructure and values, land usage trends, and administrative and technical capabilities. This data was compiled in one-on-one meetings with the municipalities and presented to the HMSC. The HMSC then collaborated with each jurisdiction to review their capabilities and needs, and developed mitigation strategies unique to each jurisdiction in an effort to reduce vulnerabilities.</p>

To be an effective plan, input from the public is vital. The HMSC recognizes the valuable contribution that the public can provide to the contents and accuracy of this plan. As required, the HMSC conducted three public meetings in an effort to allow the public to provide comments on the plan one of those meeting being after hours to encourage participation. Minimal feedback was received from the public at large during these meetings see Appendix B for documentation. The HMSC conducted a final review workshop to review the final Draft HMP before submittal to GEMA and FEMA. Table 1-3 illustrates each jurisdiction’s level of participation and specific activities that each contributed to throughout the plan update process.

**Table 1-3
Multi-Jurisdictional Participation**

Jurisdiction	Task		
	Jurisdictional Surveys (focused on hazard identification, event history, and mitigation strategies)	One-on-one Meetings as well as Conference Calls (follow up on collected information via email to ensure accuracy of mitigation strategies)	Electronic final draft review and provision of comments and suggestions via email and phone discussions.
City of Auburn	X	X	X
City of Berkeley Lake	X	X	X
City of Buford	X	X	X
City of Dacula	X	X	
City of Duluth	X	X	X
City of Grayson	X	X	X

Jurisdiction	Task		
City of Lawrenceville	X	X	X
City of Lilburn	X	X	X
City of Norcross	X	X	X
City of Peachtree Corners	X	X	X
City of Snellville	X	X	X
City of Sugar Hill	X	X	X
City of Suwanee	X	X	X
Town of Braselton	X	X	X

Gwinnett County Emergency Management is responsible for coordinating the HMSC, as well as coordinating and monitoring the plan update process. The HMSC has selected the following activities to guide their plan maintenance strategy. Table I-4 lists these activities and the timeframe associated with each one.

**Table I-4
Plan Maintenance Strategy**

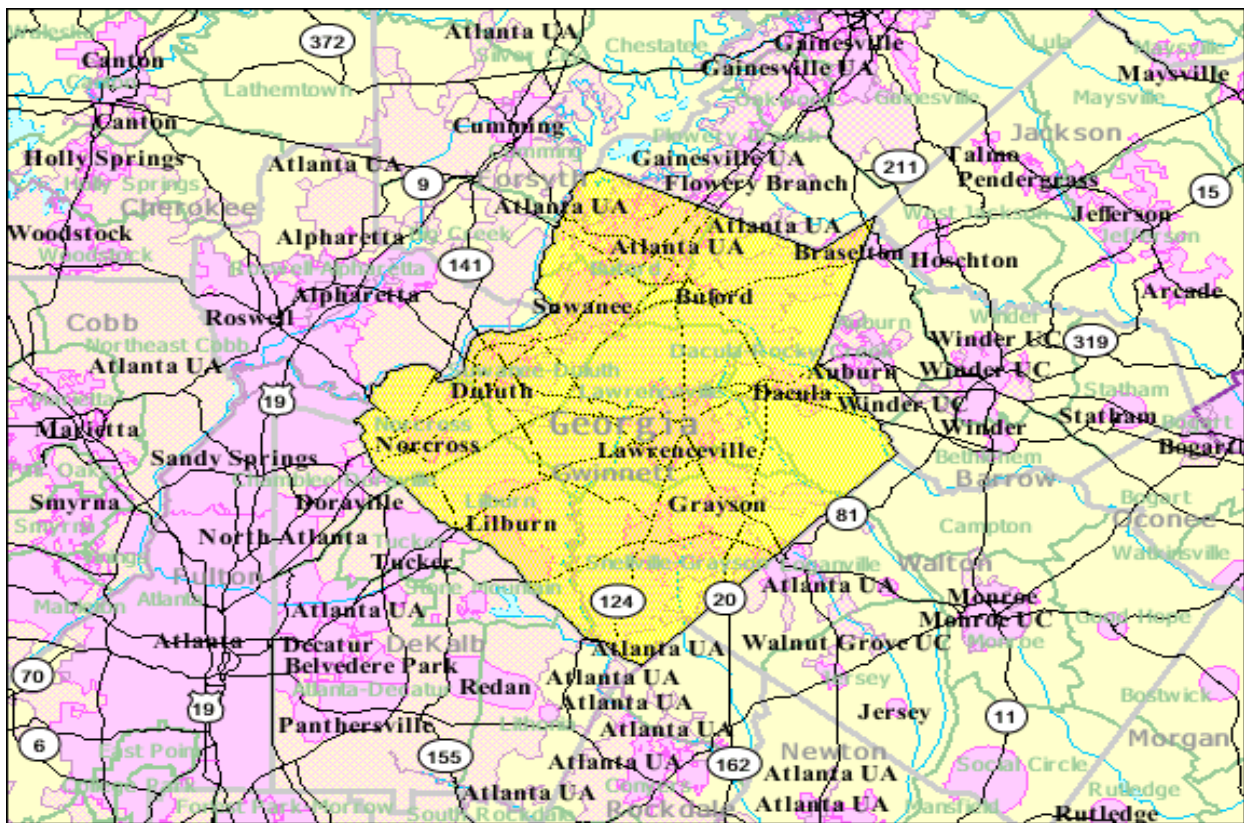
Activity	Timeframe	Responsible Department(s)
HMSC meetings	Annually	Gwinnett County Emergency Management; HMSC Participants
Plan review, revise and update (including but not limited to new hazard identification, additions/revisions to the risk assessment, and status updates to mitigation strategies, tracking implementation, assessing effectiveness)	Annually	Gwinnett County Emergency Management; HMSC Participants
Data collection pertinent to identified or new hazards and submittal to the Office of Emergency Management	Annually	Gwinnett County Emergency Management; HMSC Participants; Participating Municipalities
Mitigation strategy status update meetings for participating	Annually	Gwinnett County Emergency Management; HMSC Participants;

Activity	Timeframe	Responsible Department(s)
municipalities		Participating Municipalities
Submit the updated plan to GEMA/FEMA for review and approval	Every five years	Gwinnett County Emergency Management
Continue to provide opportunities for public involvement in plan preparation and implementation through community events, area specific meetings, county website and social media	Annually	Gwinnett County Emergency Management; HMSC Participants; Participating Municipalities

2.1 History

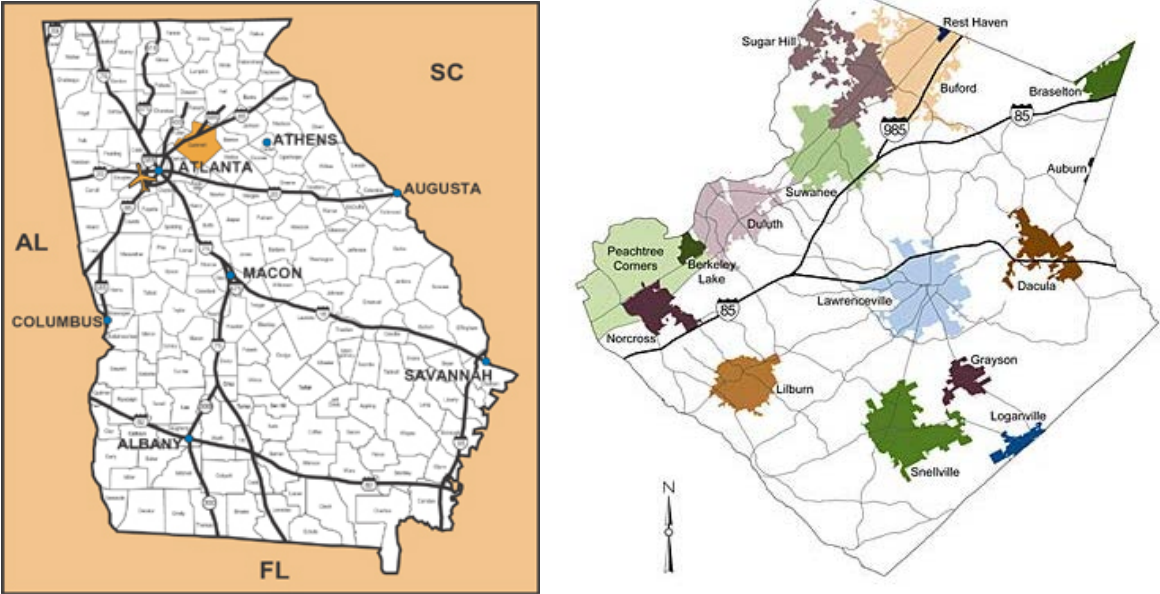
Gwinnett County is located in the northeastern part of the State of Georgia and was created on December 15, 1818 by the state legislature. The County is named after Button Gwinnett, the Georgia representative in signing the United States Declaration of Independence. The county is part of the Atlanta Metropolitan Area containing many suburbs of the City of Atlanta, located approximately 30 miles north of the city. Over the past 20 years the county has been one of the fastest growing counties in America (based on population). The county seat is Lawrenceville.

Figure 1 – Map of Gwinnett County



2.2 Topography

According to the U.S. Census Bureau, the total land area of Gwinnett County has increased from a total area of 433 square miles of land to 437 square miles of land, and four square miles of water. Adjacent counties include Forsyth, Hall, Jackson, Barrow, Walton, DeKalb, Rockdale and Fulton, all of which are also located in Georgia. The county includes part of the Chattahoochee River National Recreation Area, which is a National Protected Area.



Cities located within the county include the following:

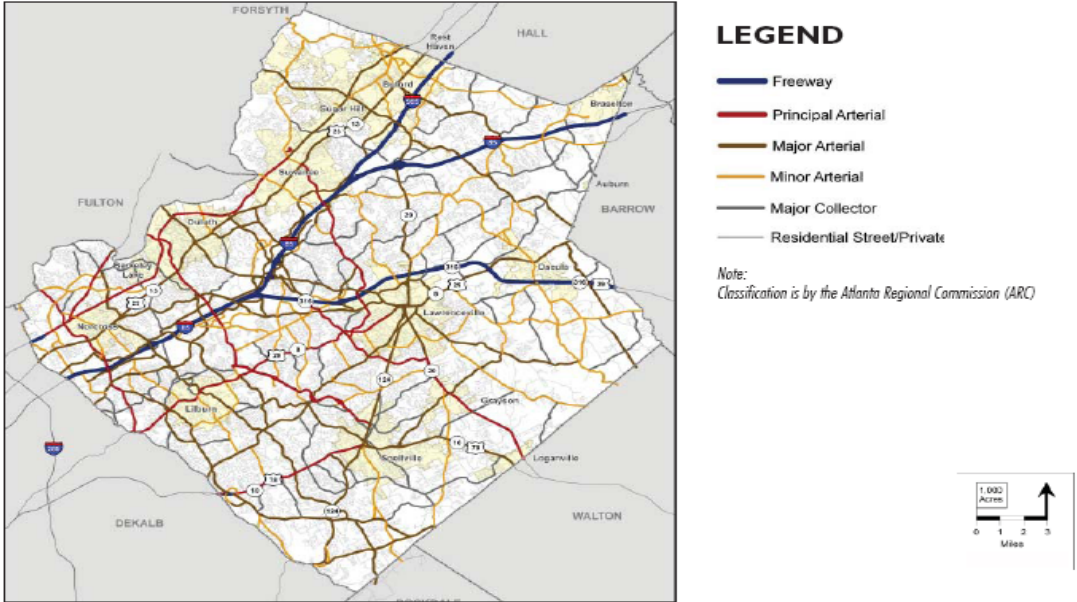
- City of Auburn
- City of Berkeley Lake
- City of Buford
- City of Dacula
- City of Duluth
- City of Grayson
- City of Lawrenceville
- City of Lilburn
- City of Norcross
- City of Peachtree Corners
- City of Snellville
- City of Sugar Hill
- City of Suwanee
- Town of Braselton

Figure 2 – Major Roads in Gwinnett County

copy can be found at www.gwinnettcountry.com, under Transportation.

volumes have been along I-85 from the DeKalb County

Figure 23: Major Roads in Gwinnett County



Major highways intersecting the county include the following:

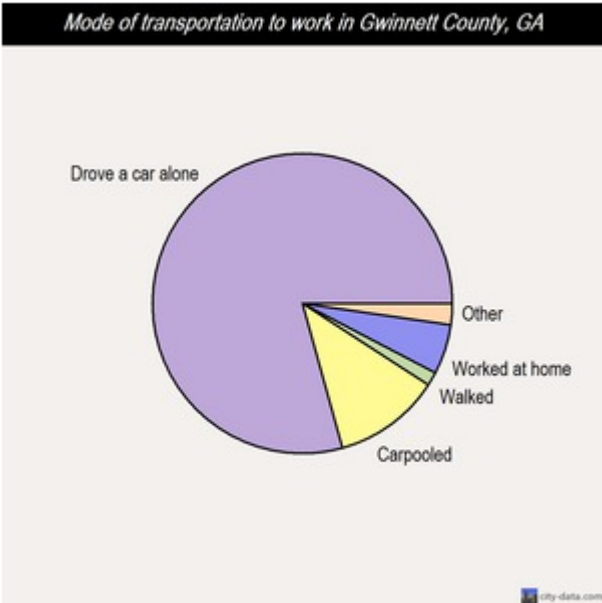
- Interstate 85
- Interstate 985
- U.S. Routes – 23, 29, 78
- State Routes – 8, 10, 13, 20, 84, 120, 124, 140, 141, 264, 316, 317, 324, 347, 365, 378,
- 403, 419

Secondary highways intersecting the county include the following:

- Arcado Road
- Beaver Ruin Road (S.R. 378)
- Bethany Church Road (S.R. 264)
- Braselton Highway (S.R. 124)
- Buford Drive (S.R. 20)
- Buford Highway (U.S. 23/S.R. 13)
- Duluth Highway (S.R. 120)
- Indian Trail-Lilburn Road
- Jimmy Carter Boulevard
- Jones Mill Road

- Lawrenceville Highway (U.S. 29/S.R. 8)
- Pleasantdale Road
- Pleasant Hill Road
- Ronald Reagan Parkway
- Scenic Highway (S.R. 124)
- Singleton Road
- Steve Reynolds Boulevard
- Stone Mountain Freeway (U.S. 78/S.R. 10)
- Sugarloaf Parkway
- University Parkway (U.S. 29/S.R. 316)

Figure 3 – Modes of Transportation to Work in Gwinnett County



Means of transportation to work:

- Drove a car alone: 308,025 (80.1 percent)
- Carpooled: 40,256 (10.5 percent)
- Bus or trolley bus: 1,205 (0.3 percent)
- Subway or elevated: 198 (0.1 percent)
- Taxicab, motorcycle or other means : 6,324 (1.6 percent)
- Bicycle: 266 (0.1 percent)
- Walked: 2,707 (0.7 percent)
- Worked at home: 25,528 (6.6 percent)

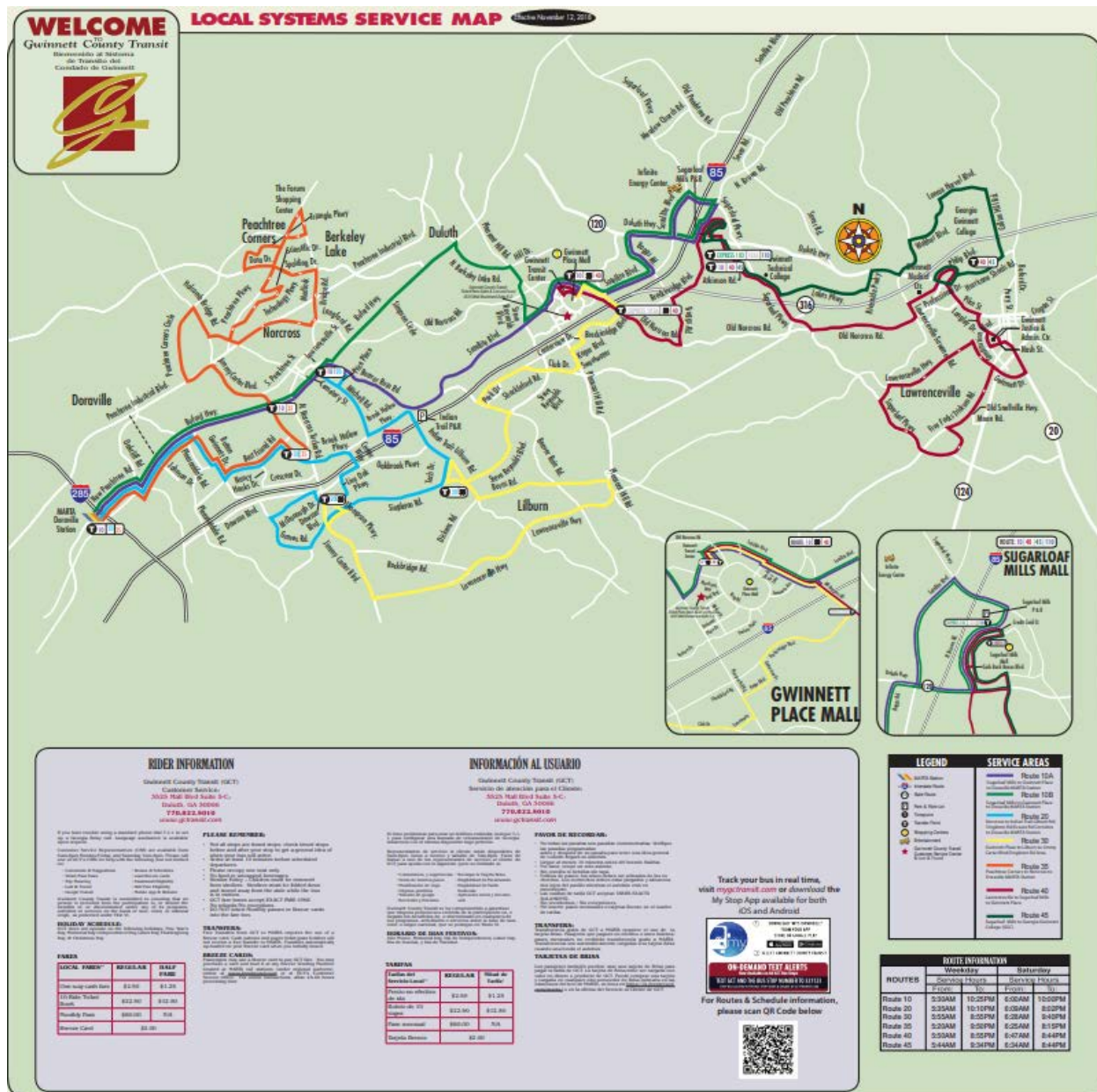
PLANNING AREA PROFILE

and most corporate jet aircraft in operation today. Gwinnett County Airport is serviced by two Fixed Base Operators (FBOs). Gwinnett Aero is located on the north side of the field and Aircraft Specialists Jet Center is located on the south side. The airport has an Air Traffic Control Tower that is in operation from 7:00am to 9:00pm year-round. At the airport, there are more than 50 aviation-related tenants, almost 200 hangars, and about 300 aircraft that are based there. Gwinnett County Airport is governed by a five member board called the Airport Authority.

The County operates its own public transportation called Gwinnett County Transit. There are also four park and ride locations located within the county. Gwinnett County Transit was formed in 2000 to provide express, local and paratransit services for the people of Gwinnett County. Express bus service operates Monday through Friday and includes six routes using the high-occupancy vehicle lanes on I-85. Park and ride lots at I-985, Discover Mills and Indian Trail have been built or upgraded to provide free and convenient parking for bus riders. Local bus service operates five routes, Monday through Saturday, connecting neighborhoods and businesses to Gwinnett County's many cultural, shopping and educational opportunities. Paratransit service for qualifying persons with disabilities operates in conjunction with the local bus service.

The express bus service provides downtown Atlanta and Gwinnett County employers with a viable transportation alternative. The buses provide first-class service each weekday for commuters traveling between three park and ride lots in Gwinnett County and downtown Atlanta. In addition, three routes from the MARTA Five Points station in downtown Atlanta serve employers located near Gwinnett Place Mall, Mall of Georgia, Discover Mills and other major employment locations in the I-85 corridor. New local bus service was implemented in late 2002. These local routes serve the major employment and activity centers in the County, with schedules designed to serve commuters, shoppers and more. The Gwinnett County 2040 Unified Plan outlines the "Connect Gwinnett Transit Plan" which provides a framework for future transit expansion and improvement in Gwinnett County, including rail and bus services to ease congestion. Major initiatives include high capacity transit and enhanced bus service. The Plan also calls for several major roadway improvements, among other projects, that enhance and preserve mobility throughout the county and to other parts of the region.

Figure 5 – Gwinnett County Local Bus Service



2.3 Climate

Gwinnett County gets 52 inches of rain per year; the U.S. average is 39. Snowfall for the county is 1 inch per year, while the average U.S. city gets 26 inches of snow annually. The number of days with any measurable precipitation is 107. On average, there are 217 sunny days per year in Gwinnett County. The July high is around 89 degrees. The January low is 32. The comfort index, which is based on humidity during the hot months, is a 64 out of 100, where higher is more comfortable. The U.S. average on the comfort index is 54. Gwinnett County has an average high temperature of 71 degrees and an average low of 48 degrees.

2.4 Water Resources

The county includes part of the Chattahoochee River National Recreation Area, which is a National Protected Area. Protection of water resources in Gwinnett County is of the utmost importance and beneficial for the entire County. To protect these valuable resources, Gwinnett County has a Water and Sewerage Authority that was established in 1970 by law. The Authority consists of five members who are residents of Gwinnett County and are appointed by the Board of Commissioners. The Authority appoints a chairman, vice-chairman, secretary and treasurer from its members.

Part of Lake Sidney Lanier is located in Gwinnett County. Lake Lanier was created in the 1950s when the U.S. Army Corps of Engineers built Buford Dam to provide flood control, power generation and recreation. It is the primary source of water for Gwinnett County. The lake has 692 miles of shoreline and is 26 miles long, covering almost 47 miles of the original riverbed. At the dam, the lake is more than 200 feet deep.

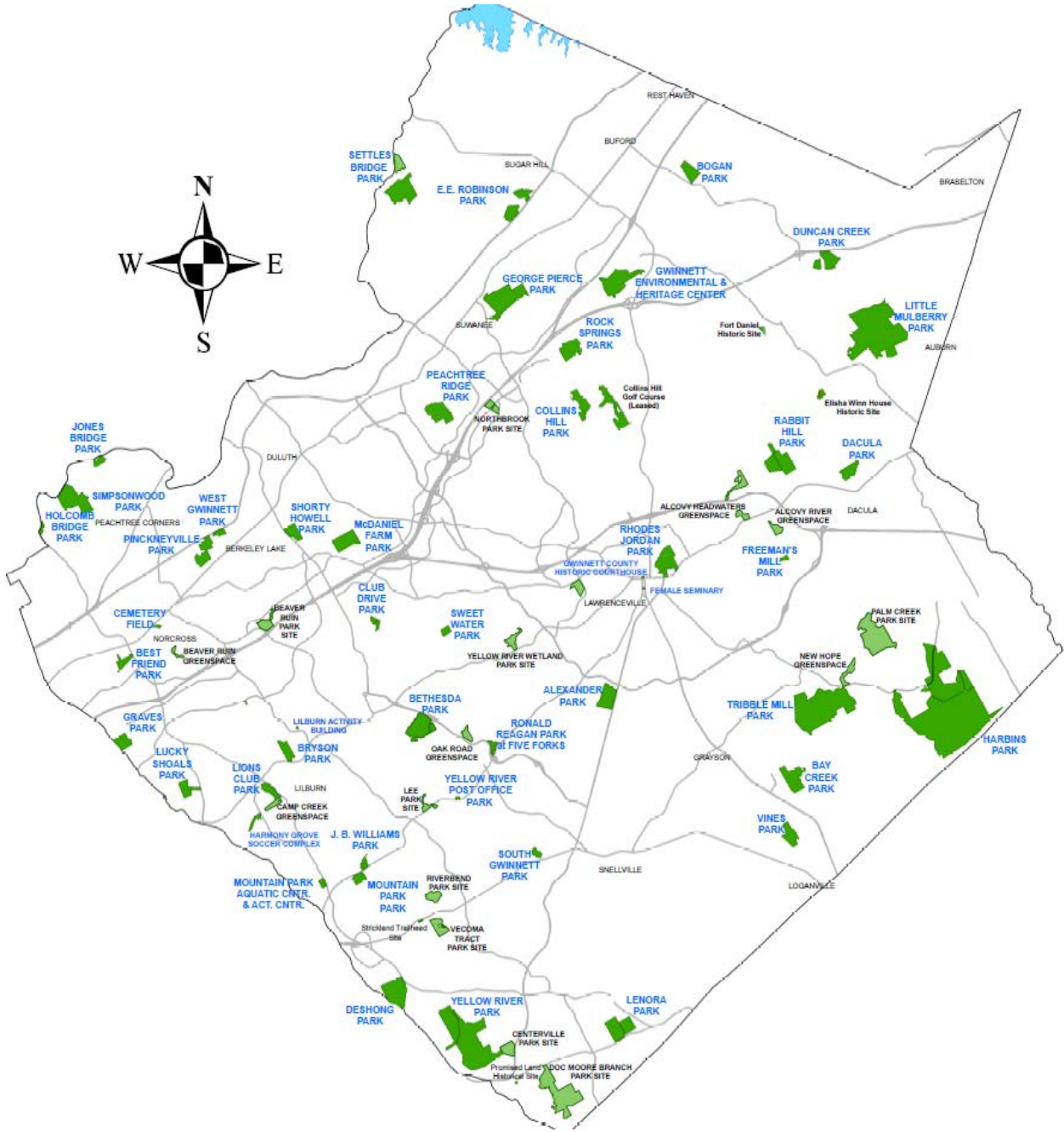
2.5 Soils

The soils in Gwinnett County consist of well drained sandy clay loams with moderate infiltration rates. Gwinnett County is in a region of moderate- to high-grade metamorphic rocks, such as schists, amphibolites, gneisses and migmatites, and igneous rocks like granite. Overlying the bedrock is a variable zone of sand, silt and clay that has resulted from the partial to complete chemical weathering of the bedrock. The unconsolidated sediment in this zone, referred to as saprolite, largely retains the physical structure of its parent bedrock. Near the top of the saprolitic zone the material gradually grades into soil. Gwinnett County soils consist of kaolinite and halloysite (1:1 aluminosilicate clay minerals) and of iron oxides. They result from the intense weathering of feldspar-rich igneous and metamorphic rocks. This intense weathering dissolves or alters nearly all minerals, and leaves behind a residue of aluminum-bearing clays and iron-bearing iron oxides because of the low solubility of aluminum and iron at earth-surface conditions. Those iron oxides give the red color to the clay-rich soil, yielding the red clay that has come to be almost synonymous with Gwinnett County and the State of Georgia.

2.6 Natural Resources

Gwinnett County is filled with natural resources and recreational opportunities for the public. There is a parks system with 50 plus sites County wide with over 10,000 acres that is owned and operated by the County as well as several historic sites in bot incorporated and unincorporated jurisdictions.

Figure 6 – Gwinnett County’s Park Locations



Park Name	Address	Area (acres)
Alexander Park	800 Old Snellville Hwy, Lawrenceville 30044	131.07
Bay Creek Park	175 Ozora Rd, Loganville 30052	154.61

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George Pierce Park	55 Buford Hwy, Suwanee 30024	303.4
Freeman's Mill Park	1401 Alcovy Rd, Lawrenceville 30045	11.91
Duncan Creek Park	3700 Braselton Hwy, Dacula 30019	114.26
DeShong Park	2859 North DeShong Rd, Stone Mountain 30087	209.34
Dacula Park	205 Dacula Rd, Dacula 30019	75.53
Collins Hill Park	2225 Collins Hill Rd, Lawrenceville 30043	95.07
Collins Hill Golf Course	585 Camp Perrin Rd, Lawrenceville 30043	139.92
Club Drive Park	3330 Club Dr., Lawrenceville 30043	25.55
Cemetery Field	211 Cemetery St, Norcross 30071	5.67
Bryson Park	5075 Lawrenceville Hwy, Lilburn 30047	67.93
Bogan Park	2723 North Bogan Rd, Buford 30519	83.31
Bethesda Park	225 Bethesda Church Rd, Lawrenceville 30044	159.95
Best Friend Park	6224 Jimmy Carter Blvd, Norcross 30071	43.1
Mountain Park	5050 Five Forks Trickum Rd, Lilburn 30047	61.63
McDaniel Farm Park	3251 McDaniel Rd, Duluth 30096	132.83
Lucky Shoals Park	4651 Britt Rd, Norcross 30093	69.96
Little Mulberry Park	3855 Fence Rd, Auburn 30011	892.45
Lions Club Park	5500 Rockbridge Circle, Lilburn 30047	51.38
Lenora Park	4515 Lenora Church Rd, Snellville 30039	178.53
Law. Female Seminary & Isaac Adair House	455 South Perry St, Lawrenceville 30046	1.845
Jones Bridge Park	4901 East Jones Bridge Rd, Peachtree Corners 30092	29.98
Holcomb Bridge Park	4300 Holcomb Bridge Rd, Peachtree Corners 30092	11.04
Harmony Grove Soccer Complex	119 Harmony Grove Rd, Lilburn 30047	21.13

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Harbins Park	2995 Luke Edwards Rd, Dacula 30019	1960.17
Gwinnett Historic Courthouse	185 Crogan St, Lawrenceville 30046	1.98
Environmental and Heritage Ctr	2020 Clean Water Drive, Buford, GA 30519	224.47
Graves Park	1540 Graves Rd, Norcross 30093	71.34
Yellow River Park	3232 Juhan Rd, Stone Mountain 30087	690.7
West Gwinnett Park	4488 Peachtree Industrial Blvd, Berkeley Lake 30071	22.45
Vines Park	3500 Oak Grove Rd, Loganville 30052	89.34
Tribble Mill Park	2125 Tribble Mill Pkwy, Lawrenceville 30045	713.07
Sweet Water Park	800 Bethesda School Rd, Lawrenceville 30044	25.44
South Gwinnett Park	2115 McGee Rd, Snellville 30078	22.87
Singleton Road Activity Building	5220 Singleton Rd, Norcross 30092	1.89
Simpsonwood Park	4511 Jones Bridge Circle, Peachtree Corners 30092	222.39
Shorty Howell Park	2750 Pleasant Hill Rd, Duluth 30096	66.46
Settles Bridge Park	380 Johnson Rd, Suwanee 30024	215.71
Ronald Reagan Park	2777 Five Forks Trickum Rd, Lawrenceville 30044	27.11
Rock Springs Park	550 Rock Springs Rd, Lawrenceville 30043	120.35
Rhodes Jordan Park	100 East Crogan St, Lawrenceville 30046	163.74
Rabbit Hill Park	400 Rabbit Hill Rd, Dacula 30019	199.63
Pinckneyville Park	4707 South Old Peachtree Rd, Norcross 30071	109.72
Peachtree Ridge Park	3170 Suwanee Creek Rd, Suwanee 30024	153.81
Yellow River Post Office	3519 Five Forks Trickum Rd, Lilburn 30047	5.1
J.B. Williams Park	4935 Five Forks Trickum Rd, Lilburn 30047	25.92
E.E. Robinson Park	885 Level Creek Rd, Sugar Hill 30518	115.02
Harbins Park	2995 Luke Edwards Rd, Dacula 30019	1960.17

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Alcovy River Green space (Dixon Tract)*	Hwy 29, Dacula	36.55
Beaver Ruin Green space*	Mitchell St, Norcross	17.18
Beaver Ruin Park Site*	Satellite Blvd, Duluth	55.95
Camp Creek Green space*	Seaboard Railroad in Lilburn	30.68
Centerville Park Site*	Centerville Hwy, Snellville	59.68
Doc Moore Branch Park Site*	Lee Rd, Snellville	350.81
Lee Park Site*	Five Forks Trickum Rd, Lilburn	31.76
New Hope Green space*	New Hope Rd, Lawrenceville	54.58
Northbrook Park Site*	Northbrook Pkwy, Suwanee	36.38
Oak Road Green space*	Oak Rd, Lawrenceville	35.50
Palm Creek Park Site*	Ewing Chapel Rd, Dacula	325.47
Riverbend Park Site*	Riverside Dr, Lilburn	50.55
Settles Bridge Park(State of GA DNR Own)*	Settle Bridge Rd, Buford	52.82
Vecoma Tract Park Site*	Ross Rd, Lilburn	71.97
Yellow River Wetland*	Lawrenceville Hwy, Lawrenceville	51.22
Strickland Trailhead Site*	Stone Mountain Hwy, Lilburn	2.05
Alcovy Headwaters Green space	Winder Hwy & Hurricane Shoals Rd, Lawrenceville	89.44
Lilburn Activity Building	788 Hillcrest Rd, Lilburn 30047	2.06
Collins Hill Aquatic	2200 Collins Hill Road, Lawrenceville 30043	18.19
Mountain Park Aquatic	1063 Rockbridge Road, Stone Mountain 30087	18.2
Fort Daniel Site	2505 Braselton Hwy, Buford	
Elisha Winn House	908 Dacula Rd, Dacula	
Promised Land Site	4530 Anderson-Livsey Ln, Snellville	

2.7 Demographic Profile

**Table 2-1
Demographic Quick Facts**

Demographic Quick Facts	Gwinnett County	Georgia
Population, 2017 estimate	920,260	10,519,475
Population, percent change, April 1, 2010 to July 1, 2017	14.3%	8.6%
Population, 2010	805,321	9,687,653
Persons under 5 years old, percent, 2017	6.7%	6.3%
Persons under 18 years old, percent, 2017	27.2%	24.1%
Persons 65 years old and over, percent, 2017	9.6%	13.5%
Female persons, percent, 2017	51.1%	51.3%
Caucasian, percent, 2017	55.4%	60.8%
African American persons, percent, 2017	28.7%	32.2%
American Indian and Alaska Native persons, percent, 2017	0.8%	0.5%
Asian persons, percent, 2017	12.2%	4.2%
Native Hawaiian and Other Pacific Islander, percent, 2017	0.1%	0.1%
Persons reporting two or more races, percent, 2017	2.8%	2.1%
Persons of Hispanic or Latino origin, percent, 2017	21.2%	9.6%
Caucasian, not of Hispanic/Latino origin, percent, 2017	37.4%	52.8%
Living in same house 1 year and over, percent, 2013-2017	87.4%	84.3%
Foreign born persons, percent, 2013-2017	25%	10%
Language other than English spoken at home, percent, age 5+, 2013-2017	34.4%	13.9%
High school graduates, percent of persons age 25+, 2013-2017	87.5%	86.3%

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Demographic Quick Facts	Gwinnett County	Georgia
Bachelor's degree or higher, percent of persons age 25+, 2013-2017	35.3%	29.9%
Veterans, 2013-2017	37,850	646,350
Mean travel time to work (minutes), workers age 16+, 2013-2017	33.1	28.0
Housing units, July 1, 2017	309,255	4,282,106
Owner-occupied housing unit rate, 2013-2017	66.6%	63.0%
Median value of owner-occupied housing units, 2013-2017	\$185,200	\$158,400
Households, 2013-2017	283,256	3,663,104
Persons per household, 2013-2017	3.12	2.71
Median household income, 2013-2017	\$64,496	\$52,977
Per capita money income, 2013-2017	\$27,945	\$28,015
Persons below poverty, percent (2017 Estimate)	10.7%	14.9%

**Table 2-2
Business Quick Facts**

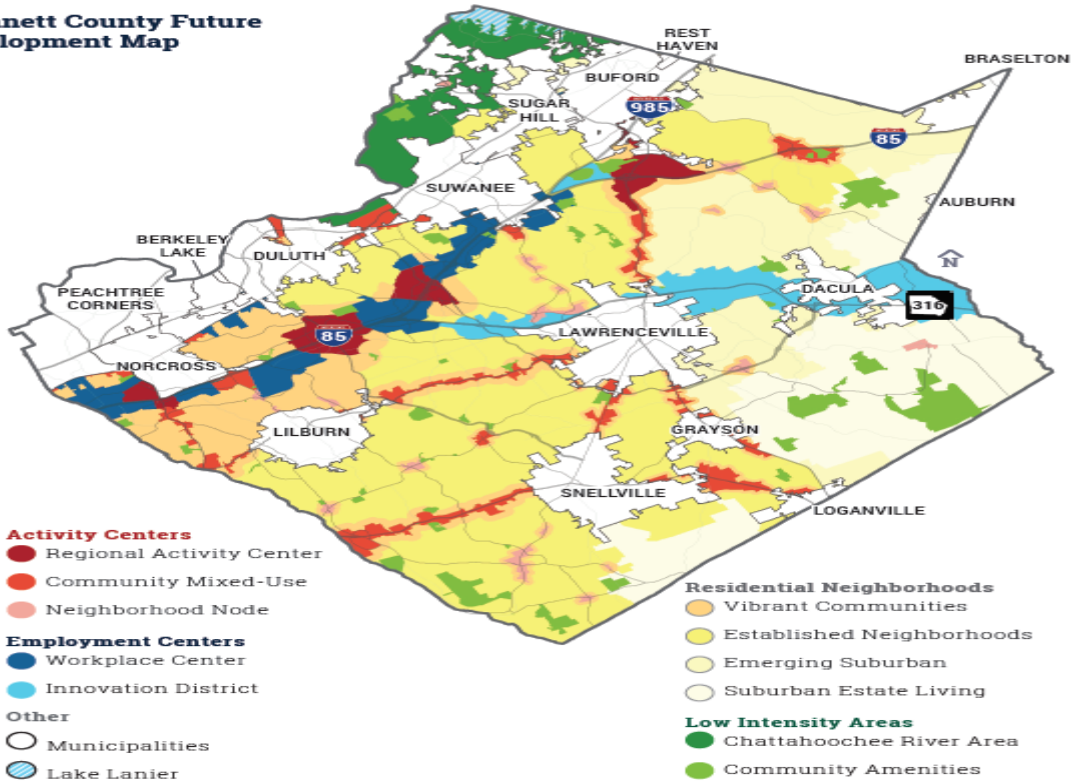
Business Quick Facts	Gwinnett County	Georgia
Total annual payroll, 2016 (\$1,000)	16,332,075	182,911,144 ¹
Total employment, percent change, 2015-2016	3.6%	3.0% ¹
Total nonemployer establishments, 2016	102,719	877,908
All firms, 2012	101,039	929,864
Men-owned firms, 2012	53,115	480,578
Women-owned firms, 2012	40,321	376,506
Minority-owned firms, 2012	54,158	371,588
Nonminority-owned firms, 2012	44,506	538,893
Veteran-owned firms, 2012	8,639	96,787
Nonveteran-owned firms, 2012	89,005	800,585

**Table 2-3
Geography Quick Facts**

Geography Quick Facts	Gwinnett County	Georgia
Land area, 2010 (square miles)	430.38	57,513.49
Persons per square mile, 2010	1,871.2	168.4
Metropolitan Area	GA Metro Area	
Federal Information Processing Standards (FIPS) Code	13135	13

According to the Gwinnett County 2040 Unified Plan, Gwinnett County’s growth in population is expected to slow somewhat over the next 25 years as its supply of land is developed. This development can have a direct impact on all Cities and the County in relation to vulnerability. Currently all Cities and the County are implementing strict NFIP standards therefore development does not make the population any more vulnerable to flooding. In relation to other hazards it isn’t uncommon for increased growth and development to increase vulnerability to other hazards such as tornados or severe weather events as increase in population drives increase to vulnerability.

Gwinnett County Future Development Map



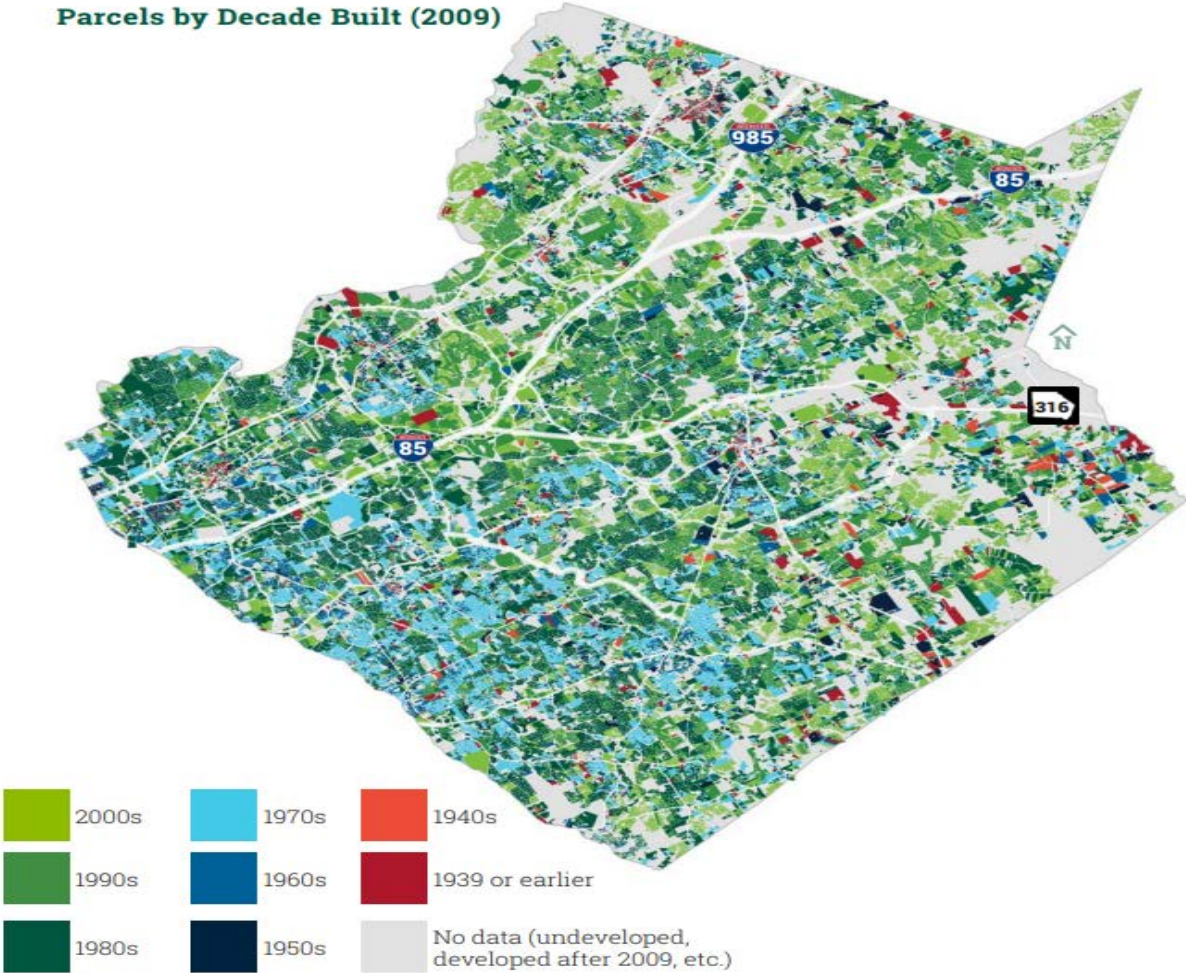
(Source: Gwinnett County Unified Plan, February 2019)

2.8 Residential Development

2.8.1 General Housing Characteristics

According to the Gwinnett County 2040 Unified Plan, low-density residential is the dominant single land use in Gwinnett County, with more than one-third of the county’s total acreage. Initial waves of growth were largely driven by families seeking a traditional suburban lifestyle. As a result, nearly three-fourths of our housing units are single-family homes, but our diversity of family sizes, types, and ethnicities means that there is likely a significant demand for more housing types. On opposite ends of the spectrum, this includes smaller housing for single-person households, housing with more bedrooms for larger families. This should be considered relative to origins broad national trends that indicate the number of single-person households (currently 19 percent of Gwinnett households) and multi-generational households are likely to increase. A more in-depth look at housing and trends and challenges can be found in the Gwinnett County 2040 Unified Plan.

Figure 7
2009 Housing Units



Source Gwinnett County, 2009

Table 2-4

Annual Development Permit Activity 1991-2017

Year	Permits	Housing Units	Square Feet (Millions)	Acres	Hotel Rooms
2017	217	3,534	2.927	1,157	298
2016	160	3,121	2.326	1,001	0
2015	161	2,208	1.742	826	166
2014	142	1,483	1.400	774	115
2013	149	1,163	2.149	629	0
2012	135	522	1.931	388	0
2011	136	0	1.035	902	0
2010	122	162	0.520	556	0
2009	110	471	0.628	471	0
2008	202	622	4.857	1,104	0
2007	346	3,261	4.035	2,767	107
2006	396	7,547	6.637	5,531	0
2005	419	10,609	5.682	4,728	0
2004	426	8,914	5.323	4,098	0
2003	434	10,085	3.265	4,932	0
2002	389	8,518	5.625	4,379	71
2001	416	7,483	7.769	5,649	162
2000	477	12,480	9.348	6,890	268
1999	485	10,612	8.037	6,319	169
1998	602	10,488	11.034	6,964	703
1997	534	7,167	10.403	6,619	278
1996	472	8,459	9.294	5,709	1,542
1995	476	7,886	10.707	5,551	921
1994	440	8,692	6.410	4,948	132
1993	377	8,952	3.872	5,491	0
1992	311	7,254	2.288	4,739	0
1991	266	4,190	3.277	4,042	0

Source: Gwinnett County Department of Planning and Development.

**Table 2-5
Housing Units, Square Feet, and Acres Permitted by Land Use in 2017**

Land Use	Permits	Housing Units	Square Feet	Acres
Commercial/Retail	60	NA	566,308	95.2
Government ¹	15	NA	578,902	88.3
Industrial	20	NA	612,265	53.9
Institutional ²	20	NA	636,743	79.2
Office	15	NA	195,318	15.7
Other ³	36	NA	7,866	71.9
Multifamily	15	1,461	NA	145.8
Single-family	32	1,750	NA	544.7
Mixed-use	4	323	329,738	62.3
Total	217	3,534	2,927,140	1,157.1

¹ Government includes public schools.
² Institutional includes places of worship, private schools, and hospitals.
³ Other includes residential recreation areas, roads, sidewalks, towers, and utilities.
 Source: Gwinnett County Department of Planning and Development.

2.9 Commercial Development

Today’s economic picture is evolving from the economy that drove the County’s growth in the 1970s through the 1990s. Service industries are replacing goods-producing industries as the dominant employment sector. • In 1990, there were 137,877 people employed in Gwinnett County, with the largest sectors being retail trade, manufacturing, wholesale trade, and accommodation and food services. By 2000, Gwinnett’s employment more than doubled to over 283,000 employees. In 2017, Gwinnett had approximately 350,000 workers. Since 1990, the manufacturing sector and the wholesale sector, both of which are dominant in the County’s economy, have both declined significantly. This is consistent with global shifts towards off-shore production. Looking to the future, employment in Gwinnett County is expected to grow rapidly over the coming decades. Job growth, particularly in the service and administration sectors, is closely linked to population growth, and is thus inextricably linked to the provision of adequate housing that is accessible to a wide range of households in terms of household size, building type, tenure type, and affordability. Continued transportation accessibility will also be critical to supporting job growth, as will land development policies that encourage more integration and mix of uses. As there are numerous possibilities of how our community might continue to grow, and depending on how well these different factors interface with each other, County employment in 2040 is estimated to be somewhere between 520,000 and 630,000 jobs

American Megatrends is headquartered in an unincorporated area of Gwinnett County near the city of Norcross.

Waffle House is headquartered in an unincorporated area of Gwinnett County near the city of Norcross.

The county is also home to professional and semi-professional athletic teams, the Gwinnett Gladiators and the Gwinnett Strippers.

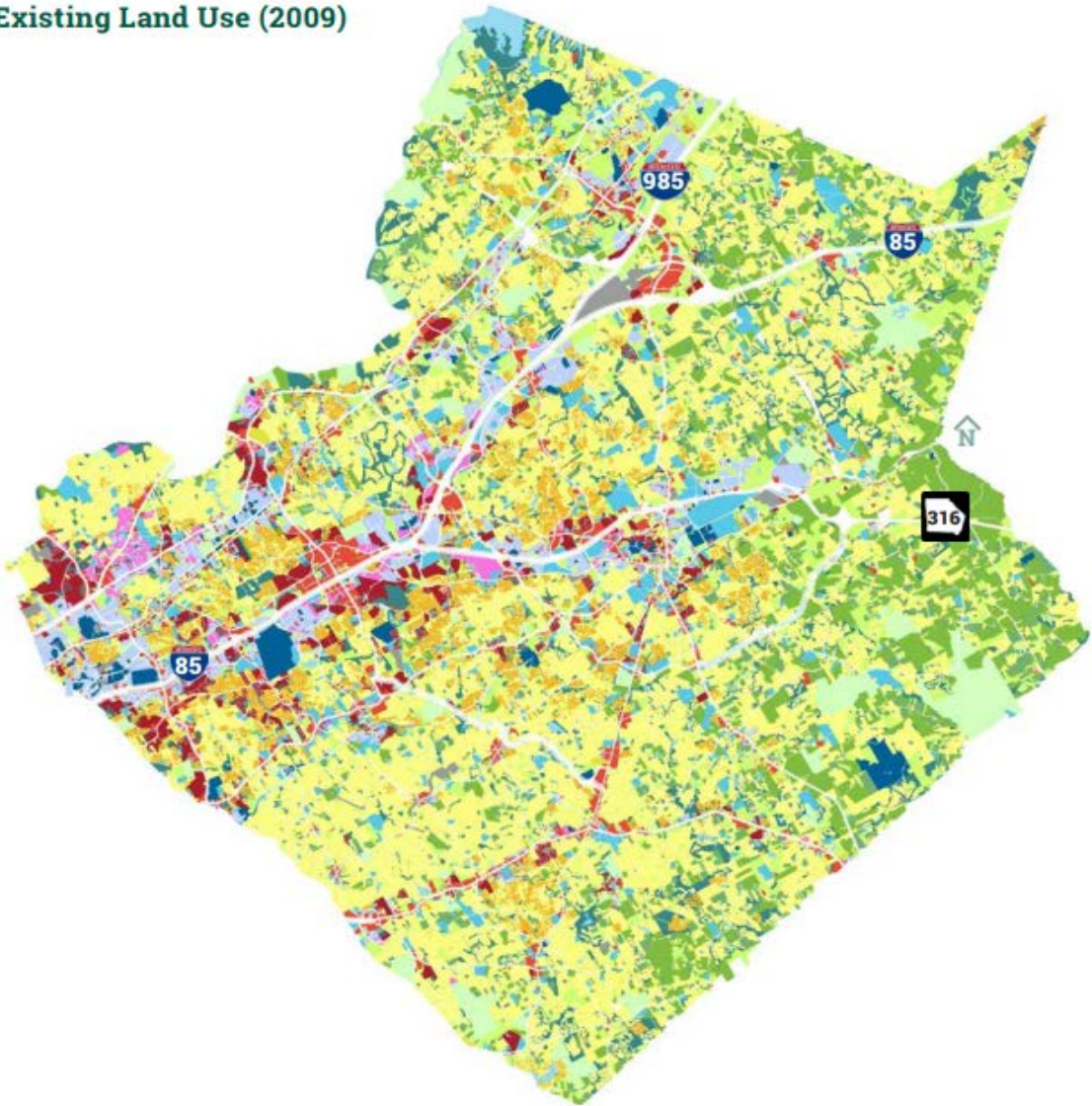
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Workforce	Employment	
47,303	51,520	Retail Trade
40,060	29,210	Health Care and Social Assistance
34,803	29,399	Accommodation and Food Services
31,863	32,643	Administration & Support, Waste Management and Remediation
30,573	26,852	Professional, Scientific, and Technical Services
28,823	27,532	Educational Services
27,264	34,668	Wholesale Trade
23,447	25,685	Manufacturing
18,041	16,115	Finance and Insurance
15,373	18,635	Construction
14,193	12,039	Information
13,217	8,216	Transportation and Warehousing
11,443	7,202	Public Administration
9,615	8,419	Other Services
8,441	8,967	Management of Companies and Enterprises
6,448	6,128	Real Estate and Rental and Leasing
4,602	3,019	Arts, Entertainment, and Recreation
1,023	346	Utilities
375	211	Agriculture, Forestry, Fishing and Hunting
129	83	Mining, Quarrying, and Oil and Gas Extraction

(Source: Gwinnett County Unified Plan, February 2019)

Figure 8 – Current Land Use

Existing Land Use (2009)



- Agriculture
- Light Industrial
- Heavy Industrial
- Commercial/Retail
- Office/Professional
- Institutional/Public
- Mixed Use
- Estate
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Multifamily Dwellings
- Park (government parkland)
- Park/Recreation/Conservation
- Right of Way
- Transportation/Communication/Utility
- Undeveloped
- Water

(Source: Gwinnett County Unified Plan, February 2019)

2.10 County Government

2.10.1 Government Administration

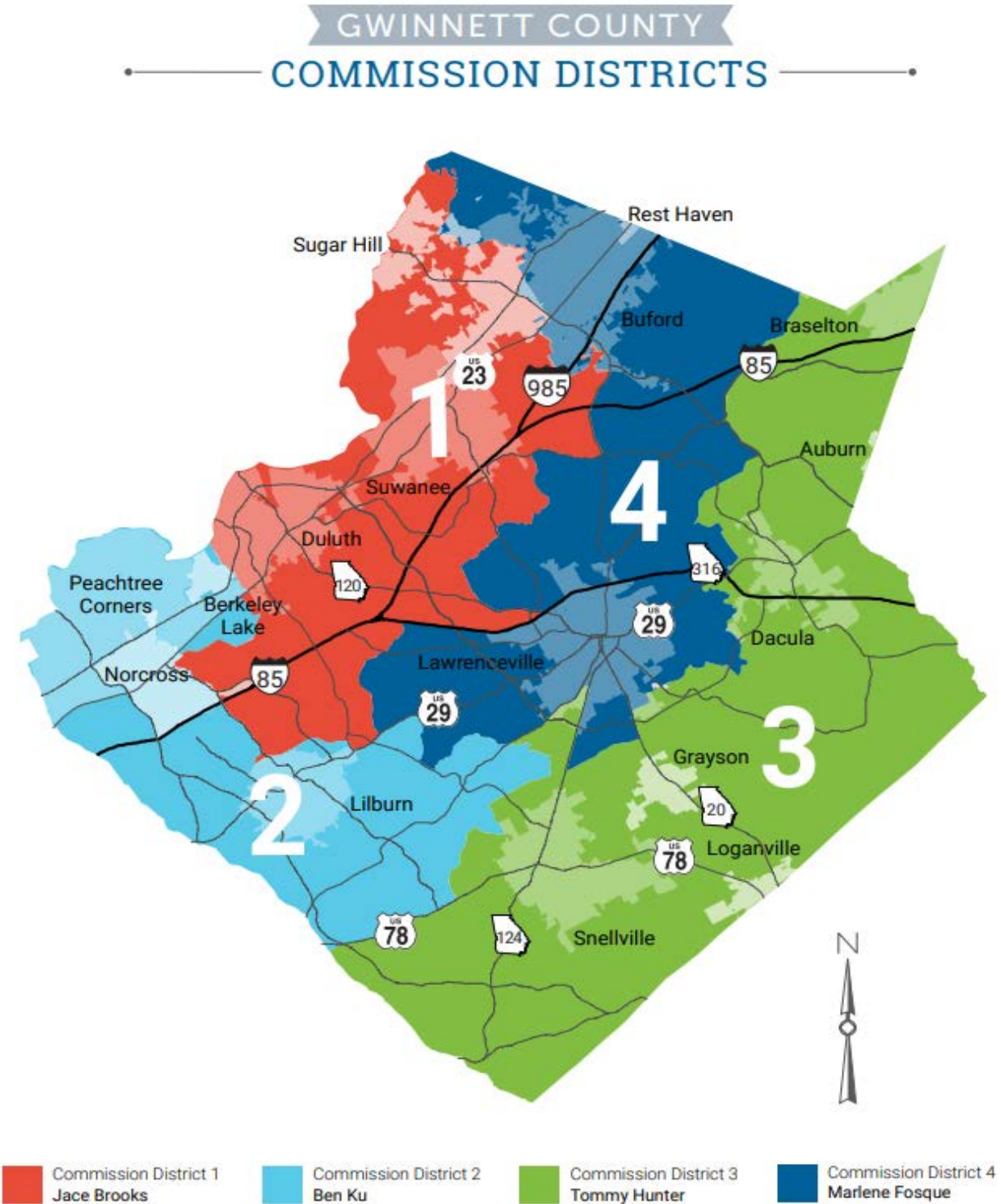
Gwinnett County government provides high quality essential services for Gwinnett residents and as many other services as tax revenues allow; spends and accounts for tax dollars in a responsible manner; responds to needs and concerns of the citizens; and conducts business in an open and professional manner without favoritism.

The Board sets direction and formulates policies for the county government, adopts the budget, authorizes expenditures, and approves or disapproves specific actions, such as rezoning of private property.

Voters in each of the four districts elect a part-time District Commissioner. The full-time Commission Chairman is elected countywide. Terms last for four years but are staggered so the chairman and two commissioners are elected during one election cycle, and the other two commissioners are elected two years later.

The Board holds official business meetings the first and third Tuesdays of each month at 2:00 p.m. On those days, the Board conducts work sessions at 10:00 a.m. The Board also holds a public hearing to consider zoning requests on the fourth Tuesday of each month at 7:00 p.m. These meetings are held in the auditorium of the Gwinnett Justice and Administration Center. On many Tuesdays, the Board conducts informal discussions with county departments and community groups. These meetings are held in the conference room of the Board of Commissioners suite. Informal discussions as well as official meetings are always open to the public.

Figure 9 – Commission Districts



(Source: Gwinnett County Unified Plan, February 2019)

2.10.2 Law Enforcement

The Gwinnett County Sheriff's Department is a multi-faceted law enforcement organization charged with numerous constitutional and legal responsibilities. The Office currently has an authorized strength of 555 sworn officers supported by 157 non-sworn employees. The Office is organized into six divisions: Administrative Services, Civil, Court Security, Field Operations, Jail, and Support Services. The department is headed by the Sheriff, an elected constitutional officer. The Sheriff's Department is responsible for the following:

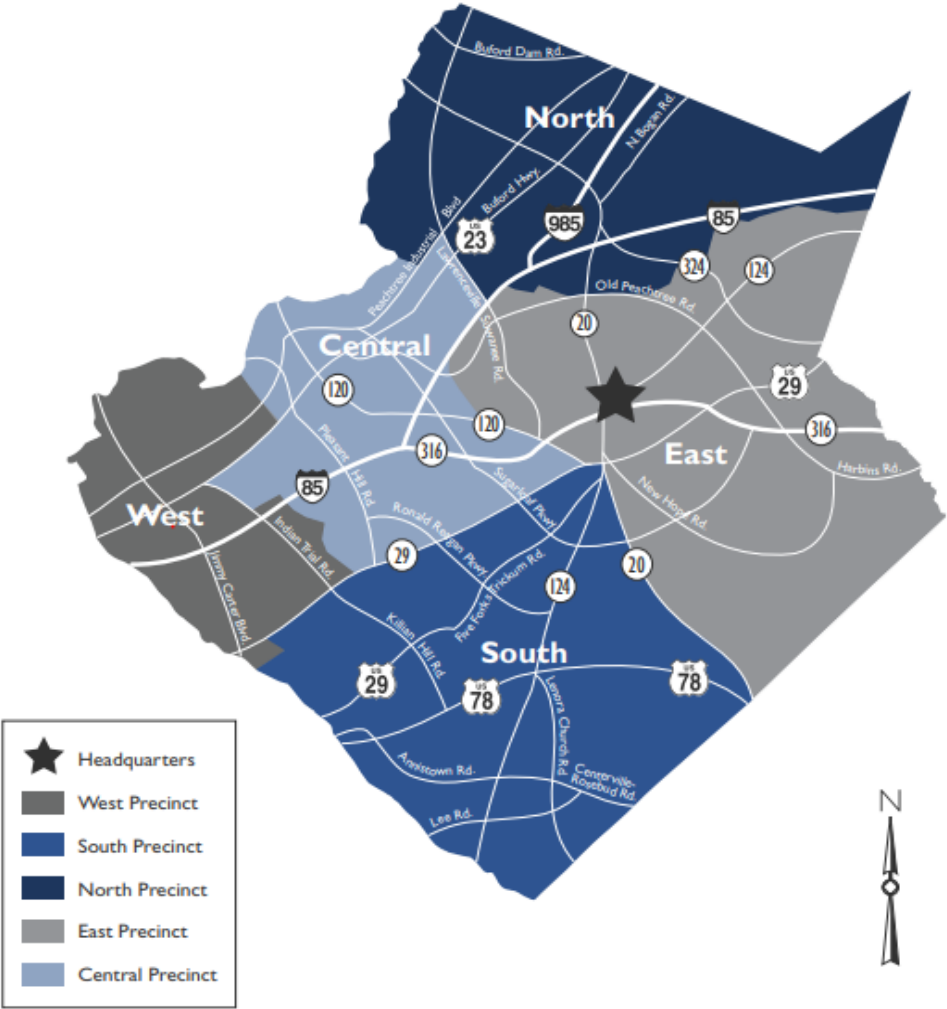
- Operation of the detention facility.
- Service of arrest warrants.
- Service of civil papers.
- Service of Family Violence orders.
- Provide court security to all state and county courts in Gwinnett County
- Provide security for the Gwinnett Justice and Administration Center, which is visited by more than a million citizens each year, as well as the Juvenile/Recorder's Court building

The Gwinnett County Police Department is a nationally accredited and rapidly growing police agency located in the Northeastern quadrant of the Atlanta metropolitan area. The Department currently has an authorized strength of 813 sworn officers supported by 280 civilian employees with the responsibility of providing law enforcement services to approximately 900,000 residents within an area of 436 square miles. The Department is organized into the Office of the Chief and two Bureaus with four Divisions: Administrative Services, Support Operations, Criminal Investigations and Uniform Divisions. The department is divided into five precincts.

Figure 10 – Police Precincts

POLICE
PRECINCTS

gwinnettcounty
GEORGIA

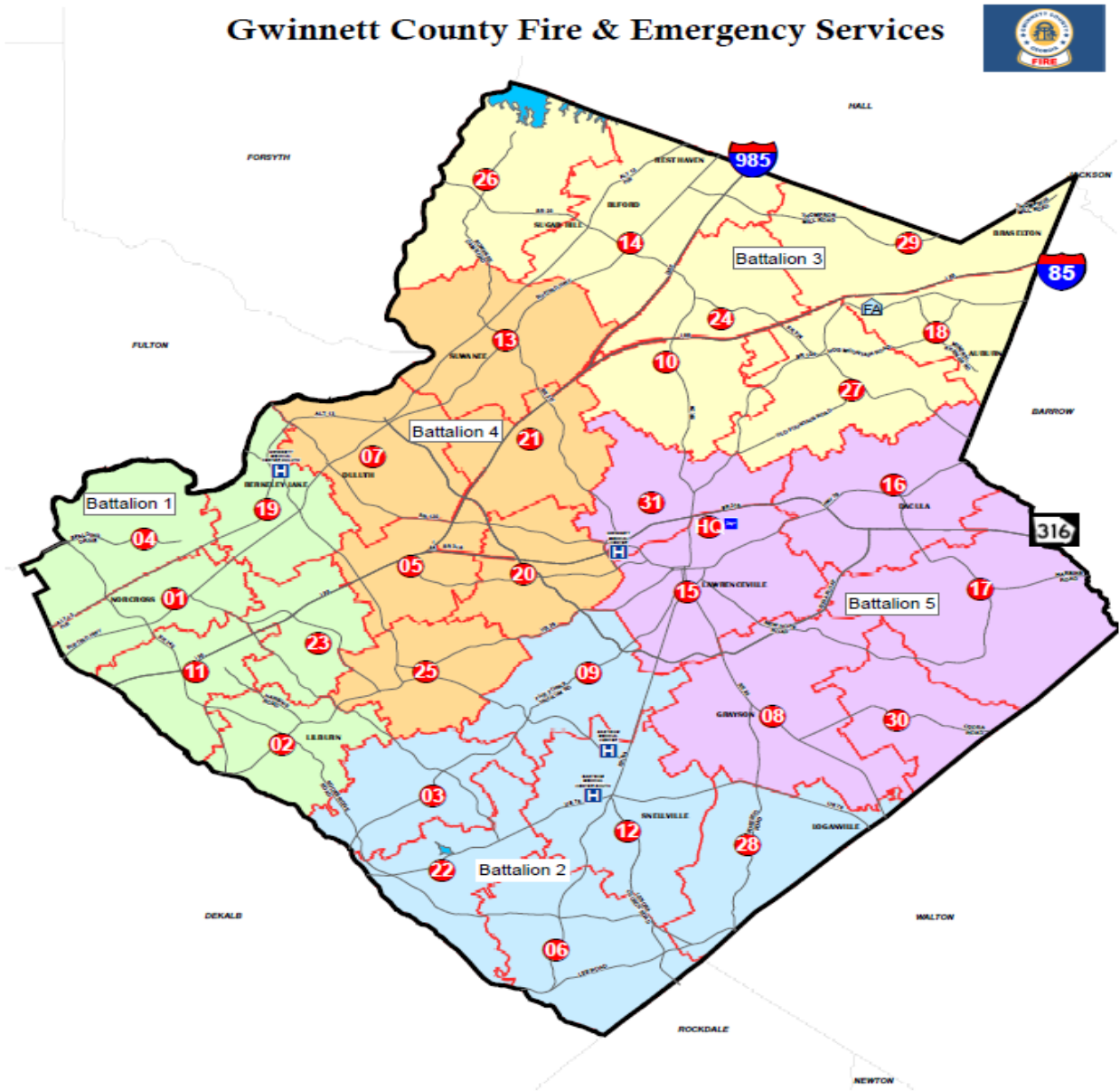


www.gwinnettpolice.com

2.10.3 Fire and Emergency Services

Gwinnett is the largest fire service district in the State of Georgia for the number of legal jurisdictions (15) under one fire department, and protects a population of over 900,000 people covering an area of 436 square miles. Responding to over 66,000 calls for help annually, the department currently operates 30 strategically located fire stations, 30 engine companies, 10 ladder trucks, 23 advanced life support medical units, plus specialty units. Serving this area with fire protection and emergency medical services is the mission of the Department of Fire and Emergency Services. The department meets its challenge with a force of 847 superbly trained men and women who are proactive in their approach to challenges and citizen-oriented in their focus.

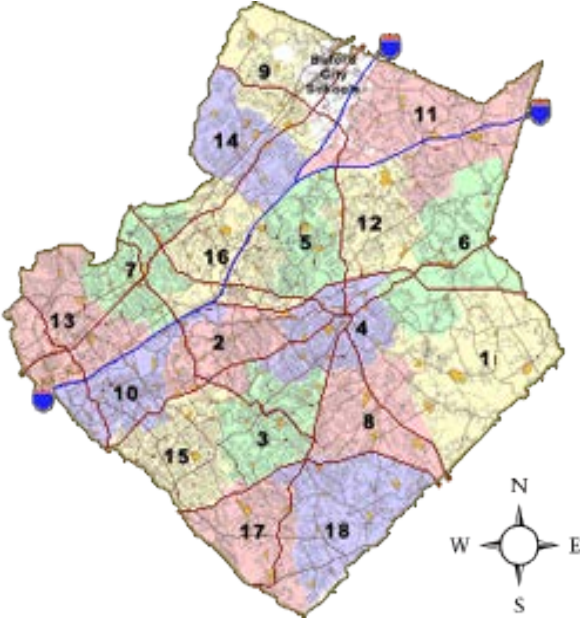
Figure 11 – Fire Station Locations



2.10.4 Education

Gwinnett County Public Schools (GCPS) is the largest school system in Georgia. The school district continues to grow, welcoming approximately 4,300 new students for the 2018-19 school year. One of every five Gwinnett County residents is a GCPS student. GCPS and its 148 schools and other educational facilities serve more than 180,000 students. Attendance zones are determined by geographical clusters, called clusters. Within each cluster, there are three to six elementary schools, one or two middle schools, and one high school. There are 81 elementary schools, 28 middle schools, and 23 high schools as well as special schools. A listing of the schools can be found in Section 4 of this HMP.

Figure 12 – Gwinnett County Public School Cluster Boundaries



- 1. Archer Schools
- 2. Berkmar Schools
- 3. Brookwood Schools
- 4. Central Gwinnett Schools
- 5. Collins Hill Schools
- 6. Dacula Schools
- 7. Duluth Schools
- 8. Grayson Schools
- 9. Lanier Schools
- 10. Meadowcreek Schools
- 11. Mill Creek Schools
- 12. Mountain View Schools

- 13. Norcross Schools
- 14. North Gwinnett Schools
- 15. Parkview Schools
- 16. Peachtree Ridge Schools
- 17. Shiloh Schools
- 18. South Gwinnett Schools

2.10.5 Hospitals

Eastside Medical Center is a 310-bed, acute care medical center, located in Snellville. The medical staff totals over 500 physicians and the hospital staffs 1,200 clinical and support staff.

Gwinnett Medical Center (GMC) is a not-for-profit healthcare network providing award-winning healthcare services to the Gwinnett community and beyond with two locations. GMC's 5,300 associates and 800 physicians serve patients at campuses in both Duluth and Lawrenceville and provide acute care, outpatient services, orthopedic and neuroscience specialty care, as well as a full continuum of wellness services. The Lawrenceville campus also operates a new, state-of-the art, eight-story patient tower, which is a Level II trauma center.

2.10.6 Religious Facilities

Over half (54.5 percent) of the population of Gwinnett County consider themselves non-religious, meaning they don't affiliate with a religion. The below table contains a breakdown of religious affiliation, adherents, and congregations within the county.

**Table 2-5
Religious Facilities**

Religion	Adherents	Congregations
Evangelical Protestant	195,348	392
Catholic	67,781	12
Mainline Protestant	67,212	69
Other	23,940	57
Orthodox	4,004	8
None	438,613	-

3.1 Risk and Vulnerability Assessment Process

The Gwinnett County Hazard Mitigation Steering Committee (HMSC) conducted a comprehensive hazard, risk, and vulnerability assessment of Gwinnett County.

For the 2015 iteration of this plan, the HMSC initially identified all natural and technical hazards that could potentially affect the County. This list was then narrowed to only the hazards that are most likely to impact the county. For the 2020 update, the HMSC determined that 14 natural hazards pose a direct, measurable threat to the County. Severe thunderstorms/windstorms, Lightning, Tornadoes, Flooding, Winter Storms, Drought, Tropical storms/hurricanes, Hazardous material releases, Pandemic/epidemic, Terrorism, Wildfires, Dam/levee failure, Cyber-crime and Earthquakes. Each of these potential hazards is addressed individually with relevant supporting data. To develop effective hazard mitigation strategies, it is first necessary to identify and profile all hazards facing the community.

The HMSC conducted a risk assessment of the hazards faced in the community. A risk assessment measures the potential loss of life, personal injury, economic injury, and property damage resulting from natural and technological hazards by assessing the vulnerability of people, buildings, and infrastructure to natural and technological disasters. Several methods were used to identify risks to the community. These methods included evaluating historical data from scientific and news media sources, soliciting opinions and experiences from participating jurisdictions and Gwinnett County residents, and surveying risks identified in the State of Georgia Hazard Mitigation Plan that were pertinent to Gwinnett County.

Following the risk assessment, the Gwinnett County HMSC conducted a vulnerability assessment. The vulnerability assessment predicted consequences and extent of damage that could result from a hazard of a given intensity in a given area on the existing and future build environment. Determining the community's vulnerability involved identifying threats posed to people, property, and the environment. This also included identifying critical facilities that could be affected by each hazard. Table 3-1 lists the natural and technological hazards included in the risk and vulnerability assessments.

It is important to note the determinations presented in this section with regard to vulnerability are developed using best available data, and the methods applied have resulted in an approximation of risk. These estimates should be used to understand relative risk from hazards and potential losses that may be incurred; however, uncertainties are inherent in any loss estimation method, arising in part from incomplete scientific knowledge concerning natural hazards and their effects on the built environment and from approximations and simplifications that are necessary in order to provide a comprehensive analysis.

Federal Emergency Management Agency (FEMA) Requirement 44 CFR 201.6(c) (2) (ii)

The risk assessment shall include a description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.

FEMA Requirement 44 CFR 201.6(c) (2) (i)

The risk assessment shall include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan shall include

**Table 3-1
Hazards Included in the Risk and Vulnerability Assessments**

Hazard	Justification for Inclusion	Likelihood of Occurrence	Hazard Rating
Severe thunderstorms/windstorms	Frequency, previous incidents, countywide hazard	Highly likely	Moderate
Lightning	Frequency, countywide hazard	Highly likely	Minor
Tornadoes	Frequency, previous incidents, countywide hazard	Likely	Major
Flooding	Frequency, previous incidents	Likely	Major
Winter storms	Frequency, previous incidents, countywide hazard	Likely	Moderate
Drought	Previous incidents, countywide hazard	Likely	Minor
Tropical storms/hurricanes	Previous incidents, countywide hazard	Unlikely	Moderate
Hazardous material releases	Frequency, potential adverse impact	Likely	Negligible – Major
Pandemic/epidemic	Previous incidents, potential adverse impact	Likely	Negligible – Major
Terrorism	Potential adverse impact	Likely	Negligible – Major
Wildfires	Frequency, potential adverse impact	Likely	Major
Dam/levee failure	Potential adverse impact	Unlikely	Negligible – Major
Cyber crime	Potential adverse impact	Unlikely	Minor
Earthquakes	Low occurrence, low vulnerability	Unlikely	Minor

Table 3-2 lists the natural and technological hazards that were not included in the risk and vulnerability assessments due to geographic location, low occurrence, or low potential for damage.

**Table 3-2
Hazards Not Included in the Risk and Vulnerability Assessment**

Hazard	Justification for Omission
Civil disturbance	Low occurrence, low vulnerability
Landslides	Low occurrence
Sinkholes	Low vulnerability

The following Hazards were removed from the plan September 2018 because of the geographic proximity theses hazards will not impact Gwinnett County.

- **Avalanche**
- **Coastal Erosion**
- **Tsunami**
- **Volcano**

The following information was included in each hazard profile:

- **Hazard Identification.** Definition of the hazard will include a description of the hazard and the general threats it poses. All hazards were identified using statistical data and records from a variety of sources, including presidential disaster declarations, National Weather Service (NWS) data, maps, and hazardous materials response data. The lists of hazards are based on frequency, severity, probability, potential loss, vulnerability, and large-scale effects on Gwinnett County.
- **Hazard Profile.** Each hazard will be profiled to explain how it will affect or has affected Gwinnett County. This will include areas prone to specific hazards and the effects they have had on Gwinnett County infrastructure. It also includes previous incidents that have affected Gwinnett County.
- **Assets Exposed to Hazard.** The risk and vulnerability analysis compares identified hazards with the inventory of affected critical facilities and the effects on the population exposed to each hazard. This section will also include a vulnerability assessment for future development, such as schools, water, and waste treatment facilities and other critical infrastructure.
- **Vulnerability.** Gwinnett County’s vulnerability to each hazard will be summarized based on a common set of definitions and classifications used to estimate vulnerability and rank hazards. Table 3-3 identifies classifications of vulnerability. Each profile was analyzed by the following criteria: frequency of occurrence, amount of warning time prior to the hazard occurring, size of the area potentially affected by the hazard, and severity of impact should the hazard occur.
- **Land Use and Development Trends.** This component of the risk and vulnerability analysis identifies land use trends and Gwinnett County land use and development plans and references current plans and regulations that could prevent the impact of the disaster.
- **Hazard Summary.** A summary of the hazard profile will be provided.

**Table 3-3
Hazard Identifications/Classifications**

Frequency of Occurrence		
Probability of occurrence occurring		
Score	Probability	Definitions
1	Unlikely	<1% probability of occurrence in the next 100 years
2	Occasionally	1–10% probability of occurrence per year or at least one chance in the next 100 years
3	Likely	>10% but <100% probability per year, at least 1 chance in the next 10 years
4	Highly Likely	100% probable in a year

Warning Time Amount of time generally given to alert people to a hazard		
Score	Warning Time	
1	More than 12 hours	
2	6 to 12 hours	
3	3 to 6 hours	
4	None to minimal	
Geographic Extent How large an area would likely be affected?		
Score	Area	
1	Localized	
2	Community-wide	
3	Countywide	
Potential Impact Severity and extent of damage and disruption		
Score	Impact	Definitions
1	Negligible	Isolated occurrences of minor property damage, minor disruption of critical facilities and infrastructure, and potential for minor injuries
2	Minor	Isolated occurrences of moderate to severe property damage, brief disruption of critical facilities and infrastructure, and potential for injuries
3	Moderate	Severe property damage on a neighborhood scale, temporary shutdown of critical facilities, and/or injuries or fatalities
4	Major	Severe property damage on a metropolitan or regional scale, shutdown of critical facilities, and/or multiple injuries or fatalities

3.2 Natural Hazards

Natural hazards such as floods, tornadoes, winter storms, and the like are enduring conditions. Natural hazards become disasters when they intersect with the human environment. In Georgia, natural disasters have had devastating effects on human lives, property, the economy, and the community. While most processes present little danger to human well-being, some develop into hazardous situations that place life, property, economy, and community at higher risk. The following hazards have been determined to have a possible impact on Gwinnett County and its Municipalities.

3.2.1 Severe Thunderstorms/ Windstorms

3.2.1.1 Hazard Identification

The Gwinnett County HMSC used data from NCDC and NWS in researching windstorms and their impact on Gwinnett County. Windstorms are defined as a storm marked by high winds with little or no precipitation. Extreme windstorm events are associated with tropical cyclones, severe thunderstorms, and downbursts. Tropical storms and hurricanes bring the threat of winds, heavy rains and flooding that may have similar preparedness, response, recovery and mitigation actions in Gwinnett County and it’s Municipalities. Winds can vary from zero mph at ground level to 200 mph in the upper atmospheric jet stream. Windstorms tend to affect areas of Gwinnett County with significant tree stands as well as areas with exposed property and infrastructure and aboveground utilities. Windstorms can cause power outages, transportation and economic disruptions, and significant property damage and pose a high risk for injuries and loss of life. Windstorms are measured according to the Beaufort Wind Scale shown in the Table below.

**Table 3-4
Beaufort Wind Scale (Land)¹**

Beaufort	Average miles per hour	Average kilometers per hour	Knots	Surroundings
0 (calm)	0	0	0–1	Calm. Smoke rises vertically.
1 (light air)	1–3	2–5	1–3	Smoke drift indicates wind direction. Leaves and wind vanes are stationary.
2 (light breeze)	4–7	6–12	4–6	Wind felt on exposed skin. Leaves rustle. Wind vanes begin to move.
3 (gentle breeze)	8–12	13–20	7–10	Leaves and small twigs constantly moving, light flags extended.
4 (moderate breeze)	13–18	21–30	11–16	Dust and loose paper raised. Small branches begin to move.
5 (fresh breeze)	19–25	31–40	17–21	Branches of a moderate size move. Small trees in leaf begin to sway.
6 (strong breeze)	26–31	41–50	22–27	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult. Empty plastic bins tip over.
7 (moderate gale)	32–38	51–61	28–33	Whole trees in motion. Effort needed to walk against the wind.
8 (fresh gale)	39–46	62–74	34–40	Some twigs broken from trees. Cars veer on road.

¹ National Weather Service, <http://www.nws.noaa.gov/>

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Beaufort	Average miles per hour	Average kilometers per hour	Knots	Surroundings
				Progress on foot is seriously impeded.
9 (strong gale)	47–55	75–89	41–47	Some branches break off trees, and some small trees blow over. Construction/temporary signs and barricades blow over.
10 (whole gale)	56–64	90–103	48–55	Trees are broken off or uprooted, structural damage likely.
11 (storm)	65–74	104–119	56–63	Widespread vegetation and structural damage likely.
12 (hurricane)	75+	120+	64+	Severe widespread damage to vegetation and structures. Debris and unsecured objects are hurled about.

3.2.1.2 Hazard Profile

One of the most prevalent natural hazard events occurring in Gwinnett County is thunderstorm wind. During the spring and summer months, Gwinnett County typically experiences numerous thunderstorms, some packing significant winds. On average, at least two thunderstorms each year produce winds strong enough to inflict significant property damage. While many of these thunderstorm wind events have been recorded within the past 20 years, this is primarily due to more accurate record keeping. In the same 64-year period, 25 injuries and 12 deaths have been attributed to thunderstorm winds in Gwinnett County. A review of historical weather data indicates there is a very significant chance of thunderstorm winds impacting Gwinnett County each year. Thunderstorm winds occur more frequently than any other natural hazard event within Gwinnett County.

**Table 3-5
Severe Thunderstorms/Windstorms
2012-2018**

Location	County	Date	Magnitude	Injuries	Property Damage	Crop Damage
NORCROSS	Gwinnett County	10-Jul-12	50	0	\$2,000	\$0.00
SUWANEE	Gwinnett County	10-Jul-12	50	0	\$2,000	\$0.00
NORCROSS	Gwinnett County	18-Jul-12	50	0	\$1,500	\$0.00
CENTERVILLE	Gwinnett County	3-Aug-12	50	0	\$1,500	\$0.00

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Location	County	Date	Magnitude	Injuries	Property Damage	Crop Damage
BUFORD	Gwinnett County	19-May-13	50	0	\$3,500	\$0.00
HOG MTN	Gwinnett County	19-May-13	50	0	\$250	\$0.00
LAWRENCEVILLE	Gwinnett County	19-May-13	50	0	\$3,000	\$0.00
DULUTH	Gwinnett County	2-Jun-13	50	0	\$2,000	\$0.00
MECHANICSVILLE	Gwinnett County	13-Jun-13	60	0	\$120,000	\$0.00
DACULA	Gwinnett County	21-Feb-14	60	0	\$1,750	\$0.00
LILBURN	Gwinnett County	29-Apr-14	60	0	\$150,000	\$0.00
NORCROSS	Gwinnett County	8-Aug-14	50	0	\$2,000	\$0.00
SNELLVILLE	Gwinnett County	8-Aug-14	50	0	\$0	\$0.00
SNELLVILLE	Gwinnett County	8-Aug-14	50	0	\$1,000	\$0.00
LAWRENCEVILLE	Gwinnett County	8-Aug-14	50	0	\$2,000	\$0.00
SNELLVILLE	Gwinnett County	18-Aug-14	50	0	\$4,000	\$0.00
BUFORD	Gwinnett County	14-Oct-14	50	0	\$500	\$0.00
HOG MTN	Gwinnett County	24-Jun-15	55	0	\$10,000	\$0.00
FIVE FORKS	Gwinnett County	24-Jun-15	50	0	\$15,000	\$0.00
CAROLINA	Gwinnett County	14-Jul-15	50	0	\$30,000	\$0.00

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Location	County	Date	Magnitude	Injuries	Property Damage	Crop Damage
GRAYSON	Gwinnett County	17-Aug-15	50	0	\$7,000	\$0.00
TRICKEM	Gwinnett County	1-Jun-16	50	0	\$4,000	\$0.00
NORCROSS	Gwinnett County	2-Jun-16	50	0	\$18,000	\$0.00
TRICKEM	Gwinnett County	2-Jun-16	50	0	\$25,000	\$0.00
GLOSTER	Gwinnett County	17-Jun-16	50	0	\$10,000	\$0.00
NORCROSS	Gwinnett County	6-Jul-16	55	0	\$100,000	\$0.00
CENTERVILLE	Gwinnett County	17-Jul-16	50	0	\$6,000	\$0.00
BERKELEY LAKE	Gwinnett County	21-Jul-16	50	0	\$25,000	\$0.00
NORCROSS	Gwinnett County	30-Nov-16	50	0	\$20,000	\$0.00
NORCROSS	Gwinnett County	1-Mar-17	50	0	\$20,000	\$0.00
DULUTH	Gwinnett County	21-Mar-17	50	0	\$30,000	\$0.00
HOG MTN	Gwinnett County	21-Mar-17	50	0	\$5,000	\$0.00
TRICKEM	Gwinnett County	30-Mar-17	60	0	\$50,000	\$0.00
TRICKEM	Gwinnett County	30-Mar-17	60	0	\$50,000	\$0.00
DULUTH	Gwinnett County	4-May-17	50	0	\$5,000	\$0.00
PITTMAN	Gwinnett County	15-Jun-17	60	0	\$30,000	\$0.00

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Location	County	Date	Magnitude	Injuries	Property Damage	Crop Damage
FIVE FORKS	Gwinnett County	15-Jun-17	50	0	\$18,000	\$0.00
PITTMAN	Gwinnett County	4-Jul-17	50	0	\$100,000	\$0.00
DUNLAP	Gwinnett County	4-Jul-17	50	0	\$15,000	\$0.00
GLOSTER	Gwinnett County	7-Jul-17	50	0	\$15,000	\$0.00
HOG MTN	Gwinnett County	7-Jul-17	50	0	\$6,000	\$0.00
NORCROSS	Gwinnett County	11-Jul-17	50	0	\$12,000	\$0.00
LILBURN	Gwinnett County	7-Jul-17	50	0	\$8,000	\$0.00
PITTMAN	Gwinnett County	20-May-18	50	0	\$15,000	\$0.00
HOG MTN	Gwinnett County	28-May-18	50	0	\$3,000	\$0.00
LILBURN	Gwinnett County	1-Jun-18	78	0	\$500,000	\$0.00
GLOSTER	Gwinnett County	9-Jun-18	50	0	\$4,000	\$0.00

3.2.1.3 Assets Exposed to Hazard

- **Property Risk/Vulnerability.** In evaluating assets that are vulnerable to severe thunderstorm/windstorms, it was determined that all critical facilities as well as all public, private, and commercial properties are vulnerable to severe thunderstorms. Major roadways such Interstate 85, 985 State route 20, 316 are equally effected and being major roads in and out of the County into Metro Atlanta and the University of Georgia which if impacted could cause significant delays to travelers during an event.

Infrastructures located in severe thunderstorm/windstorm vulnerable areas include:

- Heavy concentration of commercial and industrial land
- Heavy concentration of residential land use in vulnerable areas
- All schools located throughout the county.

- **People Risk/Vulnerability.** Risk/vulnerability includes the entire population of Gwinnett County because there is no way to determine the impact/magnitude of a windstorm and no way to predict where a storm will occur. People are vulnerable to severe windstorms through power outages, effects on transportation routes, establishment of shelters, roofs blown off structures, etc. Windstorms occur frequently within Gwinnett County.
- **Environment Risk/Vulnerability.** Risks to the environment are high for severe windstorms. High winds can destroy trees and flooding from severe thunderstorms may destroy forestry and re-direct river flow.

3.2.1.4 Vulnerability

**Table 3-6
Severe Thunderstorms/Windstorms**

Frequency of Occurrence	Highly Likely
Warning Time	3–6 hours
Geographic Extent	Community-wide
Potential Impact	Moderate

3.2.1.5 Land Use and Development Trends

New technology allows for high wind-resistant windows, either by directly installing windows capable of withstanding high winds or applying a film that protects the window. This reduces property damage by reducing the number of broken windows and reduces injuries and deaths by reducing the amount of broken glass. Although Gwinnett County currently has no regulatory capabilities regarding this technology, it is advised that new developments include high wind-resistant windows.

3.2.1.6 Hazard Summary

Overall, severe thunderstorms and high winds pose one of the greatest threats to Gwinnett County in terms of property damage and injuries and loss of life. Severe thunderstorms and high winds are the most frequently occurring natural hazard in Gwinnett County and have the greatest chance of affecting Gwinnett County each year. Based on the frequency of this hazard, and its ability to negatively affect Gwinnett County, the mitigation measures identified in this plan should be aggressively pursued.

3.2.2 Lightning

3.2.2.1 Hazard Identification

The Gwinnett County HMSC researched historical data from the NCDC and the NWS as well as information from past newspaper articles relating to lightning strikes in Gwinnett County. By definition, all thunderstorms are accompanied by lightning. The electrical charge from lightning can potentially be as much as 100 million volts. Lightning strikes proceed from cloud to cloud, cloud to ground, or where high structures are involved, from ground to cloud. Lightning strikes in Gwinnett County are most prevalent in May, with August being the next month of highest occurrence.

3.2.2.2 Hazard Profile

Lightning, as with many natural hazards, can strike anywhere and at any time. One lightning event was recorded in 2010, and no injuries or deaths occurred as a result, but property damage from this event totaled \$500,000. Gwinnett County has purchased a Weatherbug Station that is used daily for lightning detection. The Weatherbug Station is equipped with a lightning sensor to detect both cloud-to-ground and cloud-to-cloud strikes. It identifies positive and negative charged strikes, the approximate location and frequency of strikes which help in determining the severity of an approaching storm. Information is updated and recorded in an archive database that is accessible through Weatherbug. This information can then be used to assist fire investigators in determining the cause of local fires and to gather other details about the impact of lightning on the community.

**Table 3-7
Lightning Strikes²
2010-2018**

Location	Date	Death	Injuries	Property Damage	Crop Damage
SUWANEE	6/1/2010	0	0	125.00K	0.00K
DULUTH	6/2/2010	0	0	100.00K	0.00K
HOG MTN	6/2/2010	0	0	5.00K	0.00K
HOG MTN	6/2/2010	0	0	5.00K	0.00K
CAROLINA	6/15/2010	0	0	500.00K	0.00K
DULUTH	6/15/2010	0	0	250.00K	0.00K
LAWRENCEVILLE	6/25/2010	0	0	5.00K	0.00K
DACULA	6/25/2010	0	0	150.00K	0.00K
HOG MTN	6/26/2010	0	0	25.00K	0.00K
LAWRENCEVILLE	6/26/2010	0	0	250.00K	0.00K
BUFORD	7/16/2010	0	0	200.00K	0.00K
DULUTH	7/26/2010	0	0	150.00K	0.00K
DULUTH	7/26/2010	0	0	150.00K	0.00K
MECHANICSVILLE	7/26/2010	0	0	10.00K	0.00K
NORCROSS	7/26/2010	0	0	25.00K	0.00K

² NOAA Storm Events Database, <http://www.ncdc.noaa.gov/stormevents>

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Location	Date	Death	Injuries	Property Damage	Crop Damage
GLOSTER	7/26/2010	0	0	150.00K	0.00K
LUXOMNI	7/26/2010	0	0	150.00K	0.00K
TRICKEM	7/26/2010	0	0	300.00K	0.00K
CAROLINA	8/20/2010	0	0	25.00K	0.00K
LILBURN	8/20/2010	0	0	200.00K	0.00K
GLOSTER	8/20/2010	0	0	100.00K	0.00K
NORCROSS	4/15/2011	0	0	300.00K	0.00K
TRICKEM	5/26/2011	0	0	200.00K	0.00K
GRAYSON	6/18/2011	0	0	250.00K	0.00K
ROSEBUD	6/18/2011	0	0	50.00K	0.00K
BUFORD	6/18/2011	0	0	1.00K	0.00K
LAWRENCEVILLE	8/9/2012	0	0	300.00K	0.00K
SUWANEE	6/2/2013	0	0	300.00K	0.00K
CAROLINA	8/22/2013	0	0	50.00K	0.00K
LILBURN	8/22/2013	0	0	10.00K	0.00K
SNELLVILLE	6/18/2015	0	0	100.00K	0.00K
LUXOMNI	6/24/2015	0	0	10.00K	0.00K
PITTMAN	6/2/2016	0	0	15.00K	0.00K
CENTERVILLE	7/17/2016	0	1	0.00K	0.00K
HOG MTN	7/4/2017	0	0	0.20K	0.00K
NORCROSS	7/14/2017	0	0	1.00K	0.00K
MECHANICSVILLE	7/14/2017	0	0	10.00K	0.00K
SUWANEE	7/22/2017	0	0	100.00K	0.00K

Location	Date	Death	Injuries	Property Damage	Crop Damage
DACULA	5/20/2018	0	0	1.00K	0.00K
SUGAR HILL	6/16/2018	0	0	5.00K	0.00K
SUGAR HILL	7/16/2018	0	0	1.00K	0.00K

3.2.2.3 Assets Exposed to Hazard

- **Property Risk/Vulnerability.** In evaluating assets that are vulnerable to lightning incidents, the Gwinnett County HMSC determined that all critical facilities as well as all public, private, and commercial properties are vulnerable to lightning incidents. Home fires are contributed yearly to being struck by lightning and community awareness programs are big asset in mitigating loss of life and property damage.
- **People Risk/Vulnerability.** It was determined that risk/vulnerability includes the entire population of Gwinnett County because there is no way to determine the impact or magnitude of a lightning incident and no way to predict where a lightning incident will occur. People are vulnerable to lightning incidents through power outages, effects on transportation routes, establishment of shelters, being struck by lightning, etc. A significant chance of a lightning incident exists in any given year in Gwinnett County. With recent development, many Municipalities have installed or are in the process of installing open green areas for public gatherings. Many municipalities are also looking at installing lightning detection and notification systems to notify the public during an event to protect life and property.
- **Environment Risk/Vulnerability.** Risks to the environment are low for a lightning incident.

3.2.2.4 Vulnerability

Table 3-8 Lightning

Frequency of Occurrence	Highly Likely
Warning Time	None–Minimal
Geographic Extent	Localized
Potential Impact	Minor

3.2.2.5 Land Use and Development Trends

Gwinnett County does not currently have land use or development trends related to lightning.

3.2.2.6 Hazard Summary

Lightning strikes, although rare in occurrence, have a high danger potential associated with them. Lightning, as with some of the other natural hazards typical to Gwinnett County, can strike anywhere and at any time. Its unpredictability along with its deadly and destructive potential is all the more reason to explore mitigation actions. The Gwinnett County HMSC identified specific mitigation goals, objectives, and action items related to lightning strikes.

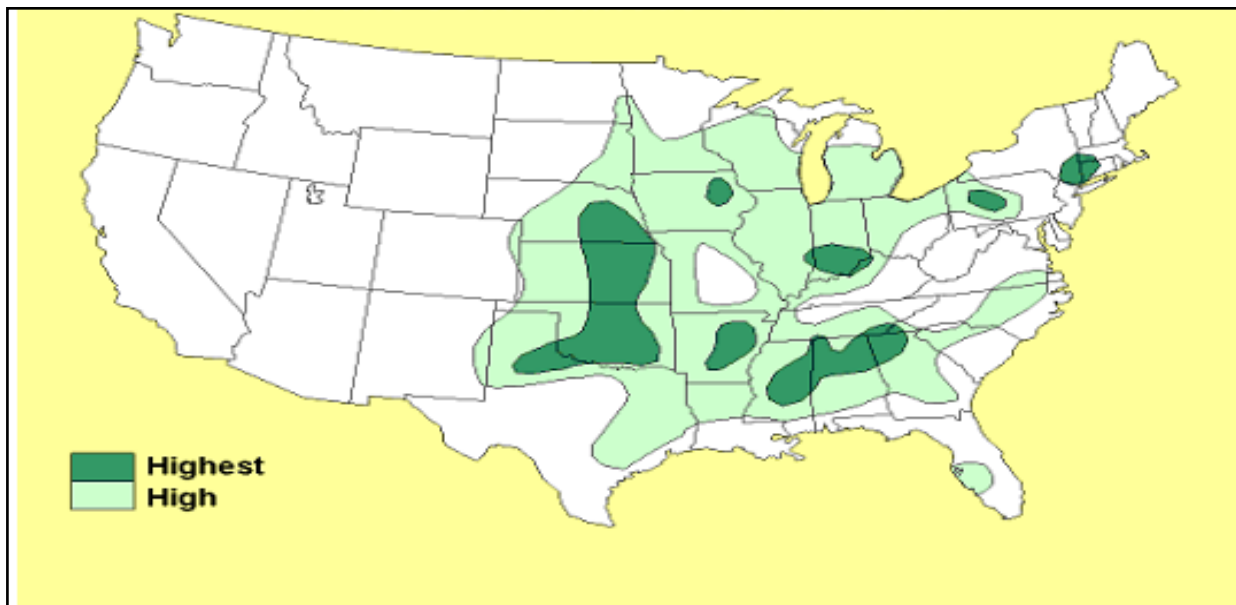
3.2.3 Tornadoes

3.2.3.1 Hazard Identification

The HMSC reviewed historical data from both SHELDUS and NCDC in researching the past events and effects of tornadoes in Gwinnett County. A tornado is a violently rotating column of air extending from a thunderstorm to the ground. The most violent tornadoes are capable of tremendous destruction with wind speeds of 250 mph or more. Damage paths can be in excess of 1 mile wide and 50 miles long. Tornado season in Georgia runs from March through August; however, tornadoes can strike at any time of the year if the essential conditions are present.³

In terms of extent, the Gwinnett County may experience tornadoes ranging from EF0 (65–85 mph) to EF4 (166–200 mph). The levels of tornado risk nationwide are shown in Figure 13. The Fujita Scale used to rate the severity of tornadoes and associated wind speed categories was updated in 2007 and is now the Enhanced Fujita (EF) Scale. The EF Scale is shown in table 3-9.

Figure 13 Tornado Risk Areas in the Conterminous United States ⁴



**Table 3-9
Enhanced Fujita Scale^{5,6}**

Fujita Scale			Derived EF Scale		Operational EF Scale	
F	Fastest ¼	3 Second Gust	EF	3 Second Gust	EF	3 Second

³ National Weather Service, <http://www.nws.noaa.gov>

⁴ National Weather Service, <http://www.nws.noaa.gov>

⁵ National Weather Service, <http://www.nws.noaa.gov>

⁶ The Enhanced Fujita Scale still is a set of wind estimates (not measurements) based on damage. It uses 3-second gusts estimated at the point of damage based on a judgment of levels of damage to various indicators. These estimates vary with height and exposure. The 3-second gust is not the same wind as in standard surface observations. Standard measurements are taken by weather stations in open exposures using a directly measured "1-minute mile" speed.

Fujita Scale			Derived EF Scale		Operational EF Scale	
Number	Mile (mph)	(mph)	Number	(mph)	Number	Gust (mph)
0	40–72	45–78	0	65–85	0	65–85
1	73–112	79–117	1	86–109	1	86–110
2	113–157	118–161	2	110–137	2	111–135
3	158–207	162–209	3	138–167	3	136–165
4	208–260	210–261	4	168–199	4	166–200
5	261–318	262–317	5	200–234	5	Over 200

3.2.3.2 Hazard Profile

All of Gwinnett County is vulnerable to the threat of a tornado because it cannot be predicted exactly when or where a tornado might occur. Gwinnett County has experienced four tornadoes in the last 15 years; within the past 68 years, Gwinnett County has experienced 11 recorded tornadoes. In addition, numerous tornado watches have been recorded during this period. Trend analysis indicates that a tornado will touch down in Gwinnett County every five years. This equates to an 18 percent chance of a tornado touching down in Gwinnett County in any given year. Tornadoes tend to strike in a random fashion, making the task of reliably calculating a recurrence interval extremely difficult. The damage potential associated with a tornado is extremely high. In 2010, an EF2 tornado (Significant Tornado, 113-157 mph) touched down near Holland Park Drive in east central Gwinnett County, about 5 miles northwest of Dacula. The tornado was determined to have a path width of 300 yards with maximum wind gusts of 130 mph. A total of 56 homes and 1 business along the path of the tornado sustained at least minor damage. Of these, 15 to 20 homes sustained major damage or were destroyed. One of these homes collapsed. Damage to homes and property was estimated at approximately \$5 million.

**Table 3-10 Tornadoes^{7, 8}
1961-2019**

Location	Date	Type	Magnitude	Injuries	Fatalities	Property Damage	Crop Damage
Gwinnett County	05/25/1961	Tornado	F1	0	0	\$2,500	\$0.00
Gwinnett County	05/16/1969	Tornado	F1	0	0	\$2,500	\$0.00
Gwinnett County	01/29/1970	Tornado	F2	0	0	\$25,000	\$0.00
Gwinnett County	04/23/1971	Tornado	F1	0	0	\$2,500	\$0.00

⁷ SHELDUS, http://webra.cas.sc.edu/hvriapps/sheldus_web/sheldus_results.aspx

⁸ NOAA Storm Events Database, <http://www.ncdc.noaa.gov/stormevents/>

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Location	Date	Type	Magnitude	Injuries	Fatalities	Property Damage	Crop Damage
Gwinnett County	05/28/1976	Tornado	F2	0	0	\$25,000	\$0.00
Gwinnett County	11/10/1984	Tornado	F2	0	8	\$2,500,000	\$0.00
Gwinnett County	02/10/1990	Tornado	F1	0	0	\$2,500,000	\$0.00
Grayson	06/27/1994	Tornado	F2	1	0	\$5,000,000	\$0.00
Norcross	04/08/1998	Tornado	F2	0	10	\$50,000,000	\$0.00
Lawrenceville	04/03/2000	Tornado	F1	0	0	\$1,500,000	\$0.00
Hog Mtn	11/30/2010	Tornado	EF2	0	0	\$5,000,000	\$0.00

3.2.3.3 Assets Exposed to Hazard

- **Property Risk/Vulnerability.** It can be assumed that all structures and facilities within Gwinnett County could be damaged by a tornado because tornadoes are among the most unpredictable of weather phenomena and are indiscriminate as to when or where they strike.
- **People Risk/Vulnerability.** It was determined that risk/vulnerability includes the entire population of Gwinnett County because there is no way to determine the impact/magnitude of a tornado and no way to predict when or where a tornado will occur. People are vulnerable to the effects of tornadoes, including power outages, disruption to transportation routes, damage to shelter, flying debris, etc. For example, power outages at any of the multiple nursing homes in the county or one of the three main hospitals could result in the shutdown of essential life supporting equipment resulting in loss of life. There is a 50 percent chance of a tornado occurring in any given year in Gwinnett County. Currently there are 30 plus locations identified county wide as shelter sites in case a tornado were to hit the county and sheltering was needed but unfortunately none of the shelters are rated for tornadoes.
- **Environment Risk/Vulnerability.** Risks to the environment can be significant. Environmental risks can include flying debris and destruction of critical infrastructure that damage and affect water supply and contaminate potable water for public consumption.

3.2.3.4 Vulnerability

**Table 3-11
Tornadoes**

Frequency of Occurrence	Likely
Warning Time	None–Minimal
Geographic Extent	Community-wide
Potential Impact	Major

3.2.3.5 Land Use and Development Trends

Continued development in Gwinnett County will result in an increase in the potential for damage from tornadoes. Gwinnett County has a land use plan that clearly identifies future development. Gwinnett County enforces the Georgia State Building Code, which requires structures to be designed and constructed for wind

loads. Using and enforcing these codes will provide reasonable protection from most natural hazards, including tornadoes. Updating building codes and adopting these codes will reduce vulnerability and damage from tornadoes.

New technology allows for high wind-resistant windows, either by directly installing windows capable of withstanding high winds or applying a film coating that protects the window. This reduces property damage by reducing the number of broken windows and reduces injuries and deaths by reducing broken glass. Although Gwinnett County currently has no regulatory capabilities regarding this technology, it is advised that new developments include high wind-resistant windows.

3.2.3.6 Hazard Summary

Overall, Gwinnett County has high exposure to potential damage from tornadoes. Should a tornado hit certain portions of Gwinnett County that are highly concentrated with homes or any of the critical facilities identified, depending upon the strength and duration of the event, significant damage could occur. Due to the destructive nature of tornadoes, it is imperative that pre-disaster mitigation measures be identified. The obstacle to accurate location identification is the fact that tornadoes may hop from one location to another creating virtually no measurable impact estimate. When identifying this hazard we must take into consideration intensity and duration. When estimating losses related to tornado events, it can be assumed that structures or facilities with the greatest replacement value will be those that sustain the most monetary damage. Some of the more vulnerable facilities from a monetary standpoint County and City facilities, utilities, Tier II chemical facilities, facilities that focus on vulnerable populations, and critical infrastructure sites. To best determine loss HAZUS-MH Version 2.2 software was utilized to determine the tornado risk and can be found in Appendix A.

3.2.4 Flooding

3.2.4.1 Hazard Identification

Overflow of rivers and streams due to severe storms or torrential rains may result in significant flooding. Different variables impact flooding, including topography, ground saturation, previous rainfall, soil types, drainage, basin size, drainage patterns of streams, and vegetative cover. Flooding may occur slowly or become a flash flood, such as in the case of a dam failure. The Gwinnett County HMSC researched historical data from NCDC, NWS, FEMA, and the National Flood Insurance Program (NFIP) as well as information from past newspaper articles relating to flooding in Gwinnett County.

FEMA Requirement 44 CFR 201.6 (c)(2)(ii)

The risk assessment must also address National Flood Insurance Program (NFIP)-insured structures that have been

To provide a sense of the flood risk in a community, it is beneficial to summarize the policies in force and claim statistics from the NFIP. The U.S. Congress established the NFIP with the passage of the National Flood Insurance Act of 1968. The NFIP is a federal program that enables property owners in participating communities to purchase insurance as protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the federal government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the federal government will make flood insurance available within the community as a financial protection against flood losses. Gwinnett County has been a member of the NFIP since 1974. Table 3-12 provides the Gwinnett County member details. All communities participate in NFIP and the newest city to Gwinnett County Peachtree Corners is in the process of establishing an NFIP compliant program.

**Table 3-12
Gwinnett County NFIP member detail**

(As of 04/03/2018 www.fema.gov)

CID	Community Name	County	Current Effective Map Date
130450#	City of Berkley Lake	Gwinnett County	March 2013
130343#	Town of Braselton	Gwinnett County	March 2013
130323#	City of Buford	Gwinnett County	March 2013
130324#	City of Dacula	Gwinnett County	March 2013
130098#	City of Duluth	Gwinnett County	March 2013
130325#	City of Grayson	Gwinnett County	March 2013
130322#	County of Gwinnett	Gwinnett County	March 2013
130099#	City of Lawrenceville	Gwinnett County	March 2013
130100#	City of Lilburn	Gwinnett County	March 2013
130474#	City of Sugar Hill	Gwinnett County	March 2013
130328#	City of Suwanee	Gwinnett County	March 2013
135176C	City of Peachtree Corners	Gwinnett County	September 2006

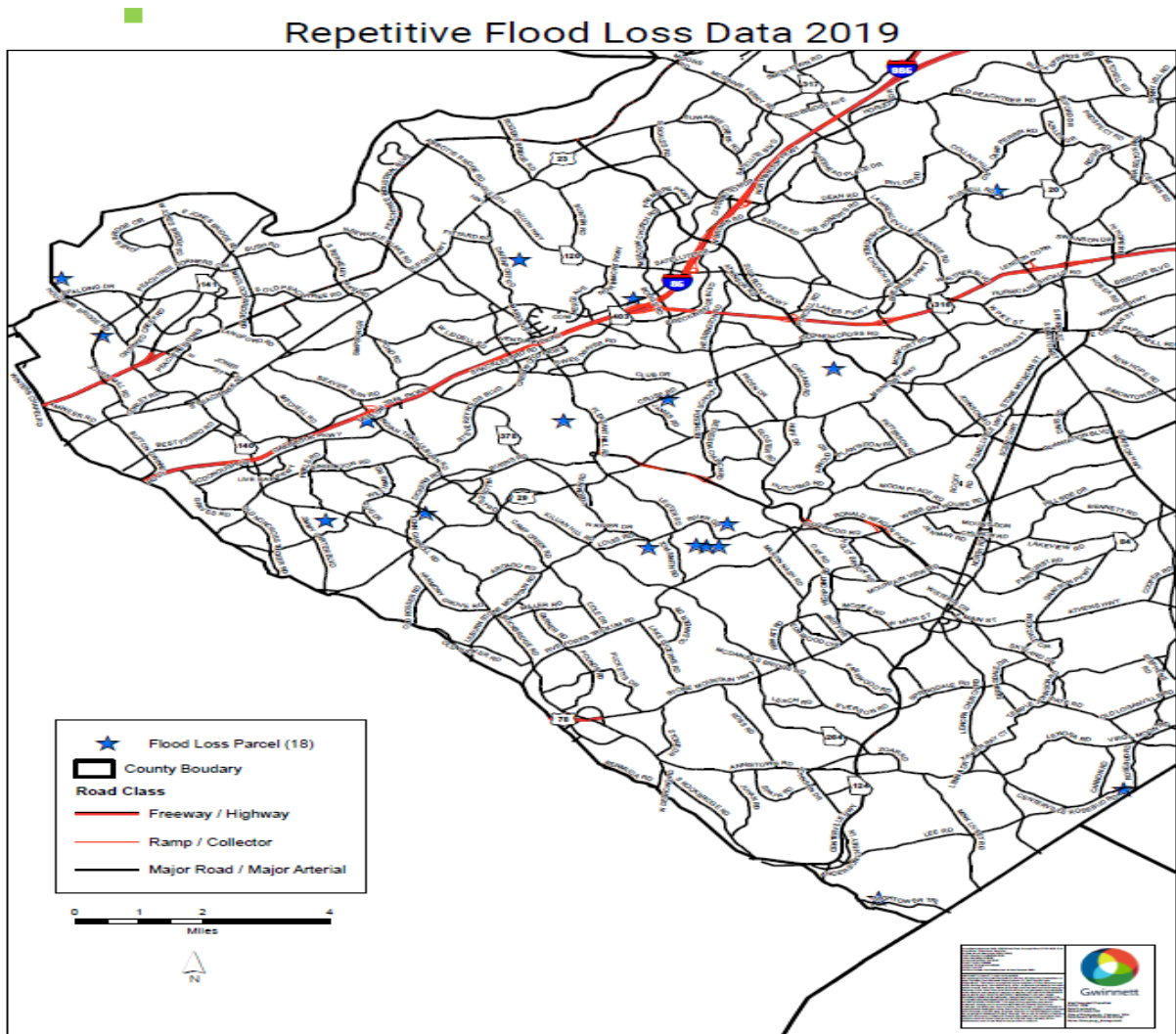
Gwinnett County has approximately 22,000 Acres of floodplain. Floodplain is very beneficial to our overall ecosystem; water quality is improved through the wetlands ability to filter nutrients and impurities from runoff and process organic wastes. Our Floodplain Management Ordinance prohibits construction within the floodplain. A home built on a floodplain lot is required to be elevated three (3) feet above the 100 year Base Flood Elevation (BFE). We currently have about 500 policyholders within the county who have purchased flood insurance through the National Flood Insurance Program (NFIP). Each of these policyholders will realize a 15% discount this year based on Gwinnett County being an active and participating member of the Community Rating System (CRS).

3.2.4.2 Repetitive Loss Properties

Repetitive loss properties are a serious concern from a mitigation standpoint. A repetitive loss property is considered so when there are two or more flood insurance claims exceeding more than \$1,000 for each loss. The losses must be within 10 years of each other and must be at least 10 days apart. A property is considered a severe repetitive loss property when there are at least four losses exceeding \$5,000 for each loss or when there are two or more losses where the building payments exceed the property value. As of February 2019 Gwinnett County has approximately 15 repetitive loss properties throughout the unincorporated areas of the County that are identified by FEMA as being residential properties.

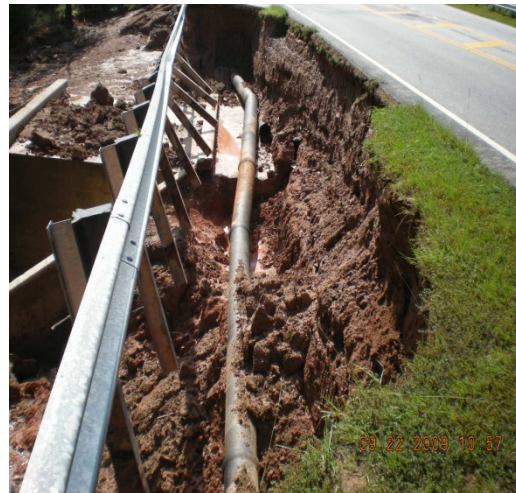
Figure 14 provides details on Gwinnett County repetitive loss properties as defined above.

Figure 14 Repetitive Loss Map



3.2.4.3 Hazard Profile

Research indicates that 20 flood incidents have occurred in Gwinnett County since 2009. The occurrence of flooding in Gwinnett County is likely and has the potential to wreak havoc on the community. Statistically, Gwinnett County can expect flooding every eight years. This equates to a 12 percent chance of flooding occurring in any given year. Gwinnett County has previously acquired 11 flood-prone properties through the Hazard Mitigation Grant Program after major flooding in 2009. Additionally, drainage improvement projects are ongoing on all over the county including several Municipalities adopting new floodplain ordinances as the City of Lilburn did in 2019.



**Table 3-13
Flood Incidents^{9, 10}
2009-2018**

Location	Date	Type of Flood	Injuries	Fatalities	Property Damage	Crop Damage
DACULA	3/27/2009	Flash Flood	0	0	1.00K	0.00K
MECHANICS VILLE	8/28/2009	Flash Flood	0	0	1.00K	0.00K
DACULA	9/16/2009	Flood	0	0	1.00K	0.00K
NORCROSS	9/21/2009	Flash Flood	1	0	630.00K	0.00K
SUGAR HILL	9/21/2009	Flash Flood	0	0	630.00K	0.00K

⁹ SHELDUS, http://webra.cas.sc.edu/hvriapps/sheldus_web/sheldus_results.aspx

¹⁰ NOAA Storm Events Database, <http://www.ncdc.noaa.gov/stormevents/>

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Location	Date	Type of Flood	Injuries	Fatalities	Property Damage	Crop Damage
BUFORD	9/21/2009	Flood	0	0	12.500M	0.00K
BUFORD	9/21/2009	Flood	0	0	5.630M	0.00K
REST HAVEN	9/21/2009	Flood	0	0	630.00K	0.00K
MECHANICS VILLE	9/21/2009	Flood	0	0	5.000M	0.00K
MECHANICS VILLE	10/12/2009	Flash Flood	0	0	5.00K	0.00K
MECHANICS VILLE	10/12/2009	Flood	0	0	5.00K	0.00K
CAROLINA	1/24/2010	Flash Flood	0	0	3.00K	0.00K
SUWANEE	5/3/2010	Flash Flood	0	0	10.00K	0.00K
NORCROSS	7/26/2010	Flash Flood	0	0	3.00K	0.00K
REST HAVEN	10/1/2012	Flash Flood	0	0	5.00K	0.00K
SUGAR HILL	5/19/2013	Flash Flood	0	0	10.00K	0.00K
CAROLINA	5/19/2013	Flash Flood	0	0	15.00K	0.00K
DULUTH	7/12/2013	Flash Flood	0	0	3.00K	0.00K
DULUTH	6/24/2015	Flash Flood	0	0	3.00K	0.00K
GRAYSON	12/24/2015	Flash Flood	0	0	3.00K	0.00K
LAWRENCEVILLE	4/23/2017	Flash Flood	0	0	0.00K	0.00K
MECHANICS VILLE	6/20/2017	Flash Flood	0	0	12.00K	0.00K
LUXOMNI	6/20/2017	Flash Flood	0	0	5.00K	0.00K

Location	Date	Type of Flood	Injuries	Fatalities	Property Damage	Crop Damage
CAROLINA	7/17/2017	Flash Flood	0	0	0.00K	0.00K
GRAYSON	7/13/2018	Flash Flood	0	0	0.00K	0.00K
Totals:			1	0	25.105M	0.00K

3.2.4.4 Assets Exposed to Hazard

Property Risk/Vulnerability. Gwinnett County has identified flood zones within the jurisdiction. All properties within a floodplain have an increased chance of flooding. The vulnerability of these structures is very high, depending on the probability of that area flooding within a 10-year or 100-year period. Many assets previously exposed to flooding have been mitigated through the FEMA Hazard Mitigation Grant Program buyouts or by implementing infrastructure changes such as widening culverts to better direct floodwaters.

People Risk/Vulnerability. People living in and around identified floodplain areas are more vulnerable to a flooding incident than those who live/work out of floodplain areas, but these areas can still be affected depending on the severity of the flooding incident. Flooded roadways present dangers for commuters. This is particularly true due to a significant chance of a flood event occurring in any given year. In addition critical life safety facilities such as Fire/EMS stations in or near the floodplain are susceptible to having their facility and equipment damaged by flooding, impeding their life safety missions and operations.

Environment Risk/Vulnerability. Risks to the environment are high if a flooding incident occurs. Examples of common environmental risks include limited public access to water and the effects floodwater has on public water supply. Flooding can affect and contaminate potable water for public consumption creating a health risk for the public.

3.2.4.5 Vulnerability

**Table 3-14
Flooding**

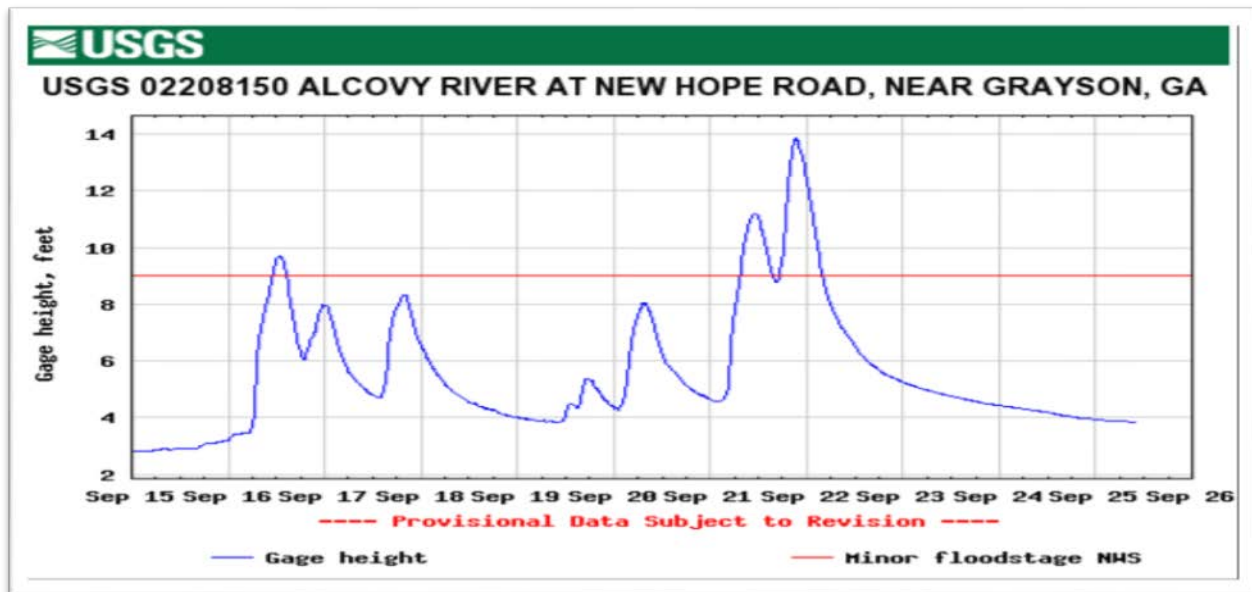
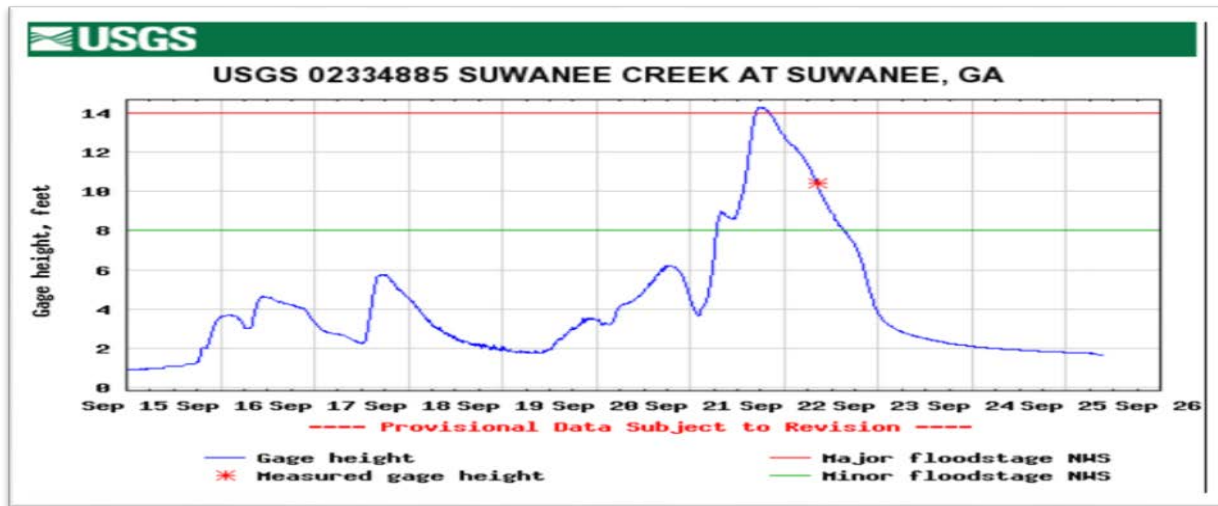
Frequency of Occurrence	Likely
Warning Time	3–6 Hours
Geographic Extent	Community-wide
Potential Impact	Major

3.2.4.6 Principal Flood Problems

According to a recent FEMA Flood Insurance Study, Flooding occurs most frequently in the low-lying areas of the Yellow River, and areas of Sweetwater, Bromolow, Beaver Ruin, Jackson, and Camp Creeks. Notable

floods occurred in Gwinnett County in 1919, 1948, 1961, 1976, 2003 and 2009. During the September 2009 flood, the Yellow River watershed received rainfall approximately equal to the 24-hour 1-percent-annual-chance rainfall depth for the county. Six USGS gages in the Upper Yellow River watershed recorded the flood and were used for flood frequency analysis. Three of the gages recorded flood discharges between 2- and 1-percent-annual-chance flood frequency, one between 1- and 0.2- percent-annual chance flood frequency and one between 10- and 2-percent-annual-chance flood frequencies¹¹.

Figure 15 - Examples of USGS Stream Gage Data from the September 2009 Flood in Gwinnett County



¹¹ Flood Insurance Study, Gwinnett County, Georgia and incorporated areas Vol. 1 of 7. FEMA Flood Insurance Study number 13135CV001C. revised March 4, 2014.

Figure 16 - NWS Statement describing the amount of rainfall across the region in September 2009

PUBLIC INFORMATION STATEMENT
 NATIONAL WEATHER SERVICE PEACHTREE CITY GA
 200 PM EDT WED NOV 4 2009

...HISTORICAL RAINFALL FREQUENCY AMOUNTS OCCUR OVER PORTIONS OF NORTH GEORGIA IN SEPTEMBER 2009...

THE NATIONAL WEATHER SERVICE HAS BEEN REVIEWING THE EXTREME HEAVY RAINFALL THAT OCCURRED IN SEPTEMBER 2009 WHICH CAUSED EPIC FLOODING IN PORTIONS OF NORTH GEORGIA. NUMEROUS LOCATIONS IN DOUGLAS...EAST PAULDING...WEST COBB...EAST CARROLL...CENTRAL GWINNETT AND SOUTHWEST WALKER COUNTIES EXCEEDED 10 INCHES OF RAIN DURING A 24 HOUR PERIOD. THE GREATEST AMOUNT WAS 16.7 INCHES JUST WEST OF DOUGLASVILLE.

THE FOLLOWING AMOUNTS ARE FOR 24 HOUR RAINFALL FREQUENCY PERIODS IN NORTH GEORGIA AND THE CHANCES OF RECURRENCE IN ANY GIVEN YEAR...

7.2 INCHES IS 1.0 PERCENT...100 YEAR RAIN EVENT
 7.7 INCHES IS 0.5 PERCENT...200 YEAR RAIN EVENT
 8.2 INCHES IS 0.2 PERCENT...500 YEAR RAIN EVENT
 8.7 INCHES IS 0.1 PERCENT...1000 YEAR RAIN EVENT
 9.7 INCHES IS 0.05 PERCENT...5000 YEAR RAIN EVENT

USING RAINFALL FREQUENCY CALCULATIONS...IT HAS BEEN DETERMINED THE CHANCES OF 10 INCHES OR MORE OCCURRING AT ANY GIVEN POINT ARE LESS THAN ONE HUNDRETH OF ONE PERCENT. THIS MEANS THE ODDS ARE 1 IN 10000 OR MORE OF RECURRENCE IN ANY GIVEN YEAR...OR A 10000 YEAR RAIN EVENT.

WEATHER RADAR ESTIMATES COMBINED WITH AUTOMATED HOURLY RAINGAGE REPORTS INDICATED THE 24 HOUR PERIOD WITH THE MOST INTENSE RAINFALL FOR THE WHOLE STORM EVENT WAS FROM 800 PM EDT ON SEPTEMBER 20 THROUGH 800 PM EDT ON SEPTEMBER 21.

Figure 17 - Samples of Flood Depth Data from Gwinnett County

Samples of Stream Gage Data showing: Flood Stage, Historic Crests and Recent Crests				
Suwanee Creek	Alcovy River	Big Haynes Creek	Pew Creek	Yellow River
Flood Categories (in feet)	Flood Categories (in feet)	Flood Categories (in feet)	Flood Categories (in feet)	Flood Categories (in feet)
Major Flood Stage: 14	Major Flood Stage: 16	Major Flood Stage: 14	Major Flood Stage: 24	Major Flood Stage: 23
Moderate Flood Stage: 11	Moderate Flood Stage: 11	Moderate Flood Stage: 12	Moderate Flood Stage: 19	Moderate Flood Stage: 17
Flood Stage: 8	Flood Stage: 9	Flood Stage: 10	Flood Stage: 15	Flood Stage: 13
Action Stage: 7	Action Stage: 7	Action Stage: 8	Action Stage: 13	Action Stage: 11
Historic Crests	Historic Crests	Historic Crests	Historic Crests	Historic Crests
(1) 14.30 ft on 09/21/2009 (2) 12.04 ft on 10/05/1996 (3) 11.76 ft on 05/19/2013 (4) 11.42 ft on 03/17/1990 (5) 11.22 ft on 10/13/2009 Show More Historic Crests	(1) 14.93 ft on 06/17/2003 (2) 13.85 ft on 09/22/2009 (3) 12.14 ft on 09/17/2004 (4) 12.09 ft on 01/25/2010 (5) 12.02 ft on 10/12/2009 Show More Historic Crests	(1) 11.89 ft on 07/07/2005 (2) 11.65 ft on 03/20/2003 (3) 10.58 ft on 09/16/2004 (4) 10.56 ft on 01/25/2010 (5) 8.51 ft on 09/21/2009	(1) 27.47 ft on 09/21/2009 (2) 17.24 ft on 07/07/2005 (3) 16.77 ft on 05/06/2003 (4) 14.39 ft on 09/17/2004	(1) 25.54 ft on 09/22/2009 (2) 17.53 ft on 05/07/2003 (3) 15.58 ft on 01/25/2010 (4) 15.22 ft on 11/12/2009 (5) 15.09 ft on 09/18/2004 Show More Historic Crests
(P): Preliminary values subject to further review.	(P): Preliminary values subject to further review.	(P): Preliminary values subject to further review.	(P): Preliminary values subject to further review.	(P): Preliminary values subject to further review.
Recent Crests	Recent Crests	Recent Crests	Recent Crests	Recent Crests
(1) 9.99 ft on 04/08/2014 (2) 9.20 ft on 01/12/2014 (3) 9.57 ft on 12/23/2013 (4) 11.76 ft on 05/19/2013 (5) 8.96 ft on 05/05/2013	(1) 9.45 ft on 01/04/2015 (2) 10.10 ft on 04/07/2014 (3) 10.81 ft on 01/11/2014 (4) 9.17 ft on 12/23/2013 (5) 10.93 ft on 05/19/2013	(1) 10.56 ft on 01/25/2010 (2) 8.51 ft on 09/21/2009 (3) 11.89 ft on 07/07/2005 (4) 10.58 ft on 09/16/2004 (5) 11.65 ft on 03/20/2003	(1) 27.47 ft on 09/21/2009 (2) 17.24 ft on 07/07/2005 (3) 14.39 ft on 09/17/2004 (4) 16.77 ft on 05/06/2003	(1) 13.03 ft on 01/12/2014 (2) 13.21 ft on 05/06/2013 (3) 14.60 ft on 05/04/2010 (4) 13.65 ft on 02/06/2010 (5) 15.58 ft on 01/25/2010
Observations courtesy of US Geological Survey. Displayed on NWS Advanced Hydrologic Prediction Service Website.				

3.2.4.7 Risk

The Department of Homeland Security (DHS), Federal Emergency Management Agency's (FEMA) Risk Mapping, Assessment, and Planning (Risk MAP) program provided Gwinnett County with flood risk information and tools that can be used to increase their resilience to flooding and better protect their citizens. A Flood Risk Report (FRR) and a Flood Risk Map were published for Gwinnett County in January 2013. Risk MAP assists with the process of identifying, assessing, communicating, planning for, and mitigating flood-related risks by pairing accurate floodplain maps with risk assessment tools and planning and outreach support. Gwinnett County has also been featured on the FEMA website as a Risk Map success story <https://www.fema.gov/risk-map-success-story-gwinnett-county-georgia-revamps-stormwater-infrastructure-improvement-plans>

Through Risk MAP, FEMA provided Gwinnett County with updated Flood Insurance Rate Maps (FIRMs) and Flood Insurance Studies (FISs) that focus on the probability of floods and that show where flooding may occur as well as the calculated 1% annual chance flood elevation. The 1% annual chance flood, also known as the base flood, has a 1% chance of being equaled or exceeded in any given year. (Structures in Gwinnett are required to be 3 feet over the 100 year flood elevation or BFE). Since flood risk is inherently dynamic FEMA also provides Gwinnett County with the following flood risk products¹²:

- Flood Risk Report (FRR): The FRR presents key risk analysis data for the Flood Risk Project.
- Flood Risk Map (FRM): See Figure 18 of this document, the FRM shows a variety of flood risk information for the in the areas included in the project.
- Flood Risk Database (FRD): The FRD is in GIS format and houses the flood risk data developed during the course of the flood risk analysis that can be used and updated by the community.

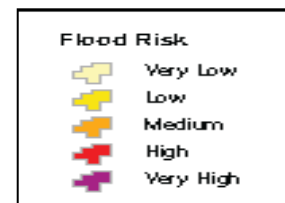
The FRR, FRM, and FRD contain a variety of flood risk analysis information to help describe and visualize flood risk within the project area including the following elements:

- Changes Since Last FIRM
- Water Surface, Flood Depth, and Analysis Grids
- Flood Risk Assessment Information
- Areas of Mitigation Interest

3.2.4.8 Flood Risk Results Information

Gwinnett County's flood risk analysis incorporates results from a FEMA-performed Hazus analysis which accounts for newly modeled areas in the Flood Risk Project and newly modeled depths for certain flood events. Potential losses were estimated as well as potential loss ratios for multiple scenarios.

The Flood Risk Map offers a graphical overview of the Flood Risk Project which highlights areas of risk that should be noted, based on potential losses, exposed facilities, etc., and is based on data found in the FRD. Areas of



¹² Products are available for download through the FEMA Map Service portal: [websitehttps://msc.fema.gov/portal](https://msc.fema.gov/portal). Local flood risk information can also be accessed through the Georgia Flood M.A.P. <http://map.georgiadfirm.com>

potential flood risk are identified as very low, low, medium, high, very high and are calculated according to the building level per Census-Block.

Figure 18 - Flood Risk Map

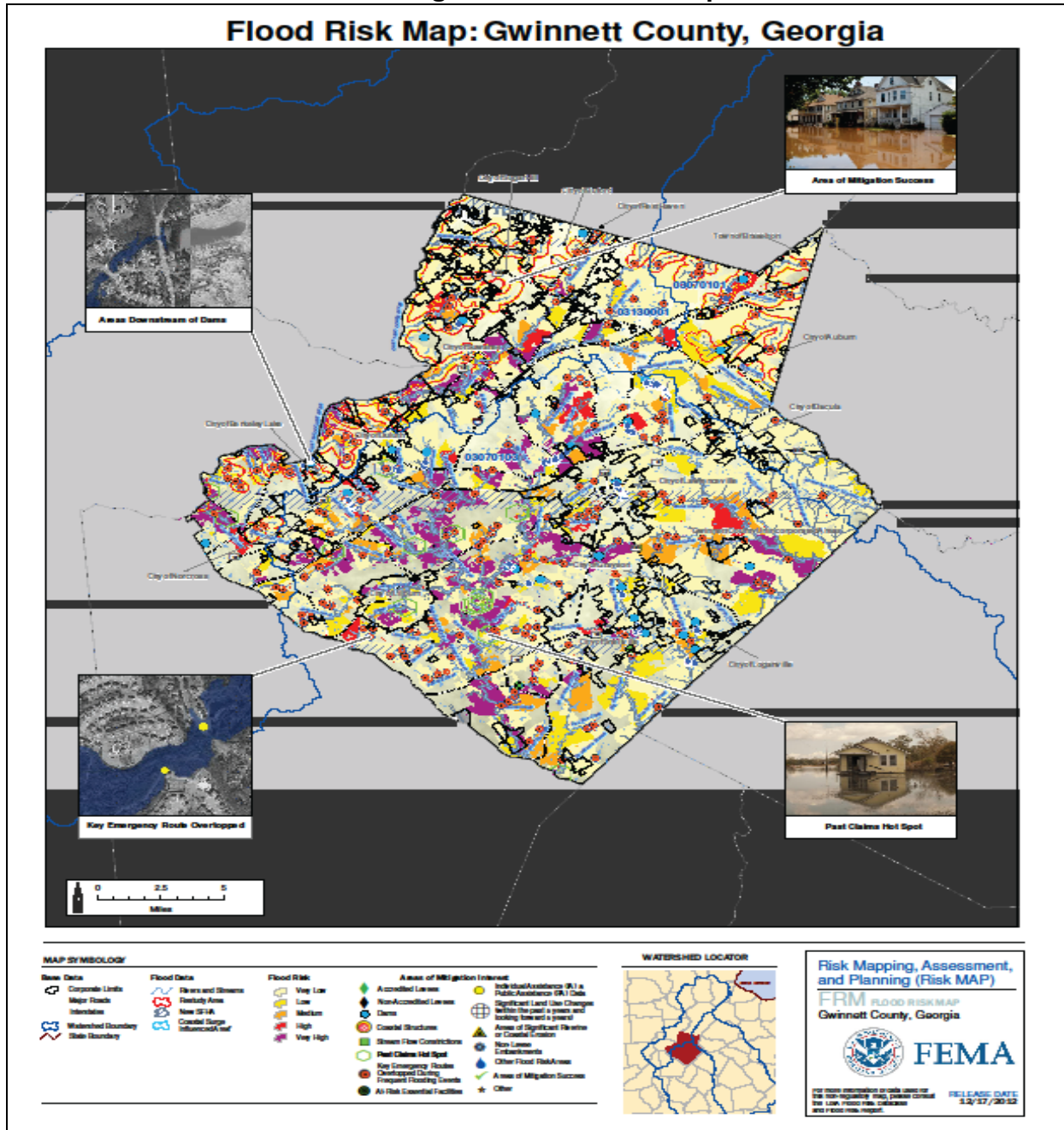
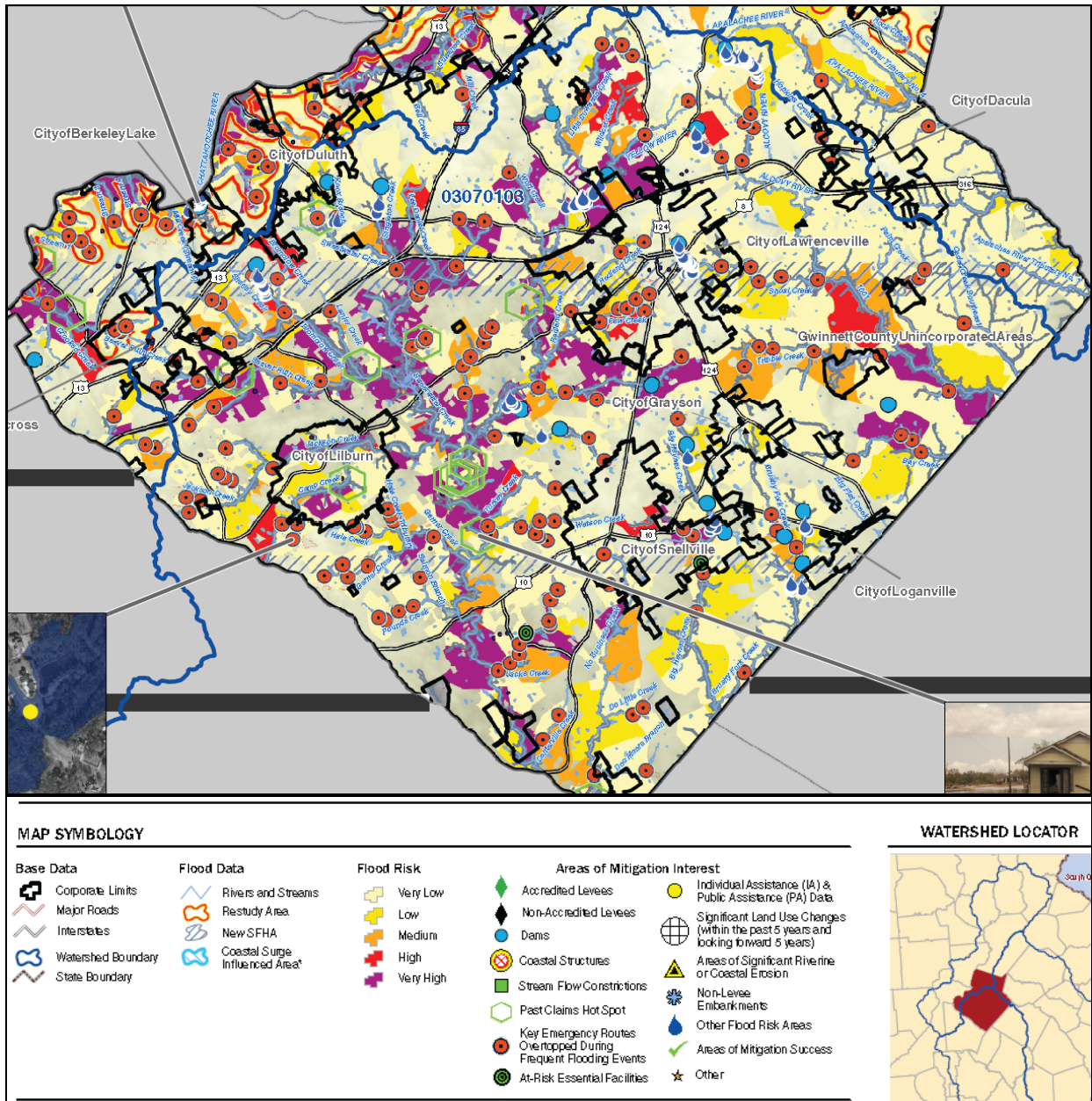


Figure 19 - Closer view of Risk Map to demonstrate the significance of the risk



3.2.4.9 Scenario-Based Flood Loss Estimates

The Gwinnett County flood risk assessment analyzed at risk structures in the Special Flood Hazard Area (SFHA). The following probabilistic risk assessment involves an analysis of a 1% annual chance riverine flood event (100-Year Flood) and a 1% annual chance coastal flood.

HAZUS Flood Risk Assessment

Hazard Definition

Flooding is a significant natural hazard throughout the United States. The type, magnitude, and severity of flooding are functions of the amount and distribution of precipitation over a given area, the rate at which precipitation infiltrates the ground, the geometry and hydrology of the catchment, and flow dynamics and conditions in and along the river channel. Floods can be classified as one of three types: upstream floods, downstream floods, or coastal floods.

Upstream floods, also called flash floods, occur in the upper parts of drainage basins and are generally characterized by periods of intense rainfall over a short duration. These floods arise with very little warning and often result in locally intense damage, and sometimes loss of life, due to the high energy of the flowing water. Flood waters can snap trees, topple buildings, and easily move large boulders or other structures. Six inches of rushing water can upend a person; another 18 inches might carry off a car. Generally, upstream floods cause damage over relatively localized areas, but they can be quite severe in the local areas in which they occur. Urban flooding is a type of upstream flood. Urban flooding involves the overflow of storm drain systems and can be the result of inadequate drainage combined with heavy rainfall or rapid snowmelt. Upstream or flash floods can occur at any time of the year in Georgia, but they are most common in the spring and summer months.

Downstream floods, also called riverine floods, refer to floods on large rivers at locations with large upstream catchments. Downstream floods are typically associated with precipitation events that are of relatively long duration and occur over large areas. Flooding on small tributary streams may be limited, but the contribution of increased runoff may result in a large flood downstream. The lag time between precipitation and time of the flood peak is much longer for downstream floods than for upstream floods, generally providing ample warning for people to move to safe locations and, to some extent, secure some property against damage.

Coastal floods occurring on the Atlantic and Gulf coasts may be related to hurricanes or other combined offshore, near shore, and shoreline processes. The effects of these complex interrelationships vary significantly across coastal settings, leading to challenges in the determination of the base (1-percent-annual-chance) flood for hazard mapping purposes. Land area covered by floodwaters of the base flood is identified as a Special Flood Hazard Area (SFHA). The Gwinnett County flood risk assessment analyzed at risk structures in the SFHA.

The following is a HAZUS report for probabilistic risk assessment that involves an analysis of a 1% annual chance riverine flood event (100-Year Flood) and a 1% annual chance coastal flood.

Riverine 1% Flood Scenario

Riverine losses were determined from the 1% flood boundaries downloaded from the FEMA Flood Map Service Center in January 2019. The flood boundaries were overlaid with the USGS 10 meter DEM using the Hazus-MH Enhanced Quick Look tool to generate riverine depth grids. The riverine flood depth grid was then imported into Hazus-MH to calculate the riverine flood loss estimates. Figure 6 illustrates the riverine inundation boundary associated with the 1% annual chance.

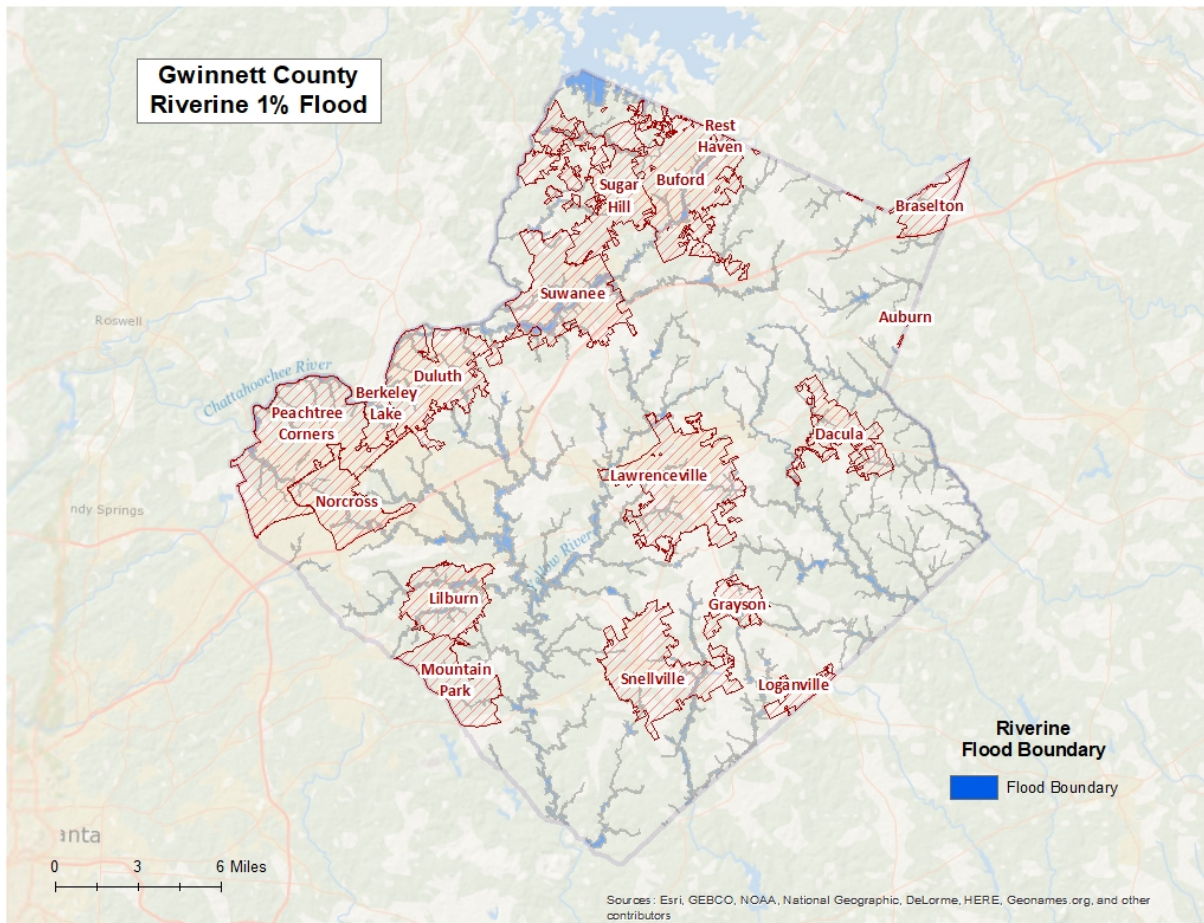


Figure 6: Riverine 1% Flood Inundation

Riverine 1% Flood Building Damages

Buildings in Gwinnett County are vulnerable to flooding from events equivalent to the 1% riverine flood. The economic and social impacts from a flood of this magnitude can be significant. Table 9 provides a summary of the potential flood-related building damage in Gwinnett County by jurisdiction that might be experienced from the 1% flood. Figure 7 maps the potential loss ratios of total building exposure to losses sustained to

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buildings from the 1% flood by 2010 census block and Figure 8 illustrates the relationship of building locations to the 1% flood inundation boundary.

Table 1: Gwinnett County Riverine 1% Building Losses

Occupancy	Total Buildings in the Jurisdiction	Total Buildings Damaged in the Jurisdiction	Total Building Exposure in the Jurisdiction	Total Losses to Buildings in the Jurisdiction	Loss Ratio of Exposed Buildings to Damaged Buildings in the Jurisdiction
Berkeley Lake					
Residential	756	7	\$230,619,633	\$771,475	0.33%
Commercial	37	1	\$29,510,012	\$543	0.00%
Buford					
Residential	3,025	15	\$430,385,977	\$932,366	0.22%
Commercial	427	3	\$261,514,605	\$13,409	0.01%
Industrial	190	8	\$249,043,739	\$518,611	0.21%
Dacula					
Residential	1,679	7	\$209,324,397	\$374,523	0.18%
Duluth					
Commercial	1,430	49	\$696,247,182	\$12,930,124	1.86%
Residential	6,233	33	\$1,192,225,547	\$2,167,993	0.18%
Industrial	90	1	\$133,416,278	\$81,869	0.06%

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Grayson

Residential	1,155	7	\$242,669,633	\$343,294	0.14%
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Occupancy	Total Buildings in the Jurisdiction	Total Buildings Damaged in the Jurisdiction	Total Building Exposure in the Jurisdiction	Total Losses to Buildings in the Jurisdiction	Loss Ratio of Exposed Buildings to Damaged Buildings in the Jurisdiction
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Lawrenceville

Residential	6,321	101	\$842,053,871	\$3,974,952	0.47%
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Commercial	783	8	\$630,072,544	\$159,723	0.03%
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Industrial	233	2	\$213,408,605	\$855,278	0.40%
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Lilburn

Commercial	339	11	\$136,370,322	\$194,918	0.14%
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Residential	3,364	36	\$492,291,100	\$1,980,130	0.40%
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Industrial	104	4	\$88,187,038	\$369,282	0.42%
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Mountain Park

Commercial	117	1	\$79,020,116	\$445	0.00%
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Residential	4,166	25	\$661,350,886	\$1,165,298	0.18%
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Norcross

Industrial	196	3	\$258,018,248	\$242,622	0.09%
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Commercial	762	9	\$251,751,700	\$831,290	0.33%
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Residential	3,265	24	\$474,834,962	\$633,422	0.13%
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Peachtree Corners

Industrial	257	1	\$374,582,941	\$100,456	0.03%
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Residential	8,268	128	\$2,289,748,311	\$10,941,188	0.48%
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Commercial	982	20	\$953,207,242	\$3,195,693	0.34%
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Rest Haven

Industrial	12	1	\$3,945,133	\$62,807	1.59%
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Occupancy	Total Buildings in the Jurisdiction	Total Buildings Damaged in the Jurisdiction	Total Building Exposure in the Jurisdiction	Total Losses to Buildings in the Jurisdiction	Loss Ratio of Exposed Buildings to Damaged Buildings in the Jurisdiction
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Snellville

Residential	6,734	94	\$943,756,678	\$2,950,501	0.31%
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Commercial	387	1	\$357,361,104	\$59,881	0.02%
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Sugar Hill

Residential	6,096	14	\$1,115,486,845	\$1,031,692	0.09%
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Commercial	172	1	\$83,433,694	\$47,860	0.06%
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Suwanee

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Commercial	265	2	\$364,234,405	\$931	0.00%
Industrial	144	3	\$237,281,595	\$767,073	0.32%
Residential	5,097	82	\$1,179,046,815	\$5,680,095	0.48%

Unincorporated

Industrial	1,043	15	\$2,353,667,320	\$1,098,832	0.05%
Religious	186	4	\$211,534,305	\$1,169,150	0.55%
Commercial	5,054	136	\$4,625,421,886	\$27,320,712	0.59%
Residential	173,529	2,192	\$29,949,025,100	\$110,553,200	0.37%

County Total

	242,898	3,049	\$52,844,049,769	\$193,521,638	
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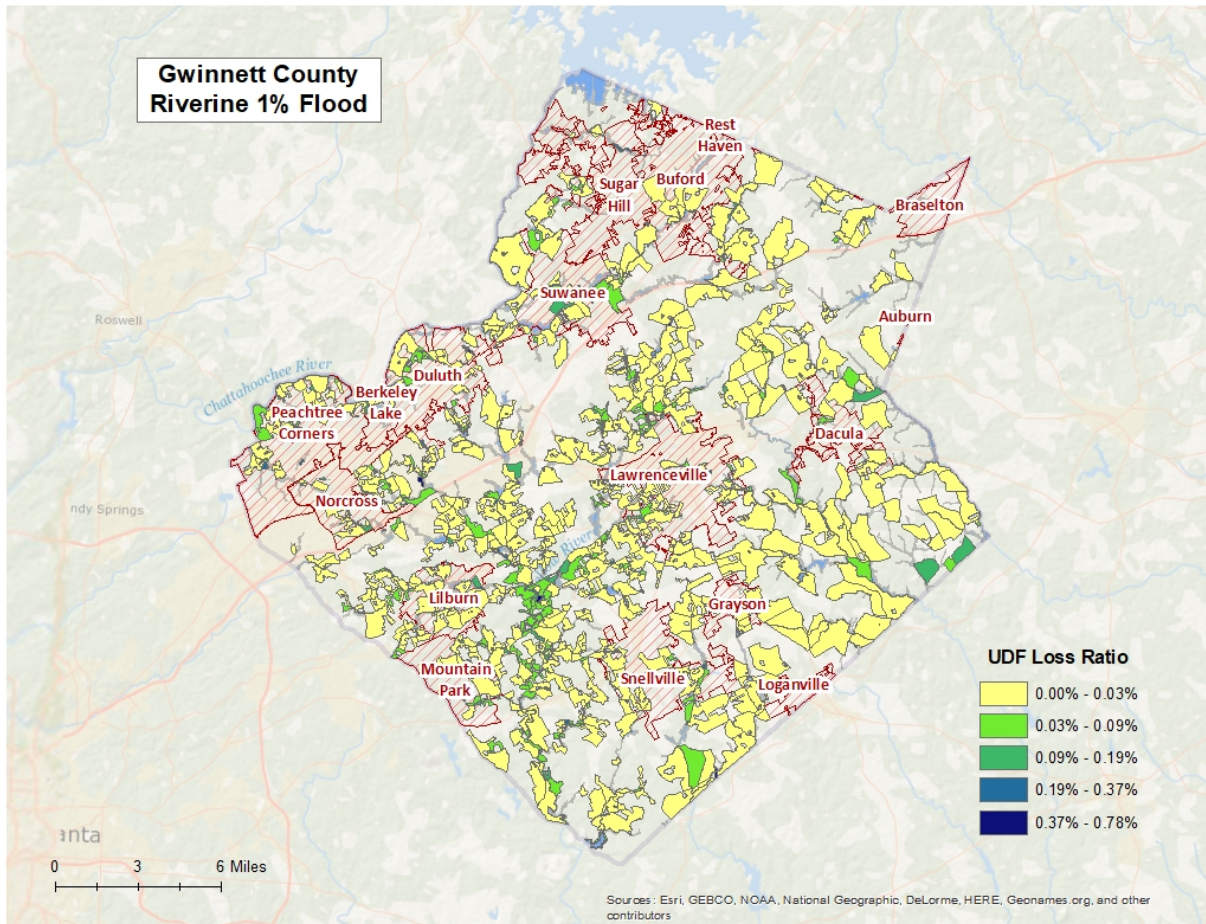


Figure 7: Gwinnett County Potential Loss Ratios of Total Building Exposure to Losses Sustained to Buildings from the 1% Riverine Flood by 2010 Census Block

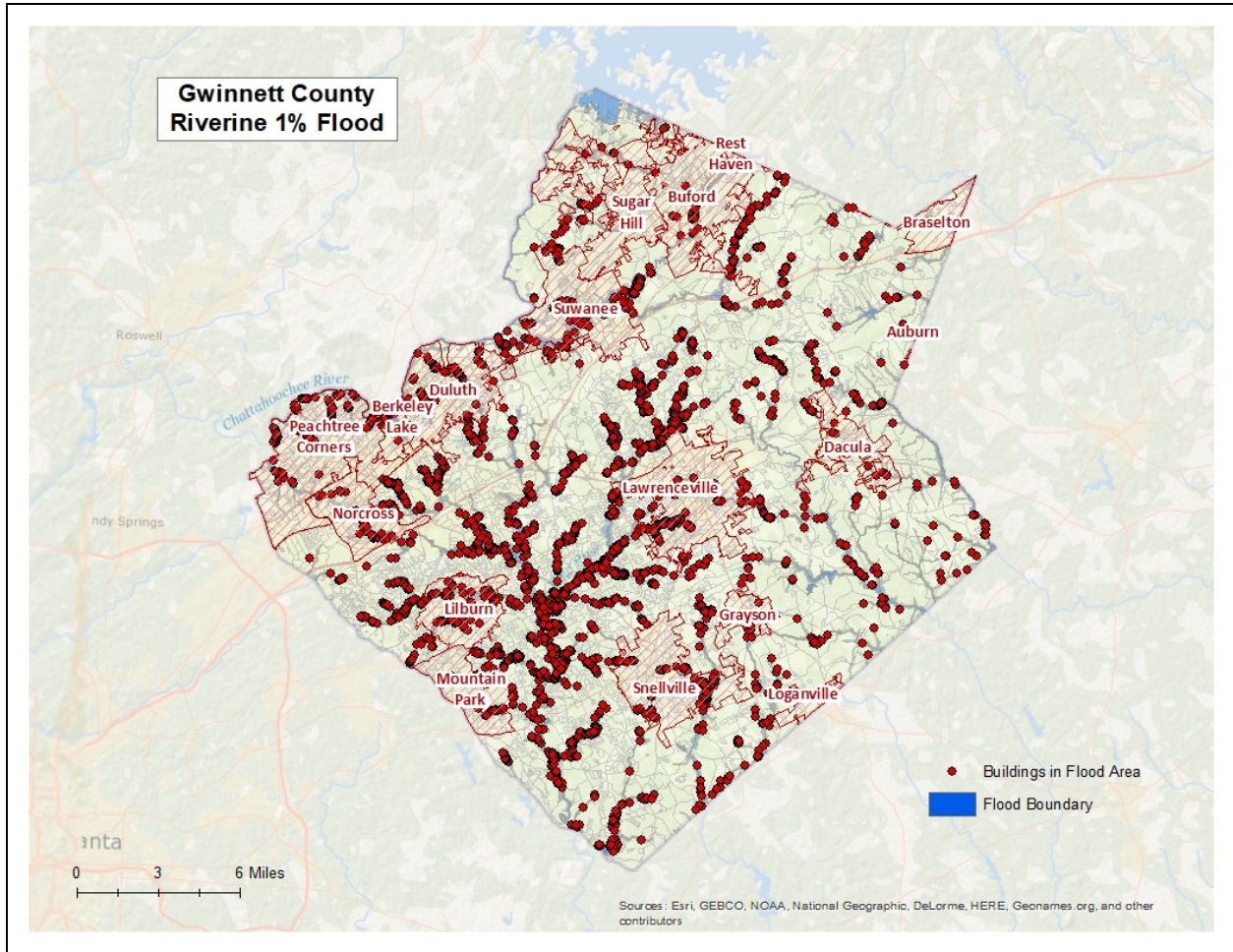


Figure 8: Gwinnett County Damaged Buildings in Riverine Floodplain (1% Flood)

Riverine 1% Flood Essential Facility Losses

An essential facility may encounter many of the same impacts as other buildings within the flood boundary. These impacts can include structural failure, extensive water damage to the facility and loss of facility functionality (e.g. a damaged police station will no longer be able to serve the community). The analysis identified one essential facility that were subject to damage in the Gwinnett County riverine 1% probability floodplain.

Table 2: Riverine 1% Flood Damaged Essential Facilities

Name	Category	City
Welcome Home Personal Care Home	Medical Care	Loganville

Riverine 1% Flood Shelter Requirements

Hazus-MH estimates that the number of households that are expected to be displaced from their homes due to riverine flooding and the associated potential evacuation. The model estimates 15,432 households might be displaced due to the flood. Displacement includes households evacuated within or very near to the inundated area. Displaced households represent 46,296 individuals, of which 39,015 may require short term publicly provided shelter. The results are mapped in Figure 9.

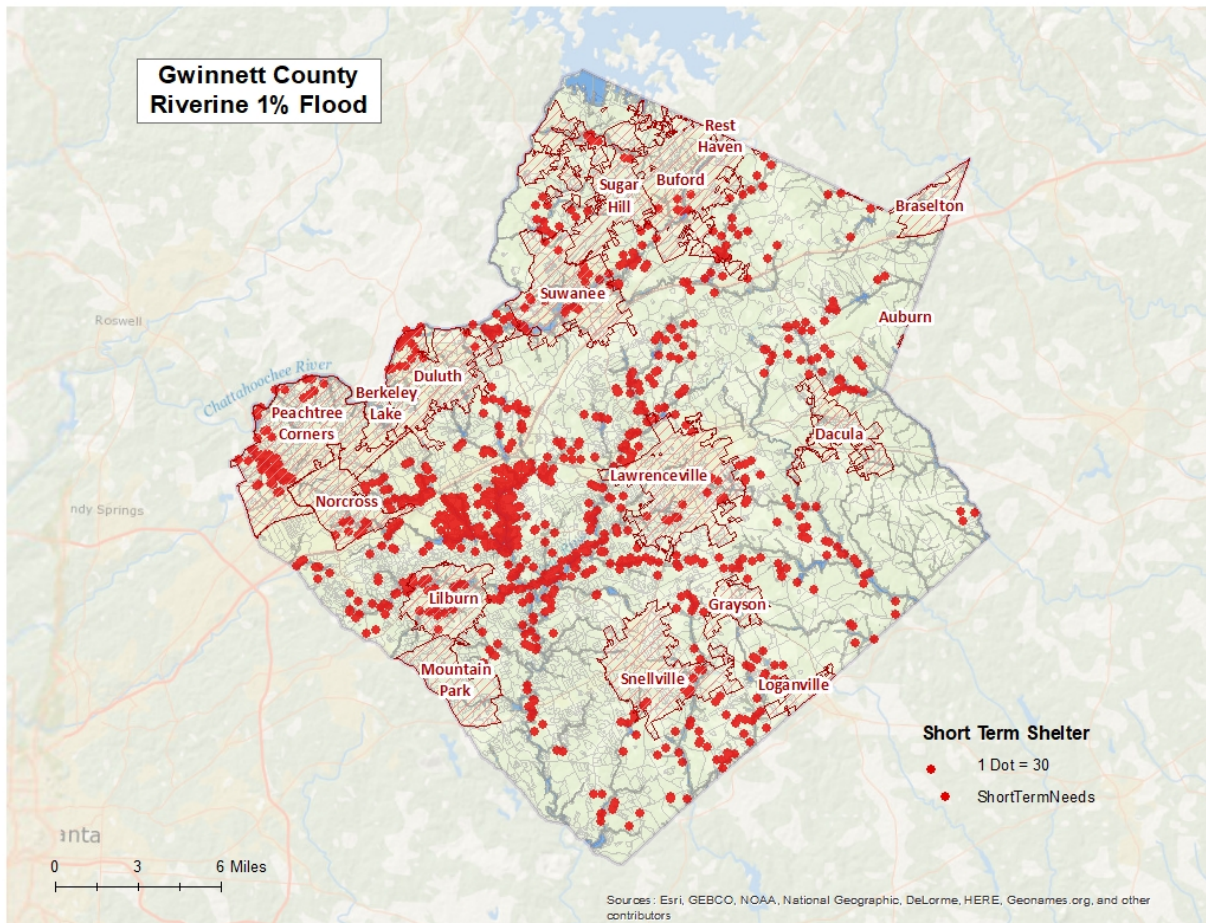


Figure 9: Riverine 1% Estimated Flood Shelter Requirements

Riverine 1% Flood Debris

Hazus-MH estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories:

- Finishes (dry wall, insulation, etc.)
- Structural (wood, brick, etc.)
- Foundations (concrete slab, concrete block, rebar, etc.)

Different types of material handling equipment will be required for each category. Debris definitions applied in Hazus-MH are unique to the Hazus-MH model and so do not necessarily conform to other definitions that may be employed in other models or guidelines.

The analysis estimates that an approximate total of 84,550 tons of debris might be generated:

1) Finishes- 27,026 tons; 2) Structural – 29,234 tons; and 3) Foundations- 28,289 tons. The results are mapped in Figure 10.

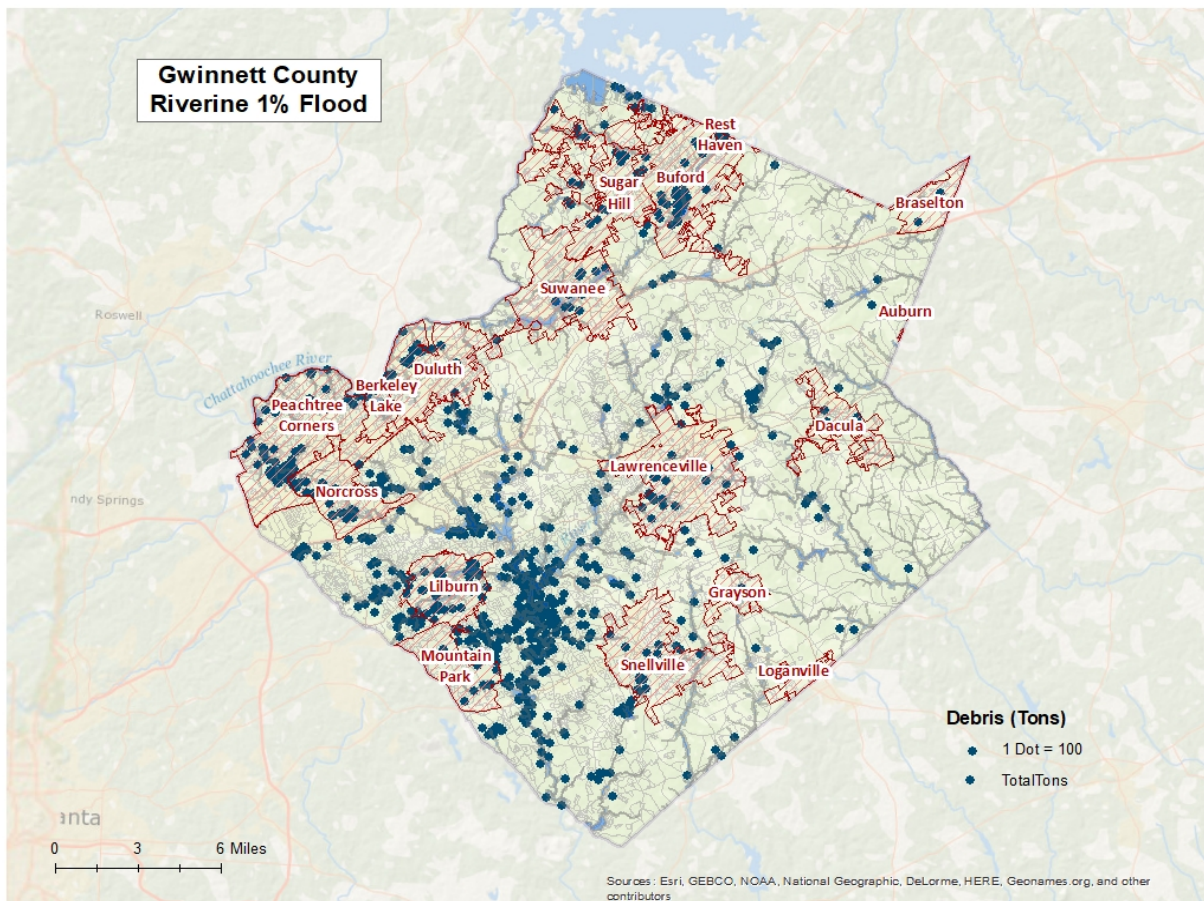


Figure 10: Riverine 1% Flood Debris Weight (Tons)

3.2.5 Severe Winter Storm

3.2.5.1 Hazard Identification

The Gwinnett County HMSC researched historical data from the National Climatic Data Center (NCDC) and the NWS as well as information from past newspaper articles relating to severe winter storms in Gwinnett County. Severe winter storms bring the threat of snow, freezing rain, and ice storms. Generally, the winter storm season in Georgia runs from late November to mid-March, although severe winter weather has occurred as early as October and as late as May in some locations.¹³ A heavy accumulation of ice, especially when accompanied by high winds, devastates trees and power lines. Sidewalks, streets, and highways become extremely hazardous to pedestrians and motorists. Severe winter storms originate as mid-latitude depressions of cyclonic weather systems and can cause snowstorms and ice storms. Winter storms can shut down normal day-to-day operations and can produce an accumulation of snow and ice on trees and utility lines resulting in loss of electricity and blocked transportation routes.

3.2.5.2 Extreme Cold

Gwinnett County typically does not experience extreme cold, but history has shown Gwinnett County is not immune to this event. Extreme cold temperature is caused by the passage of a cold front dramatically dropping temperatures, which heralds the arrival of a cold wave. A cold wave can last days, weeks, and in some cases, months. Extreme cold can lead to frozen water pipes, which when erupted can lead to extensive property damage and the depletion of a natural resource. When cities/communities have long-term loss of utilities, elderly and extremely young populations become more vulnerable to the effects of the extreme cold temperatures.



3.2.5.3 Hazard Profile

Research from the NCDC and NOAA indicates there have been 41 winter events recorded for Gwinnett County in the past 20 years. Although winter storms occur infrequently, they have the potential to wreak havoc on the community when they do strike. Statistically, Gwinnett County can expect a winter storm about every 2 years; the most frequent occurrences were in 2014. This equates to a 55 percent chance of a winter storm occurring in any given year. On January 28–29, 2014, a significant winter storm impacted north and central Georgia, beginning with snow and sleet and accumulating to widespread amounts of 1 to 3 inches of snow. Across the Metro Atlanta area, thousands of motorists were trapped on icy roads for several hours. A similar event occurred in January 2011, in which Gwinnett County experienced temperatures below zero for 3 days. This event caused approximately 2 inches of ice accumulation and numerous traffic issues as a result.



¹³ National Weather Service, <http://www.nws.noaa.gov>.

**Table 3-17
Severe Winter Storms¹⁴¹⁵
2009-2014**

County	Date	Type of severe winter weather	Injuries	Fatalities	Property Damage	Crop Damage
Gwinnett County	12/17/2000	Winter storm	0	0	\$0.00	\$0.00
Gwinnett County	12/21/2000	Winter storm	0	0	\$0.00	\$0.00
Gwinnett County	02/26/2004	Winter storm	0	0	\$0.00	\$0.00
Gwinnett County	01/28/2005	Winter storm	0	0	\$350,000	\$0.00
Gwinnett County	01/28/2014	Winter storm	0	0	\$0.00	\$0.00
Gwinnett County	02/11/2014	Winter storm	0	0	\$0.00	\$0.00
Gwinnett County	12/08/17	Winter storm	0	0	\$0.00	\$0.00
Gwinnett County	01/16/2018	Winter storm	0	0	\$0.00	\$0.00

3.2.5.4 Assets Exposed to Hazard

In evaluating assets that may potentially be impacted by the effects of severe winter storms, it was determined that all critical facilities as well as all public, private, and commercial properties are vulnerable.

- Infrastructure located in severe winter storm vulnerable areas include:
 1. Heavy Concentration of commercial and industrial land
 2. Heavy concentration of residential land use in vulnerable areas
 3. All schools located throughout the county
- **Property Risk/Vulnerability.** In evaluating assets that may potentially be impacted by the effects of severe winter storms, all critical facilities as well as all public, private, and commercial properties are vulnerable to the effects of a winter storm. Gwinnett County has several major transportation routes throughout the county, Interstate Highways 85, 78, 316 as well as Jimmy Carter Blvd and Peachtree Industrial Blvd could be significantly impacted by stranded drivers on the highway and become vulnerable to severe weather. The critical infrastructures that can be impacted are: 148+ schools, nursing homes and 3 hospitals. These are all vulnerable because the power lines to these structures are above ground and these structures are not all equipped with back- up generators, with the exception of some nursing homes and hospital. Loss of life, injury and property damage can occur to these structures and special populations.

¹⁵ NOAA Storm Events Database, <http://www.ncdc.noaa.gov/stormevents/>

- **People Risk/Vulnerability.** It was determined that risk/vulnerability includes the entire population of Gwinnett County because there is no way to determine the impact/magnitude of a winter storm and no way to predict where a storm will occur. People are vulnerable to winter storms through power outages, effects on transportation routes, establishment of shelters, water freezing, etc. The impact of a winter storm is larger in mild climates, such as in Gwinnett County, due to inexperience driving in and handling snow and ice
- **Environment Risk/Vulnerability.** Risks to the environment are low for a winter storm. Winter thaw can cause flooding, impacting the environment and possibly creating contamination of potable water for public consumption.

3.2.5.5 Vulnerability

**Table 3-18
Severe Winter Storms**

Frequency of Occurrence	Likely
Warning Time	More than 12 hours
Geographic Extent	Countywide
Potential Impact	Moderate

3.2.5.6 Land Use and Development Trends

Gwinnett County currently has no land use or development trends related to winter storms.

3.2.5.7 Hazard Summary

- Severe winter storms, unlike other natural hazards, typically afford communities some advance warning. The NWS issues winter storm watches, warnings, and advisories as these storms make their way through Gwinnett County. Due to the frequency of winter storms in Gwinnett County, most buildings and infrastructure are typically designed to sustain severe winter conditions. However, aging facilities and particularly heavy snowfalls bring the possibility of building collapse and infrastructure damage. Additionally, winter weather always brings a possibility for dangerous driving conditions, particularly in a community such as Gwinnett County where winter weather is not a regular occurrence. . These impacts have lead many critical facilities to identify the need for alternate power sources and have identified improvements to ensure critical facilities remain with power during events.

3.2.6 Drought

3.2.6.1 Hazard Identification

The Gwinnett County HMSC reviewed historical data from NCDC and the Natural Resources Conservation Service (NRCS) while researching drought conditions in Gwinnett County. By definition, a drought is a prolonged period of moisture deficiency. Drought conditions affect the cultivation of crops as well as water availability and water quality. Drought is also a key factor in wildfire development. Drought conditions make natural fuels (grass, brush, trees, dead vegetation, etc.) more fire-prone.

The Palmer Drought Severity Index shown in Table 3-18 is used to gauge long-term drought. A zero is considered normal conditions, and drought is indicated by negative numbers. Excessive moisture is indicated by positive numbers.

**Table 3-19
Palmer Drought Severity Index¹⁶**

Range	Description
-4.0 or less	Extreme drought
-3.0 to -3.9	Severe drought
-2.0 to -2.9	Moderate drought
-1.9 to +1.9	Near normal
+2.0 to +2.9	Unusual moist spell
+3.0 to +3.9	Very moist spell
+4.0 and above	Extremely moist

3.2.6.2 Hazard Profile

Gwinnett County most recently experienced drought conditions in September 2011. Agricultural crop damage during this period was in excess of \$100 million statewide. To date, agricultural losses have been the primary losses associated with drought; no critical facilities have sustained any damage or functional downtime due to dry weather conditions. Because of the extremely unpredictable nature of drought (to include duration), reliably calculating a recurrence interval is difficult and the data below is indication of drought but is insufficient to produce hazard impact.

**Table 3-20
Drought^{17,18}
2010-2017**

County	Date	Injuries	Fatalities	Property Damage	Crop Damage	Intensity
Gwinnett	09/01/2011	0	0	\$0.00	\$0.00	D4 Drought - Exceptional
Gwinnett	06/01/2016	0	0	\$0.00	\$0.00	D2 Drought - Severe
Gwinnett	07/01/2016	0	0	\$0.00	\$0.00	D3 Drought - Extreme
Gwinnett	08/01/2016	0	0	\$0.00	\$0.00	D2 Drought - Severe
Gwinnett	09/01/2016	0	0	\$0.00	\$0.00	D3 Drought - Extreme

¹⁶ National Weather Service, <http://www.nws.noaa.gov/>

¹⁸ NOAA Storm Events Database, <http://www.ncdc.noaa.gov/stormevents/>

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County	Date	Injuries	Fatalities	Property Damage	Crop Damage	Intensity
Gwinnett	10/01/2016	0	0	\$0.00	\$0.00	D4 Drought - Exceptional
Gwinnett	11/01/2016	0	0	\$0.00	\$0.00	D4 Drought - Exceptional
Gwinnett	12/01/2016	0	0	\$0.00	\$0.00	D4 Drought - Exceptional
Gwinnett	01/01/2017	0	0	\$0.00	\$0.00	D4 Drought - Exceptional
Gwinnett	02/01/2017	0	0	\$0.00	\$0.00	D4 Drought - Exceptional
Gwinnett	03/01/2017	0	0	\$0.00	\$0.00	D4 Drought - Exceptional
Gwinnett	04/01/2017	0	0	\$0.00	\$0.00	D3 Drought - Extreme

3.2.6.3 Assets Exposed to Hazard

- **Property Risk/Vulnerability:** Drought conditions typically pose little or no threat to structures; however, fires can occur as a result of dry weather. The Gwinnett County HMSC concluded that drought, in itself, presents no credible threat to critical facilities. The drought could result in the loss of the availability of municipal water supply. This threat has been addressed by mitigation actions. Wildfire as a result of drought was considered, and the Gwinnett County HMSC determined that because previous instances of wildfire in Gwinnett County have been relatively minimal, it does not bear a significant threat to the community.
- **People Risk/Vulnerability:** In evaluating vulnerability of the population in Gwinnett County, it was determined that risk/vulnerability includes the entire population of Gwinnett County because there is no way to determine the impact/magnitude of a drought event. People are vulnerable to drought through available water supply (both public and private wells) and effects from lack of water such as wildfires and ability to grow and water crops.
- **Environment Risk/Vulnerability:** Risks to the environment are high for a drought event. Environmental concerns would be loss of vegetation and risk of erosion in areas that are affected by drought and availability of water supply (both public and private wells).

3.2.6.4 Vulnerability

**Table 3-21
Drought**

Frequency of Occurrence	Likely
Warning Time	More than 12 hours
Geographic Extent	Countywide
Potential Impact	Minor

3.2.6.5 Land Use and Development Trends

Gwinnett County Department of Water Resources currently has water restrictions and conservation programs in place to address water consumption in drought conditions. In 2003, Gwinnett County was proud to become one of the first WaterFirst Communities in Georgia, and we maintain that distinguished status today. The Gwinnett County Department of Water Resources also partners with the EPA Water Sense Program, the Georgia EPD WaterSmart Program, and the Metropolitan North Georgia Water Planning District's My Drop Counts campaign.

3.2.6.6 Multijurisdictional Concerns

Agricultural losses associated with drought are more likely to occur in the rural, less concentrated areas of the county. Although the Cities of Berkeley Lake, Buford, Dacula, Duluth, Grayson, Lawrenceville, Lilburn, Norcross, Peachtree Corners, Snellville, Sugar Hill, and Suwanee are not likely to experience drought related agricultural losses, they could experience impacts to their municipal water systems.

3.2.6.7 Hazard Summary

Droughts do not have the immediate effects of other natural hazards, but sustained drought can cause severe economic stress to the agricultural interests in Gwinnett County and the entire state. The potential negative effects of sustained drought are numerous. In addition to an increased threat of grassfires, drought can affect municipal and industrial water supplies, stream water quality, water recreation facilities, hydropower generation, and agricultural resources. The Gwinnett County HMSC discussed limitations associated with mitigation actions for drought and identified mitigation actions related to the potential threat of drought.

Droughts do not have the immediate effects of other natural hazards, but sustained drought can cause severe economic stress to not only the agricultural interests in Gwinnett County but to the entire state. The potential negative effects of sustained drought are numerous. In addition to an increased threat of wildfires, drought can affect municipal and industrial water supplies, stream water quality, water recreation facilities, hydropower generation, and agricultural and forest resources. The Gwinnett County HMSC discussed the limitations associated with mitigation actions for drought and identified mitigation actions related to the potential threat of drought.

3.2.7 Tropical Storms/Hurricanes

3.2.7.1 Hazard Identification

The Gwinnett County HMSC researched historical data from the NCDC, NWS, as well as information from past newspaper articles relating to tropical storms/hurricanes in Gwinnett County. Tropical storms and hurricanes bring the threat of winds, heavy rains and flooding that may require the need for Evacuee Support and Sheltering. Streets and highways become extremely hazardous to motorists due to debris, flooding and power lines obstructing travel. There are no other storms like tropical storms/hurricanes on earth. Views of hurricanes and/or tropical storms from satellites located thousands of miles above the earth shows how unique these powerful, tightly coiled weather systems are.

A hurricane is a type of tropical cyclone-the general term for all circulating weather systems (counterclockwise in the Northern Hemisphere) over tropical waters. Tropical storms are classified as follows:

- Tropical Depression – An organized system of clouds and thunderstorms with a defined circulation and maximum sustained winds of 38 mph (33 knots) or less.
- Tropical Storm – An organized system of strong thunderstorms with a defined circulation and maximum sustained winds of 39 to 73 mph (34-63 knots).

- Hurricane – An intense tropical weather system with a well-defined circulation and maximum sustained winds of 74 mph (64 knots) or higher. In the western Pacific, hurricanes are called “typhoons,” and similar storms in the Indian Ocean are called “cyclones.”

Hurricanes are products of the Tropical Ocean and atmosphere. Powered by heat from the sea, they are steered by the easterly trade winds and the temperate westerlies as well as by their own ferocious energy. Around their core, winds grow with great velocity, generating violent seas. When tropical storms/hurricanes move ashore, they sweep the ocean inward while spawning tornadoes and producing torrential rains and floods. Each year on average, ten tropical storms (of which six become hurricanes) develop over the Atlantic Ocean, Caribbean Sea, or Gulf of Mexico. Many of these remain over the ocean. However, about seven hurricanes strike the United States coastline every four years. Of these seven, three will be major hurricanes (category 3 or greater on the Saffir-Simpson Hurricane Scale).

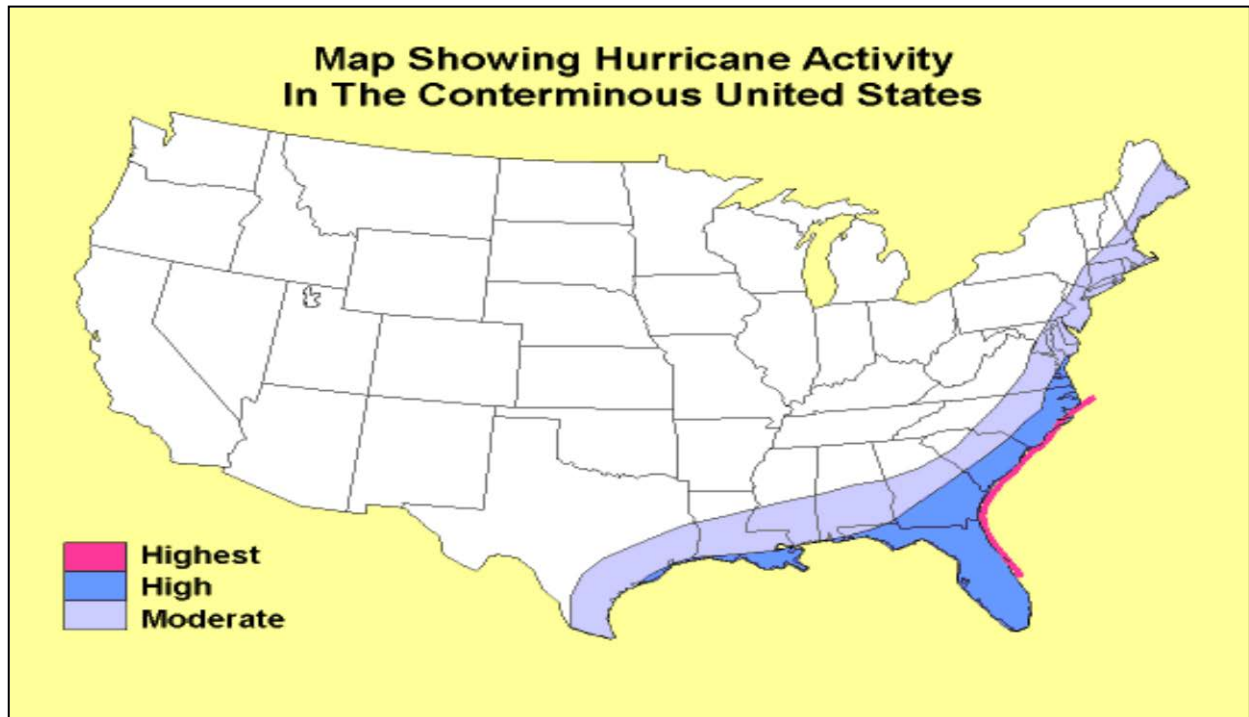
All Tropical Storms/Hurricanes are dangerous, but some are more so than others. The way storm surge, wind and other factors combine determine the hurricane’s destructive power. To make comparisons easier and to make the predicted hazards of approaching hurricanes clearer to emergency managers, NOAA’s hurricane forecasters use a disaster-potential scale, which assigns storms to five categories. This can be used to give an estimate of the potential property damage and flooding expected along the coast with a hurricane. Herbert Saffir, a consulting engineer, and Dr. Bob Simpson director of the National Hurricane Center, formulated the scale in 1969. The World Meteorological Organization was preparing a report on structural damage to dwellings due to windstorms, and Dr. Simpson added information about storm surge heights that accompany hurricanes in each category.

**Table 3-22
Saffir-Simpson Hurricane Wind Scale**

Category	Winds	Effects
One	74-95 mph	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal road flooding and minor pier damage
Two	96-110 mph	Some roofing material, door, and window damage to buildings. Considerable damage to vegetation, mobile homes, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of center. Small craft in unprotected anchorages break moorings.
Three	111-130 mph	Some structural damage to small residences and utility buildings with a minor amount of curtain wall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain continuously lower than 5 feet ASL may be flooded inland 8 miles or more.
Four	131-155 mph	More extensive curtain wall failures with some complete roof structure failure on small residences. Major erosion of beach. Major damage to lower floors of structures near the shore. Terrains continuously lower than 10 feet ASL may be flooded requiring massive evacuation of residential areas inland as far as 6 miles.
Five	Greater than 155 mph	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Major damage to lower floors of all structures located less than 15 feet ASL and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5 to 10

Category	Winds	Effects
		miles of the shoreline may be required.

Figure 20
Hurricane Activity in the Conterminous United States



Source: USGS Geographic Distribution

3.2.7.2 Hazard Profile

There is a threat of tropical storms/hurricanes occurring in Gwinnett County. Gwinnett County has experienced 15 events since 2000, including 3 hurricanes and 12 tropical storms. A review of historical weather data indicates there is a significant chance of tropical storms and hurricanes affecting Gwinnett County each year. The most recent event occurred in 2017, when the remnants of Hurricane Irma downed hundreds of trees and power lines across the county. Nine structures were destroyed, 73 sustained major damage and 77 received minor damage, mostly from falling trees. A 51 mph wind gust was measured near Suwanee and a 50 mph gust was measured around Norcross. Radar estimated between 2 and 4 inches of rain fell across the county with 3.98 inches measured in Dacula. No injuries were reported over the September 9th 2017 event.

Table 3-23
Tropical Storms/Hurricanes
2002-2019

County	Date	Type	Injuries	Property Damage	Crop Damage
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RISK AND VULNERABILITY ASSESSMENT

County	Date	Type	Injuries	Property Damage	Crop Damage
Gwinnett County	09/14/2002	Tropical Storm	0	\$0.00	\$0.00
Gwinnett County	07/01/2003	Tropical Storm	0	\$0.00	\$0.00
Gwinnett County	09/06/2004	Tropical Storm	0	\$0.00	\$0.00
Gwinnett County	09/16/2004	Tropical Storm	0	\$0.00	\$0.00
Gwinnett County	09/26/2004	Tropical Storm	0	\$0.00	\$0.00
Gwinnett County	06/12/2005	Tropical Storm	0	\$0.00	\$0.00
Gwinnett County	07/06/2005	Tropical Storm	0	\$0.00	\$0.00
Gwinnett County	07/10/2005	Hurricane	0	\$0.00	\$0.00
Gwinnett County	08/29/2005	Hurricane	0	\$0.00	\$0.00
Gwinnett County	10/05/2005	Tropical Storm	0	\$0.00	\$0.00
Gwinnett County	09/14/2007	Hurricane	0	\$0.00	\$0.00
Gwinnett County	08/21/2008	Tropical Storm	0	\$0.00	\$0.00
Gwinnett County	11/10/2009	Tropical Storm	0	\$0.00	\$0.00
Gwinnett County	09/04/2011	Tropical Storm	0	\$0.00	\$0.00
Gwinnett County	09/11/2017	Tropical Storm	0	\$0.00	\$3,000,000

3.2.7.3 Assets Exposed to Hazard

Property Risk/Vulnerability: It can be assumed that all structures and facilities within Gwinnett County could be damaged by a hurricane, as hurricanes are one the most damaging of weather phenomena, but the meteorological technology does provide more warning of the paths of hurricanes today. Also, tornadoes are usually a secondary affect from tropical storms/hurricanes which can impact property/public.

People Risk/Vulnerability: In evaluating vulnerability of the population in Gwinnett County, it was determined that risk/vulnerability includes the entire population of Gwinnett County since there is no way to determine the impact/magnitude of a tropical storm/hurricane and no way to predict where a tropical storm/hurricane will hit. People are vulnerable to tropical storms/hurricanes through power outages, effects on transportation routes, establishment of shelters, flooding, etc. This is particularly true due to there being a significant chance of a tropical storm/hurricane occurring in any given year in Gwinnett County. Due to the warning time of a tropical storm/hurricane the effects on the population is reduced compared to previous years.

Environment Risk/Vulnerability: Risks to the environment are significant for a tropical storm/hurricane. Tropical storms/hurricane can cause flooding which in turn can affect and create contamination of potable water for public consumption. The magnitude of flooding that typically occurs after a hurricane can be significant and can cause issues with hazardous materials in the flooded water affecting the environment.

3.2.7.4 Estimate of Potential Losses

All assets throughout Gwinnett County are exposed to the threat of tropical storms and hurricanes. Any of these assets could be lost during an event. The amount of loss would vary from facility to facility.

3.2.7.5 Land Use and Development Trends

Gwinnett County currently has no land use or development trends related to tropical storms or hurricanes. However, Gwinnett County does have the Gwinnett County Floodplain Management Ordinance (as amended 4/28/15), which addresses land use planning in regards to flooding issues. Flooding is a secondary affect from tropical storms/hurricanes and this Floodplain Ordinance prohibits further structures being built in the floodplains in Gwinnett County.

3.2.7.6 Multi-Jurisdictional Concerns

All of Gwinnett County can potentially be affected by tropical storms and hurricanes. As a result, any mitigation steps taken related to tropical storms and hurricanes should be undertaken on a countywide basis and include the cities of Berkeley Lake, Braselton, Buford, Dacula, Duluth, Grayson, Lawrenceville, Lilburn, Norcross, Peachtree Corners, Snellville, Sugar Hill and Suwanee.

3.2.7.7 Hazard Summary

Overall, tropical storms and hurricanes pose one of the greatest threats to Gwinnett County in terms of property damage, as well as injuries and loss of life. 15 events have impacted Gwinnett County since 2000. The past 5 years reflect only 1 tropical storm occurring. Gwinnett County's Tropical Storms/Hurricanes risk analysis incorporates results from a FEMA-performed Hazus analysis which accounts for newly modeled areas. Potential losses were estimated as well as potential loss ratios for multiple scenarios. These events may change from season to season. Based on the frequency of this hazard, as well as its ability to negatively impact anywhere in the county, the pre-disaster mitigation measures identified in this plan should be pursued. See HAZUS-MH Report Below.

Hurricane Risk Assessment

Hazard Definition

The National Hurricane Center describes a hurricane as a [tropical cyclone](#) in which the maximum sustained wind is, at minimum, 74 miles per hour (mph)¹⁹. The term hurricane is used for Northern Hemisphere tropical cyclones east of the International Dateline to the Greenwich Meridian. The term typhoon is used for Pacific tropical cyclones north of the Equator west of the International Dateline. Hurricanes in the Atlantic Ocean, Gulf of Mexico, and Caribbean form between June and November with the peak of hurricane season occurring in the middle of September. Hurricane intensities are measured using the Saffir-Simpson Hurricane Wind Scale (Table 3). This scale is a 1 to 5 categorization based on the hurricane's intensity at the indicated time.

Hurricanes bring a complex set of impacts. The winds from a hurricane produce a rise in the water level at landfall called storm surge. Storm surges produce coastal flooding effects that can be as damaging as the hurricane's winds. Hurricanes bring very intense inland riverine flooding. Hurricanes can also produce tornadoes that can add to the wind damages inland. In this risk assessment, only hurricane winds, and coastal storm surge are considered.

Table 3: Saffir-Simpson Hurricane Wind Scale

Category	Wind Speed (mph)	Damage
1	74 - 95	Very dangerous winds will produce some damage
2	96 - 110	Extremely dangerous winds will cause extensive damage
3	111 - 130	Devastating damage will occur
4	131 -155	Catastrophic damage will occur
5	> 155	Catastrophic damage will occur

The National Oceanic and Atmospheric Administration's National Hurricane Center created the HURDAT database, which contains all of the tracks of tropical systems since the mid-1800s. This database was used to document the number of tropical systems that have affected Gwinnett County by creating a 20-mile buffer around the county to include storms that didn't make direct landfall in Gwinnett County but impacted the county. Note that the storms listed contain the peak sustained winds, maximum pressure and maximum attained storm strength for the entire storm duration. Since 1859, Gwinnett County has had 12 tropical systems within 20 miles of its county borders (Table 4).

¹⁹ National Hurricane Center (2011). "Glossary of NHC Terms." National Oceanic and Atmospheric Administration. <http://www.nhc.noaa.gov/aboutgloss.shtml#h>. Retrieved 2012-23-02.

RISK AND VUNERABILITY ASSESSMENT

Table 4: Tropical Systems affecting Gwinnett County²⁰

YEAR	DATE RANGE	NAME	MAX WIND(Knots)	MAX PRESSURE	MAX CAT
1859	September 15-18	UNNAME D	70	0	TD
1900	September 11-15	UNNAME D	45	0	TD
1902	October 03-13	UNNAME D	90	970	H1
1903	September 09-16	UNNAME D	80	988	H1
1907	September 18-23	UNNAME D	40	0	TD
1911	August 23-31	UNNAME D	85	972	H1
1912	June 07-17	UNNAME D	60	0	TD
1959	October 06-09	IRENE	40	1003	TD
1994	August 14-19	BERYL	50	1013	TD
1995	August 22-28	JERRY	35	1010	TD
1997	July 16-27	DANNY	70	1013	TD
2004	August 25 - September 10	FRANCES	125	1009	H3

²⁰ Atlantic Oceanic and Meteorological Laboratory (2012). "Data Center." National Oceanic and Atmospheric Administration. http://www.aoml.noaa.gov/hrd/data_sub/re_anal.html. Retrieved 7-20-2015.

Category Definitions:

TS – Tropical storm

TD – Tropical depression

H1 – Category 1 (same format for H2, H3, and H4)

E – Extra-tropical cyclone

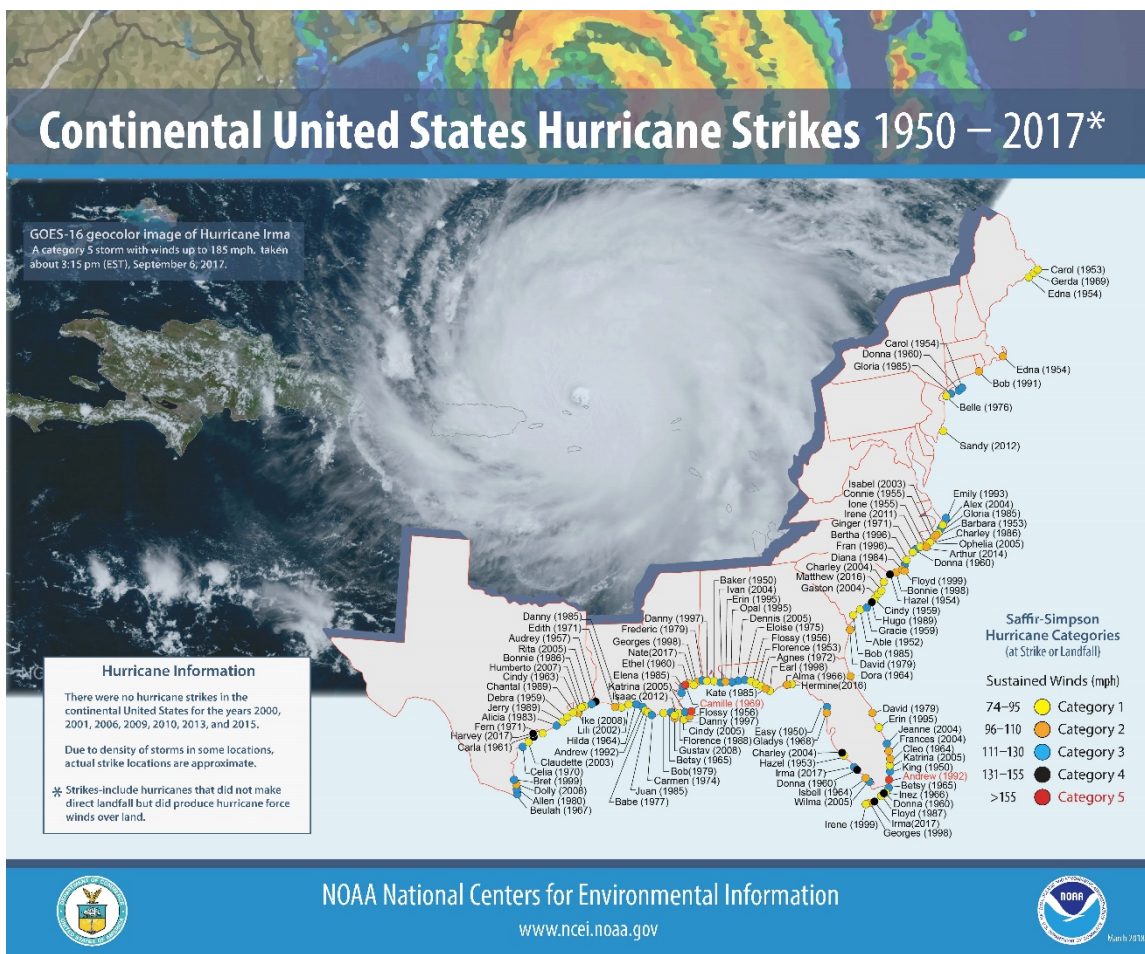


Figure 2: Continental United States Hurricane Strikes: 1950 to 2017²¹

²¹ Source: NOAA National Centers for Environmental Information

Probabilistic Hurricane Scenario

The following probabilistic wind damage risk assessment modeled a Tropical Storm with maximum winds of 68 mph.

Wind Damage Assessment

Separate analyses were performed to determine wind and hurricane storm surge related flood losses. This section describes the wind-based losses to Gwinnett County. Wind losses were determined from probabilistic models run for the Tropical Storm which equates to the 1% chance storm event. Figure 3 shows wind speeds for the modeled Tropical Storm.

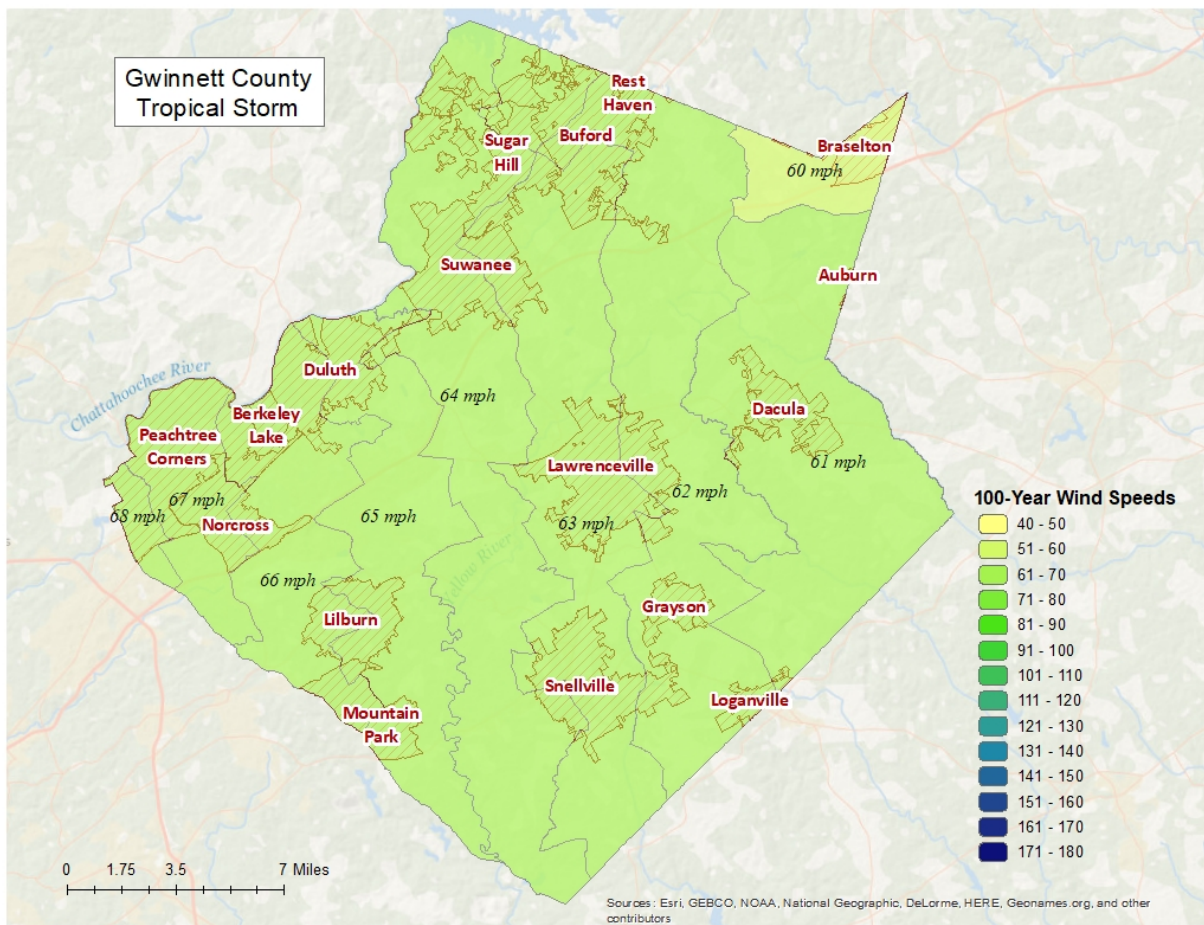


Figure 3: Wind Speeds by Storm Category

Wind-Related Building Damages

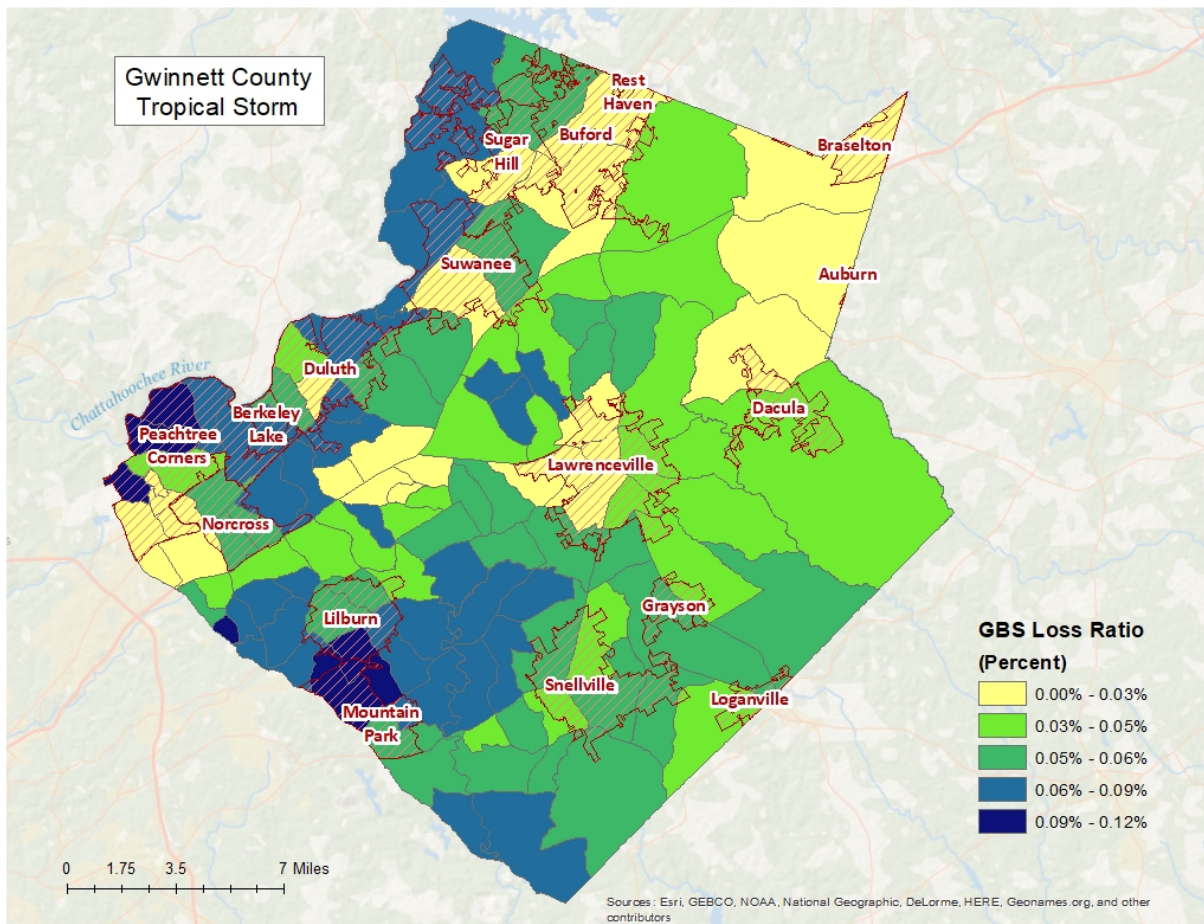
Buildings in Gwinnett County are vulnerable to storm events, and the cost to rebuild may have significant consequences to the community. The following table shows a summary of the results of wind-related building damage in Gwinnett County for the Tropical Storm (100 Year Event). The loss ratio expresses building

losses as a percentage of total building replacement cost in the county. Figure 4 illustrates the building loss ratios of the modeled Tropical Storm.

Table 5: Hurricane Wind Building Damage

Classification	Number of Buildings Damaged	Total Building Damage	Total Economic Loss ²²	Loss Ratio
Tropical Storm	125	\$28,425,580	\$42,742,550	0.05%

Note that wind damaged buildings are not reported by jurisdiction. This is due to the fact that census tract boundaries – upon which hurricane building losses are based – do not closely coincide with jurisdiction boundaries.



²² Includes property damage (infrastructure, contents, and inventory) as well as business interruption losses.

Figure 4: Hurricane Wind Building Loss Ratios

There are 385 essential facilities in Gwinnett County.

Classification	Number
EOCs	1
Fire Stations	34
Care Facilities	145
Police Stations	26
Schools	179

Essential Facility Losses

Essential facilities are also vulnerable to storm events, and the potential loss of functionality may have significant consequences to the community. Hazus-MH identified the essential facilities that may be moderately or severely damaged by winds. The results are compiled in Table 6.

Table 6: Wind-Damaged Essential Facility Losses

Classification	Facilities At Least Moderately Damaged > 50%	Facilities Completely Damaged > 50%	Facilities with Expected Loss of Use (< 1 day)
Tropical Storm	0	0	385

Shelter Requirements

Hazus-MH estimates the number of households evacuated from buildings with severe damage from high velocity winds as well as the number of people who will require short-term sheltering. Since the 1% chance storm event for Gwinnett County is a Tropical Storm, the resulting damage is not enough to displace Households or require temporary shelters as shown in the results listed in Table 7.

Table 7: Displaced Households and People

Classification	# of Displaced Households	# of People Needing Short-Term Shelter
Tropical Storm	0	0

Debris Generated from Hurricane Wind

Hazus-MH estimates the amount of debris that will be generated by high velocity hurricane winds and quantifies it into three broad categories to determine the material handling equipment needed:

- Reinforced Concrete and Steel Debris
- Brick and Wood and Other Building Debris
- Tree Debris

Different material handling equipment is required for each category of debris. The estimates of debris for this scenario are listed in Table 8. The amount of hurricane wind related tree debris that is estimated to require pick up at the public's expense is listed in the eligible tree debris column.

Table 8: Wind-Related Debris Weight (Tons)

Classification	Brick, Wood, and Other	Reinforced Concrete and Steel	Eligible Tree Debris	Other Tree Debris	Total
Tropical Storm	1,749	0	10,263	7,660	19,672

Figure 5 shows the distribution of all wind related debris resulting from a Tropical Storm. Each dot represents 10 tons of debris within the census tract in which it is located. The dots are randomly distributed within each census tract and therefore do not represent the specific location of debris sites.

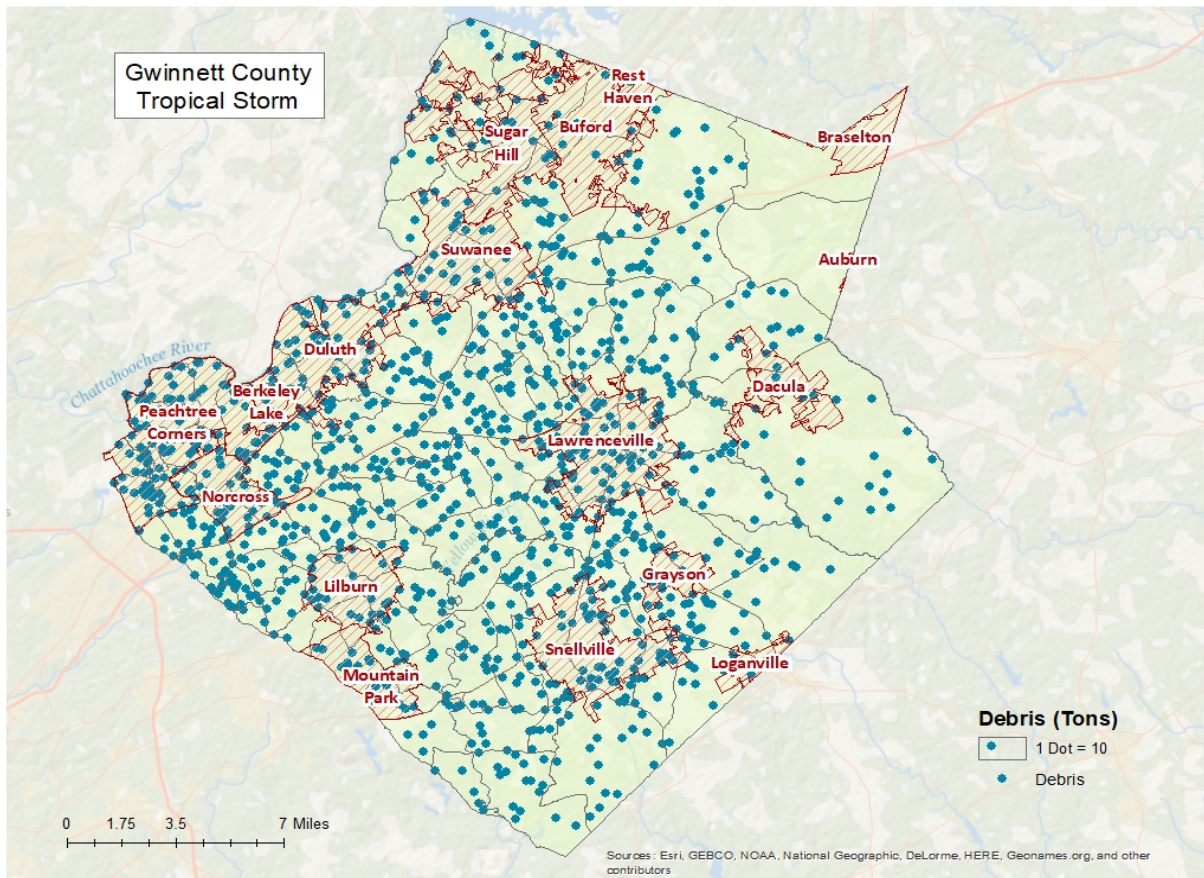


Figure 5: Wind-Related Debris Weight (Tons)

3.2.8 Wildfire

3.2.8.1 Hazard Identification

A wildfire is defined as area-sweeping and destructive conflagration, especially in a wilderness or a rural area. Wildfires in Georgia can be wildland, wildland interface, or intermix fires. Wildfires can be a result of naturally occurring influences such as lightning, extreme drought, and heat, or human influences such as a discarded cigarette butt, improperly extinguished campfire, or a stray spark from nearby railroad tracks. The potential for threat of wildfires is dependent upon topography and slope, surface fuel characteristics, recent climate conditions, current meteorological conditions, and fire behavior.

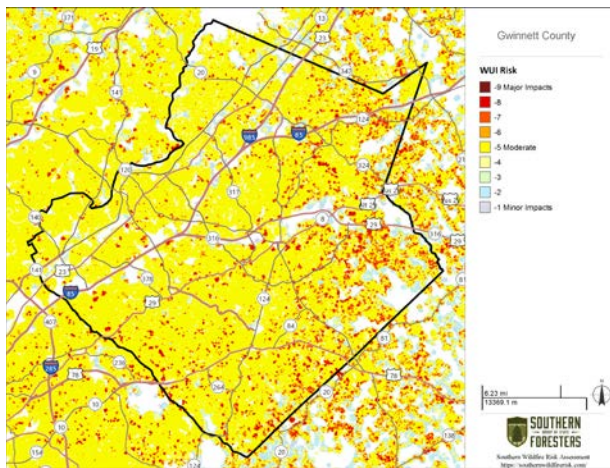
The Keetch-Byram Drought Index relates current weather conditions to potential or expected fire conditions. Fire behavior typically associated with these indices is provided in Table 3-23. Throughout the development of this plan, Gwinnett County hovered around 300 on the Keetch-Byram Drought Index²³, correlating to slightly increased fire intensity and extended period of smoldering and smoke. In terms of magnitude, Gwinnett County has experienced the full range of the Keetch-Byram Drought Index at various times throughout the year.

²³ National Weather Service, <http://www.nws.noaa.gov>

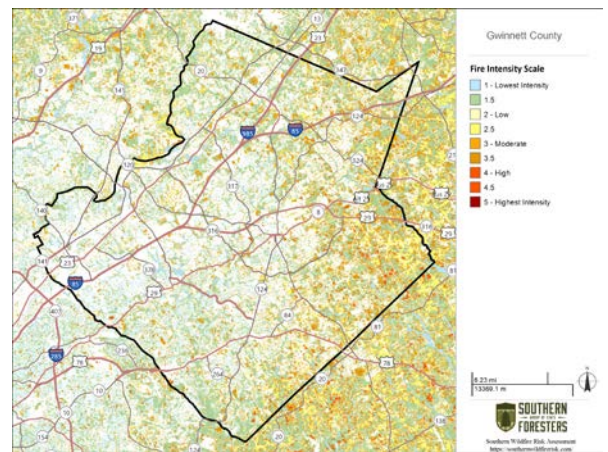
Table 3-24²⁴
Keetch-Byram Drought Index

Index	Potential or Expected Behavior
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.

3.2.8.2 Hazard Profile



As Gwinnett County continues to grow and develop the focus of wildfires increases in the county to include county owned green space and parks. Small wildfires have been recorded in county parks and currently mitigation actions are being pursued. It is estimated that approximately 800k people or roughly 96% of the population live within the Wildland Urban Interface (WUI), most within moderate to major impacts.



3.2.8.3 Assets Exposed to Hazard

Property Risk/Vulnerability. All assets throughout Gwinnett County are exposed to the threat of wildfires. The amount of loss would vary from facility to facility. The Fire intensity graphic to the right gives a representation of county impact with most if not all the county falling between low to high risks.

Infrastructures located in wildfire vulnerable areas include:

- Heavy concentration of Commercial and industrial land
- Heavy concentration of residential land use
- Schools county wide can be impacted

²⁴ United States Department of Agriculture, <http://www.usda.gov/wps/portal/usda/usdahome>

- 50+ County Parks with over 10,000 acres of woodland, trails and activity centers
- **People Risk/Vulnerability.** It was determined that risk/vulnerability includes the entire population of Gwinnett County because there is no way to determine the impact/magnitude of a wildfire incident and no way to predict where a wildfire incident will occur. Further information and breakdowns of impacts to individual cities can be found in Appendix A
- **Environment Risk/Vulnerability.** Risks to the environment are high for a wildfire incident, although there is a low frequency of occurrence. Environmental concerns include the risk of losing vegetation and risk of erosion in areas that are affected by wildfires. Further information and breakdowns of impacts to individual cities can be found in Appendix A

3.2.8.4 Vulnerability

**Table 3-25
Wildfires**

Frequency of Occurrence	Likely
Warning Time	None–Minimal
Geographic Extent	Localized–County-wide
Potential Impact	Major

3.2.8.5 Land Use and Development Trends

Future development throughout Gwinnett County will result in the potential for damage from wildfires. There are currently no building codes specified in the Gwinnett County ordinance regarding wildfire.

3.2.8.6 Hazard Summary

According to available records, Gwinnett County has experienced numerous wildfire incidents. All of Gwinnett County is subject to wildfires and therefore should be included in any prospective mitigation projects. Further information and breakdowns of impacts to individual cities can be found in Appendix A

3.2.9 Earthquakes

3.2.9.1 Hazard Identification

Although earthquakes occur less frequently in the southeastern United States than on the west coast, historical records indicate that earthquakes and their associated seismic hazards exist in Georgia. The Gwinnett County HMSC reviewed historical data from the U.S. Geological Survey in researching earthquakes in Gwinnett County and the State of Georgia. By definition, an earthquake is the sudden release of stress along a fault and the resulting vibrations of the earth. The vibrations propagate away from the epicenter.

The Mercalli Scale is the method used for measuring earthquake intensity. This scale ranks observed effects from I (felt only under favorable circumstances) to VIII (total damage). The magnitude of an earthquake is measured using the Richter scale. Earthquake magnitudes are an absolute scale. A magnitude 8 earthquake is ten times stronger than a magnitude 7 earthquake and 100 times stronger than a magnitude 6 earthquake, etc.

**Table 3-26
Modified Mercalli Scale of Earthquake Intensity²⁵**

Scale	Intensity	Description of Effects	Maximum Acceleration (mm/sec)	Corresponding Richter Scale
I	Instrumental	Detected only on seismographs	<10	
II	Feeble	Some people feel it	<25	<4.2
III	Slight	Felt by people resting	<50	
IV	Moderate	Felt by people walking	<100	
V	Slightly Strong	Sleepers awake; church bells ring	<250	<4.8
VI	Strong	Trees sway; objects fall off shelves	<500	<5.4
VII	Very Strong	Walls crack; plaster falls	<1000	<6.1
VIII	Destructive	Moving cars uncontrollable; building damage	<2500	

Hazard Profile

Gwinnett County most recently experienced seismic activity from an earthquake with an epicenter located in Dahlonega, Georgia on December 21, 2018 at 1.8. In 1993, residents of the Norris Lake area in the southernmost part of Gwinnett reported tremors, and Georgia Tech measured the activity at 2–2.7 on the Richter scale. During the years of 1995 and 1996, several small tremors were felt by citizens in the Dacula area of northwest Gwinnett County, and Georgia Tech measured the activity at less than 2.0 on the Richter scale.

Assets Exposed to Hazard

Property Risk/Vulnerability: The HMSC determined that all critical facilities as well as all public, private, and commercial properties are susceptible to being affected by an earthquake.

People Risk/Vulnerability: In evaluating vulnerability of the population in Gwinnett County, it was determined that risk/vulnerability includes the entire population of Gwinnett County because there is no way to determine the impact/magnitude of an earthquake and no way to predict where and when an earthquake will occur. People are vulnerable to earthquakes through power outages, effects on transportation routes, establishment of shelters, etc.

Environment Risk/Vulnerability: Risks to the environment are high should an earthquake occur, but the frequency of earthquakes in Gwinnett County is low. Environmental concerns would be interruption of water supply, secondary events such as fires and hazardous materials accidents (such as gas pipelines rupturing, rupture of hazardous material containers at facilities, etc.).

²⁵ National Weather Service, <http://www.noaa.nws.gov>

3.2.9.2 Vulnerability

**Table 3-27
Earthquakes**

Frequency of Occurrence	Unlikely
Warning Time	None–Minimal
Geographic Extent	Countywide
Potential Impact	Minor

3.2.9.3 Land Use and Development Trends

Gwinnett County currently has no land use or development trends related to earthquakes.

3.2.9.4 Hazard Summary

Overall, Gwinnett County has the potential for damage from earthquakes. Should an earthquake affect certain portions of Gwinnett that are highly concentrated with homes or any of the critical facilities identified, depending upon the magnitude and duration of the event, significant damage could occur.

3.3 Technological Hazards

Technological hazards are distinct from natural hazards primarily in that they originate from human activity. In contrast, while the risks presented by natural hazards may be increased or decreased as a result of human activity, they are not inherently human-caused. The term “technological hazards” refers to the origins of incidents that can arise from human activities, such as the manufacturing, transportation, storage, and use of hazardous materials.

3.3.1 Hazardous Material Releases

3.3.1.1 Hazard Identification

Transportation

A major source of hazardous spills is along roadways, highways, and railways. Hazardous materials are substances or materials that pose a potential risk to life, health, or property if they are released because of their chemical or biological nature. Hazardous materials flow through Gwinnett County on a daily basis via the highway, the railroad, and the airway.

Facilities

Facilities that produce, process, or store hazardous materials are at risk, and facilities that treat or dispose hazardous waste are also at risk. Equipment and machinery that are used to produce hazardous materials can be harmful to Gwinnett County if not properly maintained. Finally, Gwinnett County could be at risk if employees are not trained correctly on policies and procedures.

Pipeline

Several underground pipelines run east to west and north to south through Gwinnett County. The pipelines transport hydrocarbon (natural gas) at a constant flow and a liquid natural gas.

3.3.1.2 Hazard Profile

Hazardous material spills occur frequently within Gwinnett County. There were 637 or 37% percent of the recorded spills in Gwinnett County that were transportation related. This is directly attributable to the presence of 2 interstate highways (I-85 and I-985), 2 major railways (CSX and Norfolk Southern) and several multilane highways (Highway 78, 316, etc.) running through portions of Gwinnett County. There are 315 identified facilities in Gwinnett County that produce, process, and/or store hazardous materials. Gwinnett County Fire and Emergency Services responded to 1718 hazardous materials incidents in 2018.

Gwinnett County has updated the system used to collect and track data related to calls for response by Gwinnett County Fire and Emergency Services. As the data collection method has changed since the last update of this plan, it is no longer possible to sort hazardous materials call for response by transportation and fixed facility spills.

3.3.1.3 Assets Exposed to Hazard

Property Risk/Vulnerability: With over 200 SARA Title III reporting facilities, multiple interstate and highway systems and both CSX and Norfolk Southern railways that dissect the county into thirds, the planning committee considers all critical facilities as having the possibility of being affected by a hazardous materials incident.

People Risk/Vulnerability: In evaluating vulnerability of the population in Gwinnett County, it was determined that risk/vulnerability includes the entire population of Gwinnett County since there is no way to determine the impact/magnitude of a hazardous materials event and no way to predict where and when a hazardous materials event will occur. People are vulnerable to hazardous materials events through effects on transportation routes, establishment of shelters, etc. The city of Dacula is particularly vulnerable as the city is split by a railroad with limited under and over roadway crossings making first responder response difficult and timely.

Environment Risk/Vulnerability: Risks to the environment are high should a hazardous materials accident occur. Environmental concerns would be interruption of water supply, secondary events such as fires and hazardous materials accidents (such as gas pipelines rupturing, rupture of hazardous material containers at facilities, etc.). When spills do occur, whether inside or outside facilities, or whether along roadways, shutdowns, lost time, and expended man- hours are all factors mitigation planners must take into account. The Gwinnett County Fire and Emergency Services can provide a listing of facility locations throughout Gwinnett County if requested.

3.3.1.4 Estimate of Potential Losses

It is difficult to determine the damage to the environment associated with hazardous material spills. Gwinnett County has no recorded instances of critical facilities and/or other property being damaged as a result of hazardous material spills. Gwinnett County Fire and Emergency Services can provide a listing and location of facility locations throughout Gwinnett County if requested.

3.3.1.5 Land Use and Development Trends

Gwinnett County currently has no land use or development trends related to hazardous material spills.

3.3.1.6 Multi-Jurisdictional Concerns

All of Gwinnett County, to include the cities of Berkeley Lake, Buford, Dacula, Duluth, Grayson, Lawrenceville, Lilburn, Norcross, Snellville, Sugar Hill and Suwanee are vulnerable to both fixed location and transportation related hazardous material spills. The I-85 and I-985 corridor are most vulnerable to transportation related spills. Fixed location spills are possible in all areas of the county. Gwinnett County Fire

and Emergency Services can provide a list of the facilities located in Gwinnett County. See Figure 21 below for the facility locations in Gwinnett County.

**Figure 21
Hazardous Materials Facilities**

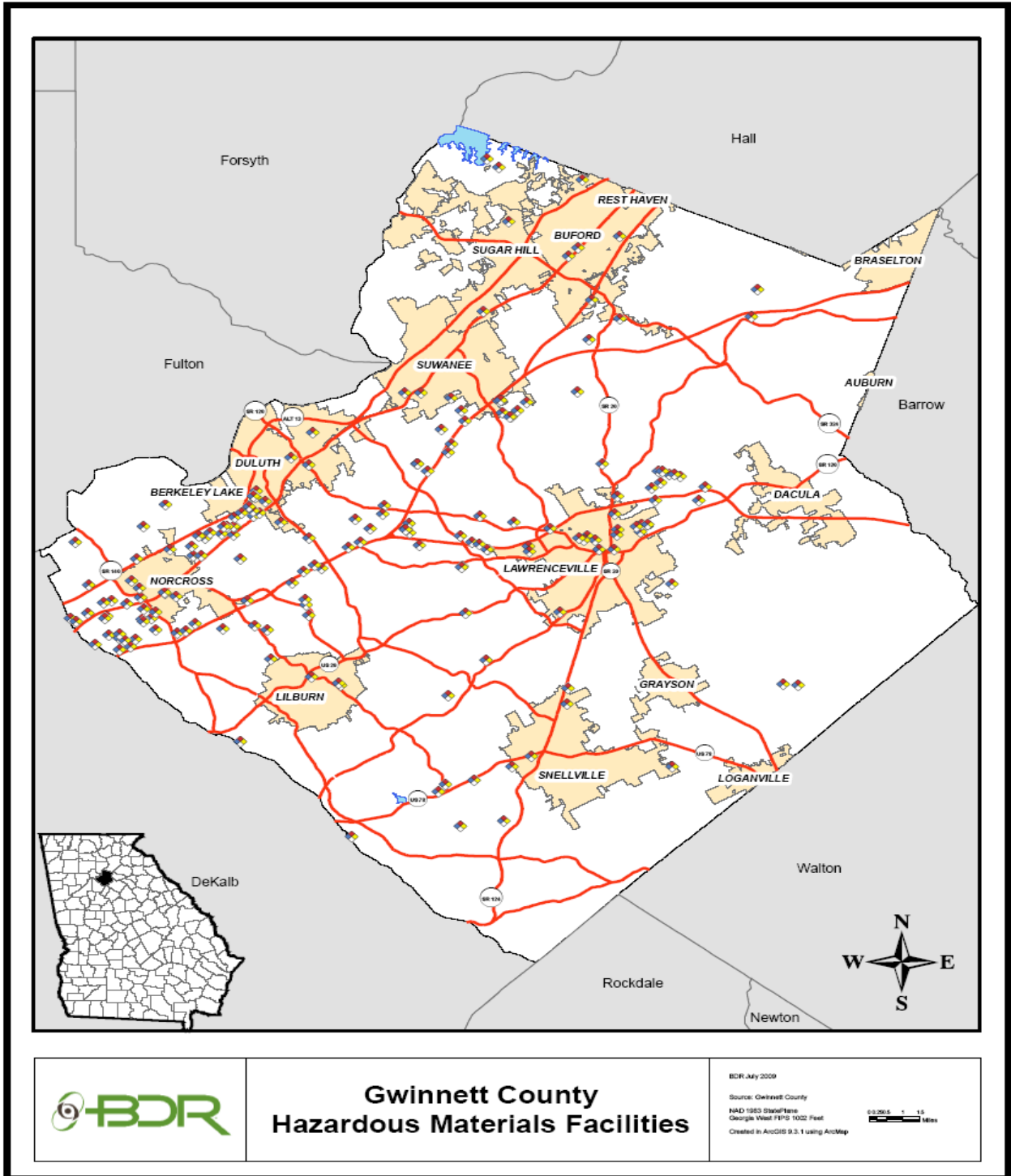


Figure 22
Gas Lines

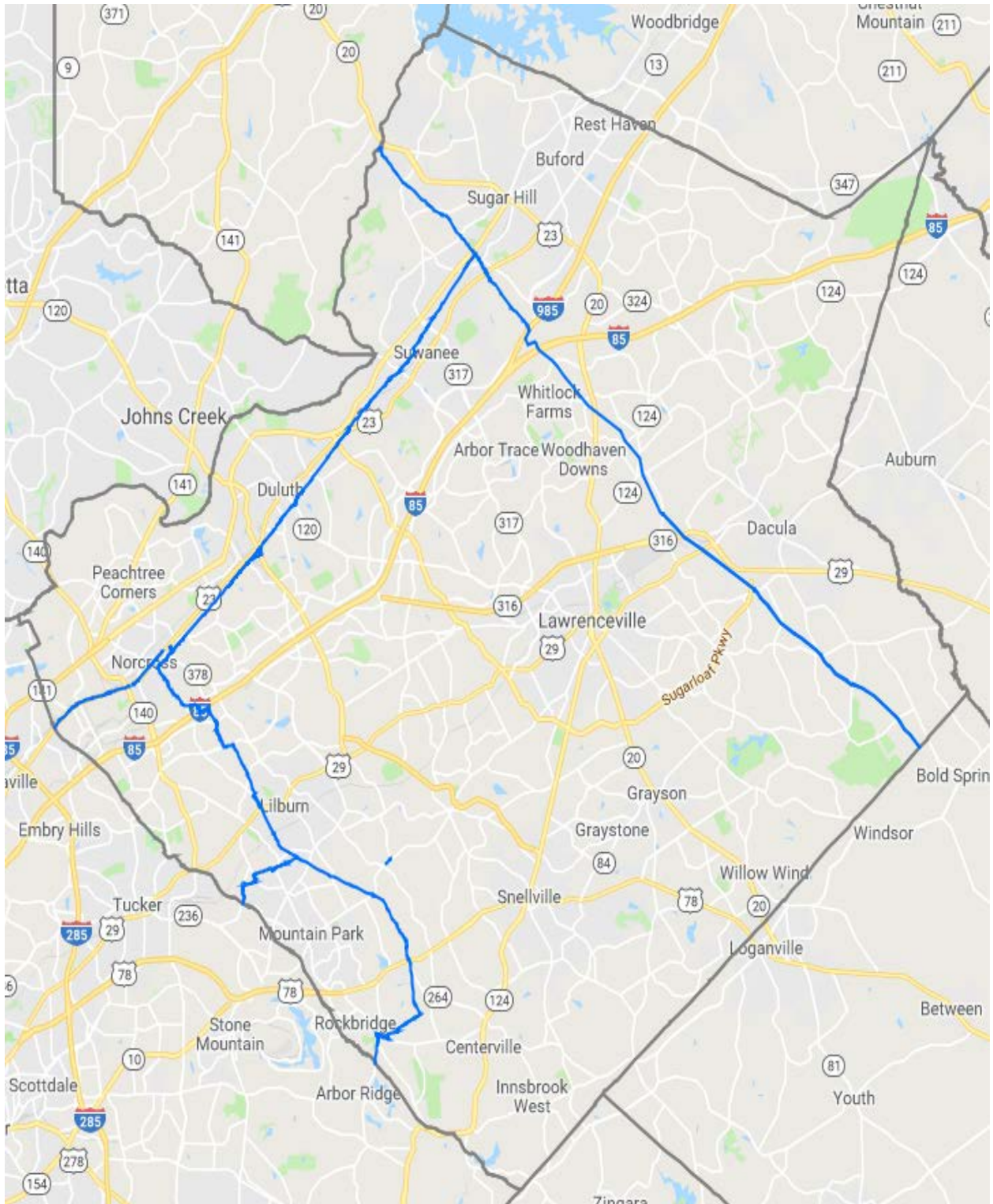
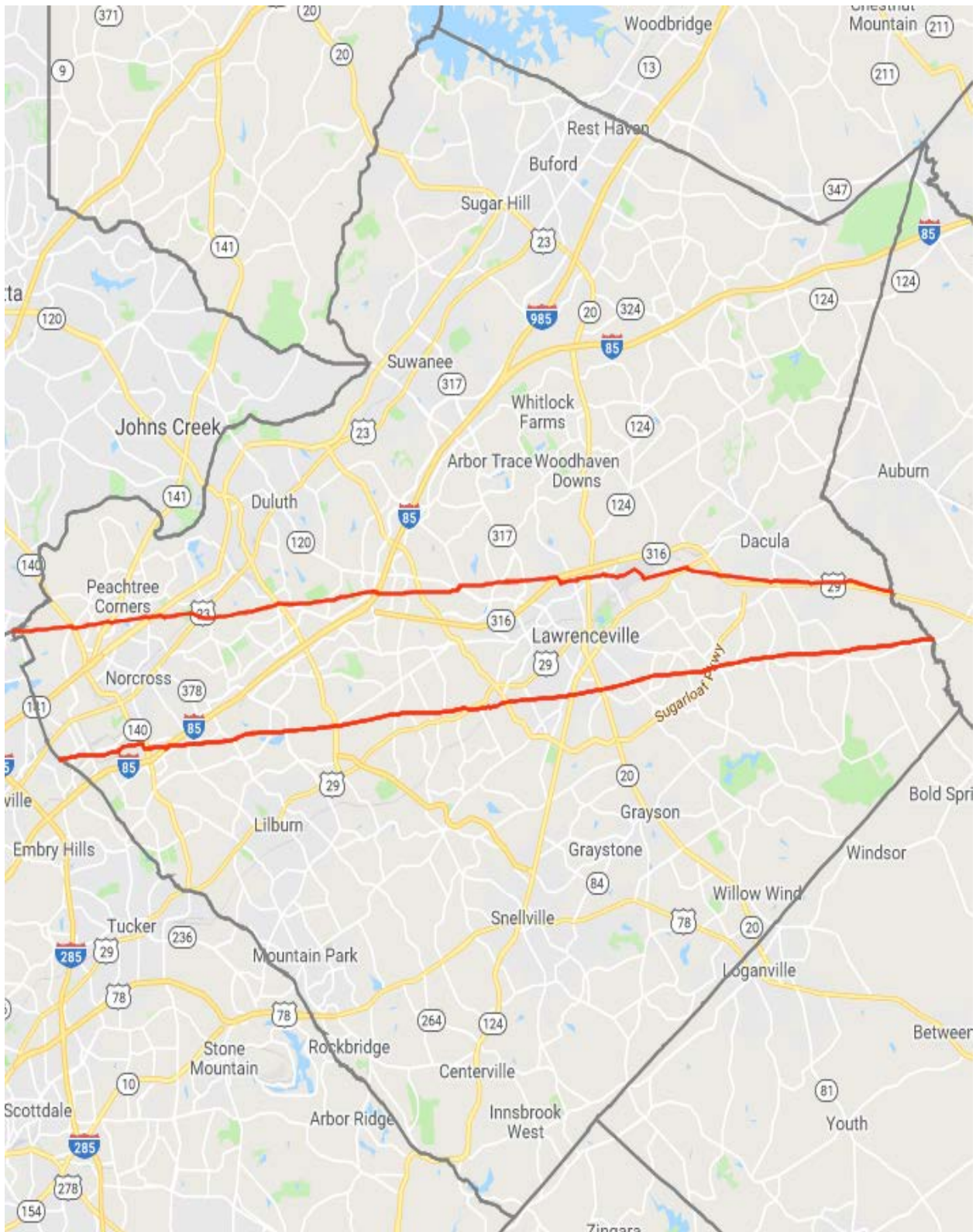


Figure 23
Plantation Pipeline and Colonial Pipeline



3.3.2 Pandemic/Epidemic

3.3.2.1 Hazard Identification

A widespread infectious disease outbreak is plausible in Gwinnett County. Pandemic/epidemic incidents are a danger to the emergency responders and the general public. This can include influenza (including H1N1), tuberculosis, polio, smallpox, Severe Acute Respiratory Syndrome (SARS), and other health-related incidents. Bioterrorism incidents can also be included in this identified hazard area.

3.3.2.2 Hazard Profile

Influenza comes to Gwinnett, Newton and Rockdale County Health Departments (GNR) every winter, usually between October and March. Although influenza is often referred to as “the flu”, it is a specific viral infection that is responsible for a substantial number of hospitalization and deaths each winter- it **isn't** the common cold. The Center for Disease Control and Prevention estimates up to 49,000 excess deaths are caused by influenza each year in the United States. Approximately 4 deaths were attributed to influenza in Gwinnett, Newton and Rockdale counties between 2014 and 2018. The continuous genetic changes in the virus, called “antigenic drift,” mean that people can get sick from the same virus year after year; this year’s flu shot doesn’t prevent next year’s illness.

Historians estimate that over the last 3 centuries there have been 10 influenza “pandemics”. A pandemic is an epidemic that affects the entire world. Influenza pandemics occur when the virus undergoes such dramatic changes that virtually no one has resistance to infection. When this occurs the number of people infected is much higher than during ordinary flu seasons. In addition, during some pandemics, the severity of illness is higher. For example, in 1918-1919, not only was the number of ill people high but also the death rate was 50 times higher than usual. Furthermore, there was a shift in the age group most severely affected from the elderly to those 20-40 years of age. In contrast, the more recent pandemics of 1957 and 1968 caused far less dramatic increases in the death rate (only about 2 times the norm of 36,000 per year from regular flu).

Evidence from multiple outbreak sites demonstrates that the H1N1 pandemic virus has rapidly established itself and is now the dominant influenza strain in most parts of the world. The pandemic will persist in the coming months as the virus continues to move through susceptible populations.

The outbreak of the H5N1 influenza strain (bird flu) in wild and domestic birds, which began in Asia in late 2003, is being carefully watched as a potential precursor to a pandemic since several hundred humans have been infected. Although the number of human infections is quite small, about 60 percent have died demonstrating the severity of this infection. The conditions to trigger a pandemic are not yet present since, at this point; the H5N1 virus is not efficiently transmitted from human to human.

The key to early detection of the next worldwide pandemic is influenza surveillance. In Georgia, the following three systems are in place to monitor influenza activity:

The Georgia State Public Health Laboratory (GSPHL) is part of the network of World Health Organization (WHO) laboratories dedicated to detecting and characterizing influenza viruses year round. Influenza viral culture is performed free of charge for clinicians submitting specimens, results are tabulated weekly, and a subset of specimens are sent to the Centers for Disease Control (CDC) for further characterization.

The Georgia Epidemiology Program collaborates with clinicians around the state in the “sentinel provider” influenza surveillance network to track the frequency of influenza-like illness (ILI) from October-May. Each week, participating clinicians report the total number of patients evaluated and the number that had a fever ≥ 100.0 F or 37.8 C plus a cough and/or sore throat, in the absence of a known cause other than influenza. This data is compiled and reported weekly.

The Gwinnett, Newton and Rockdale County Health Departments developed a Pandemic Influenza Plan with both government and external partners. The purpose of the plan is to lessen the impact of a pandemic on the residents of Gwinnett, Newton, and Rockdale Counties and to outline the roles of our public safety agencies in responding to this threat. The plan is revised annually to ensure coordination with federal, state, and non-governmental organizations, many of which have also developed pandemic influenza plans.

In 2016, Gwinnett, Newton and Rockdale County Health Departments investigated 10,374 notifiable diseases including 7,079 sexually transmitted diseases, 3,258 general notifiable diseases, and 37 tuberculosis cases. (This gives you an idea of how much our morbidity has grown in the last 10 years.) GNR Epidemiology responded to 33 outbreaks and 131 complaints of foodborne or waterborne illness in 2016

Though we have seen a decrease in overall Tuberculosis cases in the last decade, our Tuberculosis program has seen an increase in cases in the last four years. Our Tuberculosis team is receiving more cases with immunosuppression, complex medical histories, and with non-pulmonary TB (meaning infections outside of the lungs). In 2016, 75.6% of TB cases were pulmonary. In addition to 37 reported cases; the TB team investigated 247 close contacts.

3.3.2.3 Assets Exposed to Hazard

- **Property Risk/Vulnerability.** All critical facilities as well as all public, private, and commercial properties are vulnerable to being affected by an infectious disease incident due to employees being ill and possibly being unable to maintain the facilities.
- **People Risk/Vulnerability.** It was determined that risk/vulnerability includes the entire population of Gwinnett County because there is no way to determine the impact/magnitude of an infectious disease incident and no way to predict which target group(s) will be the most vulnerable to a virus or bacteria. In addition to sickness (morbidity) and death (mortality), 40 percent of the workforce could become ill.
- **Environment Risk/Vulnerability.** Risks to the environment are low should an infectious disease incident occur.

3.3.2.4 Vulnerability

**Table 3-29
Pandemic/Epidemic**

Frequency of Occurrence	Likely
Warning Time	More than 12 hours
Geographic Extent	Countywide
Potential Impact	Negligible–Major

3.3.2.5 Land Use and Development Trends

Changes in land use and habitat fragmentation can lead to more frequent interactions between humans and wildlife and increase the risk of zoonotic diseases such as rabies, in particular, urbanization and development increases the risk for vectorborne diseases by providing suitable habitat and breeding grounds for mosquitoes and ticks which transmit pathogens (e.g., West Nile virus and Lyme disease).

As international tourism and commerce becomes more common, infectious diseases such as Zika virus, Ebola, and measles may be imported to the U.S. from other countries. Our district has investigated over 20 confirmed cases of Zika since 2016, and prompt public health follow up is necessary to prevent secondary cases and local transmission.

The intergovernmental Panel on Climate Change predicts that heavy rainfall events will continue to increase. Increasingly urbanized municipalities will have to develop new strategies for managing the flow of water or risk drinking water contamination and flooding. Heavy participation has been associated with waterborne disease outbreaks through contaminated drinking water and recreational waters (e.g., E. coli 0157: H7, Campylobacter, and Cryptosporidium). Increased precipitation and above average temperatures have also been linked to epidemics of West Nile virus.

Natural disasters are on the rise, and heavily developed states with significant coastlines are most at risk. Category 3 hurricane severely damaged parts of Southern Georgia in 2018. In the aftermath of a natural disaster, public health is concerned with increased risk of waterborne diseases, botulism, and tetanus. These disasters also create risks for Gwinnett County as mass sheltering environments are especially vulnerable to outbreaks of norovirus, influenza, and pertussis.

3.3.2.6 Hazard Summary

Infectious disease outbreaks pose a threat to all of Gwinnett County. Many infectious diseases do not pose a great economical threat, but there are infectious diseases (West Nile virus and influenza virus such as H1N1) that threaten to destabilize the economy by decreasing work production and increasing strain on the health system. Fortunately, Gwinnett County has a robust public health system in place to quickly identify infectious disease and mitigate its effects.

3.3.3 Dam Failure

3.3.3.1 Hazard Identification

A dam failure is defined as a systematic failure of the dam structure resulting in the uncontrolled release of water, often resulting in floods that could exceed the 100-year flood plain boundaries. A dam failure could create mass fatalities, mass structural damage, and/or a cascading potential if a populated area is located below the dam structure. Dam hazard rankings are based on the National Inventory of Dams (NID) classification. The NID ranks dams according to the potential loss of life as well as the potential impacts on economic, environmental, and important community lifelines. Table 3-30 describes the classification of dams according to the NID.

Dam classification by GSDP (Georgia Safe Dams Program)

Impoundments are classified as either Category I dams, Category II dams or Exempt structures. To be considered a dam, the impoundment must be either 25' in height or impound 100 acre-ft. of water. If the impoundment does not meet either of these requirements, then it is not considered a dam by the GSDP. Once an impoundment is deemed to be dam, its hazard category is determined based on probable loss of life. If improper operation or failure of the dam would result in a probable loss of life, it is classified as a Category I dam. If improper operation or failure would not be expected to result in a probable loss of life, it is classified as a Category II dam. Gwinnett County contains dams in every category making the impact higher if multiple failures were to occur during an event.

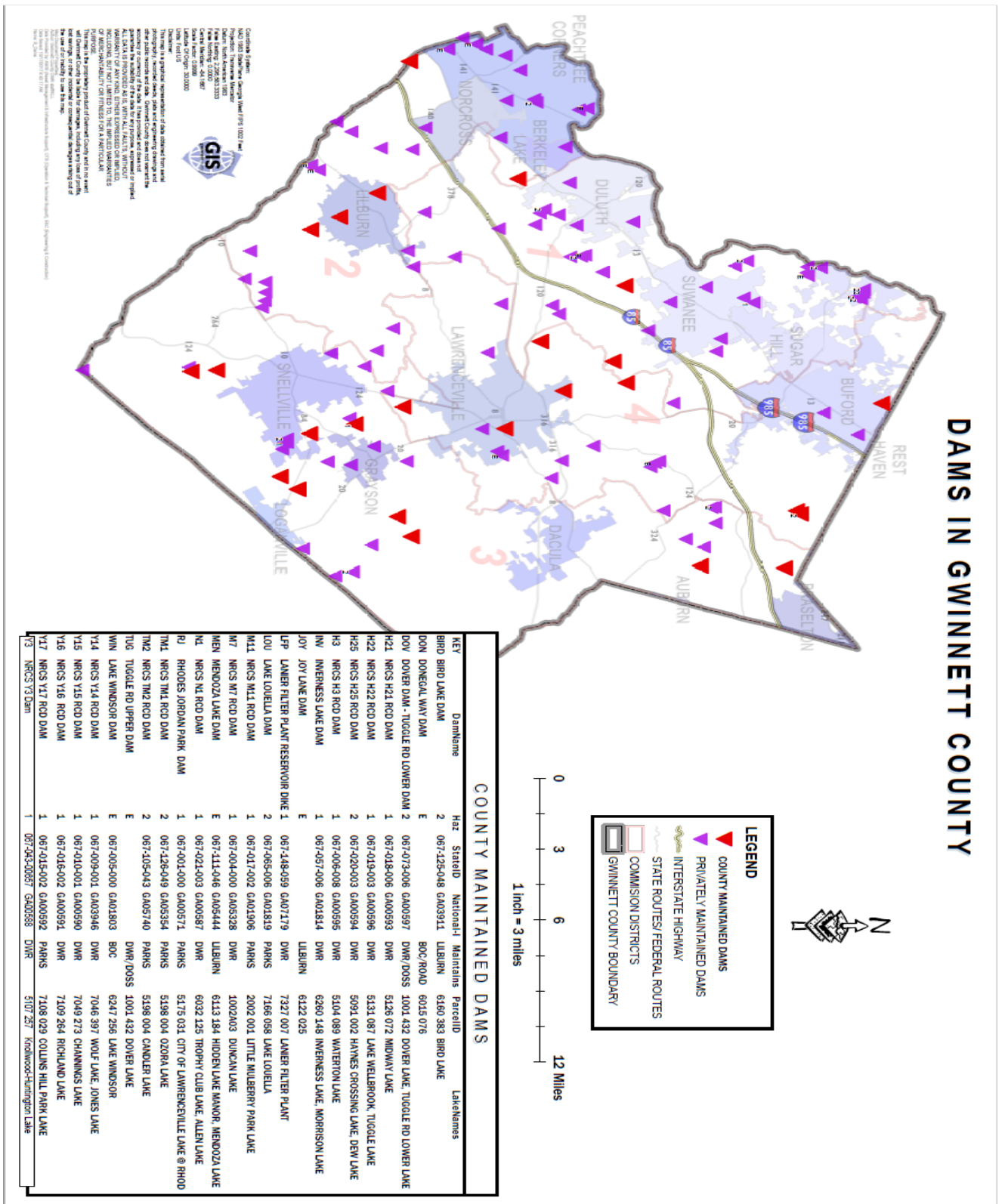
**Table 3-30
National Inventory of Dams Classifications**

NID Classifications
High hazard potential classification - loss of human life is likely if the dam fails
Significant hazard potential classification - no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities or impact other concerns
Equal to or exceeds 25 feet in height and exceeds 15 acre-feet in storage
Equal to or exceeds 6 feet in height and exceeds 50 acre-feet in storage

3.3.3.2 Hazard Profile

The location of dams in and around Gwinnett County in relation to population density is documented in this hazard mitigation plan. Whereas this may not support any conclusive correlation between dam breaches and/or failures and affected populations, it does aid the planning process by visually placing all known state-regulated dams in direct relationship to population distribution. There have been no recorded instances of dam or levee failure between 2010-Current.

Figure 24
Location Map



Non-County Operated Dams

BURNS LAKE DAM
BYRNES LAKE DAM
CANARY LAKE DAM
CARDINAL LAKE DAM
CHELTON LAKE DAM
COMMONWEALTH INDUSTRIAL PARK
COOPER'S POND
RIVER CLUB GOLF SOUTH LAKE DAM (FKA CRESCENT RIVER POND A)
RIVER CLUB GOLF NORTH LAKE DAM (FKA CRESCENT RIVER POND R)
ROWE LAKES DAM NO. 1
CROWE LAKES DAM NO. 2
CROWE LAKES DAM NO. 3
CRYSTAL LAKE DAM
DOVE LAKE DAM
EDWARDS COVE LAKE WEST DAM
EXECUTIVE ENTERPRISE INC. LAKE DAM
FALCON LAKE DAM
FONTAINE - STEMBLER DAM
FREEMAN LAKE DAM
GWINNETT PROGRESS CENTER #1 DAM
GWINNETT PLACE (MALL) RETENTION DAM
HAMILTON MILL LAKE DAM

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HOGANS LAKE DAM
HUGHES LAKE DAM
JACKSON POND LAKE
LONGLAKE AT RIVERBROOKE DAM
LAKE AT STONERIDGE DAM
LAKE COLONY DAM (NE)
LAKE COLONY DAM (SW)
LAKE MATTHEWS DAM
LAKEVIEW PLANTATION DAM
LAZY C LAKE DAM
LIONEL LAKE DAM
LOCK RIDGE FOREST LAKE DAM
LAKE PARK DAM NO. 2
SUGARLOAF (UPPER) LAKE DAM
SUGARLOAF TPC LAKE DAM #3 B
TETTERTON LAKE DAM
SUGAR HILL GOLF CLUB POND DAM NO. 1
UGAR HILL GOLF CLUB POND DAM NO. 2
SUGAR HILL GOLF CLUB POND DAM NO. 4
PYLANT LAKE DAM
RIVERGREEN AT SUGAR HILL LAKE DAM NO. 2
ROBINSON LAKE DAM
RUBY FOREST LAKE DAM
SANDLEWOOD LAKE DAM
SCOTT CANDLER RESERVOIR NO. 3

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SIMS LAKE PARK DAM
BAYSWATER COMMON SUBDIV DAM (FKA SIMS LAKE DAM)
SMOKETREE LAKE DAM
SOSEBEE LAKE DAM
PALDING TRIANGLE LAKE DAM B (LOWER)
SPALDING TRIANGLE LAKE DAM A (UPPER)
POUNDS LAKE (FKA STILLWOOD LAKE DAM)
STURBIVANT LAKE DAM
SUGARLOAF TPC LAKE DAM #2 B
SUGARLOAF TPC LAKE DAM #1 (FKA SUGARLOAF LAKE DAM)
SUMMIT CHASE NO. 1 DAM (UPSTREAM)
SUMMIT CHASE NO. 2 DAM
SWEETWATER LAKE DAM
TECHNOLOGY PARK LAKE DAM
VILLA CHASE SUBDIV LAKE DAM (FKA TUCKER MOBILE HOME PARK AT NW LAKE)
TUCKER MOBILE HOME PARK AZALEA DRIVE LAKE DAM
TUCKER MOBILE HOME POLISHING POND DAM
ASHMORE LAKE #2 DAM (UPPER #2) (FKA WALT'S FOLLY LAKE DAM NO. 2)
ASHMORE LAKE #3 DAM (UPPER #3) (FKA WALT'S FOLLY LAKE DAM NO. 3)
SUGAR HILL GOLF CLUB POND DAM NO. 5 (FKA WASTE TREATMENT POND DAM NO. 5)
SUGAR HILL GOLF CLUB POND DAM NO. 6 (FKA WASTE TREATMENT POND DAM NO. 6)
WEBB GINN FARMS DAM

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WILLOWRUN LAKE DAM
PYLANT LAKE-2
JOHNSON LAKE DAM
CASTEEL LAKE DAM
TECHNOLOGY CENTER OF GEORGIA - REGIONAL POND DAM

Figure 25
Dams by Primary Purpose

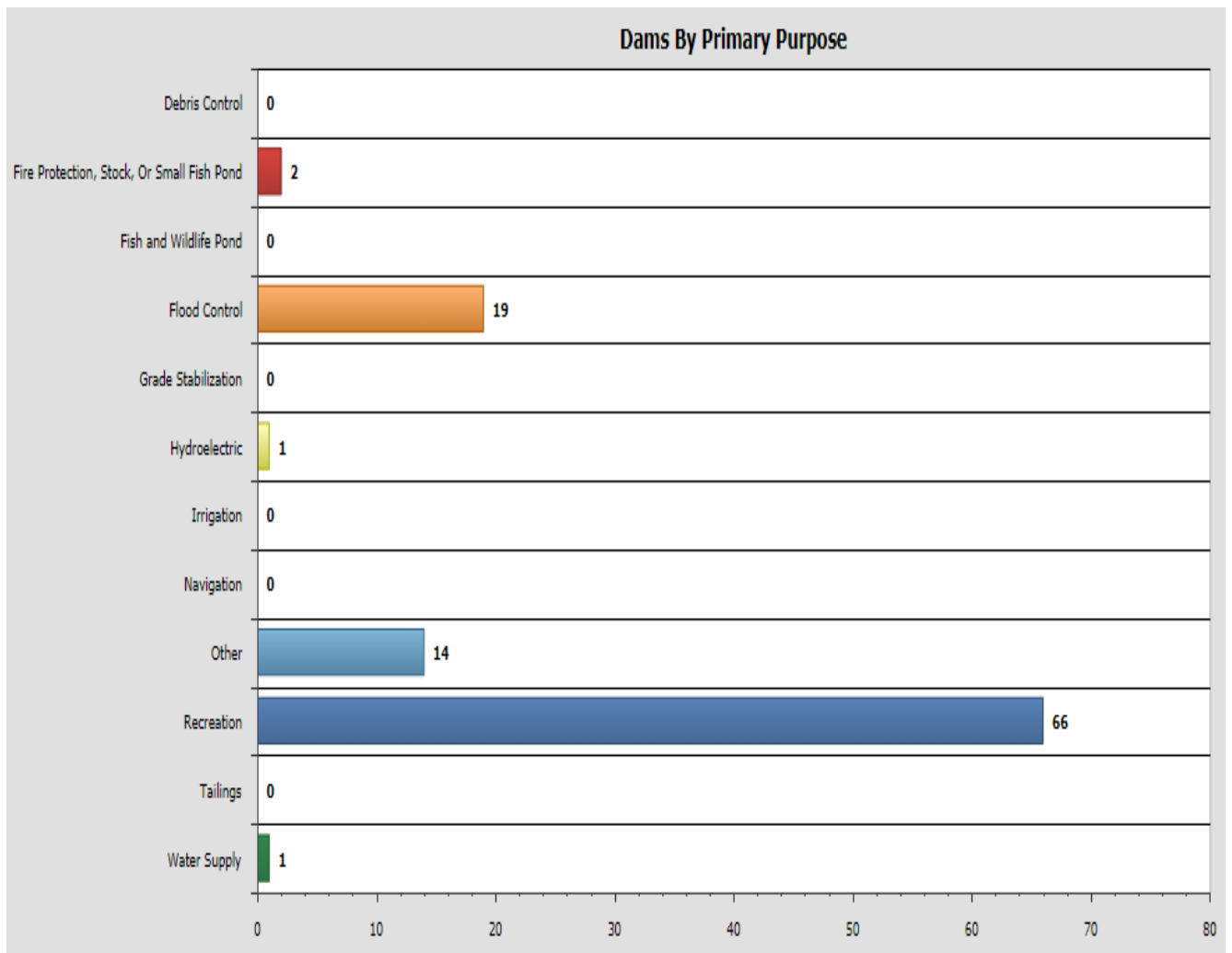
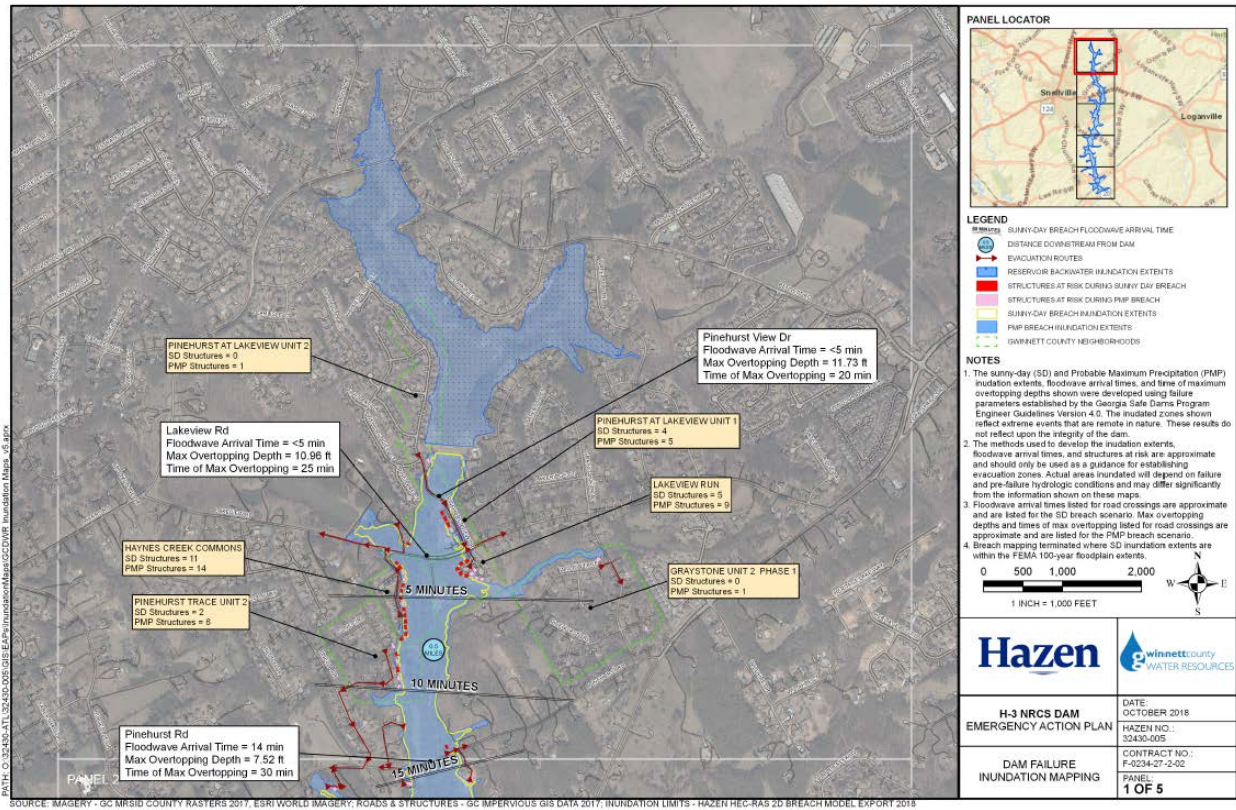
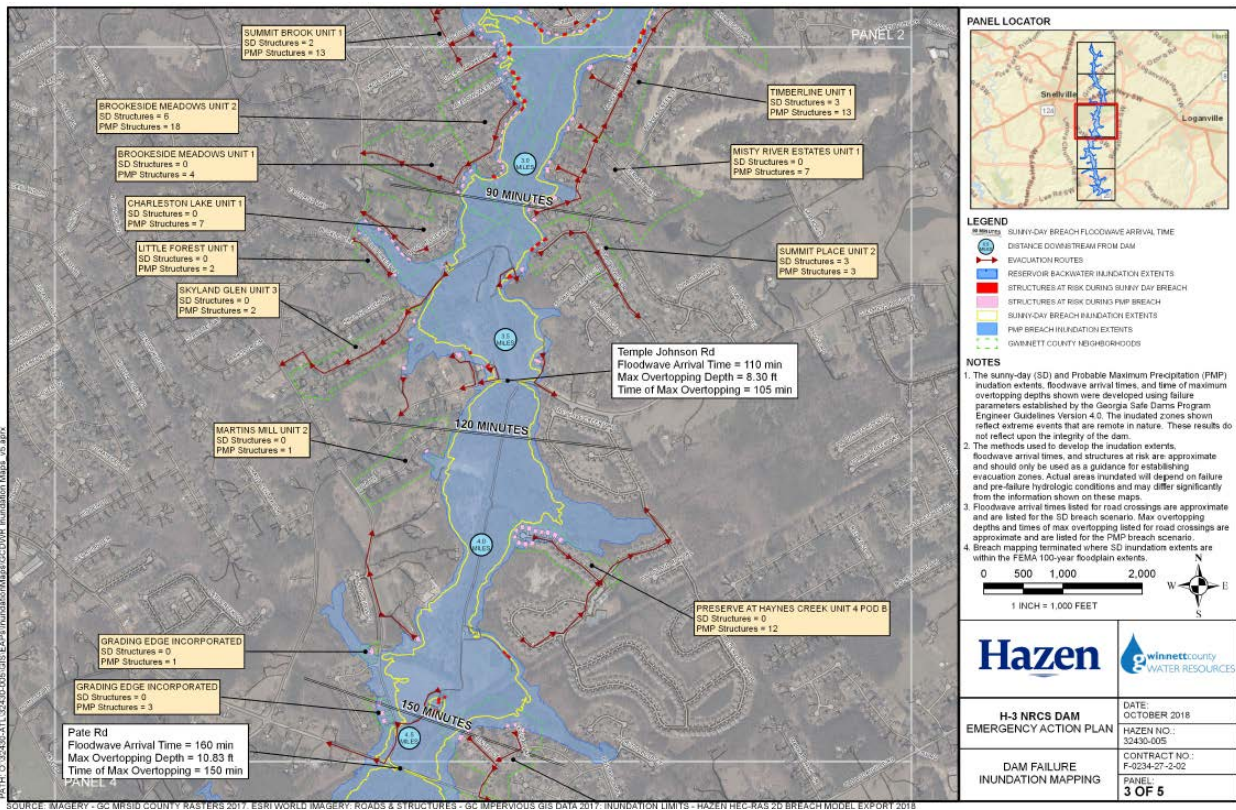
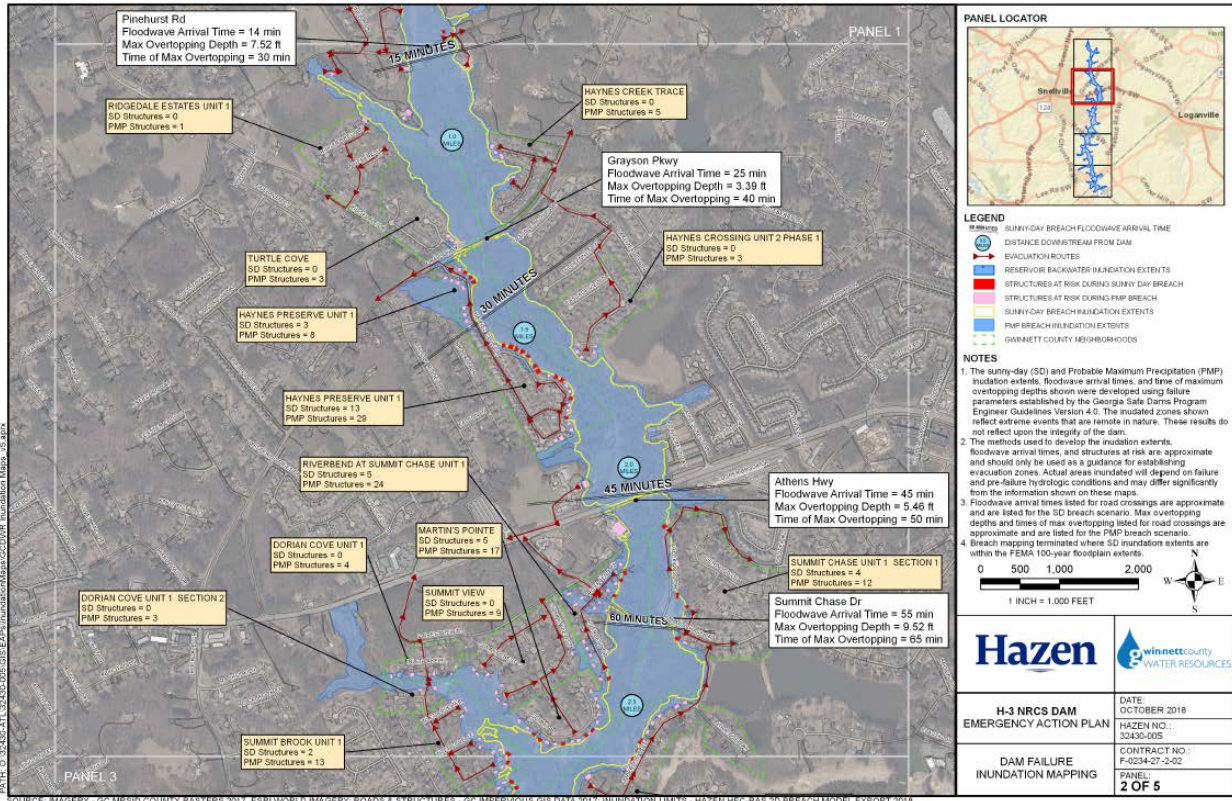


Figure 26
 Areas that would be impacted by Dam Failure
 Waterton Lake / NRCS Dam H-3 Inundation Maps Sheet 1



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RISK AND VULNERABILITY ASSESSMENT

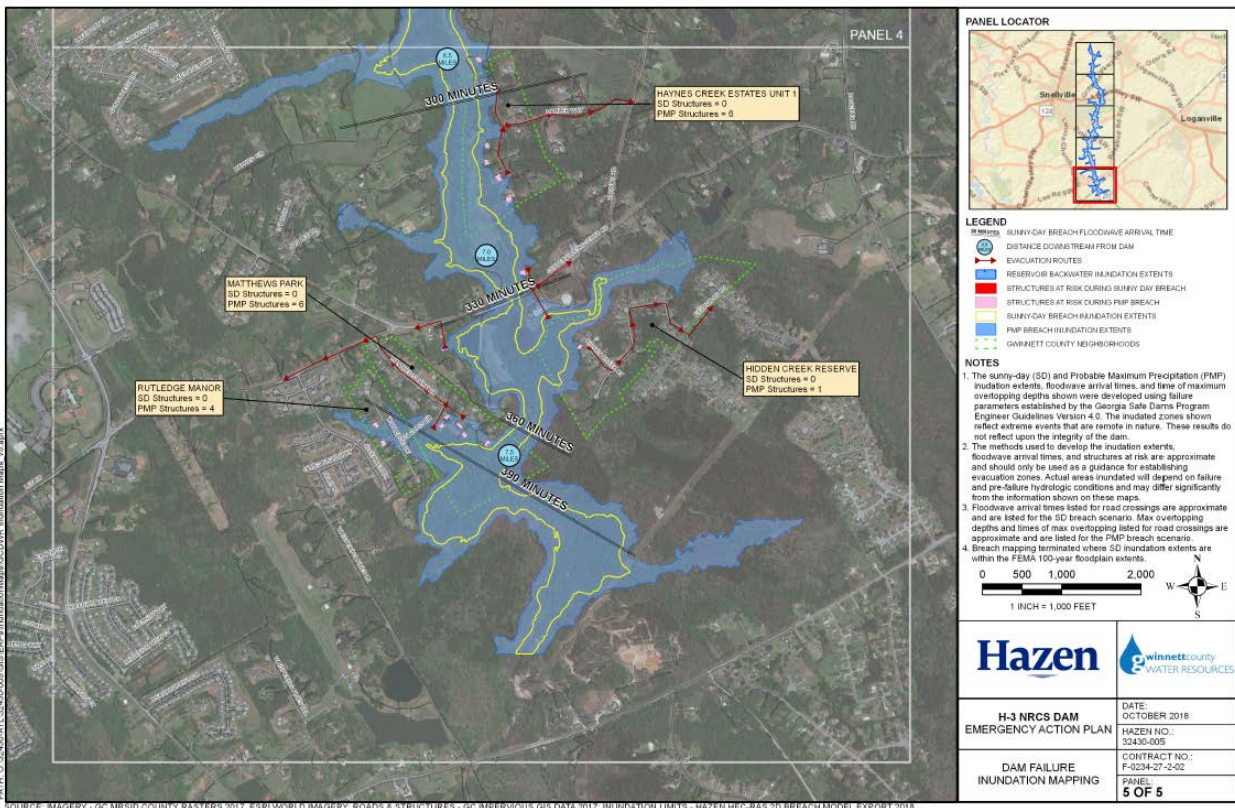
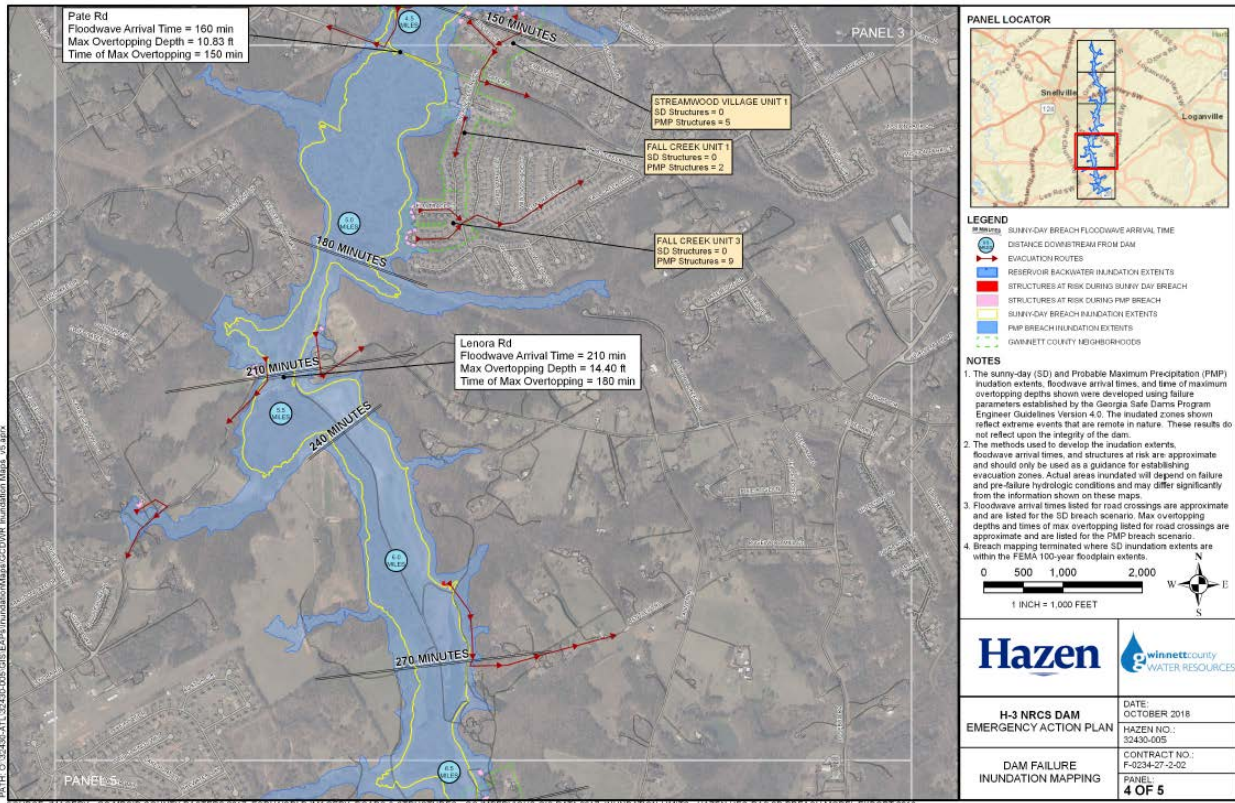


Figure 27
Waterton Lake / NRCS Dam H-3 Inundation Maps Sheet 2

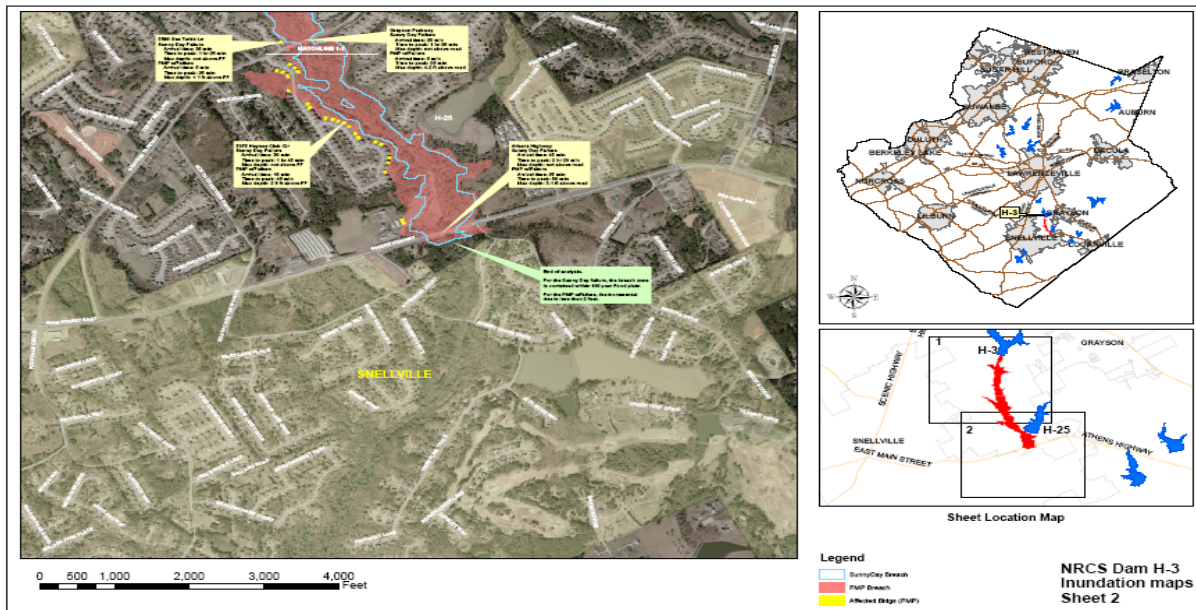
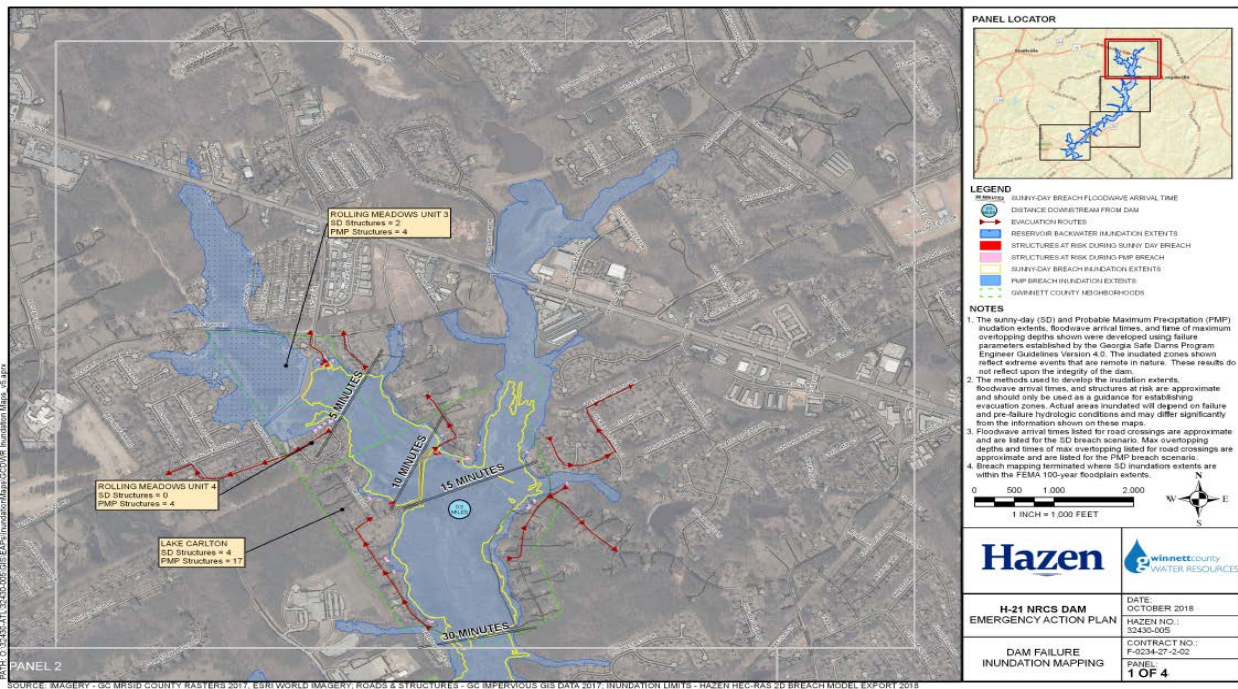
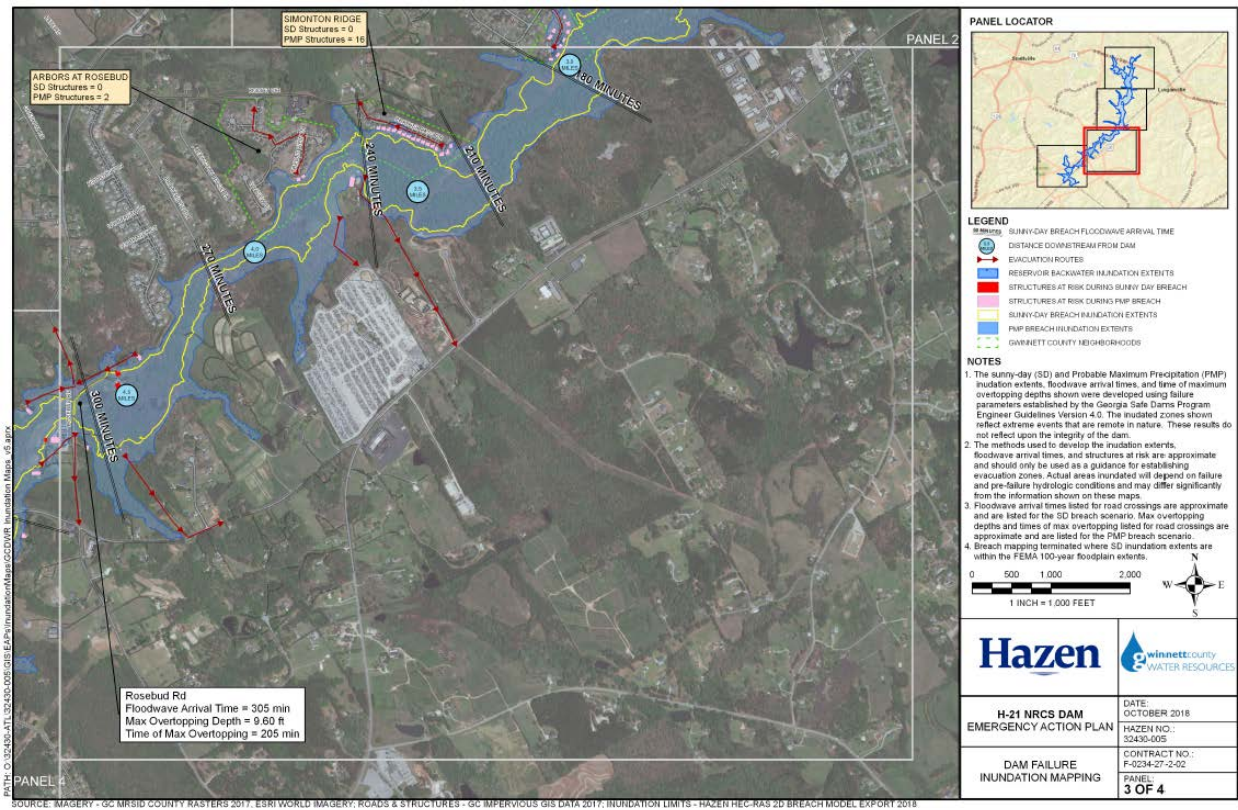
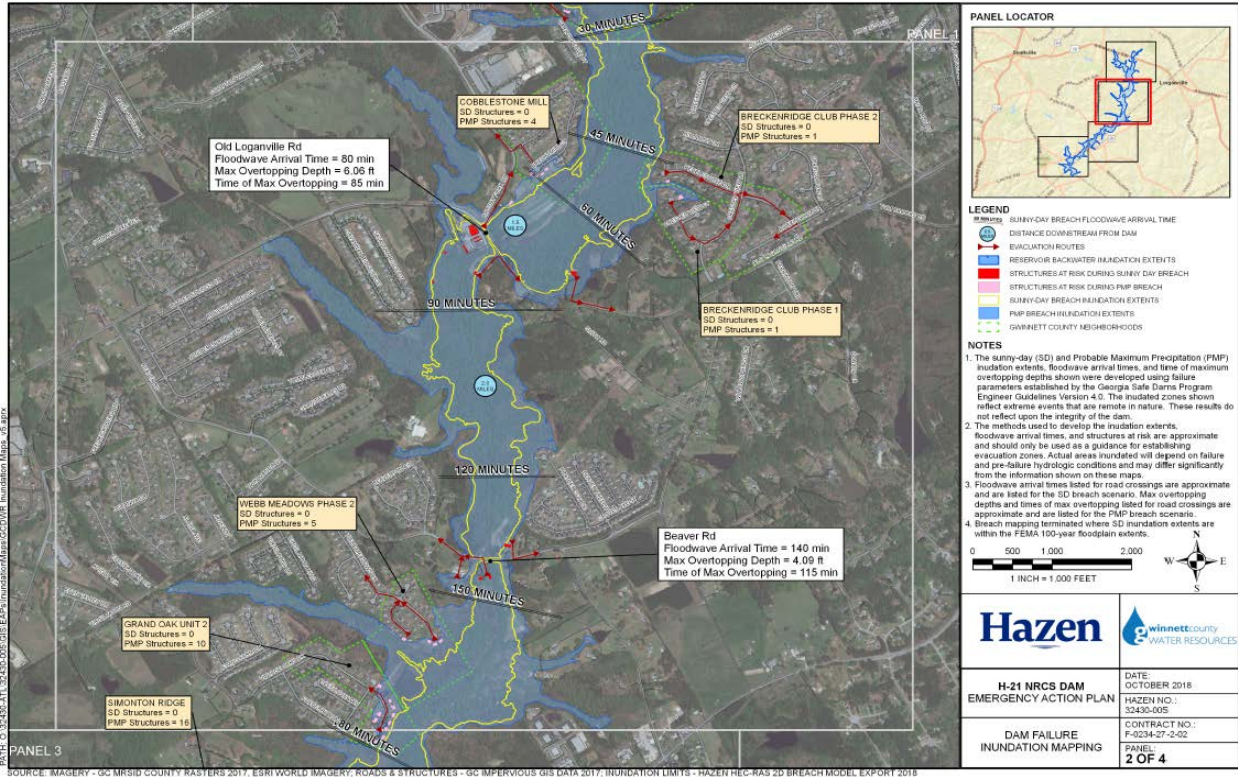


Figure 28
Midway Lake / NRCS Dam H-21 Inundation Maps Sheet 1



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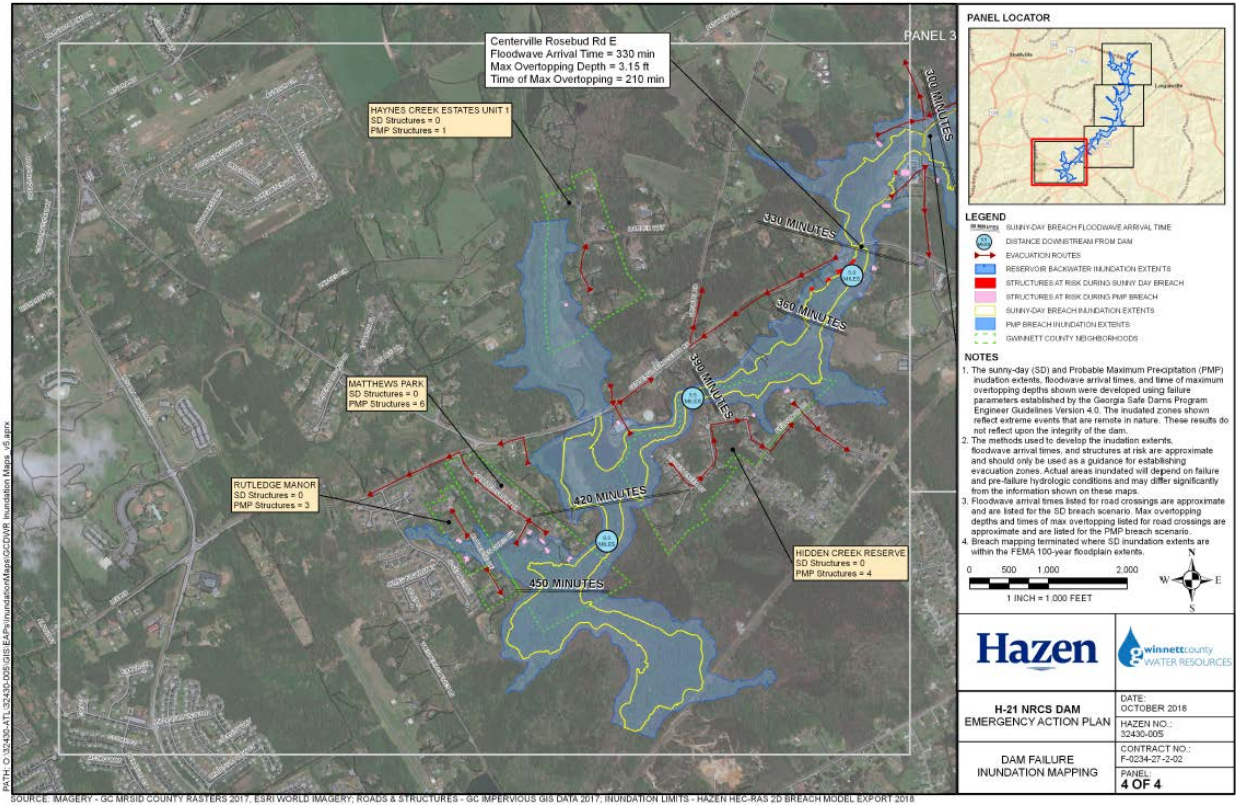
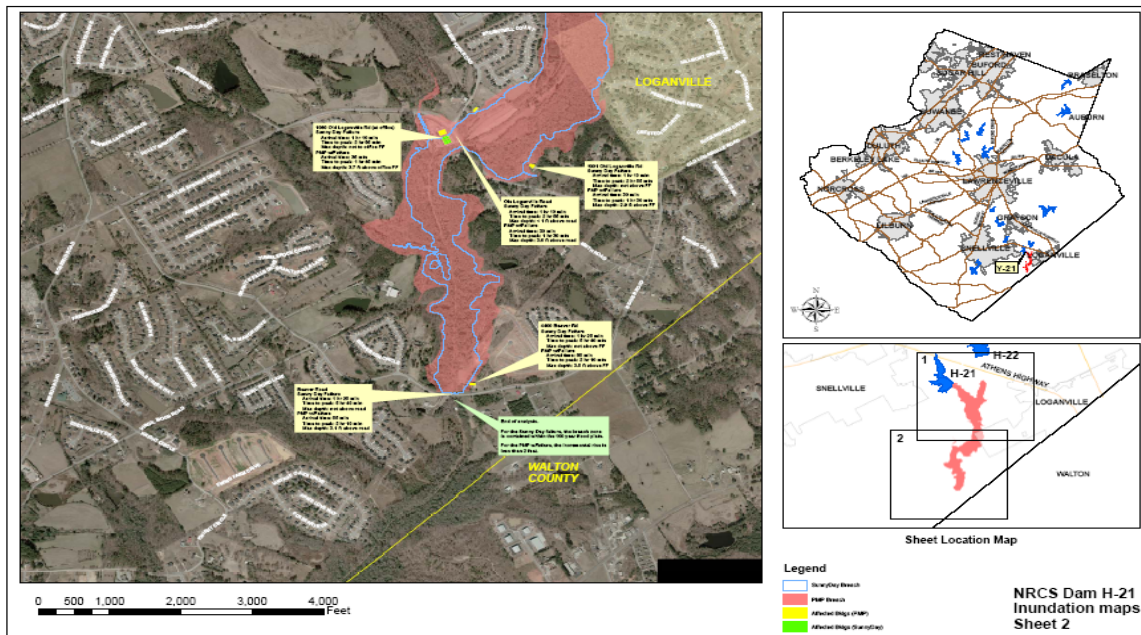
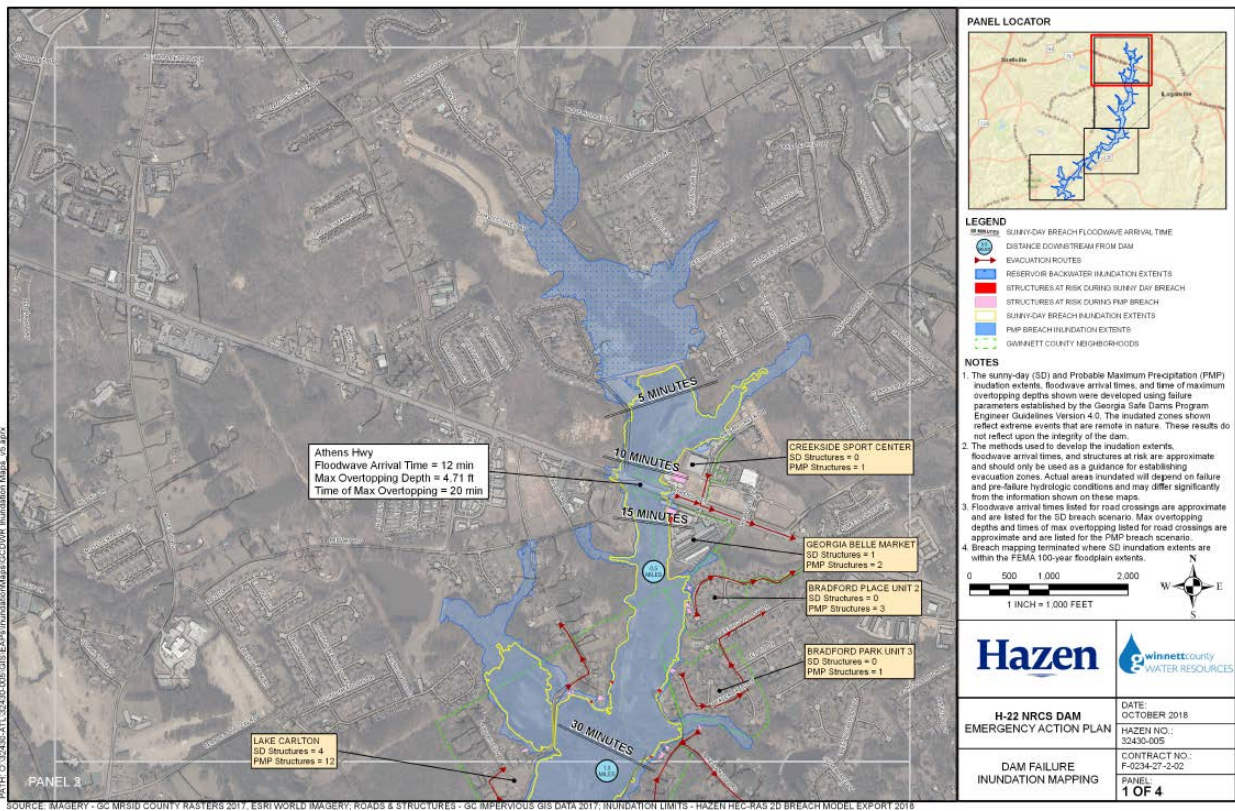


Figure 29
Midway Lake / NRCS Dam H-21 Inundation Maps Sheet 2

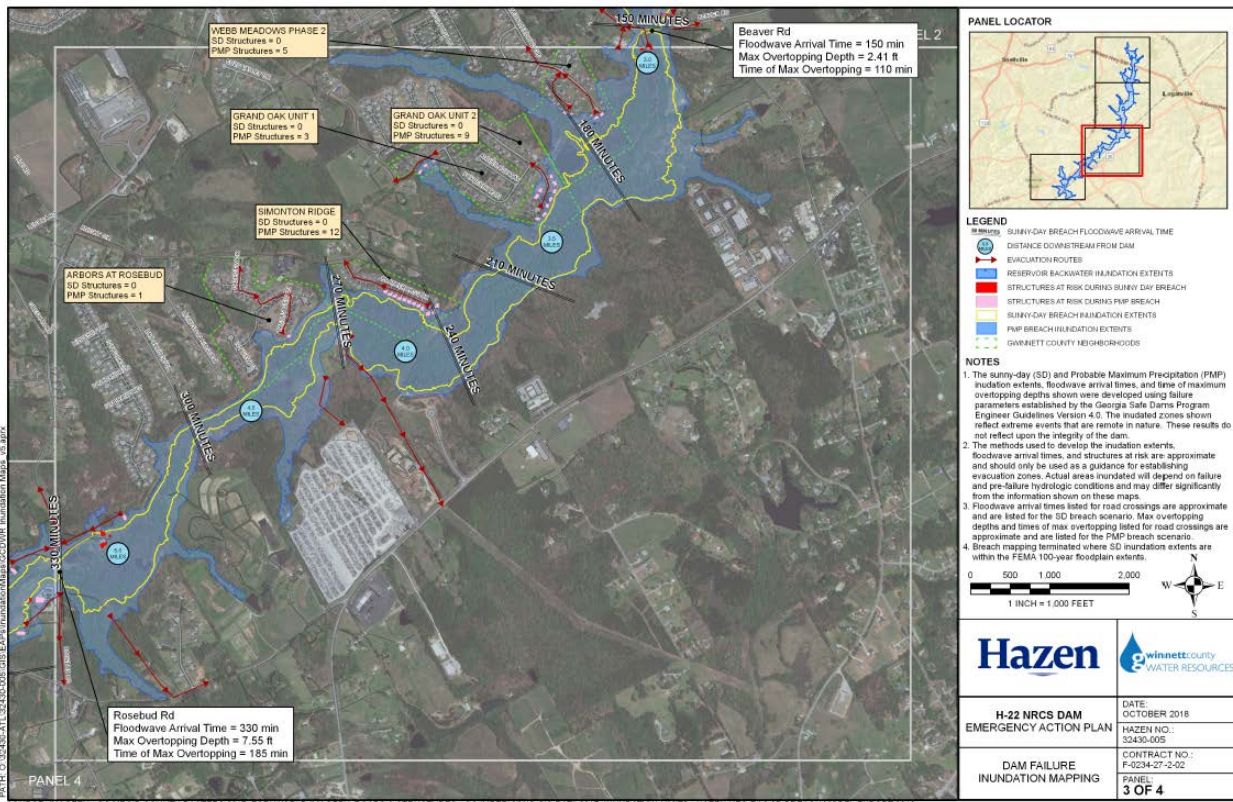
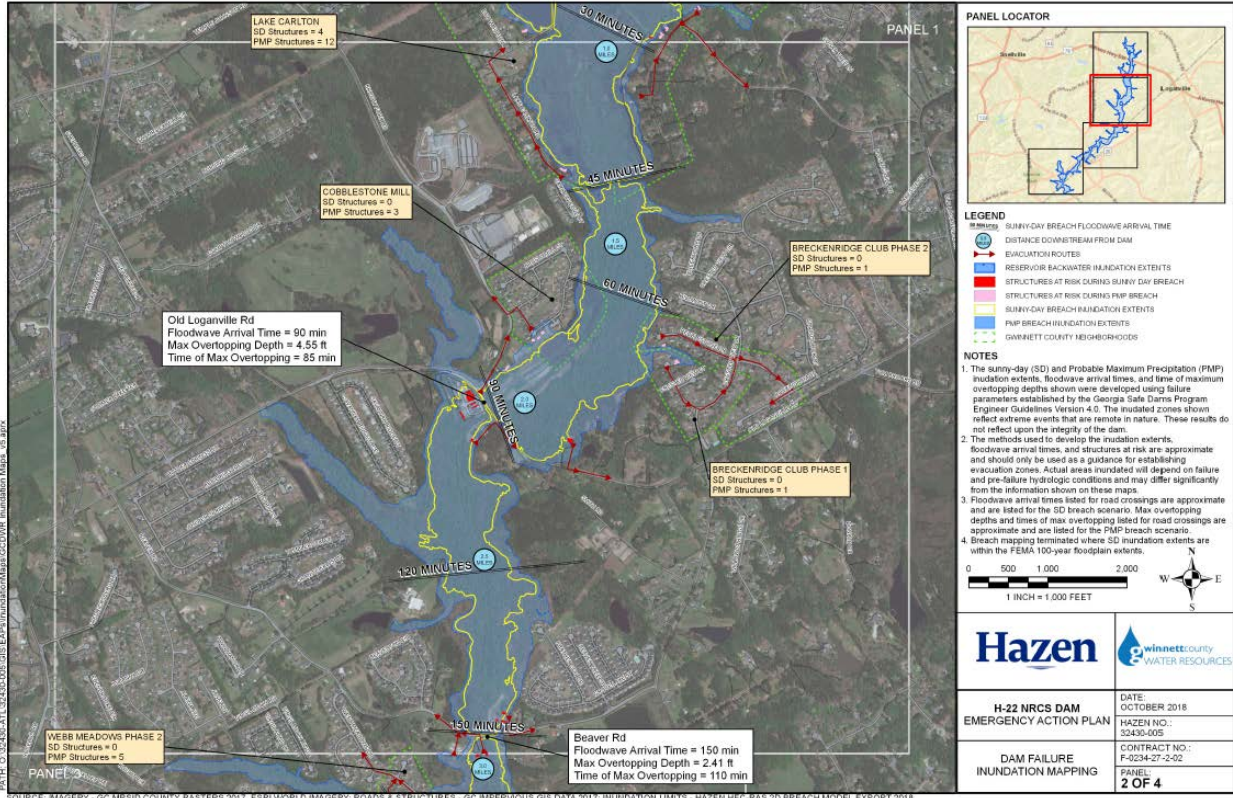


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Figure 30
Lake Wellbrook / NRCS Dam H-22 Inundation Maps Sheet 1



RISK AND VULNERABILITY ASSESSMENT



RISK AND VULNERABILITY ASSESSMENT

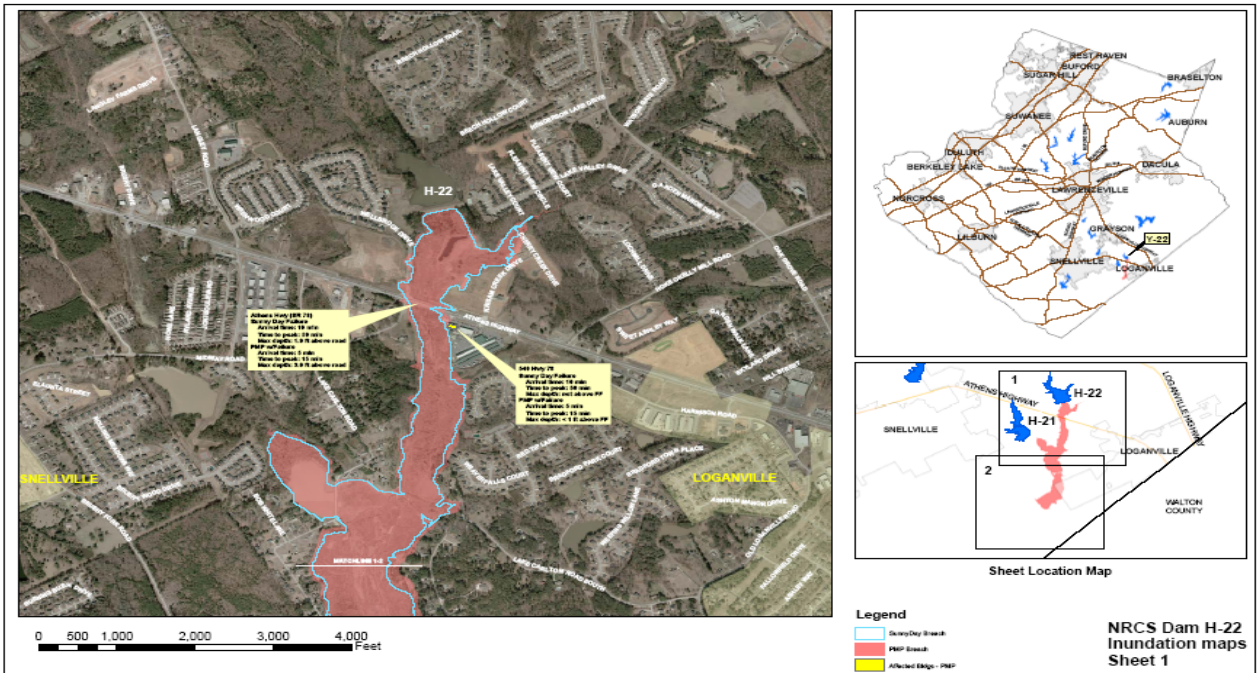
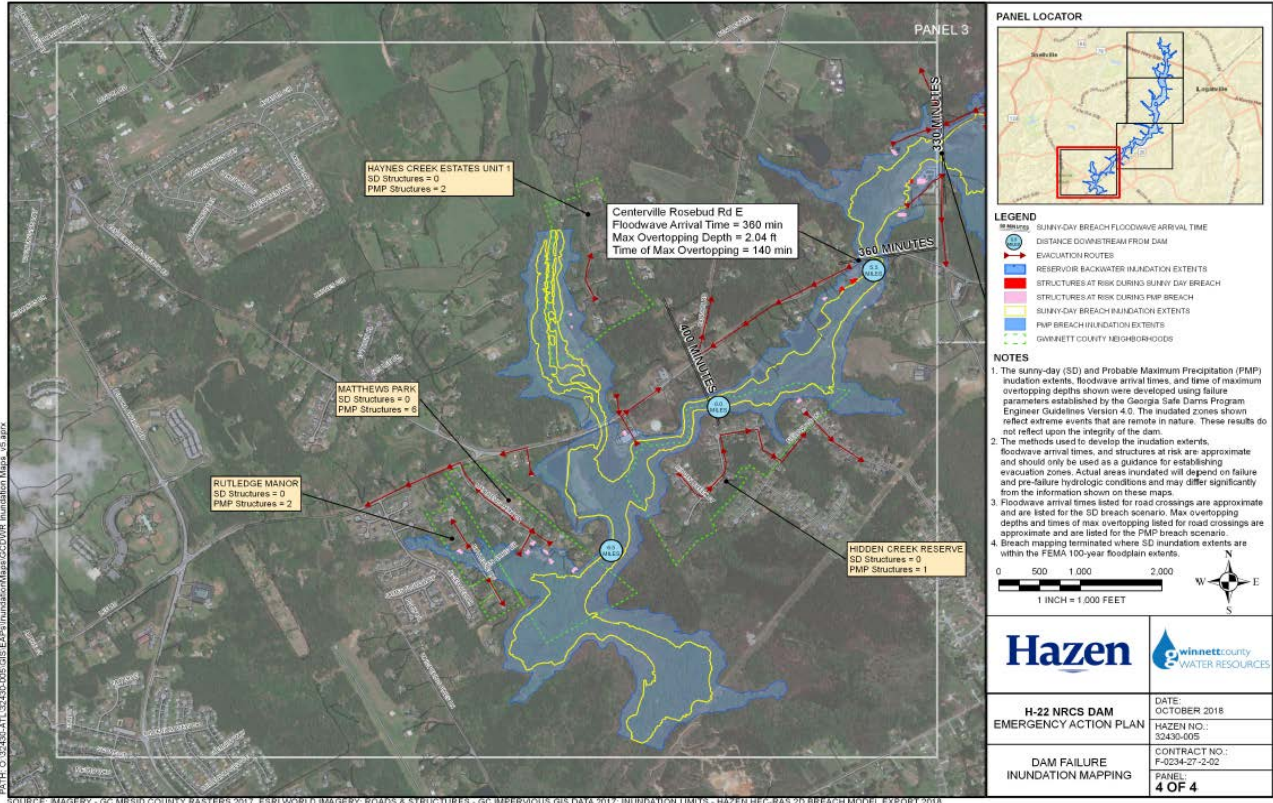


Figure 31
Lake Wellbrook / NRCS Dam H-22 Inundation Maps Sheet 1

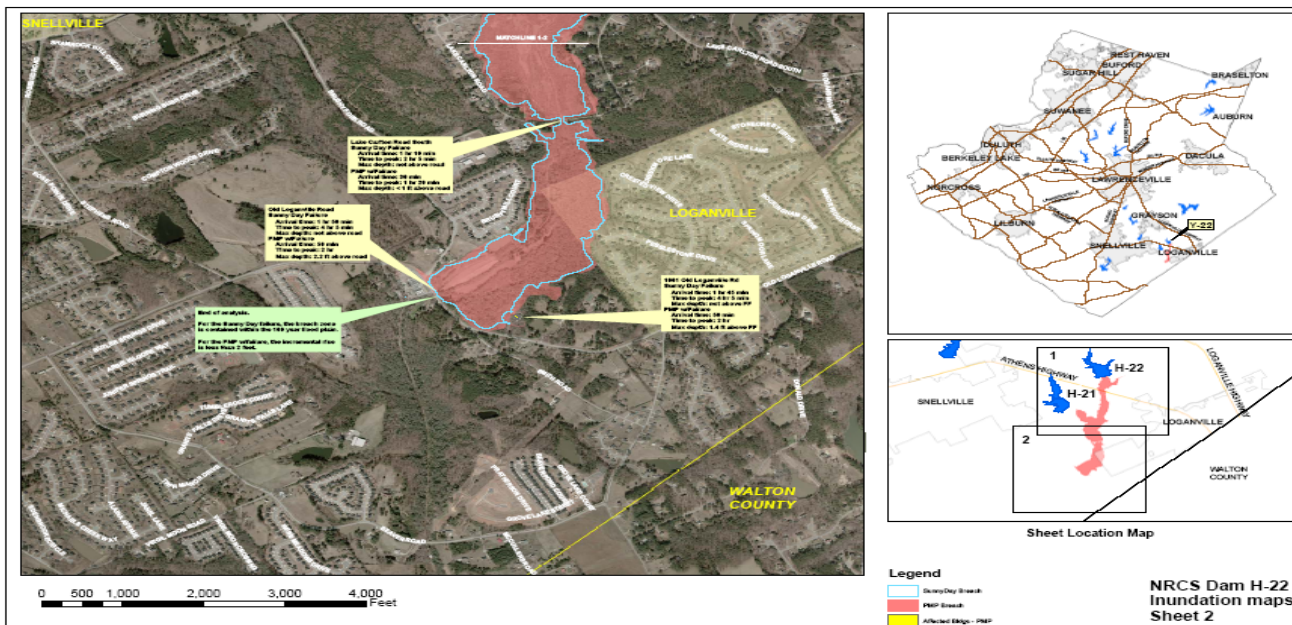
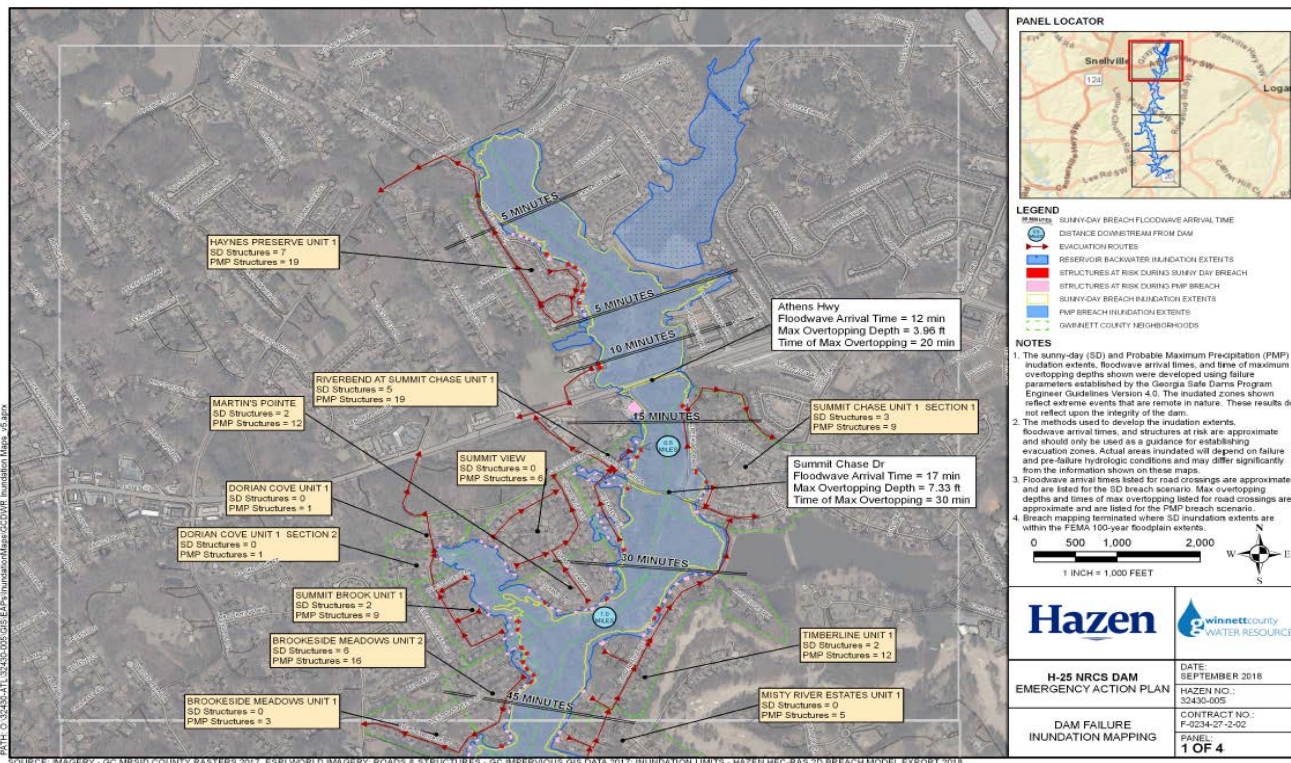
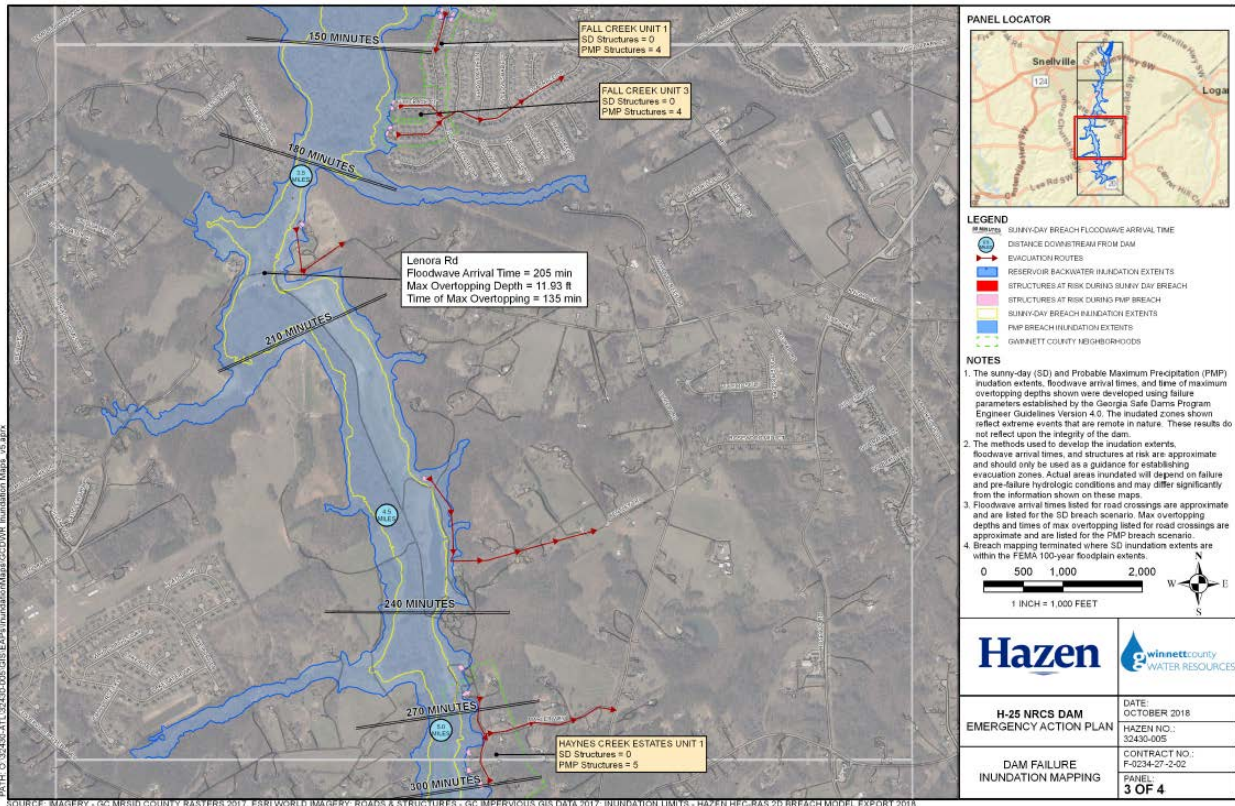
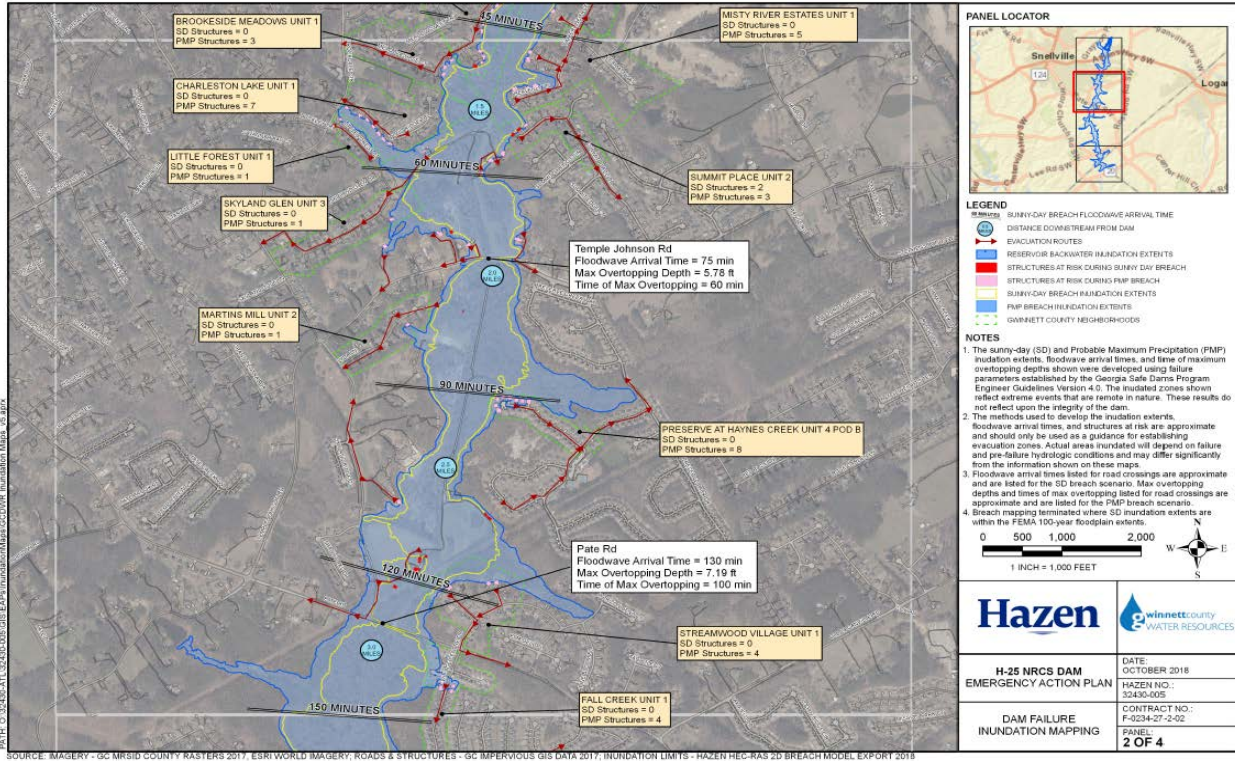


Figure 32
Haynes Crossing Lake / NRCS Dam H-25 Inundation Maps Sheet 1



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RISK AND VULNERABILITY ASSESSMENT

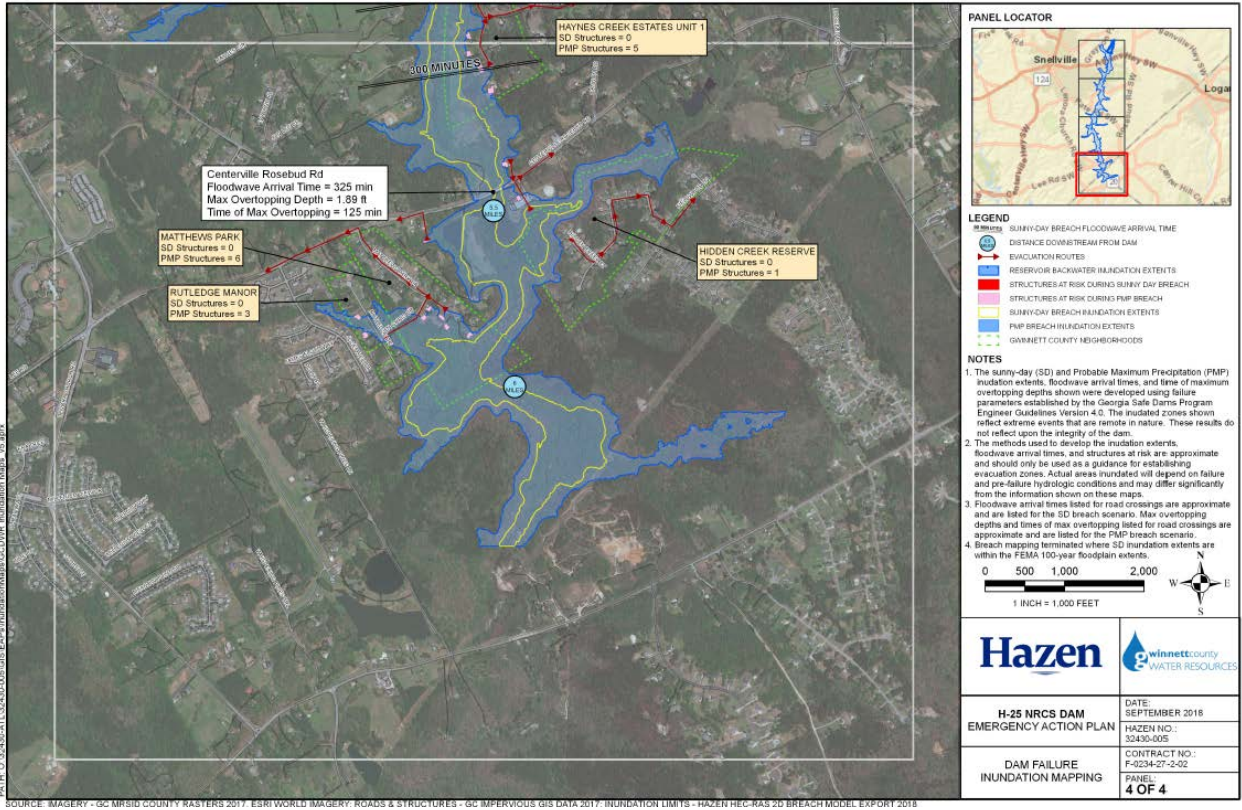


Figure 33
Haynes Crossing Lake / NRCS Dam H-25 Inundation Maps Sheet 2

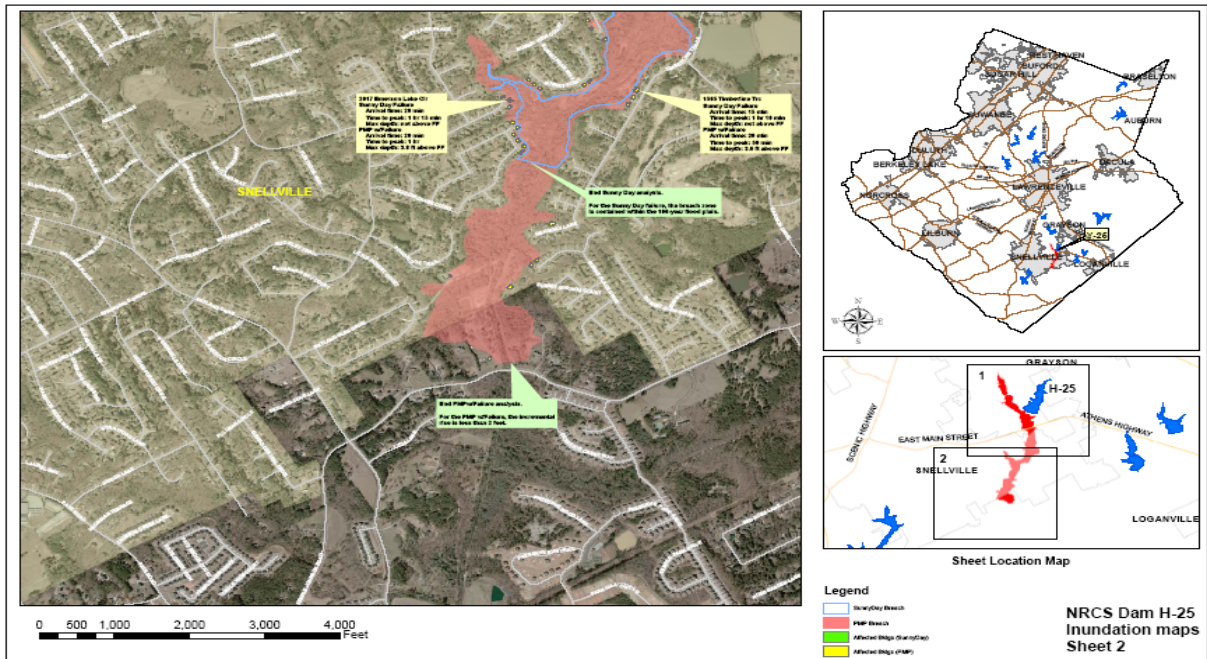
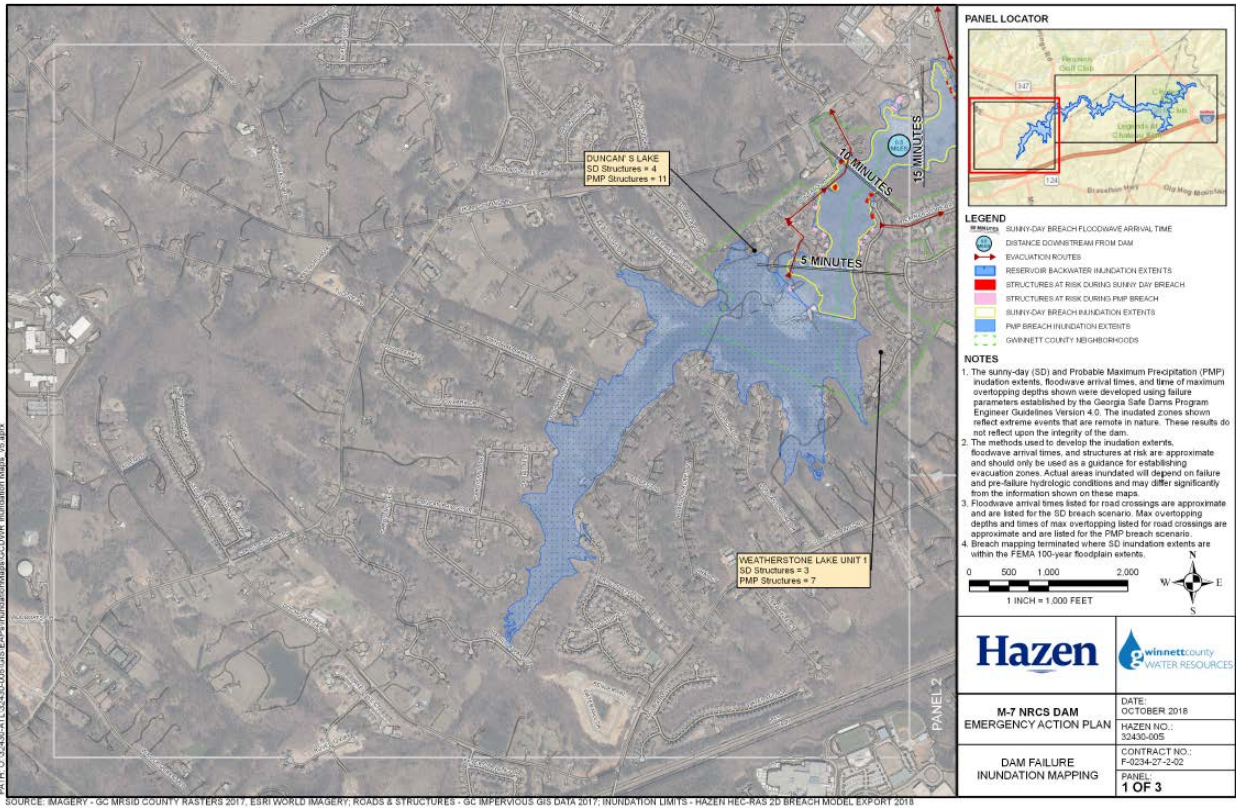


Figure 34
Duncans Lake / NRCS Dam M-7 Inundation Maps Sheet 1



RISK AND VULNERABILITY ASSESSMENT

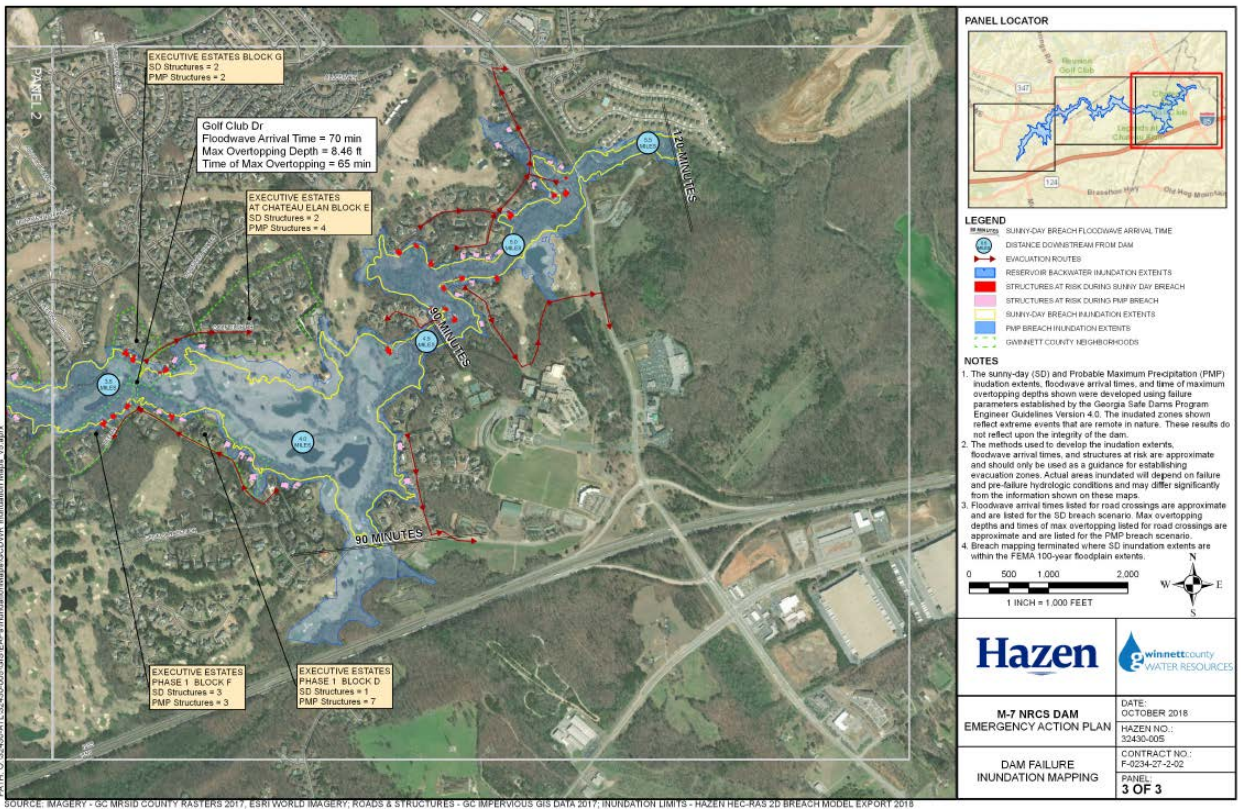
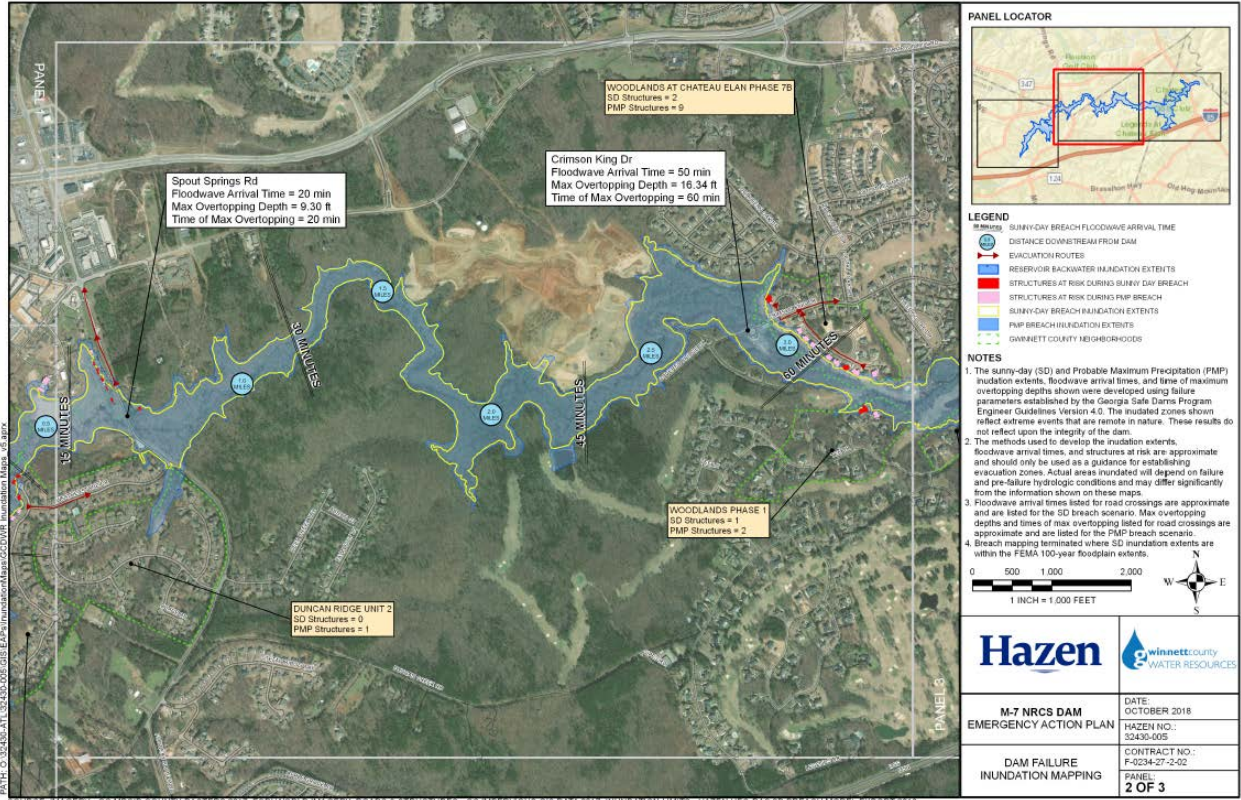


Figure 35
Duncans Lake / NRCS Dam M-7 Inundation Maps Sheet 2

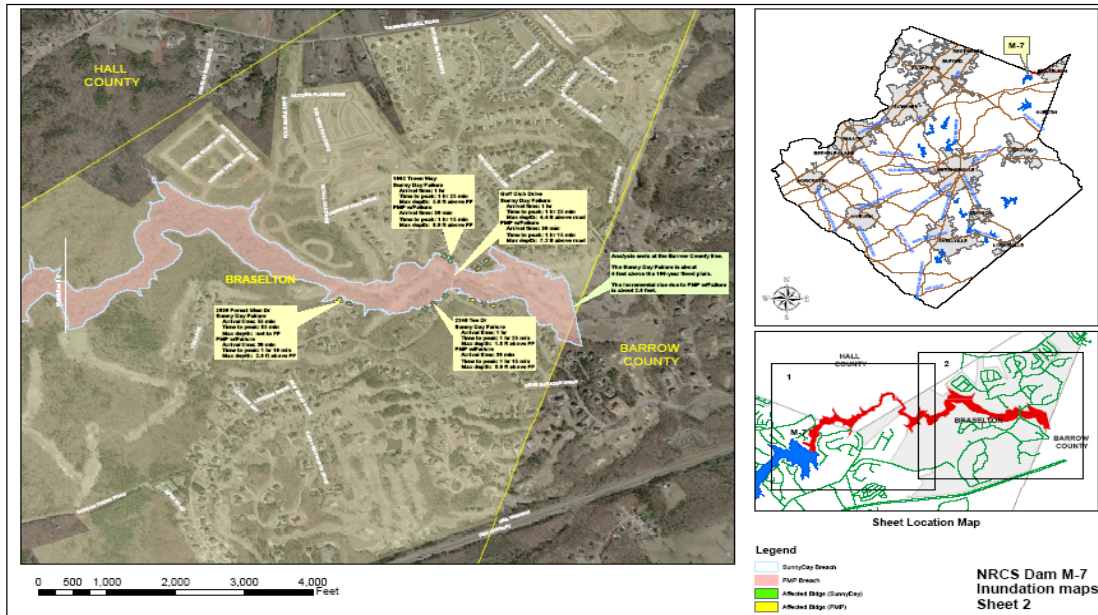
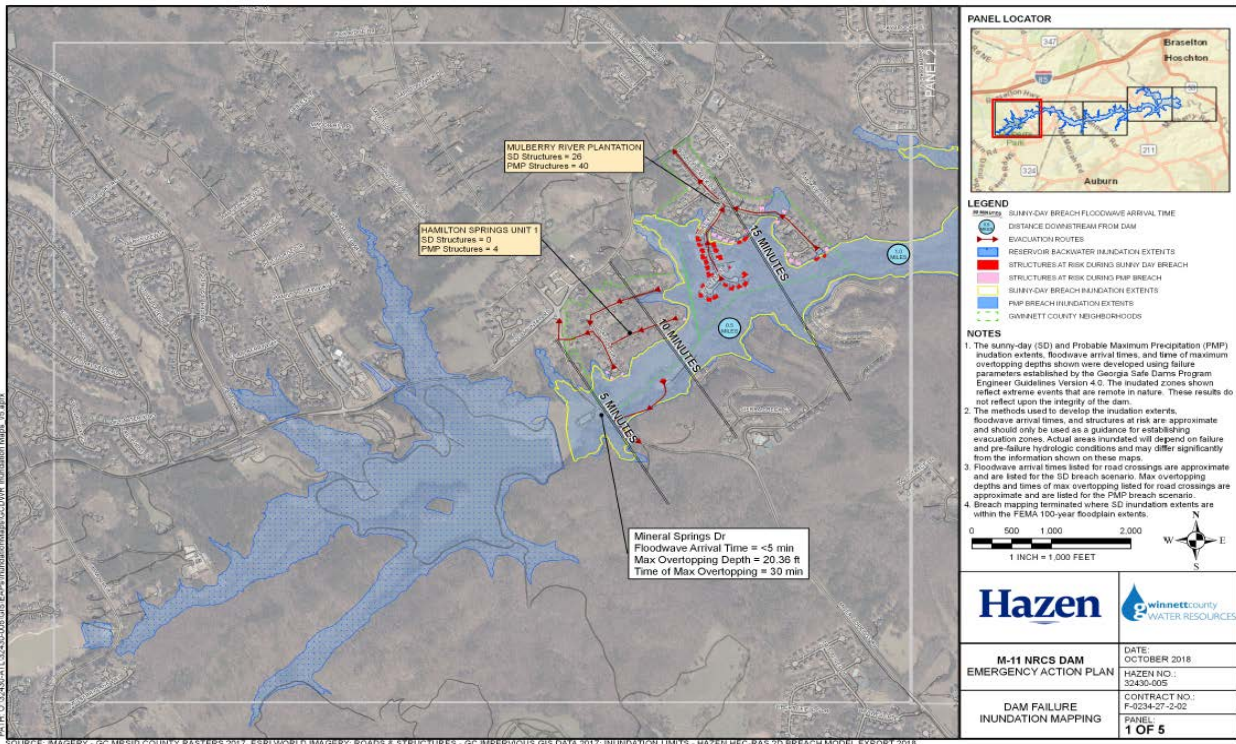
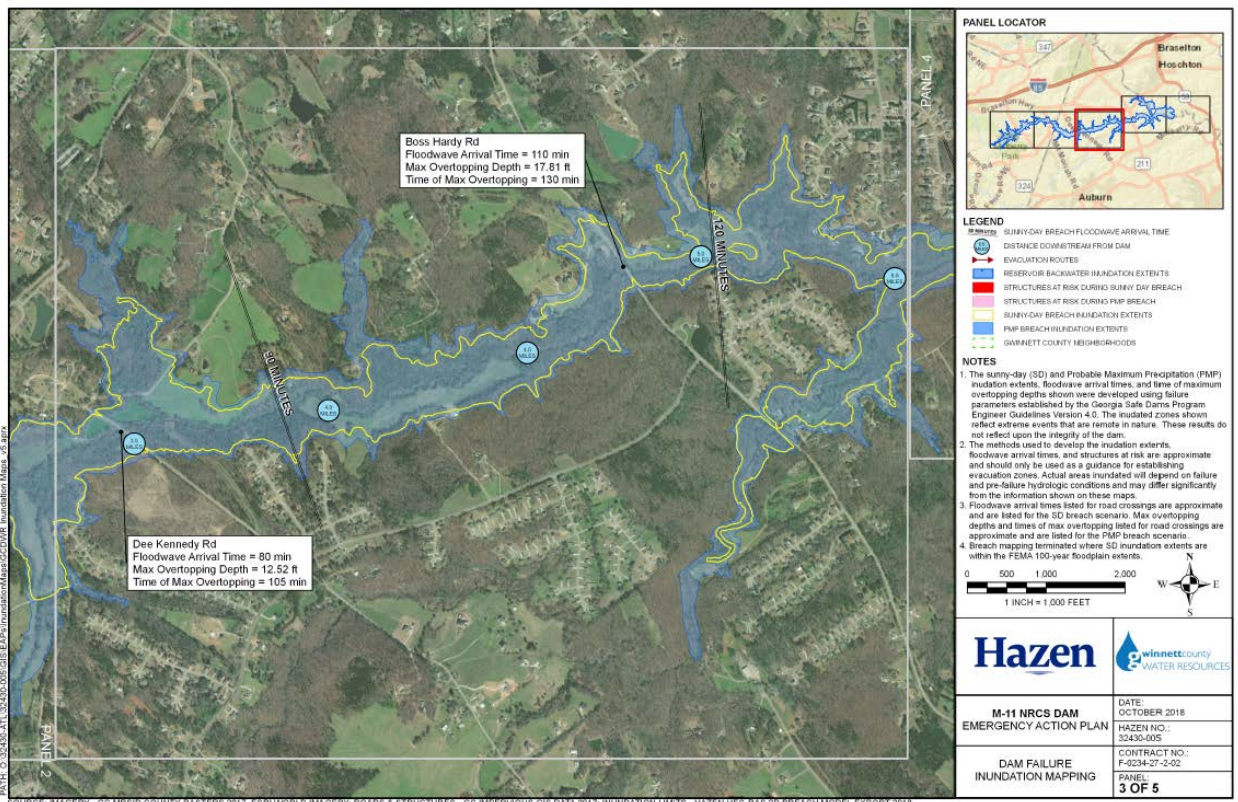
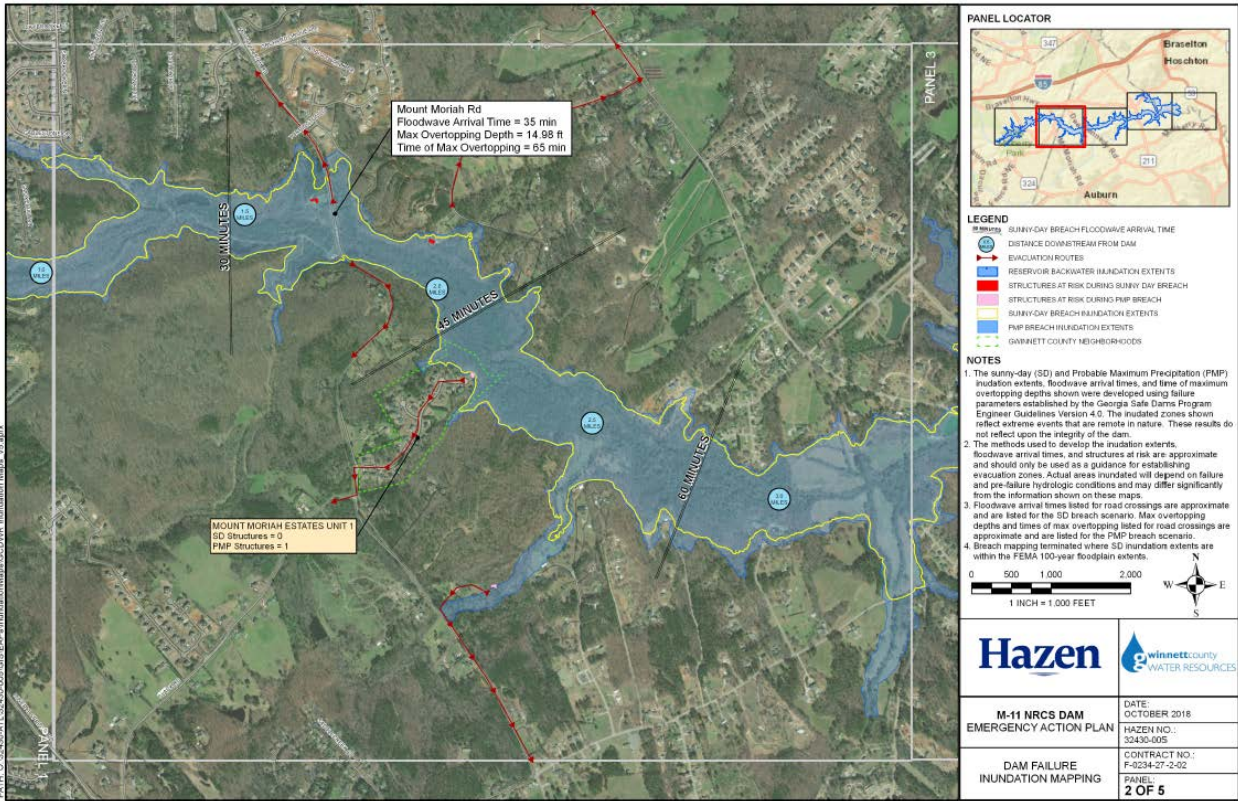


Figure 36
Little Mullberry Park Lake / NRCS Dam M-11 Inundation Maps Sheet 1



RISK AND VULNERABILITY ASSESSMENT



RISK AND VULNERABILITY ASSESSMENT

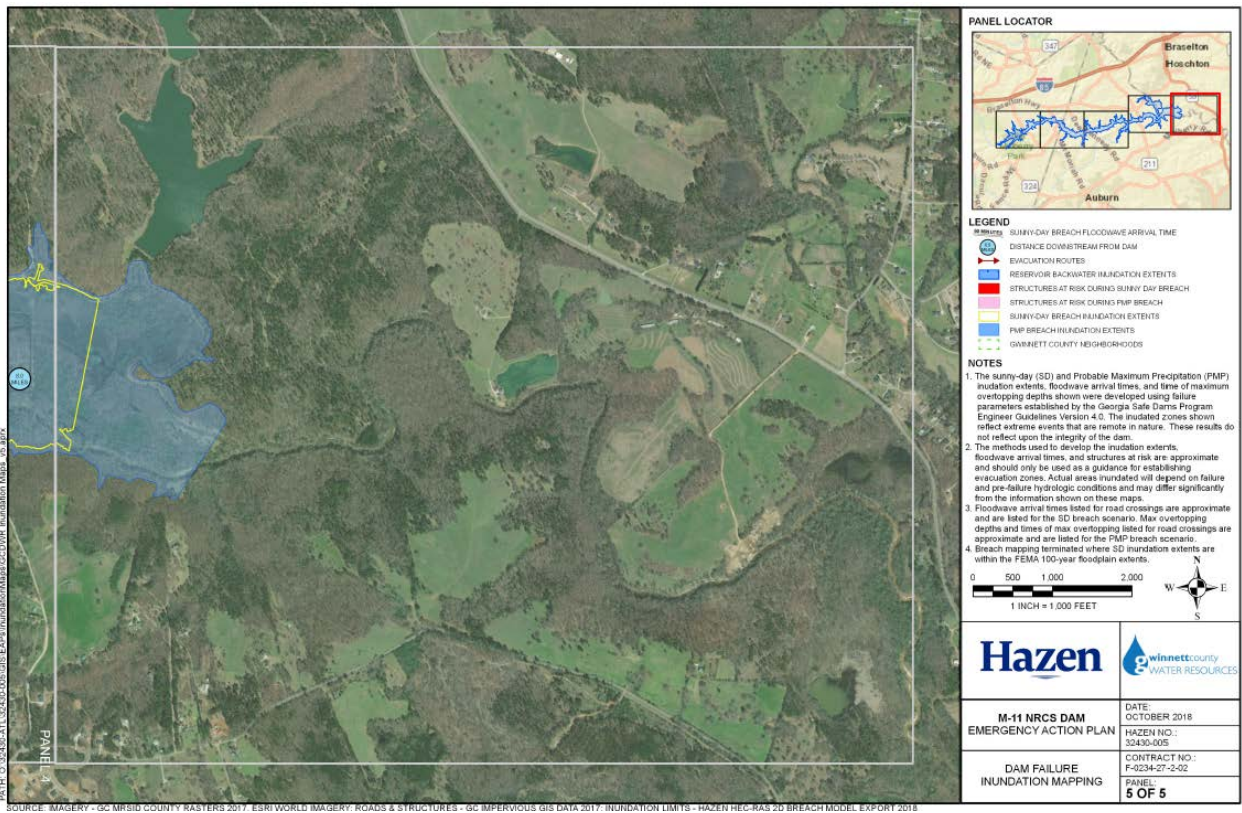
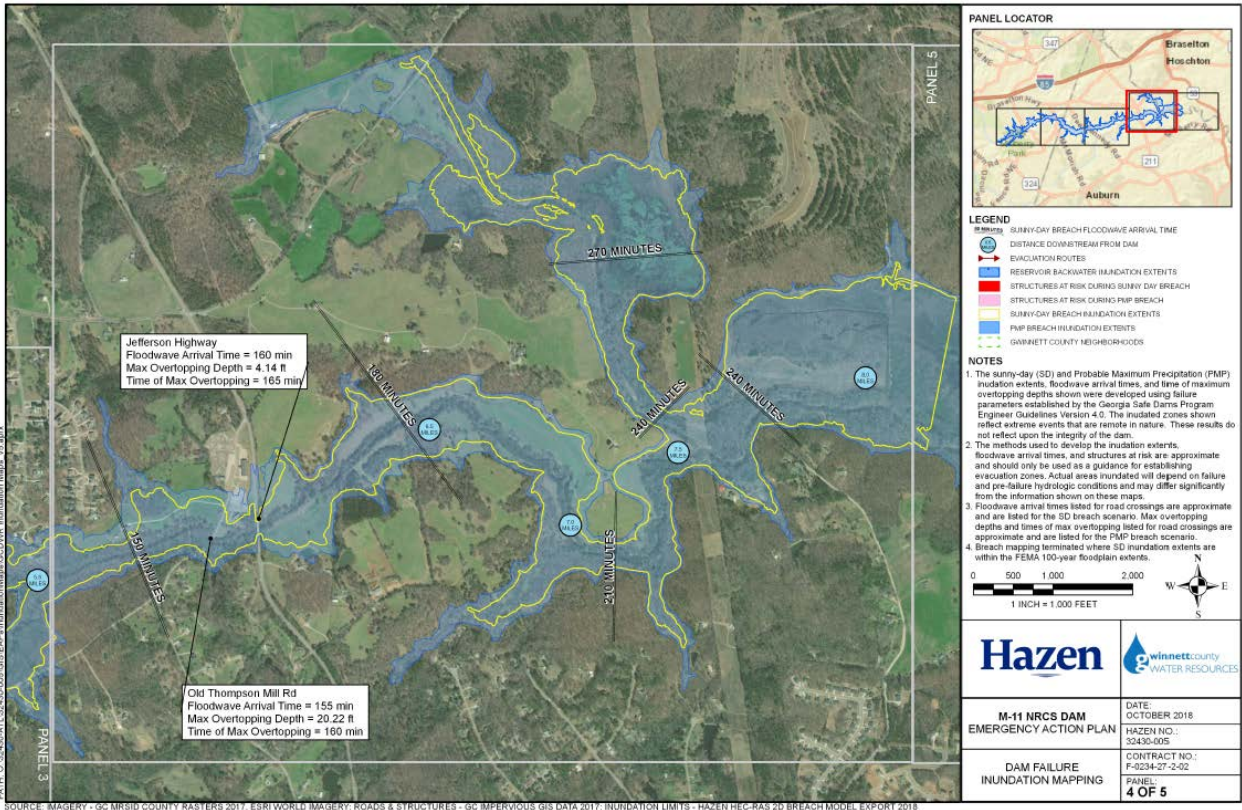


Figure 37
Little Mullberry Park Lake / NRCS Dam M-11 Inundation Maps Sheet 2

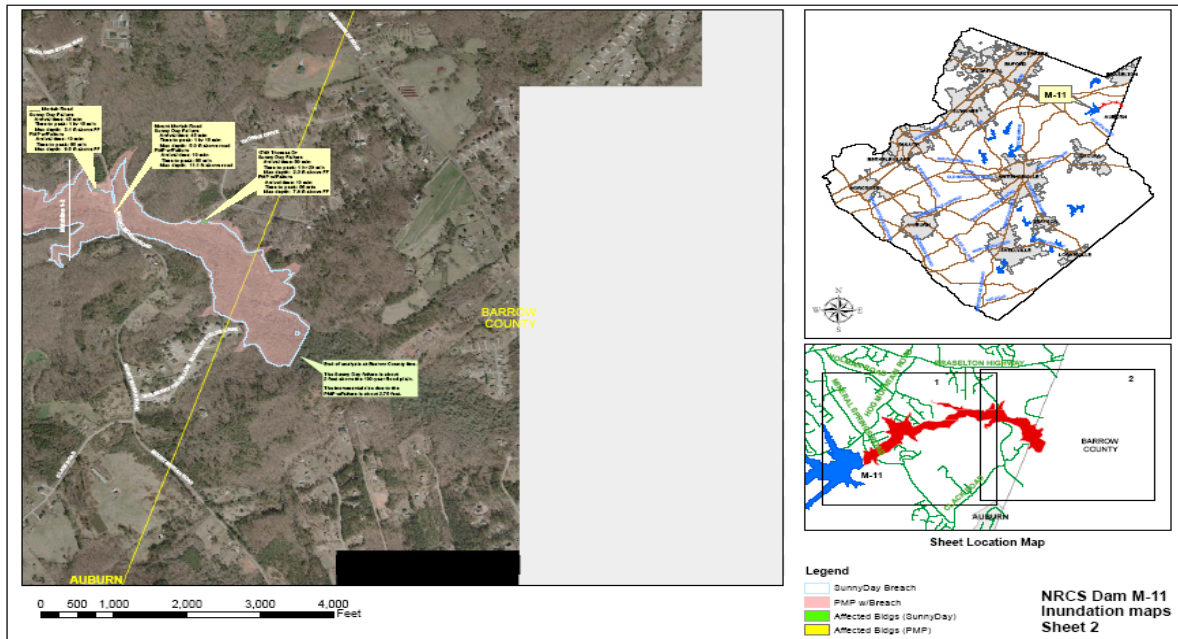
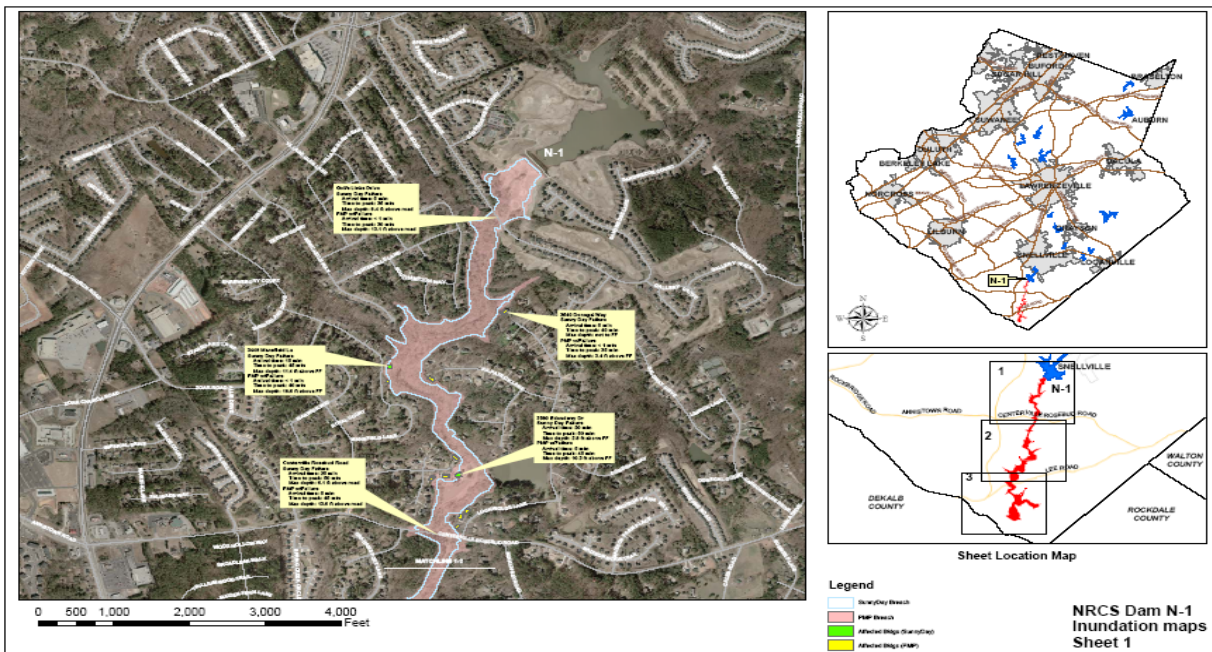
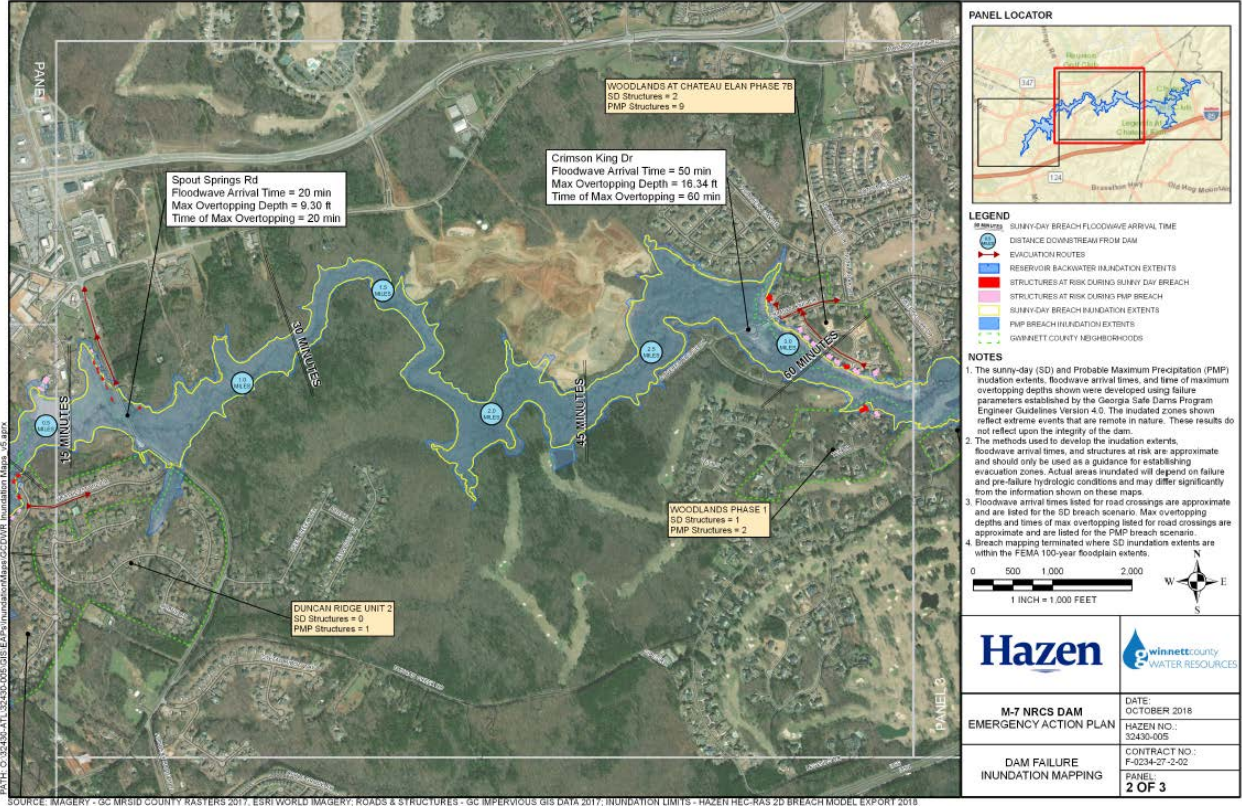
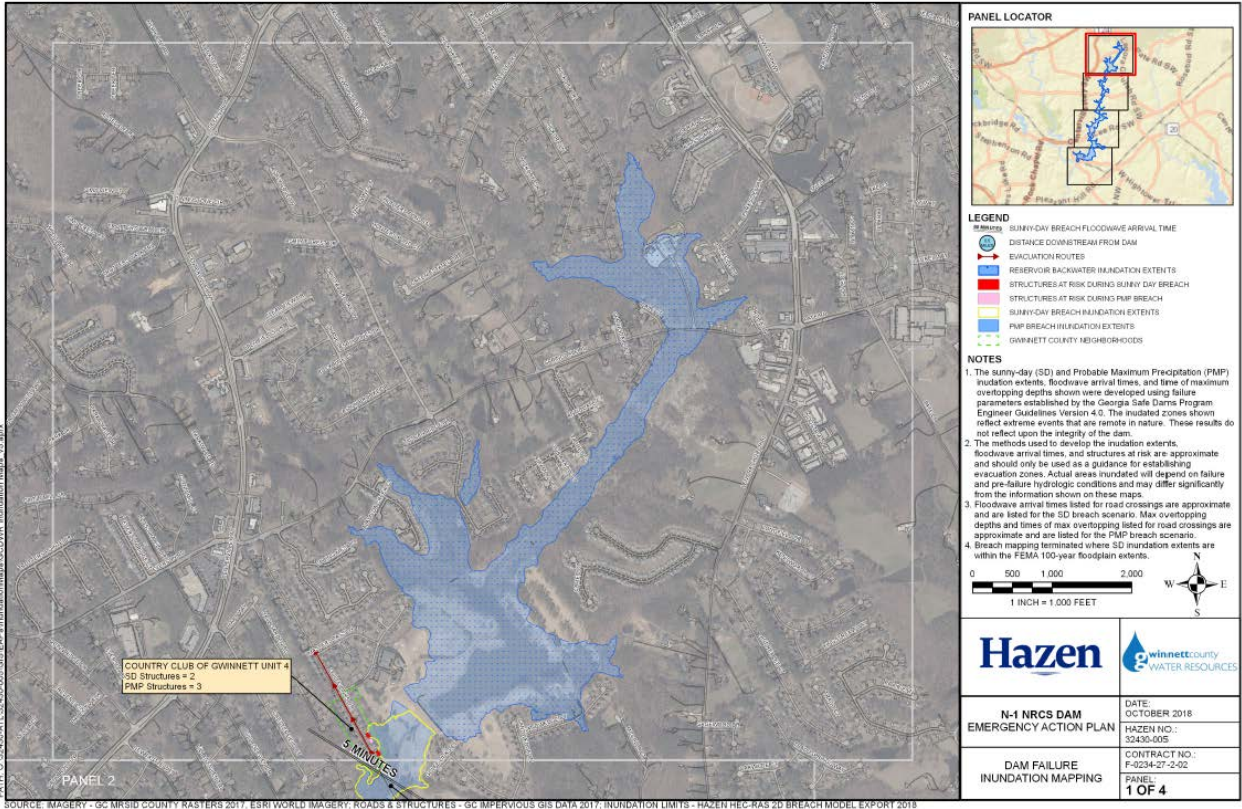


Figure 38
Trophy Club Lake / NRCS Dam N-1 Inundation Maps Sheet 1



RISK AND VULNERABILITY ASSESSMENT



RISK AND VULNERABILITY ASSESSMENT

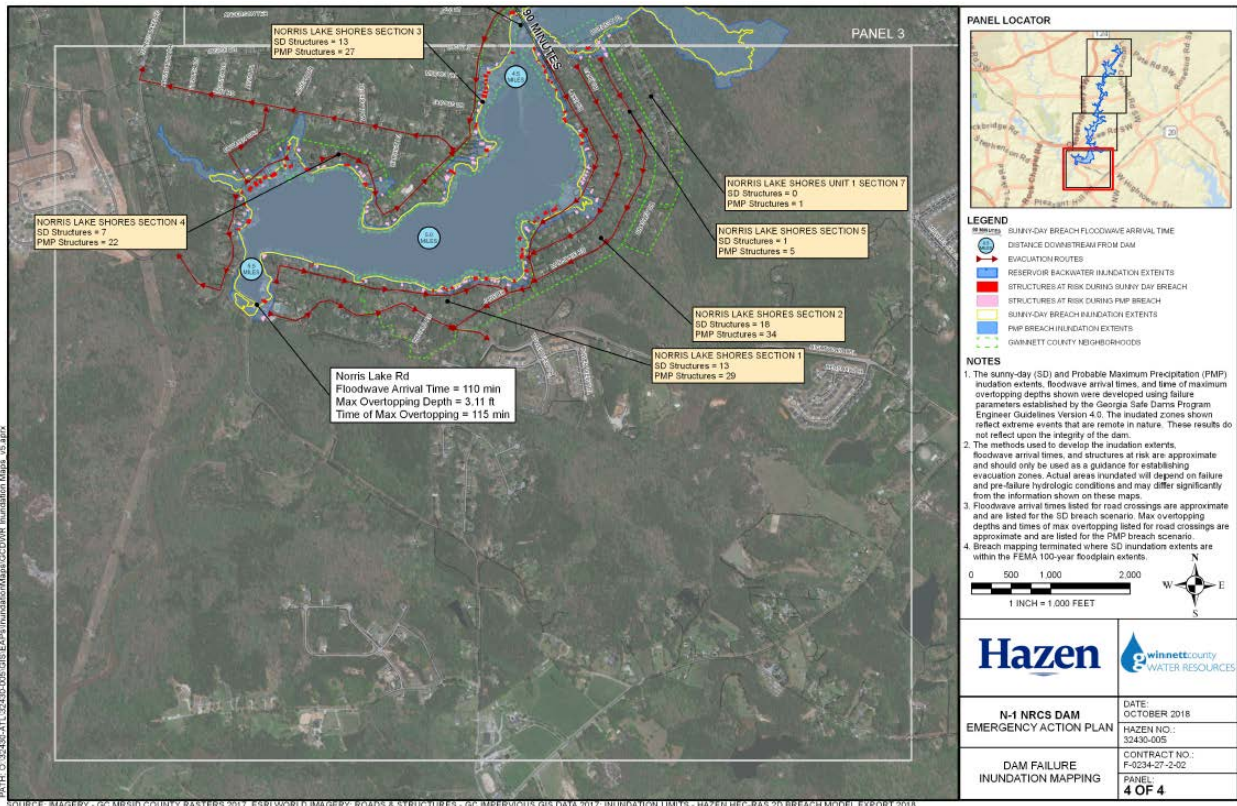
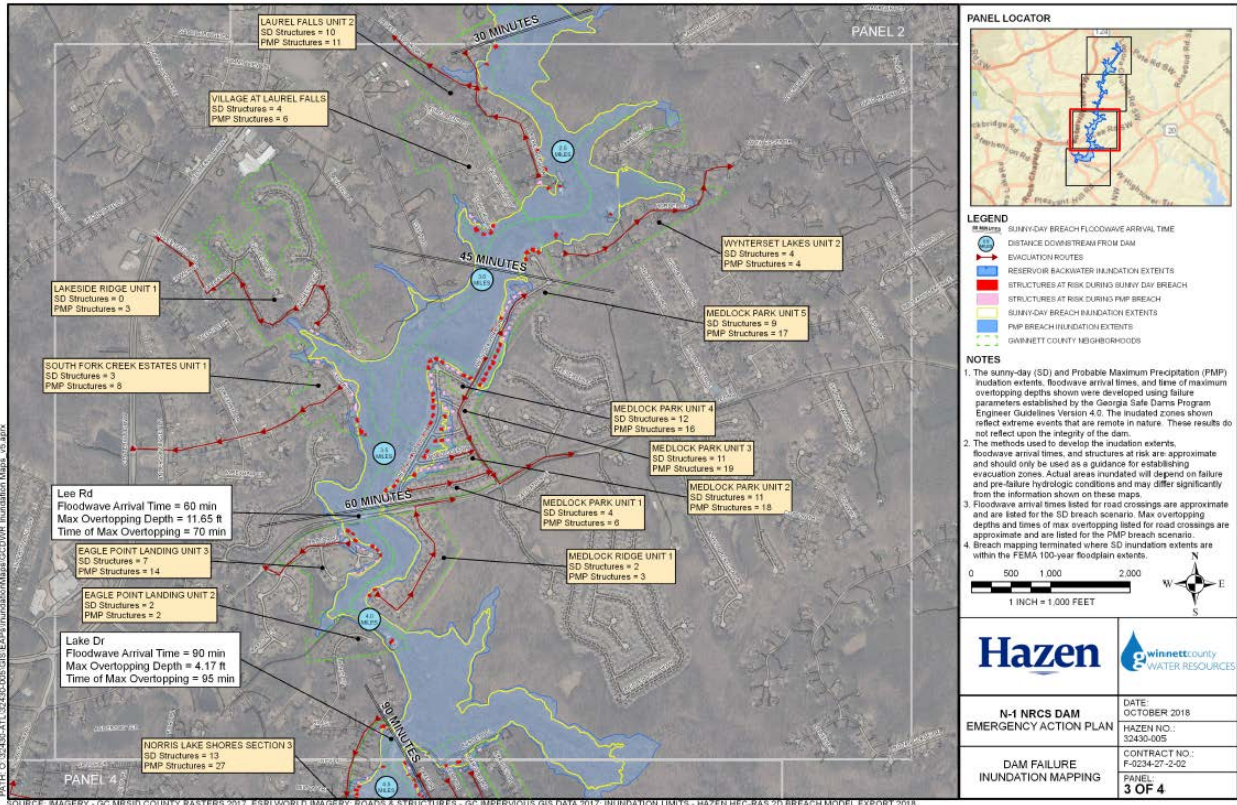


Figure 39
Trophy Club Lake / NRCS Dam N-1 Inundation Maps Sheet 2

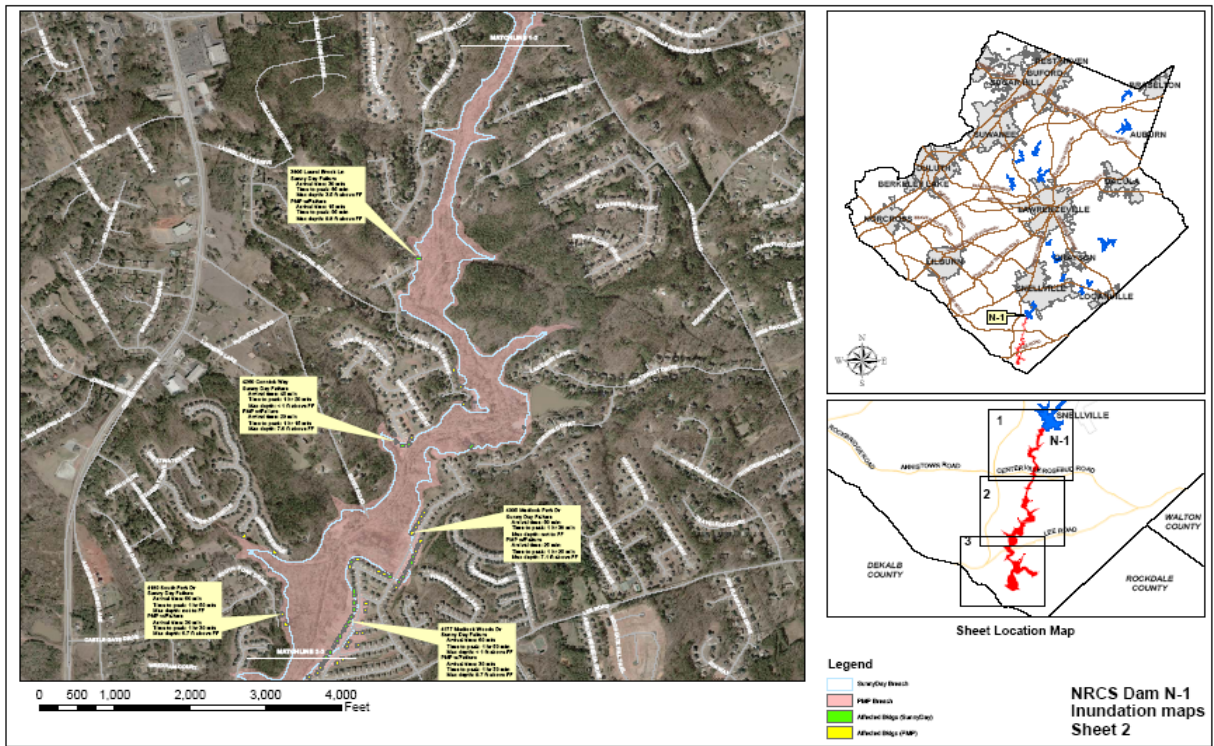


Figure 40
Ozora & Candler Lakes (Tribble Mill Park) / NRCS Dam TM-1 Inundation Maps Sheet 1

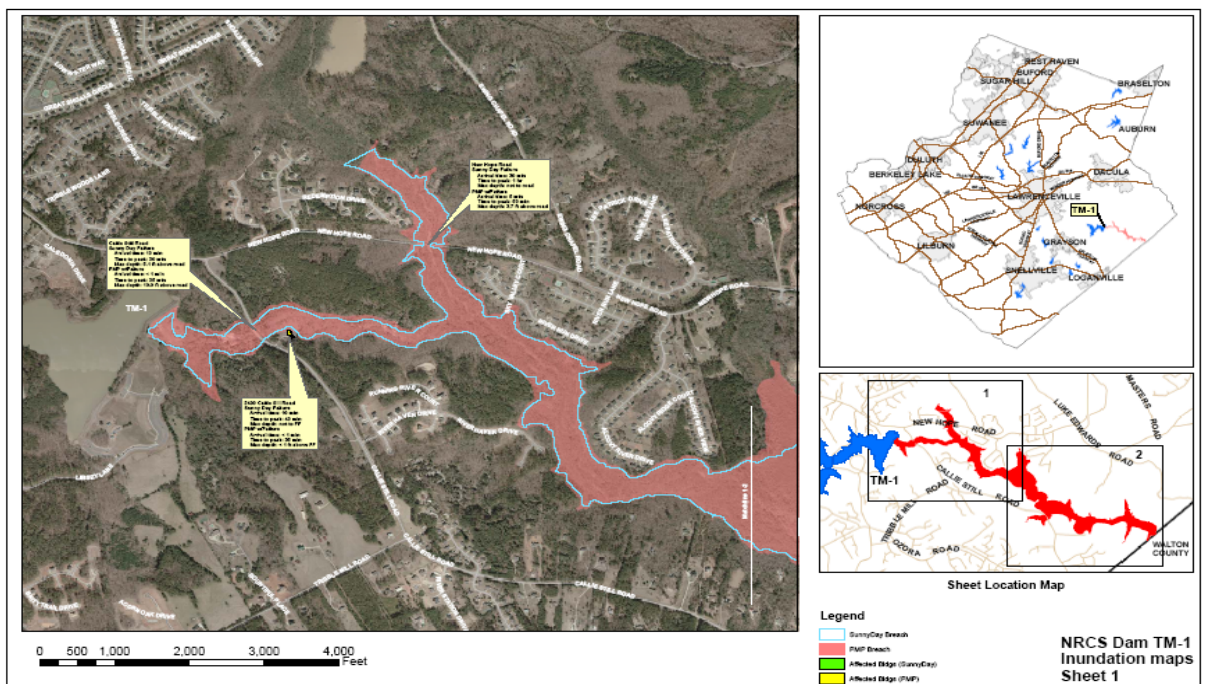


Figure 41
 Ozora & Candler Lakes (Tribble Mil Park) / NRCS Dam TM-1 Inundation Maps Sheet 2

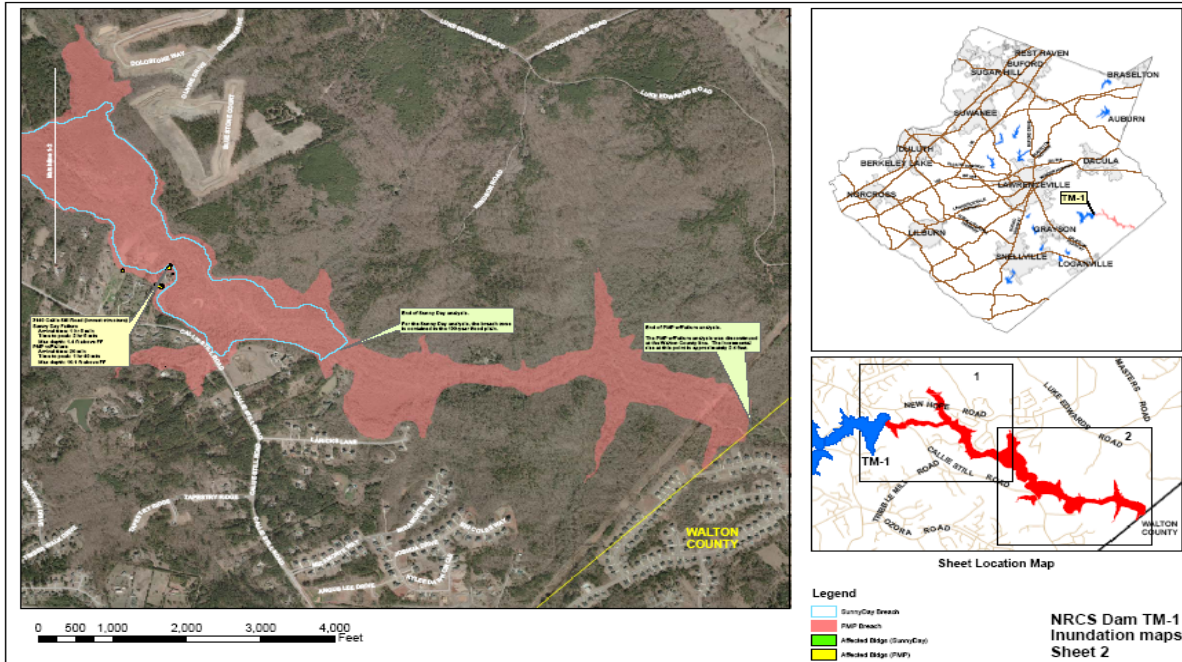
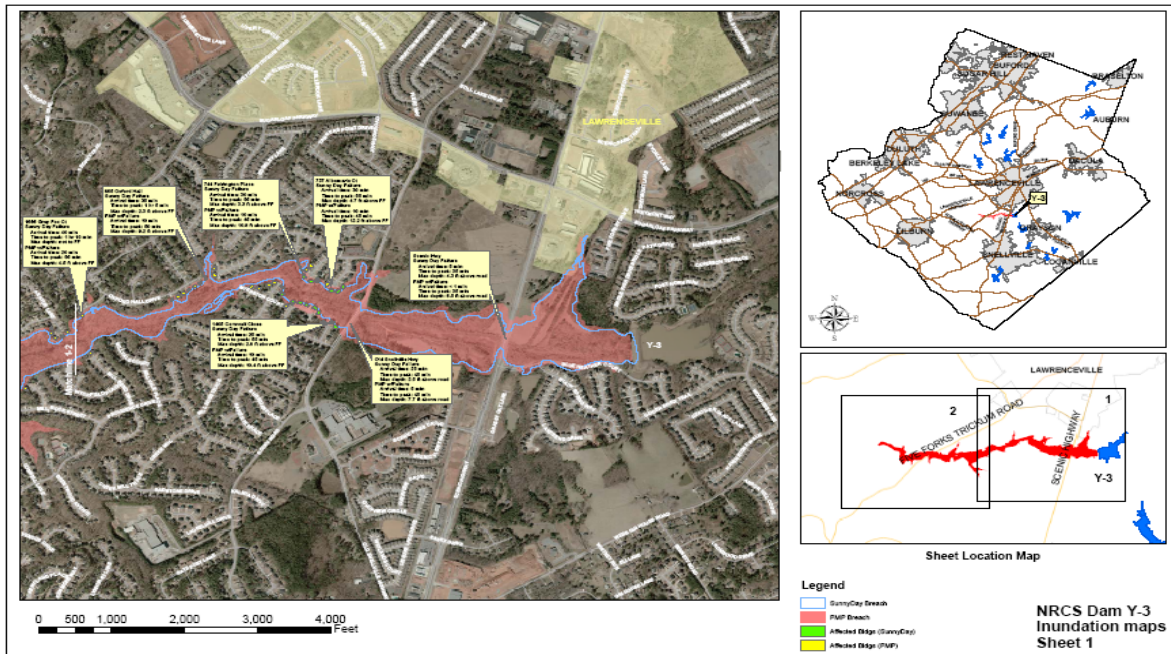


Figure 42
 Knollwood Lake / NRCS Dam Y-3 Inundation Maps Sheet



1

RISK AND VUNERABILITY ASSESSMENT

Figure 43
Knollwood Lake / NRCS Dam Y-3 Inundation Maps Sheet 2

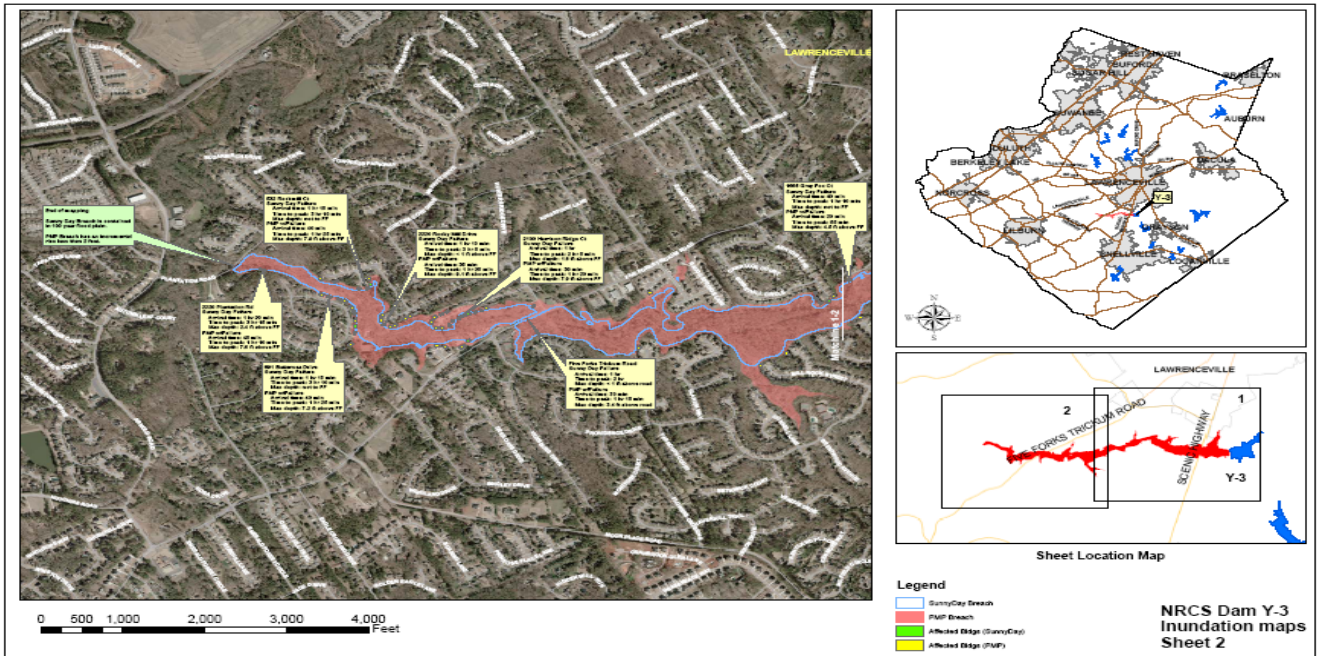


Figure 44
Wolf Lake / NRCS Dam Y-14 Inundation Maps Sheet 1

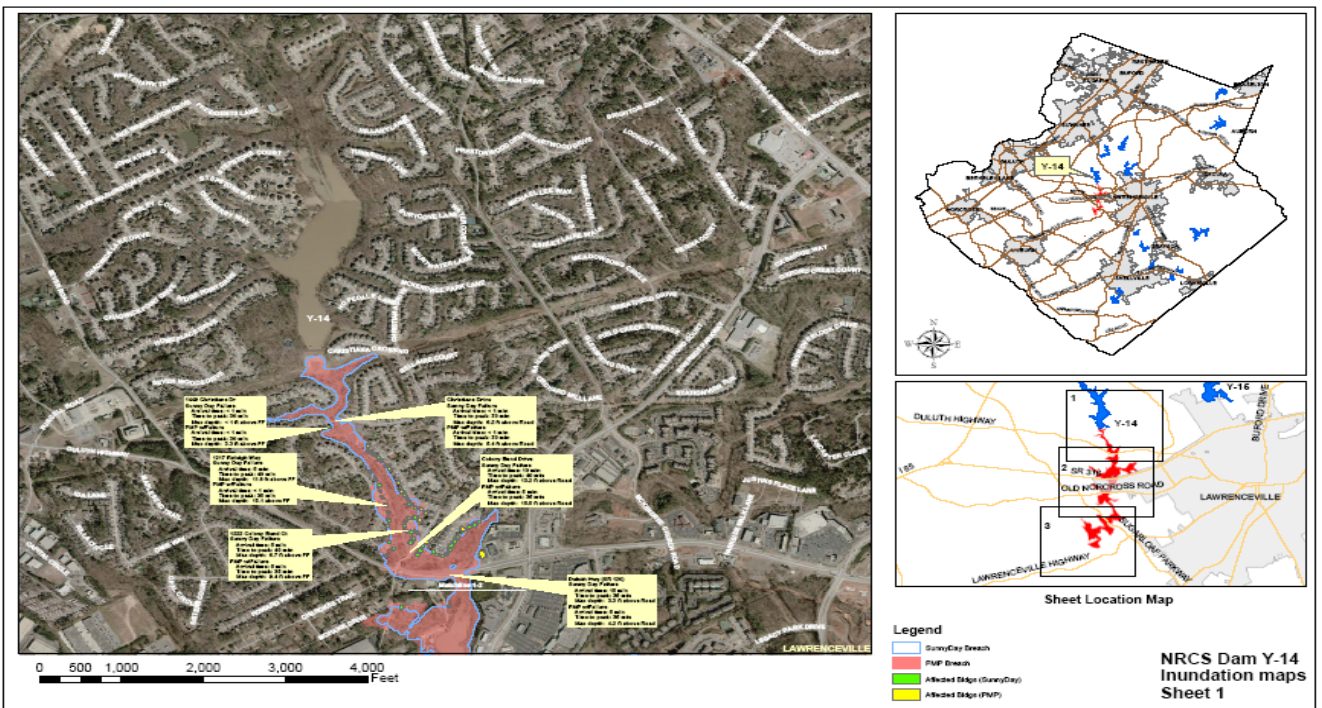


Figure 45
Wolf Lake / NRCS Dam Y-14 Inundation Maps Sheet 2

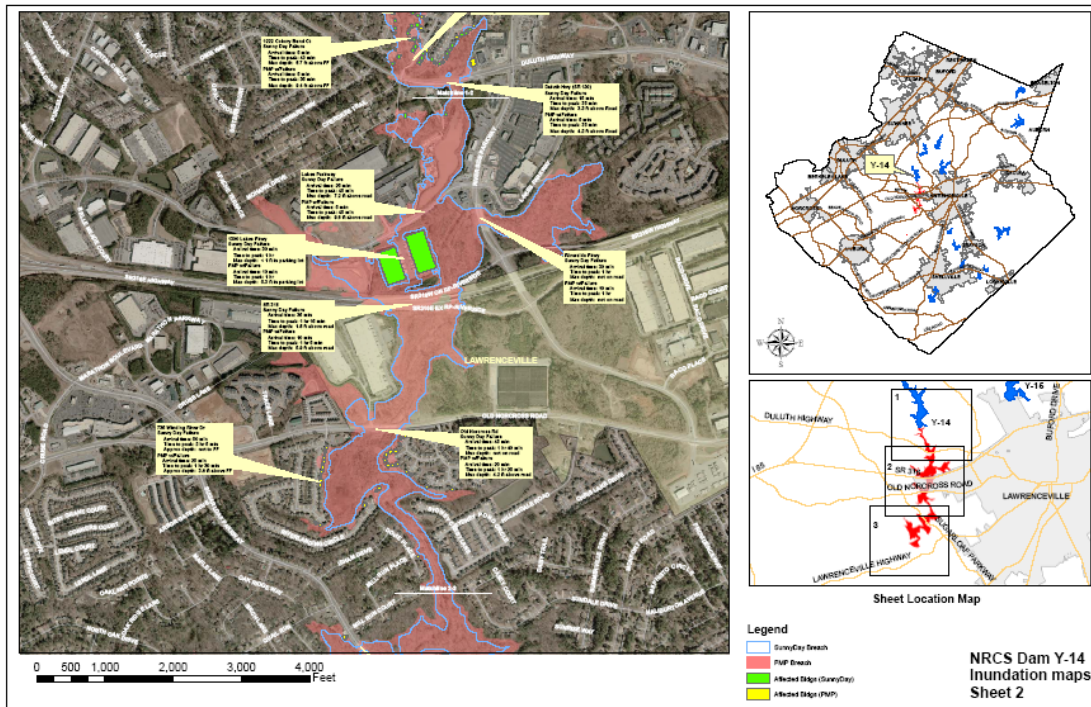


Figure 46
Wolf Lake / NRCS Dam Y-14 Inundation Maps Sheet 3

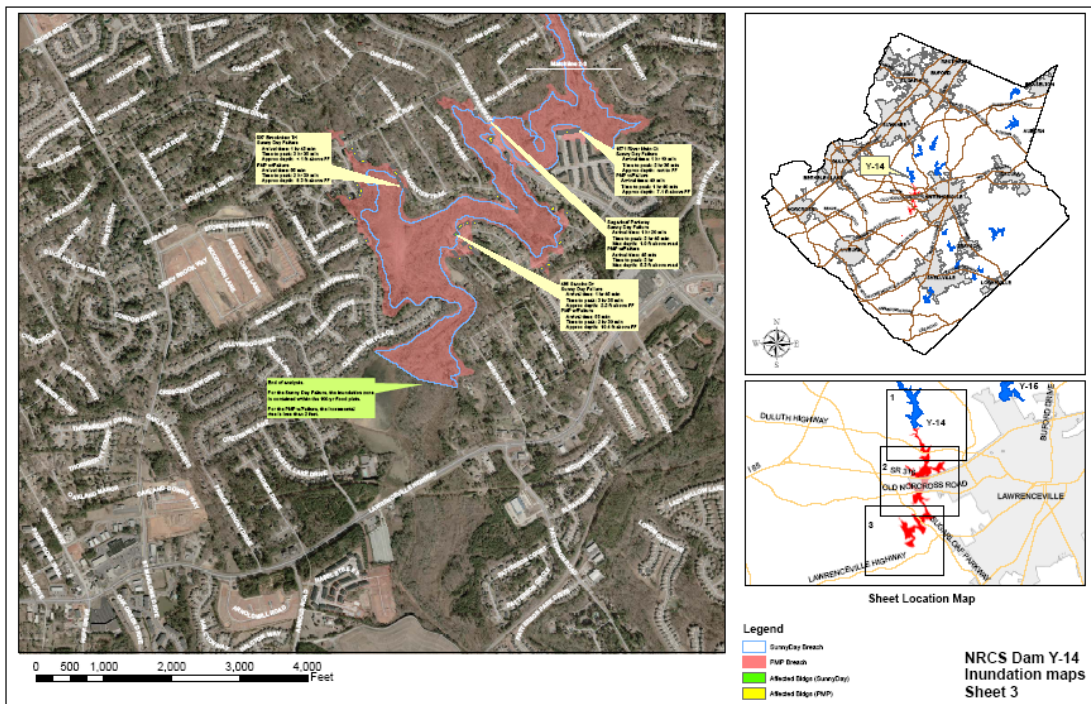


Figure 47
Channings Lake / NRCS Dam Y-15 Inundation Maps Sheet 1

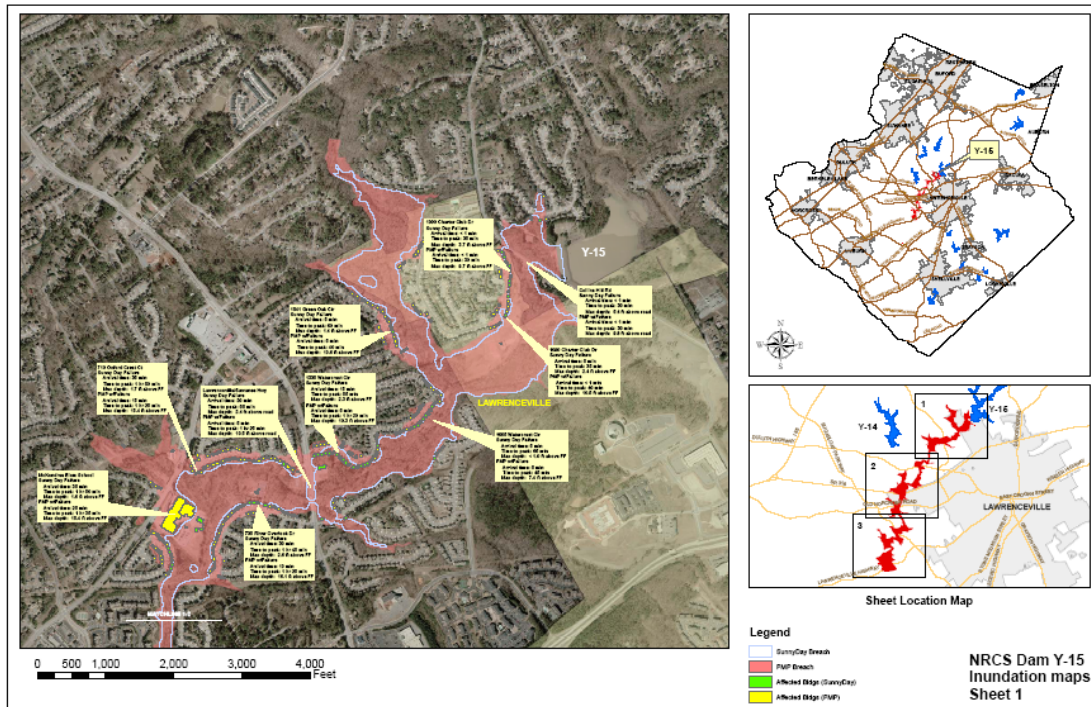


Figure 48 Channings Lake / NRCS Dam Y-15 Inundation Maps Sheet 2

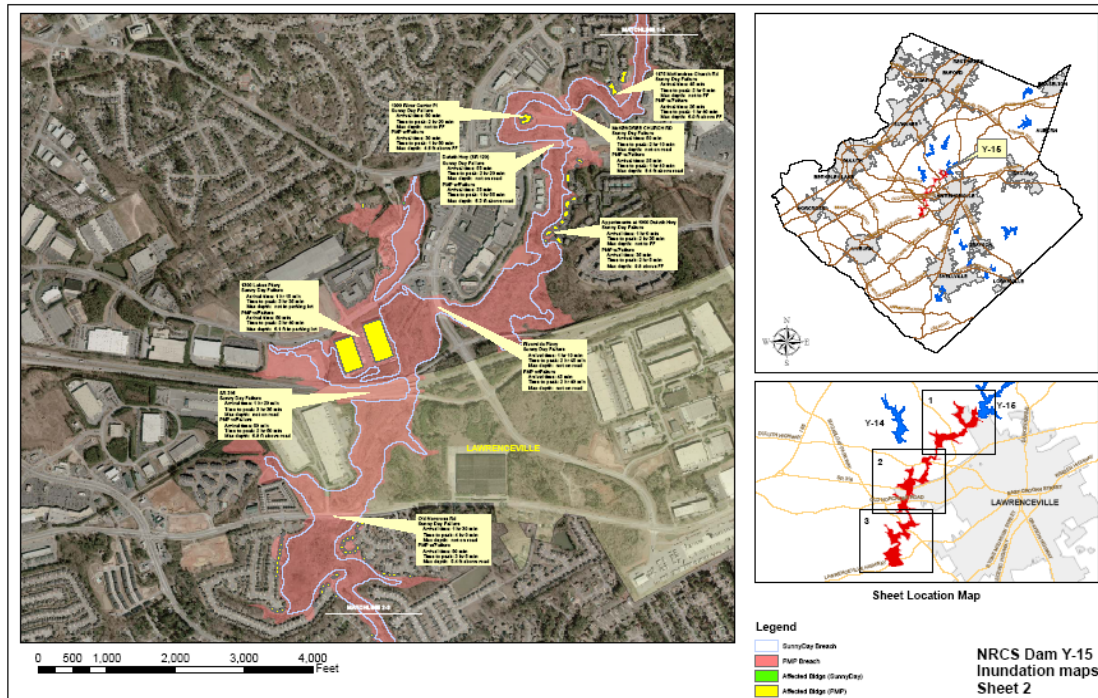


Figure 49
Channings Lake / NRCS Dam Y-15 Inundation Maps Sheet 3

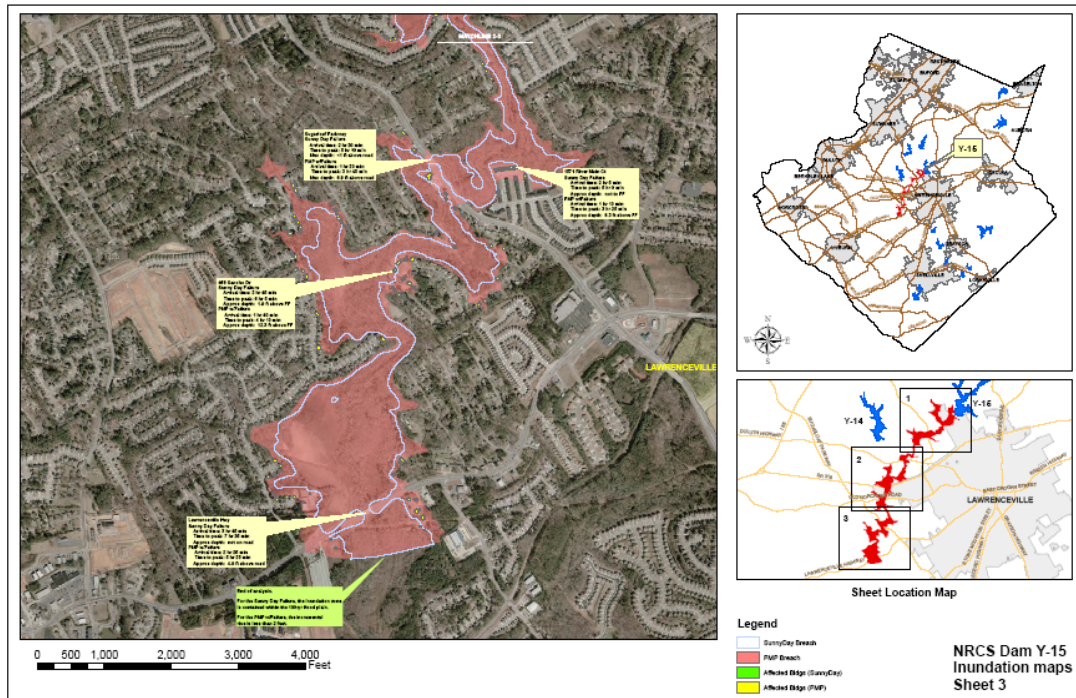


Figure 50
Richland Lake / NRCS Dam Y-16 Inundation Maps Sheet 1

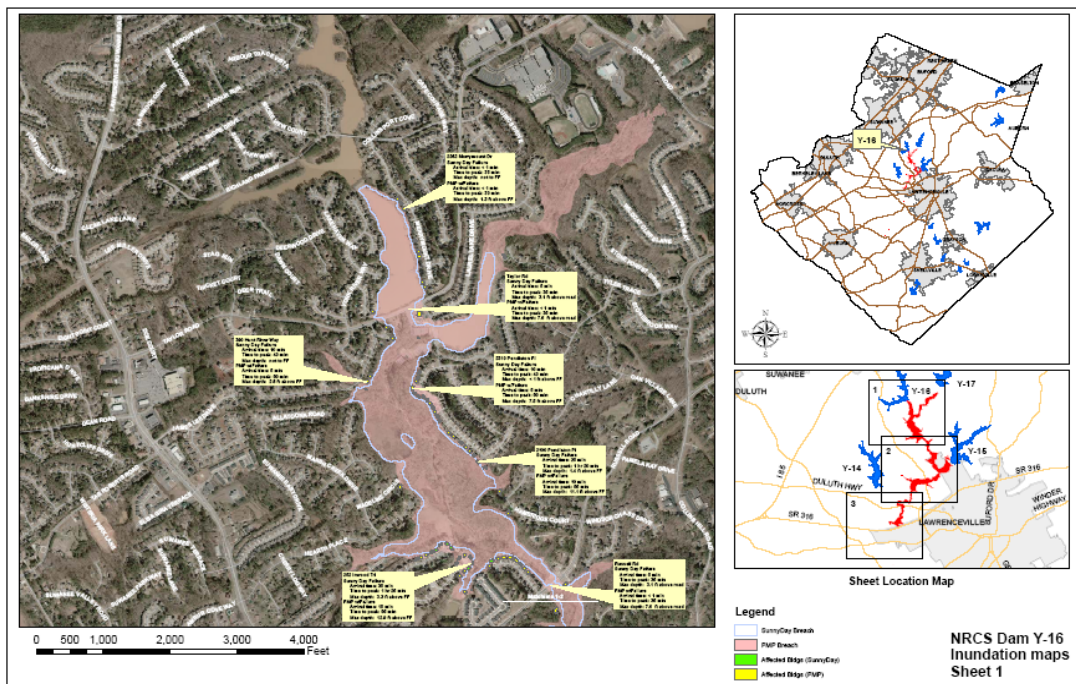


Figure 51
Richland Lake / NRCS Dam Y-16 Inundation Maps Sheet 2

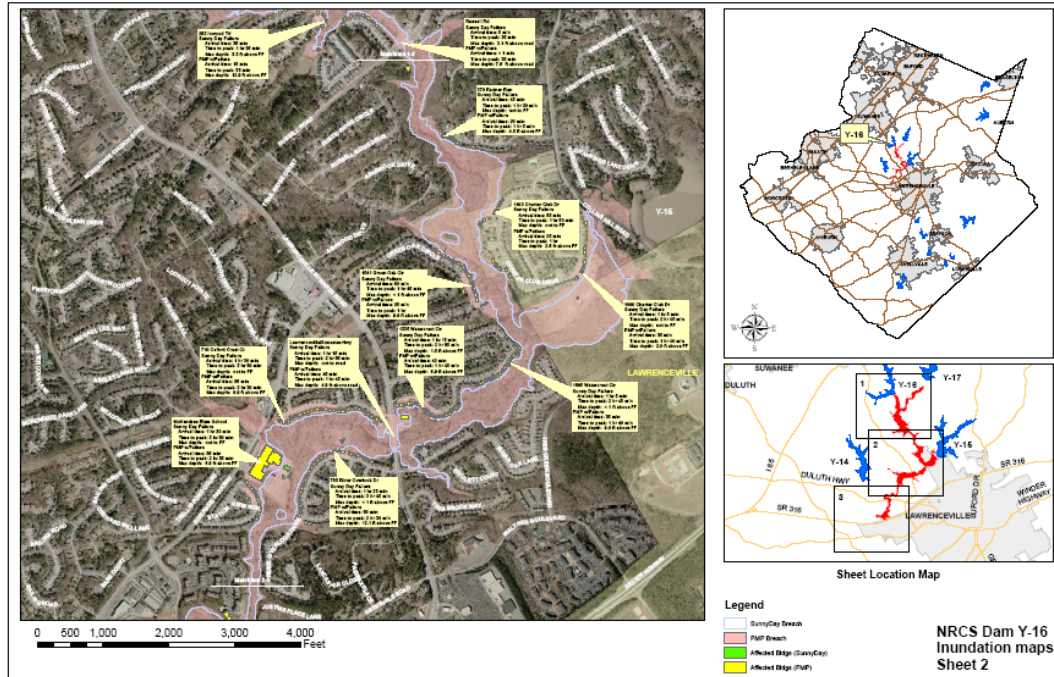
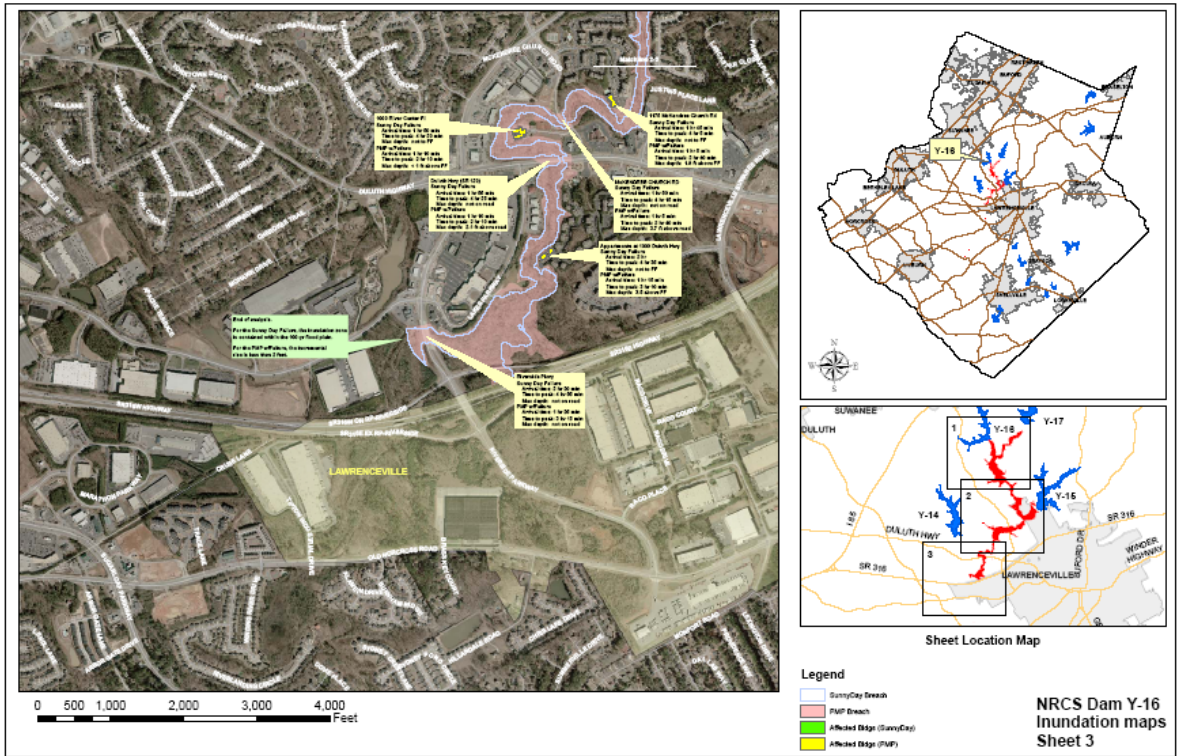


Figure 52
Richland Lake / NRCS Dam Y-16 Inundation Maps Sheet



3

Figure 53
Collins Hill Park Lake / NRCS Dam Y-17 Inundation Maps Sheet 1

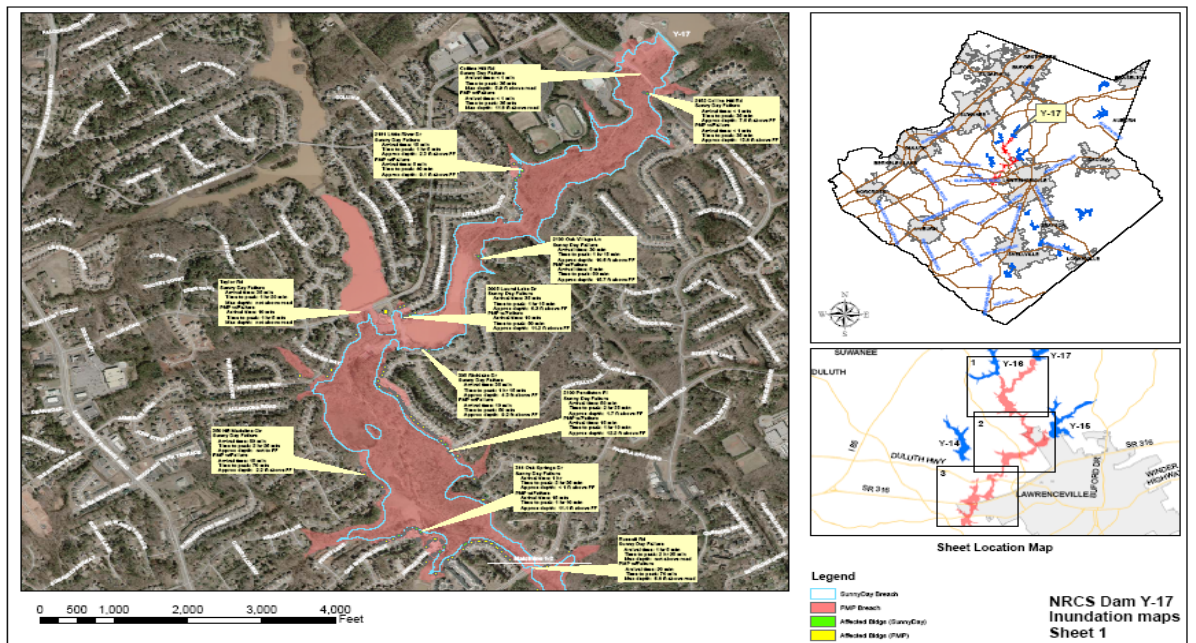


Figure 54
Collins Hill Park Lake / NRCS Dam Y-17 Inundation Maps Sheet 2

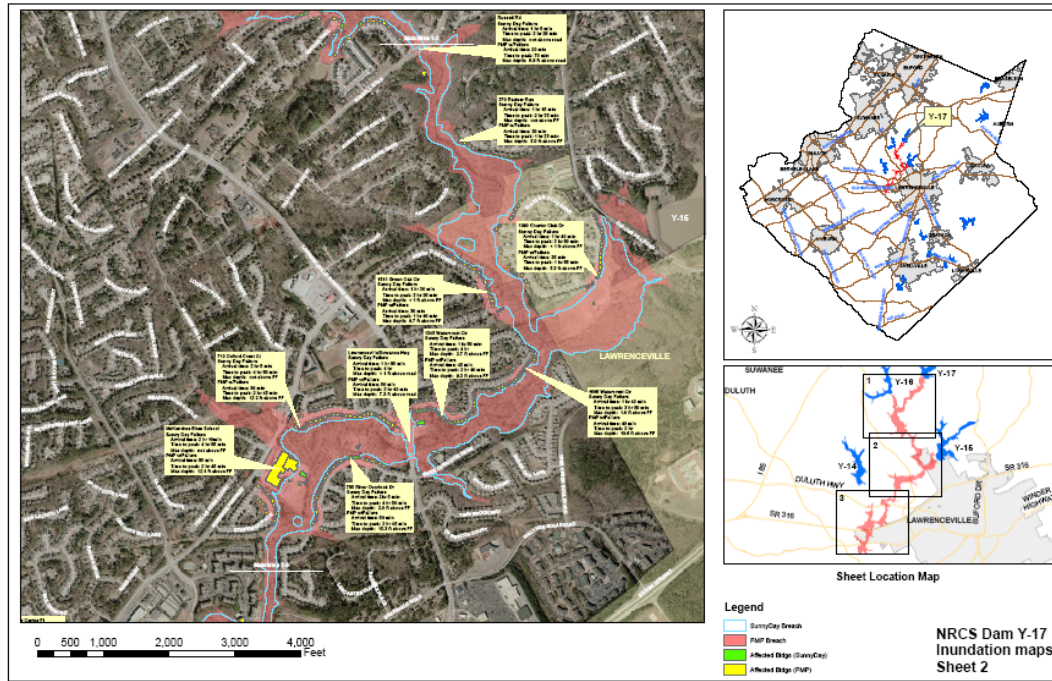
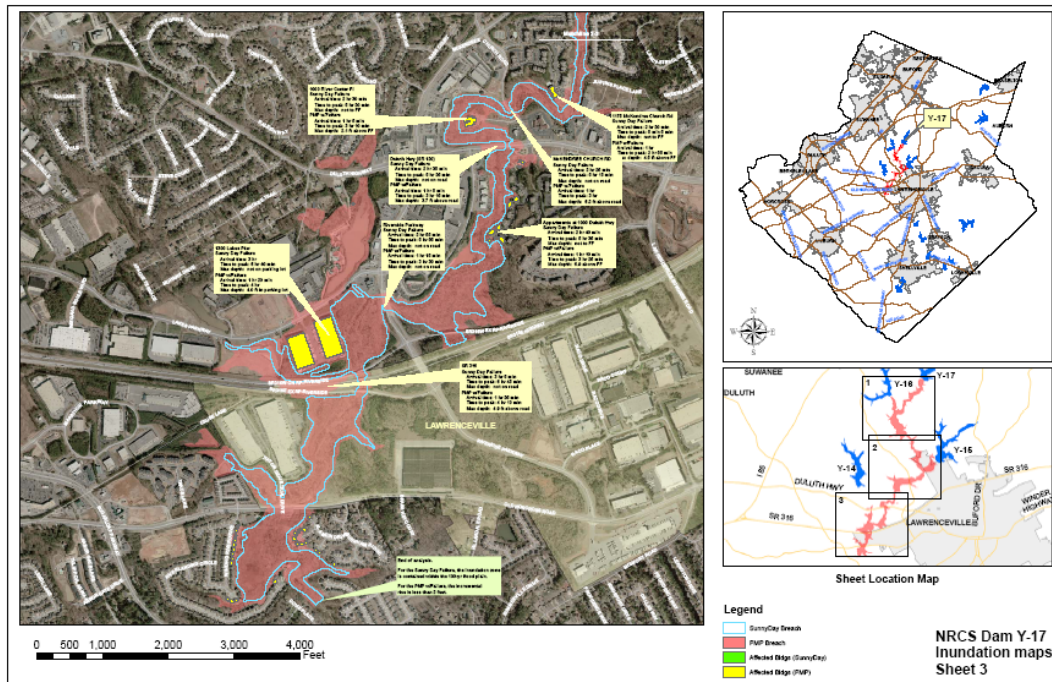


Figure 55
Collins Hill Park Lake / NRCS Dam Y-17 Inundation Maps Sheet 3



3.3.3.3 Assets Exposed to Hazard

- **Property Risk/Vulnerability.** It was determined that critical facilities as well as public, private, and commercial properties are vulnerable to being affected by a dam failure if they are located in the inundation area. Major roadways are of concern in many areas a dam failure could endanger motorist during the breach and possibly damage or remove portions of the roadway causing extended impact.
- **People Risk/Vulnerability.** It was determined that risk/vulnerability includes the majority of the population in Gwinnett County, given that there are several dams located throughout Gwinnett County. People are vulnerable to the effects of dam failure through power outages, effects on transportation routes, establishment of shelters, flooding, etc. Many of these dams are in private subdivisions and located in areas that would block residents from exiting the subdivision causing emergency personal to extract residents from their neighborhood and in turn activating sheltering plans.
- **Environment Risk/Vulnerability.** Risks to the environment are high should a dam failure occur, but the frequency of dam failures in Gwinnett County is low. Environmental concerns are interruption of water supply, water contamination, and loss of properties.

3.3.3.4 Vulnerability

**Table 3-31
Dam Failure**

Frequency of Occurrence	Unlikely
Warning Time	3–6 Hours
Geographic Extent	Localized
Potential Impact	Minor - Major

3.3.3.5 Land Use and Development Trends

When a dam is built, the surrounding area is vulnerable to a dam failure. The safety and permitting of dams is monitored by the Georgia Department of Natural Resources. Whenever a dam is to be built, it must be approved by the State Dam Safety Engineer and comply with the Permit Guidelines for Dams. If a dam is considered high hazard, its owners are required by the State of Georgia to develop an emergency action plan in response to possible failure.

3.3.3.6 Hazard Summary

Based on available records, Gwinnett County has not experienced any instances of dam failure. Although none of the dams has failed in the past, susceptible areas surrounding the area located within Gwinnett County will continue to be monitored by the Gwinnett County HMSC for the identification of need for new mitigation actions.

3.3.4 Terrorism

3.3.4.1 Hazard Identification

Terrorism is defined in the Code of Federal Regulations as the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives²⁶.

The primary objectives of most terrorist groups are to:

- Gain publicity.
- Stimulate loss of confidence in the government.
- Attract recruits.
- Get public support.
- Gain support from financial institutions, and ultimately.
- Weaken and overthrow the government.

Techniques used to gain an audience for their platform include hostage-taking, product-tampering, criminal extortion, arson, sabotage, threats against individual family members, assassinations, kidnapping, explosive bombings, and armed attacks. The most likely targets of these forms of terrorism are political leaders, key military personnel, foreign missions, military facilities, corporate executives and facilities, and celebrities. Unfortunately, the risk of terrorist acts exists in the Georgia and cannot be ruled out for Gwinnett County. Terrorist attacks can take a wide variety of forms, ranging from a verbal threat to sabotage to biological weapons to bombs. The most frequently used terrorist methods include but are not limited to the following:

- **Bombs, guns, and explosives:** These are the “traditional” weapons used by terrorists worldwide. Typically, these weapons are less technically and resource demanding.
- **Biological weapons:** These weapons use infectious microbes or toxins to produce illness or death in people, animals, or plants. Potential biological weapons include anthrax, botulism, smallpox, viral hemorrhagic fevers, water safety threats (for example, cholera), and food safety threats (for example, salmonella). Biological weapons are relatively difficult to cultivate and disseminate.
- **Chemical weapons:** Chemical weapons cause severe health reactions designed to incapacitate or cause death. There is a wide array of potential chemical agents that could be used as weapons. These agents vary in how their effects on the body, required dose, exposure mechanism, length of exposure, toxicity, origination, and form (for example, liquid, gas). Examples of chemical agents include sarin, mustard agent, VX, and cyanide.
- **Radiological and nuclear weapons:** Although there has been much speculation by media and various governmental agencies regarding the potential for a terrorist to obtain fissionable material or a nuclear bomb, there are no known unclassified cases of any such organization or group actually obtaining weapons grade material. Constructing a nuclear bomb would require special resources, training, and materials.

3.3.4.2 Hazard Profile

A major terrorism hazard event has been determined to have a low likelihood of occurrence in Gwinnett County within the five year update cycle of this hazard mitigation plan. Therefore, although some hazard

²⁶ Code of Federal Regulations, 28 C.F.R. Section 0.85,
<http://www.gpo.gov/fdsys/browse/collectionCfr.action?selectedYearFrom=2005&go=Go>

characterization information is presented, no further risk assessment has been performed for this hazard. Additional analyses to further characterize the risks of this hazard and the development of suitable mitigation action items will be conducted in the future based on periodic reviews of this hazard mitigation plan and available resources.

3.3.4.3 Assets Exposed to Hazard

- **Property Risk/Vulnerability.** All assets within Gwinnett County are vulnerable to being affected by a terrorist incident; however, there are several pieces of infrastructure that pose a larger threat than others pose. Gwinnett County government facilities and schools are vulnerable to active shooter incidents.
- **People Risk/Vulnerability.** In evaluating vulnerability of the population in Gwinnett County, it was determined that risk/vulnerability includes the entire population of Gwinnett County because there is no way to determine the impact/magnitude of a terrorist incident and no way to predict where and when a terrorist incident will occur. People are vulnerable to terrorist events through physical injury or disease, power outages, effects on transportation routes, establishment of shelters, effect of incident on mental state of the public, confidence of public in law enforcement support, contamination of the food supply, etc.
- **Environment Risk/Vulnerability.** Risks to the environment are high should a terrorist incident occur but the frequency of terrorist events in Gwinnett County is low. Environmental concerns would be interruption or contamination of water or food supplies and secondary events such as fires and HAZMAT accidents (such as gas pipelines rupturing, rupture of HAZMAT containers at facilities, etc.).

3.3.4.4 Vulnerability

**Table 3-32
Terrorism**

Frequency of Occurrence	Unlikely
Warning Time	None–Minimal
Geographic Extent	Community-wide
Potential Impact	Negligible–Major

3.3.4.5 Land Use and Development Trends

Future development throughout Gwinnett County will take into consideration possible terrorist incidents; particularly if new facilities are built that could be potential terrorist targets.

3.3.4.6 Hazard Summary

The incidents described above demonstrate the need to take terrorism seriously in Gwinnett County. Gwinnett County officials work with state and federal officials on domestic preparedness efforts, the details of which go beyond the scope of this plan. The community should always remain vigilant to the threat of an attack, whether it is via explosives, agriculture, or a cyber-attack.

3.3.5 Cyber Security

3.3.5.1 Hazard Identification

Computer hackers are one of the risks that everyone faces in the world today. Increasingly more sophisticated attacks, BotNets, Phishing, data theft from out of office working/home working, stolen or lost media, insider threat, and unauthorized machines accessing internal network. Disaster recovery or other additional cyber funding is welcome, as we will need the tools to challenge our counterparts. The investment is not always realized during inception, but always needed when compromised. Malware, including more sophisticated Trojans are areas of major concern. The issue of intruders with selective and developed predefined targets, that operates in “stealth” are not always visible, and is not always detected by Anti-Virus software.

3.3.5.2 Hazard Profile

Threats of attacks may be from insider or outsiders. Histories of cyber threats indicate that 80 percent of the attacks come from outsiders and 20 percent from insiders. This model is continually changing as the larger threat is now reviewed as the internal threat, due to accessibility. We often refer to this as having a hard shell, but a soft middle. Both are concerns nevertheless. There have been recorded instances of cyber security issues in Georgia some of which have impacted Gwinnett County.

3.3.5.3 Assets Exposed to Hazard

- **Property Risk/Vulnerability.** It was determined that all county and municipal facilities are vulnerable to being affected by a cyber-security event. This type of event could have ramifications including damage to hardware, software, servers, and the like, decreasing or temporarily disrupting the ability of Gwinnett County to conduct daily operational activities.
- **People Risk/Vulnerability.** There is little to no physical risk to people due to this type of event.
- **Environment Risk/Vulnerability.** There is little to no risk to the environment due to this type of event.

This section of the plan is a detailed assessment of Gwinnett County’s capability as a local governmental unit to mitigate the impacts of the natural hazards that were identified and analyzed in this plan. This assessment includes an examination of the following local government capabilities:

- Legal Capability
 - General Authority
 - Building Codes and Inspections
 - Land Use Planning
 - Zoning
 - Subdivision Ordinance
 - Acquisition
 - Taxation
 - Floodway Regulations
 - National Flood Insurance Program and Community Rating System
 - Stormwater Management
 - FEMA’s Floodplain Map Modernization Program
 - Emergency Management
- Institutional Capability
- Political Capability
- Technical Capability
- Fiscal Capability
- Analysis Conclusion
 - Legal Capability Conclusion
 - Institutional Capability Conclusion
 - Political Capability Conclusion
 - Technical Capability

4.1 Legal Capability

Local governments in Georgia have a wide array of powers that enable counties and municipalities to adopt and implement policies and ordinances that may be used to mitigate the potential harmful effects of natural hazards. Below is a summary of the legal authority and powers that Georgia has conferred on local governments with the State (Local Hazard Mitigation Planning Manual, GA Division of Emergency Management). These powers fall into the following four broad categories: regulations, acquisitions, taxation and spending.

4.1.1 General Authority

The board of commissioners shall have the power and authority to fix and establish, by appropriate resolution entered on its minutes, policies, rules and regulations governing all matters reserved to its exclusive jurisdiction. Such policies, rules and regulations, when so adopted, with proper entry thereof made on the minutes of the board of commissioners, shall be conclusive and binding. The board of commissioners shall exercise only those administrative powers which are necessarily and properly incident to its functions as a policy-making or rule-making body, or which are necessary to compel enforcement of its adopted resolutions. The following powers are vested in the board of commissioners and reserved to its exclusive jurisdiction:

- To levy taxes
- To make appropriations
- To fix the rates of all other charges
- To authorize the incurring of indebtedness
- To order work done where the cost is to be assessed against benefited property and to fix the basis for such assessment
- To authorize and provide for the execution of contracts
- To establish, alter, open, close, build, repair or abolish public roads, private ways, bridges and ferries, according to law, provided, however, that the chairman shall have the authority to accept subdivision plats when the requirements established by the board of commissioners for subdivisions have been met
- To establish, abolish or change election precincts and militia districts according to law
- To accept, for the county, the provisions of any optional statute where the statute permits its acceptance by the governing authority of the county
- To exercise all powers, duty and authority formerly imposed upon or vested in the commissioner of roads and revenues of Gwinnett County in respect to zoning and planning
- To create and change the boundaries of special taxing districts authorized by law
- To fix the bonds of county officers where same are not fixed by statute
- To enact any ordinances or other legislation which the county may be given authority to enact
- To determine the priority of capital improvements
- To call elections for the voting of bonds
- To exercise all of the power and authority formerly vested by law in the board of commissioners of Gwinnett County together with the power and authority which may be delegated by law to the governing authority of the county, by whatever name designated
- To appoint retained legal counsel and an independent county auditor and provide for their compensation

4.1.2 Building Codes and Inspections

The Building Permits Section of the Department of Planning and Development is responsible for enforcement of Building Codes and Inspections.

The Building Inspections Section is responsible for all building construction related inspections, with the goal to protect life, limb, property and adherence to applicable codes. This goal is accomplished through identifying structural strength and stability, as well as establishing viable means of egress, proper sanitation control, adequate lighting and ventilation, energy conservation, and personal property safety from fire and other hazards.

The Building Plan Review Section of the Department of Planning and Development is responsible for the review and authorization to permit the construction of commercial buildings, commercial structures and commercial interior projects located in unincorporated Gwinnett County. Commercial buildings include all buildings or structures other than one and two family dwellings or townhomes. Commercial structures include site retaining walls, cell tower installations, racking systems and signage foundations.

The Building Permits Section of the Department of Planning and Development is responsible for enforcement of the following functions:

- Issuance of building permits
- Building permit revisions
- Building permit renewals and extensions
- Temporary certificates of occupancy/completion
- Replacement permit cards
- Payment of re-inspection fees
- Subcontractor affidavits
- Contractor name changes
- Subcontractor name changes

Open record requests concerning building permits or building inspections

4.1.3 Land Use Planning

Gwinnett County's 2040 Comprehensive Plan and Land Use Plan Map have been updated annually since adoption of the plan in 1997. However, because the county has changed dramatically since then, the County began a two-year effort to complete a major update to its comprehensive plan. As part of the project, the Transportation Plan and Consolidated Plan will be updated in a coordinated fashion. Public input is welcomed throughout the process.

4.1.4 Zoning

Pursuant to the authority conferred by Article 9, Section 2, Paragraph IV, 1983 Constitution of Georgia, and for the purposes of promoting the health, safety, morals, convenience, order, prosperity or the general welfare of the present and future inhabitants of Gwinnett County; of lessening congestion in the streets; securing safety from fire, panic and other dangers; providing adequate light and air; preventing the overcrowding of land by avoiding both undue concentration of population and urban sprawl; facilitating the adequate provision of transportation, water, sewerage, schools, parks and other public

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requirements; protecting property against blight and depreciation; encouraging the most appropriate use of land, buildings and other structures throughout the County; securing economy in government expenditures; and for other purposes, all in accordance with a comprehensive plan for the development of the County, the County Commissioners of Gwinnett County do hereby ordain and enact into law the following Articles and Sections of the Zoning Resolution of Gwinnett County, Georgia.

**Table 4-1
Section 607 – Zoning Resolution**

Section 607 of the Zoning Resolution	
Customary Home Occupation	An occupation customarily carried on within a dwelling unit for gain or support involving the sale of only those articles, products or services produced on the premises, conducted entirely within the dwelling by members of the immediate family residing in the dwelling unit with equipment customarily used for household purposes and involving no display of articles or products. A customary home occupation includes the accommodation of not more than two boarders or roomers. A customary home occupation may include a family personal care home or a family daycare home.
1	The home occupation shall be carried on only by a member or members of the family residing in the residence.
2	To the extent that there is any sale of any item or service related to the home occupation, no sale of that item or service may occur on or adjacent to the premises unless this use has been granted a Special Use Permit by the Board of Commissioners after receiving recommendations from the Director of Planning and Development and Planning Commission and following a public hearing.
3	The home occupation shall not involve group instruction or group assembly of people on the premises.
4	There shall be no exterior evidence of the conduct of a home occupation. Except for the breeding of horses by a Hobby Breeder, the home occupation shall be conducted only within the enclosed living area of the home (including basement, if any). There shall be no display or storage of products, materials or machinery where they may be visible from the exterior of the residence.
5	The conduct of the home occupation shall neither increase the normal flow of traffic nor shall it increase either on-street or off-street parking.
7	No more than 25 percent of the dwelling unit may be used for conducting the home occupation.
8	One business vehicle used exclusively by the resident is permissible. This vehicle must be parked in a carport, garage, side yard or rear yard. This vehicle shall be no larger in size than a pick-up truck, panel truck or van not having a carrying capacity of more than one and one-half tons.

**Table 4-2
Section 400 – Zoning Districts**

Section 400 Zoning Districts	
RA-200	Agriculture-Residence District
R-140	Single Family Resident District
R-LL	Single Family Residence-Large Lot District

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	Section 400 Zoning Districts
R-100	Single Family Residence
R-75	Single Family Residence
R-60	Single Family Residence
R-SR	Senior Oriented Residence District
R-TH	Single Family Residence Townhouse District
HRR	High-Rise Residential District
RM	Multi-Family Residence District
RM-13	Multi-Family Residence District
RM-10	Multi-Family Residence District
RM-8	Multi-Family Residence District
RM-6	Multi-Family Residence District
RMD	Multi-Family Residence District (Duplexes)
RL	Lakeside Residence District
R-ZT	Single Family Residence District
MH	Mobile Home Park District
MHS	Manufactured Housing Subdivision District
HS	Hospital Service District
NS	Neighborhood Shopping District
C-1	Neighborhood Business District
C-2	General Business District
C-3	Highway Business District
O-1	Office-Institutional District
OBP	Office-Business Park District
M-1	Light Industry District
M-2	Heavy Industry District

Section 400 Zoning Districts	
MUD	Mixed-Use Development District
R-TH	Single-Family Residence Townhouse District (Prior to January 2005)
R-ZT	Single-Family Residence Zero Lot Line/Townhouse District (Prior to January 2005)
Section 1314.6	Big Haynes Creek Conservation Subdivision Option

4.1.5 Subdivision Ordinance

Subdivision regulations control the division of land into parcels for the purpose of building development or sale. Subdivision regulations are a more limited tool than zoning and only indirectly affect the type of use made of land or minimum specifications for structures.

Subdivision regulations provide for orderly growth and development by setting standards for street construction, interconnecting street systems, utilities, and for other improvements that ensure the appropriate design and layout of new development. These regulations also serve to protect natural features and resources by not allowing or reducing development intensity within sensitive environmental areas. Flood-related subdivision controls typically require that developers install adequate stormwater drainage facilities, and design water and sewer systems to minimize flood damage and contamination. Regulations typically prohibit the filling of floodways or the subdivision of land subject to flooding unless flood hazards are overcome through filling or other measures.

The Gwinnett County Subdivision Ordinance was first adopted in 1986. The original ordinance contained few specific design criteria for the approval or disapproval of new subdivisions. The ordinance was substantially revised to include specific development standards, including requirements for stormwater drainage to minimize or eliminate flood damage. The ordinance was last revised on July 22, 2014.

4.1.6 Acquisition

The power of acquisition can be useful tool for pursuing mitigation goals. Local governments may find the most effective method for completely hazard-proofing a particular piece of property is to acquire the property, either in fee simple or a lesser interest, such as an easement. Public acquisition removes the property from the private market and eliminates or reduces the possibility of inappropriate development. Georgia legislation empowers cities and counties to acquire property for public purpose by gift, grant, devise, bequest, exchange, purchase, lease or eminent domain (Ga. Article III Legislative Branch).

4.1.7 Taxation

The Gwinnett County Board of Commissioners adopted their Code of Ordinances on September 6, 1994. The following are the findings of Article VI Section I of the ordinance:

The governing authority of Gwinnett County is hereby authorized and empowered to establish and administer fire protection districts and sewerage districts in the unincorporated area of the County. The governing authority shall fix the geographical boundaries of any such district and may construct, maintain, operate and administer a fire protection system or a sewerage system, as the case may be, in

such district. The governing authority is hereby authorized to levy a tax, not to exceed five mills, for such purpose on all property in said district, if the levying of such tax is approved by a majority vote of those qualified voters of said district voting at a special election to be called and conducted by the probate court judge of said county in said district. The governing authority shall set the date for said election, which shall be held and conducted, as are other special elections. General obligation bonds also may be issued for such purposes, to be paid for by taxes levied only in said district. In the event such bonds are issued, a tax may be levied in such district with no limitation as to rate or amount and such tax shall not be affected by the tax of not to exceed five mills provided for hereinbefore. If such bonds are issued, they shall be authorized in all respects as provided in Article VII, Section VII, Paragraph I of the Constitution at an election called and held by the governing authority of Gwinnett County and only those voters residing in the affected district shall participate in the election held for that purpose. Such bonds may be issued in an amount up to ten (10%) percent of the assessed valuation of property located in such district and such percentage shall be in addition to that authorized elsewhere in this Constitution. The governing authority is also authorized to issue revenue bonds for such purposes as authorized by the Constitution and laws of this State. The homestead exemption granted under the Constitution and laws of this State shall not be granted and shall not apply to the levy of any taxes provided for herein. In order to assist in constructing, maintaining, operating, and administering any such system, assessment may be made against the property in such district benefitted thereby, and the General Assembly is hereby authorized to provide the property against which assessments may be made, the procedure relative thereto, and all other matters relative thereto. In addition to the authority granted hereinbefore, the governing authority of Gwinnett County is hereby authorized to contract with any other political subdivision for the furnishing of fire protection services or sewerage services, or both, to any district established by the governing authority.

4.1.8 Floodway Regulations

The Gwinnett County Board of Commissioners adopted their Floodplain Management Ordinance on October, 2016. The following are the findings of Section 700-10 of the ordinance:

Sec. 700-10. Findings

It is hereby determined that:

- A. The flood hazard areas of Gwinnett County are subject to periodic inundation which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood relief and protection, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.
- B. Flood hazard areas can serve important stormwater management, water quality, streambank protection, stream corridor protection, wetland preservation and ecological purposes when permanently protected as undisturbed or minimally disturbed areas.
- C. Effective floodplain management and flood hazard protection activities can: 1. Protect human life and health. 2. Minimize damage to private property. 3. Minimize damage to public facilities and infrastructure such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains. 4. Minimize expenditure of public money for costly flood control projects associated with flooding and generally undertaken at the expense of the general public.
- D. Article IX, Section II of the Constitution of the State of Georgia and O.C.G.A. § 36-1-20(a), have delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, Gwinnett County, Georgia, establishes this set of floodplain management and flood hazard reduction policies for the purpose of

regulating the use of flood hazard areas. It is determined that the regulation of flood hazard areas and the prevention of flood damage are in the public interest and will minimize threats to public health and safety, as well as to private and public property

Sec. 700-10.2. Requirements

The requirements of Chapter 700 shall be applicable to all Areas of Special Flood Hazard within the jurisdiction of Gwinnett County

Sec. 700-10.3. Statement of purpose

It is the purpose of Chapter 700 to protect, maintain, and enhance the public health, safety, environment, and general welfare and to minimize public and private losses due to flood conditions in flood hazard areas, as well as to protect the beneficial uses of floodplain areas for water quality protection, streambank and stream corridor protection, wetlands preservation and ecological and environmental protection by provisions:

- A. Restricting or prohibiting uses or activities which are dangerous to health, safety, and property due to flooding or erosion hazards or which increase flood heights, velocities, or erosion.
- B. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction or renovation.
- C. Limiting the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters.
- D. Controlling filling, grading, dredging and other development which may increase erosion or flood damage.
- E. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands.
- F. Protecting the stormwater management, water quality, streambank protection, stream corridor protection, wetland preservation and ecological functions of natural floodplain areas.

Sec. 700-10.4. Flood area maps and studies.

For the purposes of defining and determining “Area of Special Flood Hazard,” “Areas of Future-conditions Flood Hazard,” “Areas of Shallow Flooding,” “ Base Flood Elevations,” “Floodplains,” “Floodways,” “Future-conditions Flood Elevations,” “Future-conditions Floodplains,” potential flood hazard or risk categories as shown on FIRM maps, and other terms used in Chapter 700, the following documents and sources may be used for such purposes and are adopted by reference thereto:

- A. The Flood Insurance Study (FIS), dated September 26, 2006, or most current study, with accompanying maps and other supporting data and any revision.
- B. Other studies which may be relied upon for establishment of the base flood elevation (BFE) or delineation of the base or one-percent (100-year) floodplain and flood-prone areas, including:
 - 1. Any flood or flood related study conducted by the United States Army Corps of Engineers or the United States Geological Survey or any other local, State, or Federal Agency applicable to Gwinnett County.
 - 2. Any base flood study conducted by a licensed professional engineer in the State of Georgia which has been prepared utilizing FEMA approved methodology and approved by the Department of Planning and Development.

C. Other studies which may be relied upon for establishment of the future conditions flood elevation or delineation of the future conditions floodplain and flood-prone areas, including:

1. Any flood or flood related study conducted by the United States Army Corps of Engineers or the United States Geological Survey or any other local, state, or federal agency applicable to Gwinnett County.

2. Any future-conditions flood study conducted by a licensed professional engineer in the State of Georgia which has been prepared utilizing FEMA approved methodology and approved by the Department of Planning and Development.

D. The repository for public inspection of the FIS, accompanying maps and other supporting data is located at the following location:

Gwinnett County Department of Water Resources Central Facility 684 Winder Highway Lawrenceville, GA 30045

Sec. 700-10.5. Areas regulated

This article shall be applicable to all special flood hazard areas within unincorporated Gwinnett County, Georgia.

Sec. 700-10.6. Interpretation

A. In the interpretation and application of Chapter 700 all provisions shall be:

1. Considered as minimum requirements.
2. Liberally construed in favor of Gwinnett County.
3. Deemed neither to limit nor repeal any other powers granted under state statutes.

B. Where interpretation is needed as to the exact location of floodplain or floodway boundaries (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Department shall make the necessary interpretation based on data submitted by the applicant. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Chapter 700.

C. Where flood plain elevations have been defined, the floodplain shall be determined based on flood elevations rather than the area graphically delineated on the floodplain maps.

Sec. 700-10.7. Drainage easement established

On behalf of the public, a drainage easement is hereby established for the sole purpose of preserving and protecting the free flow of surface waters inside the future conditions flood contour elevations and along all watercourses. Where debris has accumulated in such a manner as would increase the need for flood protection, raise the flood level, or increase the risk of hazardous inundation of adjacent communities or jurisdictions, the County is hereby authorized to enter upon such watercourse and clear or remove such debris or obstructions as are hazardous to the public safety. The cost thereof shall be charged to the owner of the property where such debris and/or obstruction was generated. Where erosion has occurred in such a manner as would endanger a building or a structure, the County is hereby authorized to enter upon such watercourse and stabilize the channel for public safety. The cost thereof shall be charged to the owner of the property where the erosion has occurred and/or caused the erosion.

Sec. 700-10.8. Establishment of development permit

A development permit shall be required in conformance with the provisions of this UDO prior to the commencement of any clearing, grading, or development activities adjacent to, within, or affecting a future conditions floodplain.

Sec. 700-10.9. Compliance

No structure or use of land shall hereafter be located, extended, converted or structurally altered without full compliance with the terms of Chapter 700 and other applicable regulations.

Sec. 700-10.10. Compatibility with Other Regulations

Chapter 700 is not intended to modify or repeal any other ordinance, rule, regulation, statute, easement, covenant, deed restriction or other provision of law. The requirements of Chapter 700 are in addition to the requirements of any other ordinance, rule, regulation or other provision of law, and where any provision of Chapter 700 imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human health or the environment shall control.

Sec. 700-10.11. Warning and disclaimer of liability

The degree of flood protection required by Chapter 700 is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. Chapter 700 does not imply that land outside the special flood hazard or flood prone areas or uses permitted within such areas will be free from flooding or flood damages. Chapter 700 shall not create liability on the part of Gwinnett County or on the part of any officer or employee thereof for any flood damages that results from reliance on this Chapter or any administrative decision lawfully made thereunder

4.1.9 National Flood Insurance Program and Community Rating System

Another voluntary program that provides significant value is the Community Rating System (CRS). CRS is an incentive-based program that encourages counties and municipalities to undertake defined flood mitigation activities that go beyond the minimum requirements of the NFIP, adding extra local measures to provide protection from flooding. All of the 18 creditable CRS mitigation activities are assigned a range of point values. As points are accumulated and reach identified thresholds, communities can apply for an improved CRS class. Class ratings, which run from 10 to 1, are tied to flood insurance premium reductions. As class ratings improve, the percent reduction in flood insurance premiums for NFIP policy holder’s increases. CRS premium discounts, by class as defined by FEMA, are depicted in the adjacent table.

Class	Discount
1	45%
2	40%
3	35%
4	30%
5	25%
6	20%
7	15%
8	10%
9	5%
10	0%

The Gwinnett County Board of Commissioners adopted the Flood Insurance Study dated December 5, 1980, Flood Insurance Rate Map dated June 15, 1981, and the revised maps dated September 29, 2006 prepared by FEMA for unincorporated areas of Gwinnett County. The ordinance was updated September 19, 2006.

**Table 4-3
Gwinnett County Community Rating**

Community Identification Number	Community Name	CRS Entry Date	Current Effective Date	Current Class	Percent Discount For Sfha I	Percent Discount For Non-Sfha	Status3
130322	Gwinnett County	10/1/94	03/2013	7	15%	5	C

Flood area maps and studies.

- For the purposes of this article, the following are adopted: The Flood Insurance Study (FIS), dated December 5, 1980 and Flood Insurance Rate Map (FIRM), dated June 15, 1981, prepared by the Federal Emergency Management Agency (FEMA) for unincorporated areas of Gwinnett County, Georgia, with accompanying maps and other supporting data and any revision thereto.
- Other studies which may be relied upon for establishment of the base flood elevation or delineation of the 100-year floodplain include:
 - Any flood or flood related study conducted by the United States Corps of Engineers or the United States Geological Survey or any local, State, or Federal Agency applicable to Gwinnett County.
 - Any base flood study authored by a currently registered professional engineer in the State of Georgia, which has been approved by the department.
- Other studies which may be relied upon for establishment of the future conditions flood elevation or delineation of the future conditions floodplain include:
 - Any flood or flood related study conducted by the United States Corps of Engineers or the United States Geological Survey or any local, state, or federal agency applicable to Gwinnett County.
 - Any future conditions flood study authorized by a currently registered professional engineer in the State of Georgia, which has been approved by the department.
- The repository for public inspection of the FIS, accompanying maps and other supporting data is located at the following location:

Gwinnett County Department of Water Resources

One Justice Square
 446 West Crogan Street
 Lawrenceville, GA 30045

(Ord. of 9-19-06, § 1.2.1)

Areas regulated.

This article shall be applicable to all special flood hazard areas within unincorporated Gwinnett County, Georgia.

4.1.10 Stormwater Management

The Gwinnett County Board of Commissioners adopted the Stormwater Management Ordinance on January 27, 2004 and updated October, 2016. Chapter 800 defines the Stormwater Management ordinance.

Sec. 800-10. Stormwater Management General.

800-10.1 Stormwater treatment facilities shall be designed so that their peak release rates, when combined with those of all detention bypass areas in the same basin, produce peak flow rates and flow velocities at the site's boundary line no greater than those which occurred at the same location for pre-developed conditions unless the project meets conditions specified in Sections 800-40.2 and 800-40.3.

800-10.2 The positive effects of stormwater management via on-site stormwater treatment facilities diminish rapidly as the distance downstream from the point of discharge increases, and the smaller the facility's contribution is, as a percentage of the total runoff contributing to downstream flow, the shorter the distance downstream that the benefits are realized. Because of these limitations, on-site stormwater treatment is effective at controlling flooding only when flow from the facility is a significant percentage of the total flow at the point of interest, and only if the point of interest is immediately downstream. The concepts of immediately downstream and significant percentage of total flow are inseparable. The portion of a receiving watercourse (one which receives and conveys runoff from a site) which lies downstream from the site to the point where the area of the site is 10 percent of the total drainage area, shall generally be considered to constitute that portion of the watercourse which is immediately downstream.

800-10.3 Peak flow rate control shall normally be provided only for the 2-year, 5-year, 10-year, and 25-year frequency storm events. The 100-year event shall be provided when failure to do so would result in flooding of other habitable dwellings, property damage, or public access and/or utility interruption.

800-10.4 For any stormwater analysis, the composite "C" (Rational Method) or CN (SCS Method) used for analysis of pre-development conditions shall not exceed a forested condition unless prior approval via variance has been obtained from the Department. A pre-design conference between the authorized registered professional and appropriate Department of Planning and Development personnel, which may in certain straightforward cases be conducted via the telephone, is required.

800-10.5 Rational Method Runoff Coefficients and SCS Curve Number calculations used for analysis of pre- and post-development conditions shall be consistent with those shown in the Gwinnett County Stormwater Systems and Facilities Installation Standards and Specifications.

4.1.11 FEMA's Floodplain Map Modernization Program

The Gwinnett County Board of Commissioners adopted the Flood Insurance Rate Map dated June 15, 1981 prepared by FEMA for unincorporated areas of Gwinnett County.

Flood area maps and studies

- For the purposes of this article, the following are adopted: The Flood Insurance Study (FIS), dated December 5, 1980 and Flood Insurance Rate Map (FIRM), dated June 15, 1981, prepared by the Federal Emergency Management Agency (FEMA) for unincorporated areas of Gwinnett County, Georgia, with accompanying maps and other supporting data and any revision thereto.
- Other studies, which may be relied upon for establishment of the base flood elevation or delineation of the 100-year floodplain, include:
 - Any flood or flood related study conducted by the United States Corps of Engineers or the United States Geological Survey or any local, State, or Federal Agency applicable to Gwinnett County.
 - Any base flood study authored by a currently registered professional engineer in the State of Georgia, which has been approved by the department.
- Other studies which may be relied upon for establishment of the future conditions flood elevation or delineation of the future conditions floodplain include:
 - Any flood or flood related study conducted by the United States Corps of Engineers or the United States Geological Survey or any local, state or federal agency applicable to Gwinnett County
 - Any future conditions flood study authorized by a currently registered professional engineer in the State of Georgia, which has been approved by the department
- The repository for public inspection of the FIS, accompanying maps and other supporting data is located at the following location:

Gwinnett County Department of Water Resources

One Justice Square
446 West Crogan Street
Lawrenceville, GA 30045

4.1.12 Emergency Management

The Gwinnett County Board of Commissioners created the Department of Emergency Management Sec. 2-141, January 5, 1993. One of the primary functions of the Department of Emergency Management is to maintain an Emergency Operations Plan for Multi-Hazards. This is a mechanism to pre-determine actions to be taken by government agencies and private organizations of Gwinnett County to reduce the vulnerabilities of people and property to disaster, and establish capabilities to respond effectively to the actual occurrence of a disaster.

Although the primary purpose of the plan is to ready the County and its citizens for a disaster, the plan also helps mitigate the extent of actual damages to life and property by having an action plan in place to prepare and then respond to an emergency situation. The plan anticipates the possibility of the hazards identified in Section 3 of this Hazard Mitigation Plan.

4.2 Institutional Capability

Gwinnett County Public Schools (GCPS) and its 148 schools and other educational facilities serve more than 180,000 students. Gwinnett's modern, well-equipped, and well-maintained schools provide an environment where teaching and learning thrive. Geographical clusters, called clusters, determine attendance zones. Within each cluster, there are three to six elementary schools, one or two middle schools, and one high school.

Figure 56
Gwinnett County Public Schools Organizational Chart

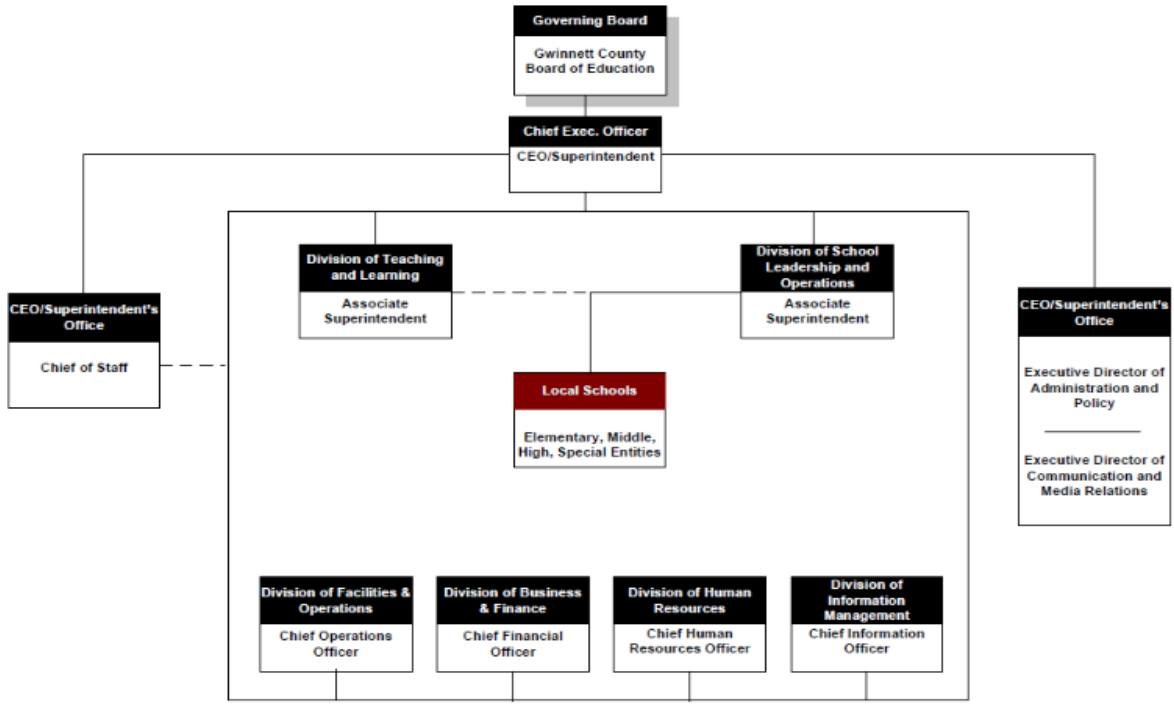


Table 4-4
Institutional Capability

Institutional Capability	Yes or No
County Board of Education (elected official)	Yes
CEO/Superintendent	Yes
Chief of Staff	Yes
Chief Financial Officer	Yes
Chief Academic Officer	Yes
Chief Human Resources Officer	Yes
Chief Operations Officer	Yes
Chief Information Officer	Yes
Executive Director for Administration and Policy	Yes

Institutional Capability	Yes or No
Executive Director of Communications and Media Relations	Yes

**Table 4-5
Institutional Capability Schools**

Institutional Capability	2018-2019 Enrollment
Buford Elementary	720
Buford Academy	930
Buford Middle	1,063
Buford High	1,361
Archer HS	2,740
McConnell MS	2,148
Cooper ES	1,452
Harbins ES	1,299
Lovin ES	962
Berkmar HS	2,911
Berkmar MS	1,207
Hopkins ES	1,213
Minor ES	1,018
Sweetwater MS	1,566
Bethesda ES	1,197
Corley ES	1,196
Kanoheda ES	858
Brookwood HS	3,585
Crews MS	1,411
Brookwood ES	1,371

COMMUNITY CAPABILITY ASSESSMENT

Institutional Capability	2018-2019 Enrollment
Craig ES	1,010
Five Forks MS	1,181
Gwin Oaks ES	1,005
Head ES	607
Central Gwinnett HS	2,097
Jordan MS	926
Jenkins ES	832
Simonton ES	813
Moore MS	949
Lawrenceville ES	688
Winn Holt ES	1,140
Collins Hill HS	3,018
Creekland MS	1,998
McKendree ES	1,056
Rock Springs ES	849
Taylor ES	887
Walnut Grove ES	868
Dacula HS	2,202
Dacula MS	1,672
Alcova ES	1,401
Dacula ES	1,122
Mulberry ES	790
Discovery HS	2,707
Richards MS	2,175

COMMUNITY CAPABILITY ASSESSMENT

Institutional Capability	2018-2019 Enrollment
Alford ES	954
Baggett ES	1,095
Benefield ES	1,253
Cedar Hill ES	988
Duluth HS	2,741
Coleman MS	837
Chattahoochee ES	1,394
Duluth MS	1,487
Berkeley Lake ES	852
Chesney ES	1,176
Harris ES	838
Grayson HS	3,030
Bay Creek MS	1,151
Grayson ES	919
Trip ES	1,227
Couch MS	1,068
Pharr ES	722
Starling ES	1,066
Lanier HS	1,859
Lanier MS	1,408
Sugar Hill ES	1,131
Sycamore ES	827
White Oak ES	703
Meadowcreek HS	3,247

COMMUNITY CAPABILITY ASSESSMENT

Institutional Capability	2018-2019 Enrollment
McClure Health Science HS	
Lilburn MS	1,755
Lilburn ES	1,429
Nesbit ES	1,183
Rockbridge ES	1,261
Radloff MS	1,398
Ferguson ES	844
Graves ES	1,244
Meadowcreek ES	896
Mill Creek HS	3,699
Jones MS	968
Harmony ES	536
Ivy Creek ES	1,246
Osborne MS	1,715
Duncan Creek ES	1,378
Fort Daniel ES	678
Puckett's Mill ES	819
Mountain View HS	2,622
Twin Rivers MS	2,096
Dyer ES	857
Freeman's Mill ES	877
Patrick ES	732
Woodward Mill ES	997
Norcross HS	3,149

Institutional Capability	2018-2019 Enrollment
Paul Duke STEM HS	614
Pinckneyville MS	1,286
Peachtree ES	940
Simpson ES	972
Stripling ES	742
Summerour MS	1,693
Baldwin ES	1,021
Beaver Ridge ES	1,110
Norcross ES	844
North Gwinnett HS	3,207
North Gwinnett MS	2,238
Level Creek ES	1,042
Riverside ES	1,003
Roberts ES	829
Suwanee ES	653

4.3 Political Capability

Gwinnett County government provides high quality essential services for Gwinnett residents and as many other services as tax revenues allow; spends and accounts for tax dollars in a responsible manner; responds to needs and concerns of the citizens; and conducts business in an open and professional manner without favoritism.

The Board sets direction and formulates policies for the county government, adopts the budget, authorizes expenditures, and approves or disapproves specific actions; such as rezoning of private property.

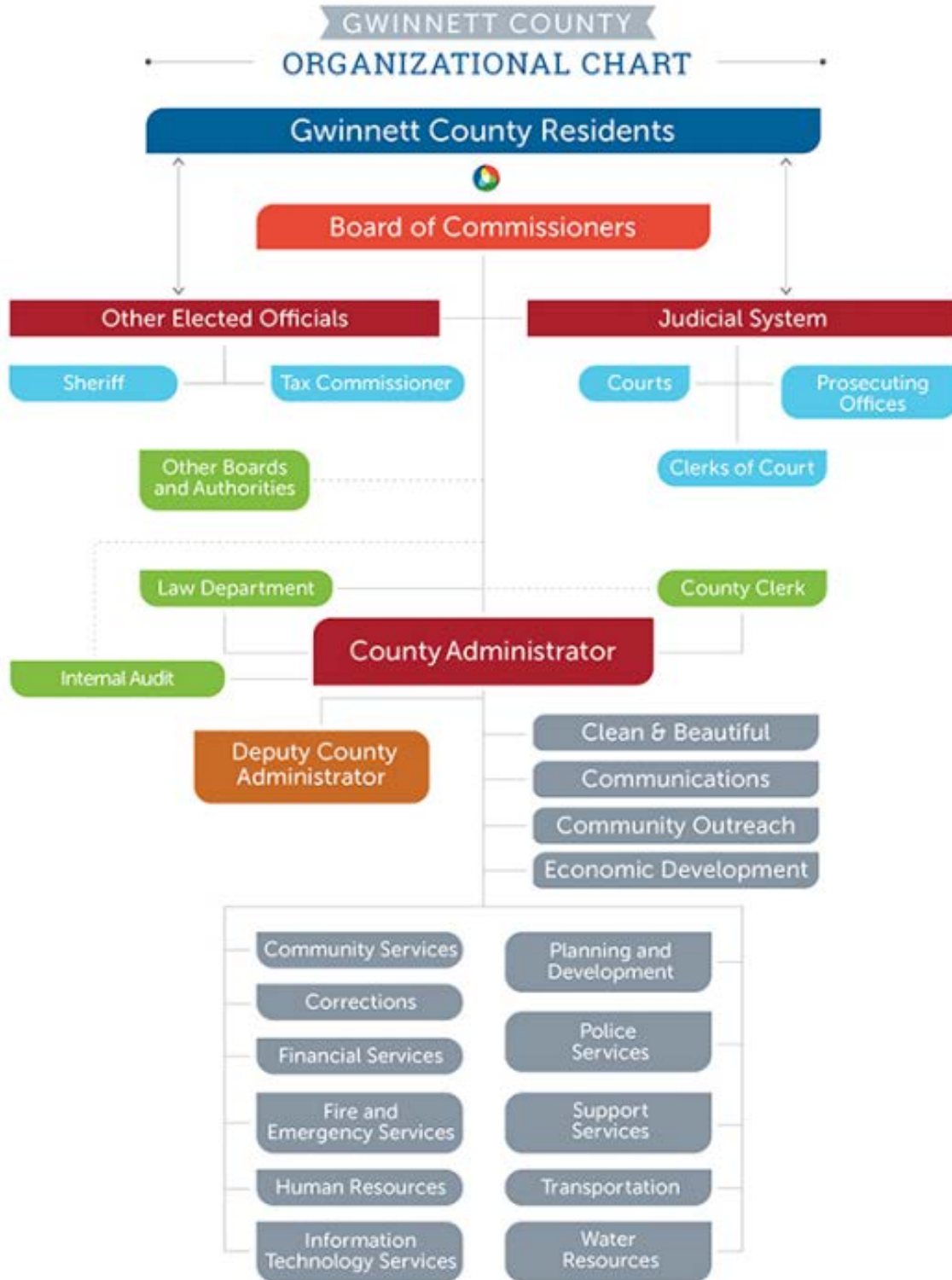
Voters in each of four districts elect a part-time District Commissioner. The full-time Commission Chairman is elected countywide. Terms are for four years, but are staggered so the chairman and two commissioners are elected during one election cycle, and the other two commissioners are elected two years later.

The Board holds official business meetings the first and third Tuesdays of each month at 2:00 p.m. On those days, the Board conducts work sessions at 10:00 a.m. The Board also holds a public hearing to

consider zoning requests on the fourth Tuesday of each month at 7:00 p.m. These meetings are held in the auditorium of the Gwinnett Justice and Administration Center. On many Tuesdays, the Board conducts informal discussions with county departments and community groups. These meetings are held in the conference room of the Board of Commissioners suite. Informal discussions as well as official meetings are always open to the public.

The Gwinnett County Board of Commissioners sets the standard as a dynamic, vibrant community where all people can enjoy essential economic opportunities, safe neighborhoods, plentiful green space and recreational facilities. They are committed to partnering with others in the community who share a dedication to making life better for Gwinnett County citizens.

Figure 57
Gwinnett County Organizational Chart



4.4 Technical Capability

**Table 4-6
Technical Capability**

Technical Capability	Yes or No
CRS Coordinator’s Manual	Yes
Georgia State HMP	Yes
Georgia State Emergency Management Plan	Yes
FEMA 386 Series “How to Manuals”	Yes
GIS Data Base and Technical Layers	Yes
FEMA Floodplain Maps	Yes
FEMA-154 Rapid Visual Screening of Buildings for Potential Seismic Hazards – Book	Yes
FEMA-310 NEHRP Handbook for Seismic Evaluation of Existing Buildings	Yes

4.5 Fiscal Capability

The evaluation of funds and ordinances for the Community Capability section of this document provided valuable information on Gwinnett County’s position in terms of existing mitigation planning; however, local conditions are constantly changing due to increased development, changes in technology, changes in local mitigation capabilities, or natural disaster events. It is because of these ever changing conditions that evaluation must be an ongoing process; therefore, the initial community capability assessment should be viewed as a starting point rather than an end result. Because these conditions do not change at regular intervals, it is difficult to establish a timeline dictating how often ordinances and policies should be reviewed. The best window of opportunity for policy evaluation may come following a natural disaster event.

Gwinnett County operates annually on approximately \$1.82 billion dollars. Board members hold public hearings to discuss the budget and accepted comments in writing and online from citizens before making their final decision.

The operating budget, excluding transfers between funds, is up about 4.8 percent. Much of the increase in the operating budget is related to increased personnel costs as the County adds necessary personnel and addresses compensation issues. The budget includes a \$1.39 billion operating budget and \$438 million for capital improvements, including Special Purpose Local Option Sales Tax (SPLOST) funded projects.

County and city officials agreed to share SPLOST proceeds, with the County receiving 78.76 percent and cities getting 21.24 percent. The County is dedicating 65 percent of its share of the proposed SPLOST to transportation, including \$30.8 million for joint city/county projects. Parks, public safety, civic center expansion, library relocation/renovation, and senior facilities are also getting funds

A safe and healthy community remains a top priority. The budget adds more police officers in the community and sheriff’s deputies to staff the detention center and additional courtrooms resulting from

the expansion of the Gwinnett Justice and Administration Center where the county courts are located. The budget also includes adding positions for Fire and Emergency Services and funding for construction of the Georgia State Patrol Post 51.

Gwinnett County recently announced it had once again attained a “Triple AAA” bond rating, meaning it earned the top possible grade from all three bond rating agencies (S&P, Moody’s and Fitch). Gwinnett is one of fewer than 50 counties nationwide to earn the distinction.

**Table 4-7
Fiscal Capability**

Fiscal Capability Fiscal Tools (Taxes, Bonds, Funds and Fees)	Yes or No
Crime Victims Assistance Fund	Yes
District Attorney Special Operations Fund	Yes
E-911 Fund	Yes
Police Special Investigation Fund	Yes
Sheriff Inmate Store Fund	Yes
Sheriff Special Operations Fund	Yes
Fiscal Capability Fiscal Tools (Taxes, Bonds, Funds and Fees)	Yes or No
Stadium Operating Fund	Yes
Tree Bank Fund	Yes
Tourism Fund	Yes
Tourism Sustainability Fund	Yes
Airport Operating Fund	Yes
Local Transit Operating Fund	Yes
Solid Waste Operating Fund	Yes
Stormwater Management Operating Fund	Yes
Water and Sewer Operating Fund	Yes

COMMUNITY CAPABILITY ASSESSMENT

Auto Liability Fund	Yes
Fleet Management Fund	Yes
Group Self-Insurance Fund	Yes
Risk Management Fund	Yes
Vehicle Purchasing fund	Yes
Worker's Compensation Fund	Yes
Capital Project Funds	
Capital Project Fund	Yes
Airport Renewal and Extension Fund	Yes
Solid Waste Renewal and Extension Fund	Yes
Stormwater Renewal and Extension Fund	Yes
Transit Renewal and Extension fund	Yes
Water and Sewer Renewal and Extension/Proposed bond Construction Fund	Yes
1997 Special Purpose Local Option Sales Tax Fund	Yes
2001 Special Purpose Local Option Sales Tax Fund	Yes
2005 Special Purpose Local Option Sales Tax Fund	Yes
2009 Special Purpose Local Option Sales Tax Fund	Yes
Grant Funds	
General Grant Fund	Yes
Fiscal Capability Fiscal Tools (Taxes, Bonds, Funds and Fees)	Yes or No
HUD Grant funds	Yes
Local Transit Operating Grants	Yes

COMMUNITY CAPABILITY ASSESSMENT

Jurisdiction Capabilities	
Authority to Levi Taxes	Yes
Taxes and Revenues	
Property Taxes	Yes
Beer and Wine Taxes	Yes
Insurance Premium Tax	Yes
Other Taxes	Yes
Licenses and Permits	Yes
Intergovernmental Revenue	Yes
Judicial Revenue	Yes
Charges for Services	Yes
Sales and Rental	Yes
Interest on Investments	Yes
Bonds	
Authority to Issue Bonds	Yes
Funds	
General Obligation Debt Service Fund (1986 Issue)	Yes
General Obligation debt Service – Detention Center Fund	Yes
Recreation Fund	Yes
Speed Hump Fund	Yes
Street Lighting Fund	Yes
Corrections Inmate Welfare Fund	Yes

Analysis Conclusion

4.5.1 Legal Capability Conclusion

Statutes and ordinances have been adopted to ensure that the HMP will protect the citizens and property of those who live and work in Gwinnett County, and to improve the quality of life for all the citizens of Gwinnett County.

4.5.2 Institutional Capability Conclusion

The Gwinnett County and Buford City Community School program is structured to extend education and recreation to the community. Gwinnett's modern, well-equipped, and well-maintained schools provide an environment where teaching and learning thrive.

4.5.3 Political Capability Conclusion

Gwinnett County government provides high quality essential services for Gwinnett residents and as many other services as tax revenues allow; spends and accounts for tax dollars in a responsible manner; responds to needs and concerns of the citizens; and conducts business in an open and professional manner without favoritism.

4.5.4 Technical Capability Conclusion

Gwinnett County Planning and Development, Fire and Emergency Services and Information Technology Services have in place the necessary plans and tools to support a comprehensive multi-hazard mitigation plan supporting the citizens and property owners of Gwinnett County.

5.1 Natural, Human-Caused, and Technological Hazard Mitigation Goals and Objectives

The purpose of this section is to update strategies from the 2015 version of this plan and identify new strategies for the 2020 update of this plan, through which Gwinnett County can implement natural, human caused and technological hazard mitigation goals, objectives, and actions. As identified in Section 3, the Multi-Jurisdictional Hazard Mitigation Steering Committee (HMSC) has a clear understanding of the community’s hazards and risks and has reviewed and updated this section to reflect those issues. The all-hazard mitigation plan represents an essential goal in the efforts at all levels of government to achieve a more coordinated system that is able to adapt to the changing threats and vulnerabilities of our time, the current priorities have not changed and remain in line with the previous plan.

For each of the hazards identified in Section 3, the Multi-Jurisdictional HMSC updated and outlined hazard mitigation goals, objectives, and actions as part of the updated mitigation strategy. This section captures the goals, objectives, and mitigation actions identified by the HMSC. They are displayed as individual tables for each hazard and listed in order of priority. The method used to determine the priority of actions factored in the frequency of the event, monetary loss, anticipated costs, and the potential for loss of life. Although detailed cost-benefit analyses were beyond the scope of this Plan, HMSC Members utilized economic evaluation as determining factor between mitigation actions when applicable and best guesses when appropriate.

Mitigation actions for all the cities and townships within Gwinnett County have been updated and incorporated in Gwinnett County’s goals, objectives, and actions, and are also identified in Section 6, Individual Jurisdiction Mitigation Action Plans.

All of the actions identified in this updated plan will benefit all citizens, access and functional needs population, business and commercial owners, visitors and the transient populations within Gwinnett County.

Many of the mitigation strategies identified in the 2015 update of this plan are “completed”, some have been “deferred”, while others are still “in progress”. The “completed”, “deferred” and “in progress” strategies are included throughout this section.

5.2 Previous Hazard Mitigation Accomplishments

Gwinnett County has made previous efforts to mitigate hazards in the community and to integrate mitigation accomplishments into the planning process. Goals from the previous mitigation plan have been intergraded into the current goals and strategies. These have been marked as “ongoing” in the following tables. Some of the previous efforts have been significant and beneficial in reducing loss of life and property during disasters. These efforts include the following:

*(actions #'s may change from 2015 to 2020)

Project Accomplishments from previous update 2015										
Previous Action #	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
I.1.2	Partner with National Weather Service (NWS) and the American Red Cross (ARC) to offer additional storm spotter and citizen preparedness training.	County	County EMA, NWS, ARC	\$2,000	\$20,000	County Budget, Federal Emergency Management Agency (FEMA)	2015-2019	Completed and ongoing.	Existing	The NWS hosted a class May 2019 and the ARC April 2019. This office will continue to offer classes when possible
I.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	Home First Gwinnett a collaboration between Gwinnett County and the United Way	\$3,000	\$100,000	City/County Budget, FEMA	2015-2019	Completed and ongoing	Existing	Shelters locations have been established with multiple departments
I.3.2	Acquire additional sheltering supplies (e.g., cots, blankets).	County	County EMA, ARC	\$10,000	\$200,000	County Budget, FEMA	2015-2019	Completed and ongoing	Existing	Over \$50k worth of supplies purchased so far

MITIGATION STRATEGIES

2.2.1	Establish school shelter-in-place programs.	County	School Officials, County EMA	\$2,000	\$100,000	Gwinnett School Budget	2015-2019	Completed / Remove	Existing	As per Brian Hudson of GCS all schools have completed this
7.2.1	Relocate/acquire structures that could be affected by flooding, as appropriate.	County	County Planning Department, EMA, IT	\$15,000	\$250,000	County Budget, Grants	Ongoing	Completed and ongoing	Existing	11 properties acquired, will continue to identify additional properties
8.1.2	Continue to identify and implement water conservations efforts before, during, and after times of drought.	All	County EMA and Individual Jurisdictions	Staff Time	\$250,000	County and Individual Jurisdiction Budgets	2015-2019	Completed and ongoing	New and Existing	DWR has identified response and monitoring plans for drought situation
13.3.1	Assist all critical departments in developing continuity of operations (COOP) plans.	County	County EMA, East Metro District Health, City and County Officials	\$5,000	\$100,000	State Budget, County Budget, FEMA	2010-2013	Completed and ongoing	Existing	All county departments have COOP plans this will continue to be monitored and updated as needed

MITIGATION STRATEGIES

14.2.1	Train all first responders on terrorism response.	All	County Sheriff, County EMA, County Police Departments, School Officials	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	Completed and ongoing	Existing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement, and emergency medical services personnel.
15.1.5	Establish hoarding task force to address the impact to community safety and possible solutions.	County	County EMA, First Responder Agencies, County Departments	Staff Time		County Budget	2014	Completed, and ongoing	N/A	Utilizing multiple departments in Code enforcement, Police and Animal control this has been completed and is being maintained by Community Services

15.1.7	Implement an all-hazards notification system for the City of Suwanee.	City of Suwanee	City Officials	\$20,000	\$100,000	City Budget, FEMA, Grants	2010-2015	Completed, Remove	Existing	The City of Suwanee contracted with Code RED to provide service
15.3.10	Coordinate with the City of Snellville to execute a mutual aid agreement for the relocation space for the Lilburn Communication Center	City of Lilburn, City of Snellville	City Officials			City Budget	2015-2019	City of Lilburn City of Snellville	Existing	Complete contracted with E911
15.3.11	Procure and install an emergency generator at the GGC Police Department to enable responders to continue operations during power outages.	GGC	GGC	\$120,000	\$300,000	Federal Emergency Management Agency, Grants	2013-2015	Completed, Remove	Existing	Generator was purchased with state funds

Previous Hazard Mitigation Actions that were removed.

The deleted strategies from the 2015 plan are listed below and have been removed from all other portions of the plan.

* (actions #'s may change from 2015 to 2020)

Removed projects from 2015 Plan

Previous Action #	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
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MITIGATION STRATEGIES

1.3.8	Identify and bury utility lines in densely populated and commercial areas, including Main Street, Martin Farm Road, and Buford Highway in the City of Suwanee.	City of Suwanee	City Officials, Public Works	1 Million	1 Million	City Budget, Grants	2015-2019	Ongoing from 2010	Existing	REMOVED City is no longer pursuing this
3.1.1	Acquire a standalone computer system that can be solely dedicated to running HAZUS –MH	County	County EMA			County Budget, EMA	2015-2019	Deferred from 2010	New	REMOVED. Standalone computer isn't required
4.1.1	Adopt a mobile home tie-down and skirt ordinance.	All	County EMA, City and County Officials	\$3,000	\$100,000	City/County Budget	2015-2019	Deferred from 2010 for Gwinnett County. Complete in City of Auburn, also requiring hurricane clips for new construction	Existing	REMOVED, County code regulates new mobile homes completed by alternate means

MITIGATION STRATEGIES

6.1.1	Identify critical facilities in wildfire hazard areas and develop protective action plans.	All	County EMA, County Fire/Rescue, City and County Officials	\$250,000		City/County Budget	2014-2016	In progress; working with Department of Forestry to develop Wildland Urban Interface plans	Existing	REMOVED, F.D. no longer interested in pursuing funding for these plans. State Forestry maintains plans
6.1.2	Initiate wildfire mapping and hazard vulnerability assessments for local businesses.	All	County EMA, First Responder Agencies, County Departments	\$250,000		City/County Budget	2014-2016	New; in progress	Existing	REMOVED Due to development of the county and State Forestry maintain these maps
6.2.3	Implement minimum width private road and driveway standards to allow emergency vehicle access as well as to decrease grades at stream crossings.	County	County EMA, County Planning and Development Department, County Fire/Rescue Department	Staff Time		County Budget, FEMA	2015-2019	Deferred from 2010	New	REMOVED County regulates planning and permits of new and existing access points for emergency vehicles

7.1.1	Ensure that flood maps are updated / aligned with tax roles for detailed flood information.	County	EMA, Tax Assessor, Storm Water	\$15,000	\$1,500,000	County Budget	Ongoing	Ongoing;	Existing	REMOVED flood Insurance Rate Map panels currently up to date and will be maintained by Planning and Development
7.2.2	Continue efforts to lower the county's Community Rating System (CRS) rating.	County	County EMA	Staff Time			2015-2019	CRS audit in 2013 resulted in a 7 rating, an improvement of one position	Existing	REMOVED Per Planning and Development at this time maintaining the current CRS rating
7.2.4	Install water level monitoring devices on 15 Category I dams to remotely monitor water surface elevations during flood events.	County	County	\$250,000	\$2,000,000	County/Grants	2019-2024	Deferred from 2015	Existing	REMOVED Per DWR Pursuing this with other monitoring systems

MITIGATION STRATEGIES

8.1.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	County EMA, City and County Officials	\$1,500	\$100,000	County/City Staff Time	2019-2024	New	Existing	REMOVED Per DWR Pursuing this with other outreach methods
9.2.1	Train all first responders on Urban Search and rescue techniques	County	County EMA County Fire Department	Staff Time	\$50,000	County Budget	2015-2019	Ongoing part of annual training	Existing	REMOVED Specialized teams are available and train year round to respond to these types of incidents
10.1.1	Implement zoning ordinances and/or development regulations for areas downstream of high hazard dams.	County	Water Resources, Planning & Development	Staff Time	\$900,000	County Budget	2015-2018	Not started	Existing	REMOVED Peer Planning and development t this project is actively underway in different form

MITIGATION STRATEGIES

11.1.2	Maintain sufficient antivirus software for County systems.	County	County ITS, GCSIRT	\$50,000	\$200,000	County Budget	Completed	The management team is reviewing and working with budget to bring in additional resources to assist with security needs. Once the security division is in place, the initiative of the tabletop exercise will be discussed and potential future initiatives.	Existing	REMOVED Per ITS this project is being completed and updated at multiple levels
14.1.1	Increase public terrorism awareness through public speaking engagements.	County	County Sheriff, County EMA, County Police Departments	\$1,000	\$5,000	County Budget	Ongoing	Ongoing	N/A	REMOVED Per P.D. this is incorporate into community outreach in a different form

MITIGATION STRATEGIES

15.1.1	Conduct a countywide communications study to assess the capabilities and effectiveness of all-hazards alert and notification system—including sirens and audible devices—currently in place; determine the need for additional sirens and other audible devices; and build in redundancy (e.g., reverse 911, text message alerts).	All	County EMA, City and County Officials	Staff Time		County Budget, Grants, FEMA	2010-2011	Deferred from 2010	Existing	REMOVED Per county communications director the study was not implemented and redundant systems were already in place
15.1.2	Implement actions recommended by the countywide communications study assessing the capabilities and effectiveness of all-hazards alert and notification system.	County	County EMA, City and County Officials	Staff Time		County Budget, Grants, FEMA	2015-2019	Deferred from 2010	Existing	REMOVED Per county communications director the study was not implemented and redundant systems were already in place

MITIGATION STRATEGIES

15.1.3	Educate residents on what actions to take in response to audible alerts and sirens sounding. Schedule and complete regular testing of current and future sirens	County	City and County Officials	\$5,000	\$100,000	County Budget, Grants, FEMA	2019-2024	Ongoing from 2015	N/A	REMOVED County doesn't maintain sirens, local municipalities conduct this on an individual level
15.1.5	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	City and County Officials	\$2,000	\$20,000	County/City Budgets	2015-2019	Ongoing from 2010	N/A	REMOVED This has been incorporate in to al hazard public outreach in a different form
15.1.6	Upgrade all-hazards alert and notification sirens in the City of Berkeley Lake.	City of Berkeley Lake	City Officials	\$20,000		City Budget, Grants	2015-2019	Not started	Existing	REMOVED Per Berkeley lake they are no longer interested in funding this and are acquiring a different method of alerting the public

MITIGATION STRATEGIES

15.1.10	Develop and distribute multi-lingual all hazards preparedness materials	City of Buford, Grayson, Norcross, Duluth, Sugar Hill and Town of Braselton	City Officials			City Budget, FEMA, Grants	Ongoing	Ongoing	Existing	REMOVED. Gwinnett County completes this action for the municipalities
15.3.1	Train County GIS personnel to ensure proper incorporation of HAZUS-MS in GIS database	County	County EMA, County GIS	\$1,000	\$30,000	County Budget	2015-2016	Not started	Existing	REMOVED. HAZUS reports are generated outside of county GIS Dept.
15.3.7	Replace the aged section of water line along Parks Mills Road and Harmony Grove Church Road in city of Auburn	City of Auburn	City Officials, Public Works			City Budget, FEMA, Grants	2015-2019	Not Started	Existing	REMOVE. Project was funded with other resources
15.3.8	Acquire a generator large enough to provide backup power for all of the Lawrenceville Police Dept	City of Lawrenceville	City Officials, Police Department			City Budget, FEMA Grants	2015-2019	Not Started	New	REMOVED. Project was completed and generator acquired using alternate funds

MITIGATION STRATEGIES

15.3.12	Provide emergency shelter for 25-50 individuals in the Wellness and Recreation Center.	GGC	GGC	\$50,000		Federal Emergency Management Agency, Grants		New	Existing	REMOVED GGC is pursuing a wind retrofit of student center for sheltering
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PROJECT RANKING

Gwinnett County's incorporated jurisdictions participating in this Hazard Mitigation Plan were asked to prioritize their mitigation projects. Each steering committee member considers the potential impact based upon the greatest opportunity for loss reduction as well as considerations based on ease of implementation associated with each project to assist with prioritization. Projects in unincorporated areas of the county were listed in the same manor under hazard types in section 5 below. This ensures that projects provide the greatest opportunity for loss reduction and also reduce vulnerability to hazards throughout Gwinnett County. The projects are based upon continuous community needs, the identification of new hazards, and current needs based upon the community risk assessment. Projects are also selected to be feasibly accomplished within the next five years to mirror the HMP update. Project ranking will only be used as a generic guide when determining implementation as project funding allocated from HMGP, FMA and PDM may have priorities that often do not line up with local plans. In this case the funding may dictate the order in which projects are implemented but the initial ranking will be upon greatest opportunity for loss reduction.

**Table 5-1
Winter Storms**

Goal 1: Reduce Gwinnett County’s risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
I.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	Emergency Public Information and education materials are distributed at County Public Safety Festivals and other events including the Multicultural festival and any Citizen Corp events

MITIGATION STRATEGIES

Goal 1: Reduce Gwinnett County's risk and vulnerability to severe winter storms.

1.1.2	Partner with National Weather Service (NWS) and the American Red Cross (ARC) to offer additional storm spotter and citizen preparedness training.	County	County EMA, NWS, ARC	\$2,000	\$20,000	County Budget, Federal Emergency Management Agency (FEMA)	In Progress	Ongoing	Existing	NWS storm spotter with over 100 in attendance May 2019 future offerings will be offered with required update in spring/fall 2022
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Objective 1.2: Improve first responder capability to prepare for, respond to, and recover from severe winter storms.

1.2.1	Identify/acquire/equip all emergency response vehicles with tire chains.	County, City of Lilburn	County EMA, City maintenance and road staff, and County Officials	\$2,000	\$20,000	City/County Budget, FEMA, National Fire Grant	2019-2024	Deferred from 2015 Ongoing	Existing	Equipment has been acquired but not all Municipal and County Depts. have been outfitted will continue to seek funding
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MITIGATION STRATEGIES

Objective 1.3: Improve Gwinnett County's capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	Home First Gwinnett a collaboration between Gwinnett County and the United Way	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	Working with County and NGO Partners, Shelters have been identified programs are being established
1.3.2	Acquire additional sheltering supplies (e.g., cots, blankets).	County	County EMA, ARC	\$10,000	\$200,000	County Budget, FEMA	2019-2024	Ongoing	Existing	Over \$50k of supplies purchased with future plans in place to expand

**Table 5-2
Severe Thunderstorms/Windstorms**

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-2024	Ongoing	N/A	Emergency Public Information and education materials are distributed at County Public Safety Festivals and other events including the Multicultural festival and any Citizen Corp events
2.1.2	Provide NOAA weather radios to identified functional needs citizens (e.g., elderly, rural, low-income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	\$2k purchased and distributed since last update
2.1.3	Implement alert, warning, and notification systems for visually-impaired and hearing-impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	Purchased and distributed A/V alerting notification devices.

MITIGATION STRATEGIES

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.2: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events, including thunderstorms and windstorms.

2.2.1	Purchase and install generators or transfer switches at all Gwinnett County critical facilities	County	County EMA, County Officials	\$200,000	\$2 Million	City and County Budget, State and Federal Grants	2019-2024	New / Ongoing	New / Existing	Application Submitted for Generator at County Parks Operations Center, Future sites being identified
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**3Table 5-3
Tropical Storms/Hurricanes**

Goal 3: Minimize the impacts of tropical storms and hurricanes in Gwinnett County, including all municipalities.

Objective 3.1: Enhance advance warning and preparedness capabilities.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
3.1.1	Establish, develop and maintain weather reporting station at Gwinnett County Airport to increase weather awareness	County	County EMA, County Officials	\$500,000	\$1 Million	County Budget, FEMA	2019-2024	New	New	New, Working with NWS to identify needs

Goal 3: Minimize the impacts of tropical storms and hurricanes in Gwinnett County, including all municipalities.

3.1.2	Identify existing facilities suitable for structural and non-structural wind retrofitting to decrease wind damage and increase occupant safety during tropical storm wind events	County	County EMA, County Officials	Staff Time		County Budget, FEMA	2019-2024	New	New	New
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**Table 5-4
Tornadoes**

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County’s capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.1	Procure and install shatter- resistant coating on windows and glass doors at administrative and educational buildings on campus of GGC	GGC	Georgia Gwinnett College	\$495,530		FEMA, State, GGC Operational Funds	2018-2024	New	Existing	Application submitted and denied in 2018, will re-apply
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000	\$500,000	City/ County Budget	2019-2024	New	Existing	New

**Table 5-5
Lightning**

Goal 5: Reduce Gwinnett County’s risk and vulnerability to lightning.										
Objective 5.1: Increase citizen lightning awareness.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget	Ongoing	Ongoing	N/A	Emergency Public Information and education materials are distributed at County Public Safety Festivals and other events including the Multicultural festival and any Citizen Corp events
Objective 5.2: Improve Gwinnett County’s capability to prepare for, respond to, and recover from severe weather events involving lightning and its effects.										
5.2.1	Outfit the County Parks Department with equipment to mitigate fires caused by weather	County	County Parks Department	\$200,000	\$900,000	County Budget, FEMA, National Fire Grant	2019-2024	New	Existing	HMGP Application for funding submitted

**Table 5-6
Wildfires**

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.										
Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.1	Gwinnett County parks wildland fire buffer protection zones management plan	County	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	HMGP Application for funding submitted
Objective 6.2: Encourage the protection of residential and commercial structures.										
6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program. This includes "Prevention Month" (October) and distribution of pamphlets to promote clearing of underbrush and fire hazards from around businesses and homes.	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time	\$500,000	City/County Budget	Continuous	Ongoing	NA	Emergency Public Information and education materials are distributed at County Public Safety Festivals and other events including the Multicultural festival and any Citizen Corp events

**Table 5-7
Flooding**

Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.										
Objective 7.1: Improve Gwinnett County's flooding information distribution and warning to citizens.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
7.1.1	Use HAZUS-MH to map 500/100-year flood plains in house.	County	EMA, Storm Water	\$5,000	\$100,000	County Budget	2019-2024	New	New and Existing	New
7.1.2	Identify repetitive loss areas and structures.	County	EMA, Storm Water	\$5,000	\$500,000	County Budget	Ongoing	Ongoing	Existing	Report is requested from FEMA yearly to stay current on property list and identify needs
Objective 7.2: Improve Gwinnett County's capability to prepare for, respond to, and recover from flood events.										
7.2.1	Relocate/acquire structures that could be affected by flooding, as appropriate.	County	County Planning Department, EMA, IT	\$15,000	\$250,000	County Budget, Grants	Ongoing	Completed and ongoing;	Existing	11 properties acquired, will continue to identify additional properties

Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

7.2.2	Install electronic monitoring stations on high hazard dams to remotely observe/control water surface elevations, flow rates, and hazard indicators surrounding flood events	County	Water Resource	\$200,000	\$500,000	DWR / Federal Grants	2019-2024	New	Existing	New
7.2.3	Replace damaged, aged or inappropriately sized culverts throughout the county using hydraulic/hydrologic models along with established database management system. Refer to Table A-7	County	Water Resources	On Average \$350,000		County/G grants	2019-2024	Ongoing	New and Existing	Dept. of Water Resources continues to complete these with multiple funding sources

**Table 5-8
Drought**

Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.										
Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
8.1.1	Educate citizens and farmers in the County about the potential negative effects that arise from extended drought conditions.	County	County EMA	\$1,000	\$50,000	County Budget	2019-2024	Ongoing		Emergency Public Information and education materials are distributed at County Public Safety Festivals and other events including the Multicultural festival and any Citizen Corp events
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plan.	All	County EMA, City and County Officials	\$1,500	\$100,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	Existing	Continue to monitor for funding

MITIGATION STRATEGIES

8.1.3	Continue to identify and implement water conservations efforts before, during, and after times of extreme drought.	All	County EMA and Individual Jurisdictions	Staff Time		County and Individual Jurisdiction Budgets	2015-2019	Deferred from 2015	New and Existing	Addressed as needed
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**Table 5-9
Earthquakes**

Goal 9: Reduce Gwinnett County’s risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County’s earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events.	All	County EMA, City and County Officials	\$2,500	\$100,000	County/City Budget	Ongoing	In progress from 2015	N/A	Emergency Public Information and education materials are distributed at County Public Safety Festivals and other events including the Multicultural festival and any Citizen Corp events

**Table 5-10
Dam Failure**

Goal 10: Reduce Gwinnett County’s risk and vulnerability to dam failure events.										
Objective 10.1: Improve Gwinnett County’s capabilities to prepare for and respond to a dam failure.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action informatio n
10.1.1	Purchase signage and barriers to indicate critical/ dangerous areas around dams to inform the public of dam safety	County	Water Resources, Planning and Development, Emergency Management	\$1,000		County Budget	2019-2024	New	Existing	New
10.2.1	Initiate public education workshops for citizen dam-owners about safety measures, preparedness and mitigation of dam hazards	County	Water Resources, Emergency Management	\$1,000		County Budget	2019-2024	New	Existing	New
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	New

MITIGATION STRATEGIES

10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget, Grants	2019-2024	New	Existing	New
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**Table 5-11
Cyber Security**

Goal 11: Reduce Gwinnett County's risk and vulnerability to cyber security attacks.										
Goal 11.1: Reduce Gwinnett County's risk and vulnerability to cyber security attacks.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
11.1.1	Purchase and maintain offsite and offline data backups for county information	County	County ITS	\$800,000		County ITS	2019-2024	New	New	New

**Table 5-12
Hazardous Material Spills**

Goal 12: Reduce Gwinnett County’s risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents.	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	NA	Emergency Public Information and education materials are distributed at County Public Safety Festivals and other events including the Multicultural festival and any Citizen Corp events

MITIGATION STRATEGIES

Goal 12: Reduce Gwinnett County’s risk and vulnerability to hazardous materials events.

12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents.	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	Existing	Emergency Public Information and education materials are distributed at County Public Safety Festivals and other events including the Multicultural festival and any Citizen Corp events
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Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear, and high-yield explosives exercises with all first responder agencies.	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City/ County Budget, School Budget	Ongoing	Ongoing	Existing	Ongoing, Training continues
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Objective 12.3: Improve Gwinnett County’s capability to prepare for, respond to and recover from hazardous materials events.

12.3.1	Continue to enforce requirements for each site to submit Tier II reports to the Fire Rescue Department.	County	County Fire/Rescue Department	\$3,000	\$100,000	County Budget	Ongoing	Ongoing	Existing	Sites are being maintained and monitored by multiple levels (FD/EMA)
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**Table 5-13
Pandemics/Epidemic Incidents**

Goal 13: Reduce Gwinnett County’s risk and vulnerability to pandemic/epidemic events.										
Objective 13.1: Improve Gwinnett County’s pandemic/epidemic information distribution and warning to citizens.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
13.1.1	Educate the public on pandemics, including isolation, quarantine, triage, and medical care.	County	County EMA, Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$20,000	County Budget, Public Health Grants	Ongoing	Ongoing	NA	Emergency Public Information and education materials are distributed at County Public Safety Festivals and other events including the Multicultural festival and any Citizen Corp events

MITIGATION STRATEGIES

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.

Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.

13.2.1	Train county staff and first responders on pandemic flu response.	All	County EMA, Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not started Deferred from 2015	NA	Project has been deferred due to manpower and budget constraints
13.2.2	Participate in Strategic National Stockpile drills and exercises.	All	County EMA, Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	GNR Health continues to participate with County (TTX 3/19)

Objective 13.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from pandemic/epidemic events.

13.3.1	Assist all critical County Departments in developing and maintaining continuity of operations (COOP) plans.	County	County EMA, Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$100,000	State Budget, County Budget, FEMA	Ongoing	Complete and ongoing	Existing	Annual meetings to fulfill training and updates
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**Table 5-14
Terrorism**

Goal 14: Reduce Gwinnett County’s risk and vulnerability from domestic and international terrorism incidents.										
Objective 14.1: Increase citizen domestic and international terrorism awareness, preparedness and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
14.1.1	Purchase radio antennas to ensure the continued radio communication capabilities between responders and school staff	County	School Officials	\$250,000		School Budget	Ongoing	Not Started	New	Awaiting funding opportunities and budget requirements
Objective 14.2. Improve first responder’s capability to prepare for and respond to terrorism incidents.										

MITIGATION STRATEGIES

14.2.1	Train all first responders on terrorism response.	All	County Sheriff, County EMA, County Police Departments, School Officials	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	<p>Completed</p> <p>All School Resource Officers have received active shooter training.</p> <p>Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement, and emergency medical services personnel.</p>	Existing	Opportunities for future training will be identified and implemented as allowed
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MITIGATION STRATEGIES

14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024 Ongoing	Physical security measures have been completed from 2015 plan	New and Existing	Attempting to identify funding for software and computer upgrades
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**Table 5-15
All-Hazards**

Goal 15: Improve Gwinnett County’s capability to reduce risk and vulnerability to all-hazards events.

Objective 15.1: Improve Gwinnett County’s information distribution and warning capabilities to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County/ City Budgets	2019-2024	Ongoing from 2015	NA	Emergency Public Information and education materials are distributed at County Public Safety Festivals and other events including the Multicultural festival and any Citizen Corp events

MITIGATION STRATEGIES

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

15.1.2	Establish hoarding task force to address the impact to community safety and possible solutions.	County	County EMA, First Responder Agencies, County Departments	Staff Time		County Budget	2019-2024	Ongoing	N/A	Multiple departments maintain this to identify and assist vulnerable populations in the cities and county
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Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.

15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments.	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	Full scale exercises completed in 2019 with multijurisdictional and department training. Will continue to identify future opportunities for exercises and training
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MITIGATION STRATEGIES

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

15.2.2	Train first responders and County department representatives annually on EOC procedures.	County	County EMA, First Responder Agencies, County Departments	\$10,000	\$100,000	County Budget, Grants, FEMA	2019-2024	Ongoing from 2015	Existing	EOC operations 101 class is offered annually and as requested and will continue. Eoc Management team training will be offered to higher ranks
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Objective 15.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from all-hazards events.

15.3.1	Maintain the Hazard Mitigation Steering Committee for plan maintenance.	County	County EMA	\$5,000	\$250,000	County/City Budgets	Ongoing	Ongoing	Existing	HMSC meet yearly and as needed to maintain the plan
15.3.2	Develop/maintain/revis a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City/County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2015-2019	Ongoing	Existing	Information is actively maintained in WebEOC by EMA staff

MITIGATION STRATEGIES

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.										
15.3.3	Work with Gwinnett County EMA to establish Campus CERT	GGC	GGC	Staff Time		Federal Emergency Management Agency, Grants		New	Existing	GGC evaluating implementation and management of this program
15.3.4	Provide smoke alarms and conduct home safety surveys in key areas identified through demographic and housing data.	County	County Fire/Rescue	\$10,000	\$100,000	County Budget	2019-2024	In progress	Existing	GCFES manages this program
15.3.5	Implement a battalion-based education model to support community risk reduction efforts at the fire station level throughout Gwinnett County's five battalions.	County	County Fire/Rescue	Staff Time		County Budget	2019-2024	In progress	Existing	GCFES manages this program
15.3.6	Procure Emergency Portable Signage for public warning and campus security.	GGC	GGC	17,000	25,000	GGC Budget / Federal Grants	2019-2024	New	New	Application in progress
15.3.7	Promote College Participation in the National PrepareAthon to promote Preparedness and Safety	GGC	GGC	5,000	10,000	GGC Budget / Federal Grants	2019- 2024	New Yearly Ongoing	Existing	GGC manages this outreach yearly
15.3.8	Procure and install an upgrade to current emergency communication/radio systems on campus to ensure reliable communications during an incident	GGC	GGC	181,000	250,000	GGC Budget / Federal Grants	2019 -2024	New	Existing	New

Section 6
INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

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**CITY OF AUBURN, GEORGIA
MITIGATION ACTION PLAN**

Geography/History

The City of Auburn (City) is located at 34°1'0"N, 83°49'55"W (34.016692, -83.831869). According to the U.S. Census Bureau, the City has a total area of 6.52 square miles (16.9 km²), all of which is land. The City has a total area of 0.14 square miles (0.36 square kilometers, 95.2 acres in Gwinnett County and it remains entirely single family residential).

The City of Auburn is in Gwinnett County as well as Barrow County, within the Atlanta metro area. The Barrow County seat is Winder. The community of Auburn, which straddles Barrow and Gwinnett counties, was established in 1892. Its name is derived from the red clay that was found in nearby land that was used to dye clothes to a rich auburn color. Auburn is a community that has a mix of residential and commercial areas, planned houses, apartments and green areas.

Significant Characteristics

Roy E. Parks Children's Playground is the newest addition to the City. A safe and clean place for children to play, the park is surrounded by a six foot wrought iron fence. This park displays a whimsical mural on a retaining wall and features plenty of brightly colored play equipment. The park is not in Gwinnett County

The City of Auburn Ballpark is located in Downtown Auburn and hosts the Auburn Dixie Youth Baseball League. The park is not in Gwinnett County

R.H. Burel Park is one of Auburn's most prominent parks. It is best known for a bright red caboose that was donated to the City by CSX Railroad. The park is not in Gwinnett County.

James Shackelford Memorial Park was dedicated for the late Council member James Shackelford. With its shelters and beautiful nature trails, this park is great for camping. The park is not in Gwinnett County.

Named by students at Auburn Elementary, Whistlestop Park is a green space park with picnic tables, shrubbery and pecan trees. The park is not in Gwinnett County.

Population and Demographics

As of the 2017 census, there are 7,375 people, 2,311 households, and 1,856 families residing in the City. The population density is 1,131 people per square mile (407.5/km²). There are 2,562 housing units at an average density of 480 housing units per square mile (150.5/km²). The racial makeup of the City is 71.9 percent White, 8.3 percent African American, 0.2 percent Native American, 3.4 percent Asian, 0 percent Pacific Islander, 13.3 percent Hispanic or Latino (of any race), 0.2 percent other races, and 2.2 percent two or more races.

There are 2,562 households, of which 45.2 percent include children under the age of 18, 56.7 percent are married couples living together, 14.3 percent have a female head of house with no husband present, and 22 percent are non-families. Approximately 16.4 percent of all households are individuals living alone, of which 1.7 percent are 65 years of age or older. The average household size is 3.0, and the average family size is 3.03.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

The median age of an Auburn resident is 35.9 years old; 33.7 percent of the population is under the age of 18, 4.4 percent from 18 to 24, 41.5 percent from 25 to 44, 12.5 percent from 45 to 64, and 3.5 percent of the population are 65 or older.

The city’s population increased 0.2 percent from 2010-2018.

Auburn Comprehensive Plan update 2018 provides the following info:

Variety of data sources collected by the NEGRC for Comp Plan Update: City of Auburn, State of Georgia, the 2012-2016 American Community Survey (ACS), the 2010 U.S. Census, and ESRI Business Analyst.

Demographic Summary	2010 Actual	2017 Estimate	2022 Projected
Population	6,887	7,375	7,871
Households	2,271	2,311	2,434
Families	1,800	1,856	1,963
Average Household Size	3.04	3.03	3.04
Median Age	32.9	35.9	

2017 ACS 5-Year Estimate

Population: 7,316

**Table I
City of Auburn Population Since 1970**

Year	1980	1990	2000	2010	2017
Population	750	3,000	7,000	7,173	7,375

Economy

The median income for a household in the city is \$54,381, while the median income for a family is \$55,486. Males have a median income of \$62,744 versus \$46,261 for females. The per capita income for the city is \$54,300. Percentage of residents living in poverty in 2016: 20.1% (18.9% for White Non-Hispanic residents, 22.6% for Black residents, 26.5% for Hispanic or Latino residents, 100.0% for American Indian residents, 28.0% for other race residents, 51.7% for two or more races residents)

The most common industries for males are administrative and support and waste management services (15 percent); retail trade (13 percent); wholesale trade (13 percent); manufacturing (11 percent);

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

construction (11 percent); other services, except public administration (8 percent); and transportation and warehousing (5 percent);

The most common industries for females are retail trade (21 percent); educational services (20 percent); health care and social assistance (12 percent); other services, except public administration (10 percent); manufacturing (7 percent); professional, scientific, and technical services (6 percent); and transportation and warehousing (4 percent).

Auburn-area historical tornado activity is slightly above the Georgia state average. It is 109 percent greater than the overall U.S. average.

On November 22, 1992, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 35.9 miles away from the City center, injuring 46 people and causing approximately \$5 million in damages.

On May 28, 1973, an F3 tornado with maximum wind speeds of 158-206 mph, struck 15.4 miles away from the City center, killing one person and injuring 65 others. Damages were estimated between \$5 million and \$50 million.

Table 2
Single-Family Home Values (Located In Gwinnett County)

Permits	Number of Units
\$100 - \$125,000	11
\$125 - \$150,000	53
\$150 - \$175,000	29
\$175 - \$200,000	6
\$200,000 +	0

Infrastructure

The Auburn Police Department, consisting of about 20 employees, offers excellent coverage from well-trained and professional officers. The department includes divisions in Code Enforcement, Investigations, Support Services, and Uniform Patrol.

Fire and emergency services for Auburn are provided by the Barrow County Department of Fire and Emergency Services, Station 4 and Gwinnett Fire and Emergency Services covers the portion of Auburn that is in Gwinnett County from Station 18. Station 4 has an advanced life support ambulance and a licensed basic life support engine, and is staffed by four personnel 24 hours a day. Station 4 also houses a reserve engine and a reserve ambulance.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Gwinnett County Public Schools have the following schools in Auburn:

**Table 3
Auburn School Infrastructure**

School	Type	Enrollment
Mulberry	Elementary	587
Dacula MS	Middle School	1,598
Dacula HS	High School	1,938

Land Usage

The City has a total area of 6.5 square miles, all of which is land. The portion of the Auburn municipal boundary within Gwinnett County remains entirely single family residential and is 0.14 square miles.

Legal and Regulatory Capabilities

Auburn was certified in 2013 as a Local Issuing Authority for storm water erosion and sedimentation inspections and enforcement.

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

**Table 4
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
				Y	N	N
Building Codes	Municipal Code	Title 15	2002	Y	N	N
Capital Improvements Plan	Municipal Code	Charter - Article VI	2009	Y	N	N
Comprehensive Plan	2030 Comprehensive Plan and Referenced in the Municipal Code	Title 17	Updated 2018	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan		City plan pending	N	N	Y

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type:		Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
	Ordinance	Resolution Codes Plans, Etc.					
Community Rating System	County Rating				Y	N	Y
Economic Development Plan	Strategic Implementation Plan	n/a	2010		N	N	Y
Emergency Management Accreditation Program Certified					N	N	Y
Emergency Response Plan	Local Emergency Operations Plan (EOP)		2012		N	N	Y
Flood Management Plan	Referenced in the Municipal Code	Title 18	2010		Y	N	N
Growth Control Ordinance	Municipal Code	Title 16	2002		Y	N	N
Hazard Setback Regulations	Building Code	IBC 2012	2002		Y	N	Y
Hillside Ordinance							
Historic Ordinance	Municipal Code	Title 15 / Title 16					
National Flood Insurance Program Participant			Pending		N	N	Y
Post-Disaster Ordinance			Pending		N	N	Y
Post-Disaster Recovery Plan	County EOP				N	N	Y
Real Estate Disclosure	Real Estate Commission				N	N	Y
Site Plan Requirements	Referenced in the Municipal Code	Title 16	2002		Y	N	Y
Subdivision Regulations	Municipal Code	Title 15					
		Title 16			Y	N	Y
		Title 17					
Wildfire Ordinance							
Zoning Ordinances	Municipal Code	Title 17	2002		Y	N	N

Administrative and Technical Capabilities

The City of Auburn has a number of administrative and technical capabilities. City departments include Administrative, Community and Economic Development, Parks and Leisure, Public Works, Police,

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Public Library, Tax, and Utilities. The City government includes a Mayor and four City Council Members.

The City Administrator and City Clerk manage administrative functions including finances, utility billing, and property tax. Community and Economic Development encompass strategic planning, current planning, GIS, occupational tax and permits, Main Street program, and the Downtown Development Authority. Public Works encompasses public water system, buildings and grounds, and storm water. Parks and Leisure includes public parks, leisure activities, and organized athletic activities.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan

Table 5 Mitigation Actions

Goal 1: Reduce Gwinnett County's risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County's capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	Home First Gwinnett a collaboration between Gwinnett County and the United Way	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	
1.3.3	Identify and bury utility lines in densely populated and commercial areas in the City of Auburn.	City of Auburn	City Officials, Public Works	\$500,000		City Budget, Grants	2019-2024	Ongoing from 2015	Existing	Currently a low priority for the City and is dependent on funding and corporation from private utility company.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. * These actions also can apply to Hurricane and Tropical Storms

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-20204	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low-income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert warning and notification systems for visually-impaired and hearing- impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	Existing	

Objective 2.2: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events, including thunderstorms and windstorms.

2.2.1	Purchase and install generators or transfer switches at all critical facilities in Gwinnett County	All	County EMA, County Officials	\$200,000	\$2 Million	County Budget, State and Federal Grants	2019-2024	New / Ongoing	New / Existing	
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

Goal 5: Reduce Gwinnett County's risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/ County Budget	Ongoing	Ongoing	N/A	.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.										
Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	
Objective 6.2: Encourage the protection of residential and commercial structures.										
6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 7.2: Improve Gwinnett County's capability to prepare for, respond to, and recover from flood events.										
7.2.4	Identify and replace damaged and aged culverts in the City of Auburn.	City of Auburn	Public Works, Storm Water Coordinator	\$104,000 Annual Budget		City of Auburn Storm Water Utility Fund	Ongoing from 2015	Ongoing	Existing	In progress, 2 priority sections repaired

Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.										
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plan.	All	County EMA, City and County Officials	\$1,500	\$100,000	County City Staff Time	2019-2024	Deferred from 2010	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

8.1.3	Continue to identify and implement water conservations efforts before/during and after times of extreme drought	All	County EMA, County Departments and Individual Jurisdictions	Staff Time		County and Individual Jurisdictions budgets	2019-2024	Deferred form 2015	New and Existing	
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Goal 9: Reduce Gwinnett County's risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County's earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County/ City Budget	Ongoing	Ongoing	N / A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 10: Reduce Gwinnett County's risk and vulnerability to dam failure events.										
Objective 10.1: Improve Gwinnett County's capabilities to prepare for and respond to a dam failure.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	
10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget, Grants	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County’s risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	N / A	
12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	Existing	

Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City/ County Budget, School Budget	Ongoing	Ongoing	Existing	
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.										
Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.										
Action	Action/Projects Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action Information
13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 14: Reduce Gwinnett County's risk and vulnerability from domestic and international terrorism incidents.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/Existing Infrastructure	Additional action Information
Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.										
14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel.	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	
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Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

Objective 15.1: Improve Gwinnett County's information distribution and warning capabilities to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action Information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	

Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.

15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

15.3.2	Develop/maintain/revise a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing	
15.3.	Provide smoke alarms and conduct home safety surveys in key areas identified through demographic and housing data.	All	County Fire/Rescue	\$5000		County Budget	2019-2024	In progress	Existing	

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**CITY OF BERKELEY LAKE, GEORGIA
MITIGATION ACTION PLAN**

Geography/History

The City of Berkeley Lake (City) is located at 33°59'7"N, 84°11'0"W (33.985333, -84.183382). According to the U.S. Census Bureau, the City has a total area of 1.86 square miles (4.8 km²), of which 1.76 square miles (4.6 km²) is land and 0.1 square miles (0.26 km² or 5.4 percent) is water.

The majority of lands within the limits of the City of Berkeley Lake were developed in the late 1940s by Frank Coggins. It contains a dam that was constructed in 1948, which happens to be one of the largest earthen dams in the state. The 83-acre Lake Berkeley, the City's namesake, was named after Frank Coggins's Berkeley Blue Granite Quarries in Elberton, GA.

In 1952 the Berkeley Realty & Investment Company and its 700-acre property were purchased by Calvin and Kate Parsons along with John and Dorothy Bagwell. In 1953 Lake Berkeley Civic Association was formed by some 25 property owners. This association discussed important needs such as electricity, telephones and accessibility around the lake. The need for benefits that an incorporated City could help secure brought on the creation of the City of Berkeley Lake's charter.

On March 6, 1956, the General Assembly of Georgia approved the municipality as the City of Berkeley Lake in Gwinnett County. Since that time a number of ordinances have been passed to protect the character and tranquility of the community. A master plan for future land use and growth has also been developed and adopted.

Since 1994 five new subdivisions have been added. Two tracts of over 10 acres remained; however, in 1996 a referendum for the issuance of a bond was supported by residents to purchase one of the tracts, which included about 63 acres of undeveloped forest land. An adjoining 9 acres were purchased in 2002.

In 2011 and 2012, the city annexed much of the Peachtree Industrial Boulevard corridor between South Old Peachtree Road and North Berkeley Lake Road, greatly increasing the proportion of non-residential land in the city; as well as 115 homes in two adjacent existing subdivisions. With the creation of the City of Peachtree Corners on July 1, 2012, Berkeley Lake is now surrounded by other municipalities and can expand its boundaries no further.

Significant Characteristics

Children's Park is a popular park located near City Hall for the enjoyment of area children.

Lake Berkeley is an 83-acre privately owned area where residents can enjoy fishing, boating and various outdoor activities.

Population and Demographics

Berkeley Lake has grown into a thriving community centered on its 83-acre lake. According to the 2000 census, Berkeley Lake is the most affluent community in metro Atlanta and all of Georgia.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

As of the Census Bureau's 2017 American Community Survey, there were 2,005 people and 766 homes in the City. The racial makeup of the population of the City was 83.1 percent White, 7.9 percent African American, 1.5 percent Native American, 9.3 percent Asian, 6.7 percent Hispanic or Latino (of any race), 1.9 percent from other races, and 3.7 percent from two or more races.

There were 731 households, of which 32.7 percent included children under the age of 18, 76.6 percent were married couples living together, 5.5 percent had a female head of house with no husband present, and 17.1 percent were non-families. Approximately 15.9 percent of all households were made up of individuals, while 4.9 percent had someone living alone who was 65 or older. The average household size was 2.61.

The median age of a Berkeley Lake resident is 48.7 years old, a significant increase from the 2010 Census. In the City the population was spread out, with 22.4 percent under the age of 18, 6.1 percent from 18 to 24, 8.8 percent from 25 to 44, 39.5 percent from 45 to 64, and 16.4 percent who were 65 or older. For every 100 females, there were 103.1 males. For every 100

The population since 2010 has increased by 27.4 percent, primarily due to annexation.

Economy

The median income for a household in the City in 2017 was \$125,592. Males had a median income of \$105,469 versus \$72,083 for females. The per capita income for the City was \$58,710. About 2.6 percent of families and 2.9 percent of the population were below the poverty line, including 2.1 percent of individuals under 18 and 7.6 percent age 65 or over.

The most common industries for males are management, business, science arts and education (65.4 percent); sales and office (19.4 percent);

The most common industries for females are management, business, science arts and education (69.3 percent); sales and office (18.7 percent).

Berkeley Lake-area historical tornado activity is above the Georgia state average. It is 107 percent greater than the overall U.S. average.

On April 3, 1974, an F4 tornado struck 27.9 miles away from the City center, killing six people and injuring 30 people. Damages were estimated between \$500,000 and \$5 million.

On November 22, 1992, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 19.0 miles away from the City center, injuring 46 people and causing between \$5 million to \$50 million in damages.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

The 2007 estimated range of home values of owner-occupied houses in Berkeley Lake is:

Table 1
Estimated Range of Home Values

Amount	# of Homes
\$175,000 to \$199,999	9
\$200,000 to \$249,999	47
\$250,000 to \$299,999	58
\$300,000 to \$399,999	141
\$400,000 to \$499,999	193
\$500,000 to \$749,999	221
\$750,000 to \$999,999	24
\$1,000,000 or more	7

Infrastructure

Police services are provided by Gwinnett County. The City of Berkeley Lake supplements these services with two City Marshals who are on duty a total of 64 hours per week.

Fire services are provided to Berkeley Lake by the Gwinnett County Department of Fire and Emergency Services.

Gwinnett County Public Schools have the following schools in Berkeley Lake:

Table 2
Berkeley Lake School Infrastructure

School	Type	Enrollment
Berkeley Lake	Elementary	852
Duluth	Middle	1,487
Duluth	High	2,741

Land Usage

The City has a total area of 1.86 square miles (4.8 km²), of which 1.76 square miles (4.6 km²) is land and 0.1 square miles (0.26 km² or 5.4 percent) is water.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities. .

**Table 3
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
				Y	N	N
Building Codes	Code of Ordinances	Chapter 14, Chapter 78		Y	N	N
Capital Improvements Plan	Referenced in the Code of Ordinances	Part I – Article 6 Capter 54 – Article III		Y	N	N
Comprehensive Plan	2040 Comprehensive Plan		Jan / 2019	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan			N	N	Y
Community Rating System	County Rating			N	N	Y
Economic Development Plan	County Plan			N	N	Y
Emergency Management Accreditation Program Certified				N	N	Y
Emergency Response Plan	County Emergency Operations Plan (EOP)			N	N	Y
Flood Management Plan	Referenced in the Code of Ordinances	Chapter 42 - Article IV		Y	N	N
Growth Control Ordinance				Y	N	N
Hazard Setback Regulations						
Hillside Ordinance						
Historic Ordinance	Code of Ordinances	Chapter 32 - Article II Chapter 42 - Article IV		Y	N	N

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
National Flood Insurance Program Participant		CID # 130450		N	N	Y
Post-Disaster Ordinance						
Post-Disaster Recovery Plan	County EOP			N	N	Y
Real Estate Disclosure	Real Estate Commission			N	N	Y
Site Plan Requirements	Code of Ordinances	Chapter 32 - Article II		Y	N	N
Subdivision Regulations	Code of Ordinances	Chapter 26 - Article V				
		Chapter 32 - Article II		Y	N	N
		Chapter 42 - Article IV				
Wildfire Ordinance						
Zoning Ordinances	Code of Ordinances	Chapter 78		Y	N	N

Administrative and Technical Capabilities

The City of Berkeley Lake has a number of administrative and technical capabilities. City departments include Administrative, Courts, Planning and Zoning Commission, as well as Budget and Finance. The City government includes a Mayor and five City Council Members. The City Administrator/City Clerk, Deputy City Administrator, Ordinance Enforcement Officer/City Marshal (2) and Deputy City Clerk manage administrative functions. Other key City personnel include the City Attorney, City Treasurer, Municipal Judge, City Engineer and City Building Inspector.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan.

**Table 4
Mitigation Actions**

Goal 1: Reduce Gwinnett County’s risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County’s capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	Home First Gwinnett a collaboration between Gwinnett County and the United Way	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	
1.3.4	Identify and bury utility lines in the densely populated areas, including	City of Berkeley Lake	City Officials	\$250,000		City Budget	2019-2024	NEW	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-20204	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low-income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert warning and notification systems for visually-impaired and hearing- impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

Goal 5: Reduce Gwinnett County's risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/ County Budget	Ongoing	Ongoing	N/A	

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	

Objective 6.2: Encourage the protection of residential and commercial structures.

6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	
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Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Objective 7.1: Improve Gwinnett County's flooding information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
7.1.3	Maintain NFIP status for Flood Mitigation	City of Berkeley Lake	City Officials	\$5,000	\$100,000	City Budget	2019-2024	Ongoing	N/A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	New and Existing	
8.1.3	Continue to identify and implement water conservations efforts before/during and after times of extreme drought	All	County EMA, County Departments and Individual Jurisdictions	Staff Time		County and Individual Jurisdictions budgets	2019-2024	Deferred form 2015	New and Existing	

Goal 9: Reduce Gwinnett County’s risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County’s earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County City Budget	Ongoing	Ongoing	N / A	.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 10: Reduce Gwinnett County’s risk and vulnerability to dam failure events.										
Objective 10.1: Improve Gwinnett County’s capabilities to prepare for and respond to a dam failure.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	
10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County budget / Grants	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County’s risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	N / A	
12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	Existing	

Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City County Budget, School Budget	Ongoing	Ongoing	Existing	
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.

Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 14: Reduce Gwinnett County’s risk and vulnerability from domestic and international terrorism incidents.

Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Time frame	Status	New/Existing Infrastructure	Additional action information
14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel.	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	
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Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

Objective 13.1: Improve Gwinnett County's information distribution and warning capabilities to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.

15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	
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Objective 15.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from all-hazards events.

15.3.2	Develop/maintain/revise a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing	
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**CITY OF BUFORD, GEORGIA
MITIGATION ACTION PLAN**

Geography/History

The City of Buford (City) is located at 34°7'1"N, 83°59'55"W (34.117080, -83.998535). According to the U.S. Census Bureau, the City has a total area of 15.4 square miles (39.8 km²), of which 15.3 square miles (39.6 km²) is land and 0.1 square miles (0.1 km² or 0.34 percent) is water.

Winning a bid to host the lunch stop on the new Atlanta and Richmond Air Line Railway, the City of Buford was named after the railway's president, Algernon S. Buford. Formerly the Town of Buford," the City was incorporated by Act of legislature on August 24, 1872. The City's name was changed to the City of Buford in 1896.

Buford was blessed in its early years with far-sighted citizens who had an interest in business and education. The City was often called the "city of many factories" and has been referenced as the "New York of Gwinnett."

For over 60 years, Buford was the largest city in Gwinnett County. During most of those 60 years, it had the only significant industrial development in the county and exerted a powerful—and many times dominant—influence upon county politics.

Buford has the first bank within the county and had two running before any other permanent banking facilities were established in the county.

Buford is also associated with the field of education. Many students came from other areas of the county to acquire a diploma from a place that was recognized for quality education.

The City of Buford also made a name for itself with its leather industry, creating nationally known shoes, saddles, harness, horse collars, and other leather products. It also operated the only glue factory in the South, and conducted a large farming operation which produced straw for horse collars and other farm products.

Significant Characteristics

Lake Sidney Lanier has over 692 miles of shoreline and is known for its aqua blue water, amazing scenery and a variety of recreational activities.

Lake Lanier Islands is located past the Holiday Marina on the south side of the lake, and hosts many events ranging from concerts, arts and craft festivals, fireworks shows, holiday light shows and activities for every member of the family.

Population and Demographics

As of the 2018 census, there are 15,189 people and 4,984 households in the City. The population density is 909 people per square mile. The racial makeup of the City is 47.9 percent White, 34.6 percent Hispanic or Latino (of any race), 10.5 percent African American, 0.07 percent Native American, 3 percent Asian, 0 percent Pacific Islander, and 2.3 percent from two or more races.

There are 4,984 households, of which 6.3 percent include children under the age of 5, 26.2 percent include children under the age of 18, and 11.9 percent have someone who is 65 or older. The average household size is 3.08.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

The median age of a Buford resident is 38 years old. In the City the population is spread out, with 26.2 percent under the age of 18, 10.7 percent from 18 to 24, 33.7 percent from 25 to 44, 19.0 percent from 45 to 64, and 11.9 percent who are 65 or older. The City's population has grown more than 5.28 percent since 2016.

Economy

In 2017 the median income for a household in the city is \$48,772. Males have a median income of \$62,744 versus the \$46,261 for females. The per capita income for the city is \$24,769. About 17.1 percent of families are below the poverty line.

Gwinnett County is home to more than 700 manufacturing companies, more than 1,200 high-tech companies, and more than 410 international companies.

The most common jobs held by residents of Buford, GA, by number of employees, are Construction & Extraction Occupations (919 people), Food Preparation & Serving Related Occupations (852 people), and Sales & Related Occupations (847 people). The highest paid jobs held by residents of Buford, GA, by median earnings, are Computer & Mathematical Occupations (\$72,685), Health Diagnosing & Treating Practitioners & Other Technical Occupations (\$68,625), and Fire Fighting & Prevention, & Other Protective Service Workers Including Supervisors (\$63,103)

Buford-area historical tornado activity is slightly above the Georgia state average. It is 101 percent greater than the overall U.S. average.

On November 22, 1992, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 25.0 miles away from the City center, injuring 46 people and causing between \$5 million and \$50 million in damages.

On April 3, 1974, an F4 tornado struck 25.8 miles away from the City center, killing six people and injuring 30 others. Damages were estimated between \$500,000 and \$5 million.

Table I
Single-Family Home Values

Value	# Of Homes
< \$100,000	607
\$100k - \$200K	799
\$200k - \$300K	755
\$300K - \$400K	420
\$400K - \$750K	148

Infrastructure

The North Precinct of the Gwinnett County Police Department, which covers an area of 87 square miles in northern Gwinnett County, serves Buford. Fire services are provided to Buford by the Gwinnett County Department of Fire and Emergency Services.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

The Buford City School System consists of the following Schools, the City Operates its own independent school system:

**Table 2
Buford School Infrastructure**

School	Type	Enrollment
Buford	Elementary	513
Buford Academy	Elementary 3-5	917
Buford Senior Academy	Elementary 4-5	
Buford	Middle	687
Buford	High	816

Land Usage

According to the U.S. Census Bureau, the City has a total area of 15.4 square miles (39.8 km²), of which 15.3 square miles (39.6 km²) is land and 0.1 square miles (0.1 km² or 0.34 percent) is water.

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

**Table 3
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
				Y	N	Y
Building Codes	Ordinance		8-4-2008	Y	N	N
Capital Improvements Plan	Plan			Y	N	N
Comprehensive Plan	2040 Comprehensive Plan		2-4-2019	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan			N	N	Y
Community Rating System	County Rating			N	N	Y
Economic Development Plan	County Plan			N	N	Y

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Emergency Management Accreditation Program Certified				N	N	Y
Emergency Response Plan	County Emergency Operations Plan (EOP)			N	N	Y
Flood Management Plan	Ordinance		9-14-2018	Y	N	N
Growth Control Ordinance				Y	N	N
Hazard Setback Regulations				Y		
Hillside Ordinance				N		
Historic Ordinance				Y	N	N
National Flood Insurance Program Participant	Ordinance		9-14-2018	Y	N	Y
Post-Disaster Ordinance						
Post-Disaster Recovery Plan	County EOP			N	N	Y
Real Estate Disclosure	Real Estate Commission			N	N	Y
Site Plan Requirements	Zoning Ordinance		Amended 1-9-2018	Y	N	N
Subdivision Regulations	Zoning Ordinance		Amended 1-9-2018	Y	N	N
Wildfire Ordinance						
Zoning Ordinances	Ordinance		Amended 1-9-2018	Y	N	N

Administrative and Technical Capabilities

The City of Buford has a number of administrative and technical capabilities. City departments include Electric, Finance, Gas, Inspection, Marshal, Planning and Zoning, Recreation, Sanitation, Sewer, Storm Water Management, Street, Utility Billing and Water. The City government includes a Commission Chairman and three Commissioners. Other key City personnel include the City Manager, City Clerk/Planning Director, Public Utilities Director and Finance Director/Deputy Clerk.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan.

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Mitigation Actions**

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Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County's capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	City and County Officials	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	
1.3.5	Purchase and install generators at critical facilities	City of Buford	City Officials	\$250,000	\$500,000	City Budget, Grants	2019-2024	New	Existing	
1.3.6	Purchase and install transfer switched at identified critical facilities	City of Buford	City Officials,	\$50,000	\$200,000	City Budget, Grants	2019-2024	New	New / Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low-income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert warning and notification systems for visually-impaired and hearing-impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

Goal 5: Reduce Gwinnett County's risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/ County Budget	Ongoing	Ongoing	N/A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	

Objective 6.2: Encourage the protection of residential and commercial structures.

6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	
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Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Objective 7.1: Improve Gwinnett County's flooding information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
7.1.5	Maintain NFIP status for Flood Mitigation	City of Buford	City Officials	\$5,000	\$100,000	City Budget	2019-2024	Ongoing	N/A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	Existing	
8.1.3	Continue to identify and implement water conservations efforts before, during, and after times of drought.	All	County EMA and Individual Jurisdictions	Staff Tlme		County and Individual Jurisdiction Budgets	2015-2019	Deferred from 2015	New and Existing	

Goal 9: Reduce Gwinnett County's risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County's earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County/City Budget	Ongoing	Ongoing	N / A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 10: Reduce Gwinnett County's risk and vulnerability to dam failure events.										
Objective 10.1: Improve Gwinnett County's capabilities to prepare for and respond to a dam failure.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget, Grants	2019-2024	New	Existing	
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Goal 12: Reduce Gwinnett County’s risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	N / A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County's risk and vulnerability to hazardous materials events.

12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	Existing	
Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.										
12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City/ County Budget, School Budget	Ongoing	Ongoing	Existing	

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.										

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.

13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

Goal 14: Reduce Gwinnett County's risk and vulnerability from domestic and international terrorism incidents.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.										
14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel.	Existing	
14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	GCPS Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County’s capability to reduce risk and vulnerability to all-hazards events.

Objective 15.1: Improve Gwinnett County’s information distribution and warning capabilities to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	

Objective 15.2: Improve Gwinnett County’s first responder capabilities to prepare for and respond to all-hazards events.

15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	
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Objective 13.3: Improve Gwinnett County’s capability to prepare for, respond to, and recover from all-hazards events.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.										
15.3.2	Develop/maintain/revises a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing	
15.3.9	Coordinate with the City of Buford to expand the current burial depth of gas lines in the City of Dacula.	City of Buford	City Officials, Public Works	\$250,000		City Budget	2019-2024	Ongoing from 2015	New and Existing	Portions of this project are complete other aspects are still in progress

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**CITY OF DACULA, GEORGIA
MITIGATION ACTION PLAN**

Geography/History

The City of Dacula (City) is located at 33°59'15"N, 83°53'31"W (33.987598, -83.891926). The City has a total area of 5.33 square miles (13.8 km²), all of which is land.

The City of Dacula began as the Town of Chinquapin Grove. When it was founded, the name was changed due to the fact that no chinquapin trees actually existed in the City. The name Dacula was formed by letters found in Decatur and Atlanta. Those two cities were nearby Dacula and were already prospering during the time of Dacula's founding.

There was a train station on a CSX line in Dacula, and though it closed in the mid 1950's, the City experienced immense growth. Formerly a small, one light town in the early 80s, the City of Dacula now has nearly 10 public schools from both the Dacula and Mill Creek clusters of Gwinnett County.

Significant Characteristics

With its 3,850 seat auditorium, Hebron Baptist Church is one of the largest Southern Baptist churches in the Southeast United States.

The City has several beautiful parks suitable for weddings, picnics, and other large or small outdoor functions.

Little Mulberry Park is a park that encompasses 485 acres of an 890 acre park. It features five miles of trails, including two paved multi-purpose trails and a handicap-accessible trail, and more than two miles of woodland foot trails. The park also offers many picnic pavilions, restrooms, a playground and an observation terrace.

Dacula is also known for its large Memorial Day parade, as well as its professional and collegiate athletes.

Population and Demographics

As of the 2017 American Community Survey (ACS) census, there are 5,366 people; 1,821 households; and 1,376 families residing in the City. The population density is 1,333.0 people per square mile. The racial makeup of the City is 68.7 percent White, 20.1 percent African American, 18.3 percent Hispanic or Latino (of any race), 4.1 percent Asian, and 2.1 percent from two or more races.

There are 1,821 households, of which 36.7 percent include children under the age of 18. Approximately 21.4 percent of all households are made up of individuals, while 1.5 percent have someone living alone who is 65 or older. The average household size is 3.00.

The median age of a Dacula resident is 33 years old. In the City the population is spread out, with 26.5 percent under the age of 18, 6.9 percent from 18 to 24, 29.3 percent from 25 to 44, 32.6 percent from 45 to 64, and 9.6 percent who are 65 or older. For every 100 females, there are 93.6 males.

The City's population has grown more than 39.4 percent since 2010.

Economy

The median income for a household in the City is \$59,090. The per capita income for the City is \$23,686. About 5.2 percent of families and 8.2 percent of the population are below the poverty line.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

The most common industries are management, business, and financial occupations at 23%; sales and office occupations at 23%; sales and office occupation at 28%; and service occupation at 21%.

Dacula-area historical tornado activity is slightly above the Georgia state average. It is 94 percent greater than the overall U.S. average.

On November 22, 1992, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 33.3 miles away from the City center, injuring 46 people and causing between \$5 million and \$50 million in damages.

On April 3, 1974, an F4 tornado struck 36.4 miles away from the City center, killing six people and injuring 30 others. Damages were estimated between \$500,000 and \$5 million.

Table I
Single-Family New House Construction Building Permits

Year	Permits	Average Cost
2002	63	\$70,200
2003	4	\$81,300
2004	4	\$82,100
2005	3	\$86,000
2006	15	\$133,200
2007	12	\$146,100
2008	13	\$172,900
2009	2	\$174,600
2010	9	\$91,600
2011	1	\$65,000
2012	0	n/a
2013	84	\$107,800
2014	111	\$132,674
2015	96	\$146,408
2016	187	\$128,466
2017	42	\$103,030
2018	39	\$110,939

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Infrastructure

The East Precinct, which covers an area of 125 square miles in Gwinnett County, of the Gwinnett County Police Department serves Dacula.

Fire services are provided to Dacula by the Gwinnett County Department of Fire and Emergency Services.

Gwinnett County Public Schools have the following schools in Dacula:

**Table 2
Dacula School Infrastructure**

School	Type	Enrollment
Dacula	Elementary	1,122
Dacula	Middle	1,672
Dacula	High	2,202

Land Usage

The City has a total area of 5.33 square miles (13.8 km²), all of which is land.

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

**Table 3
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
				Y	N	N
Building Codes				Y	N	N
Capital Improvements Plan	Referenced in the 2030 Comprehensive Plan			Y	N	N
Comprehensive Plan	2030 Comprehensive Plan		12/4/2008	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan			N	N	Y
Community Rating System	County Rating			N	N	Y

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Economic Development Plan	County Plan			N	N	Y
Emergency Management Accreditation Program Certified				N	N	Y
Emergency Response Plan	County EOP			N	N	Y
Flood Management Plan				Y	N	N
Growth Control Ordinance	Referenced in the 2030 Comprehensive Plan			Y	N	N
Hazard Setback Regulations						
Hillside Ordinance						
Historic Ordinance	Referenced in the 2030 Comprehensive Plan			Y	N	N
National Flood Insurance Program Participant				N	N	Y
Post-Disaster Ordinance						
Post-Disaster Recovery Plan	County Emergency Operations Plan (EOP)			N	N	Y
Real Estate Disclosure	Real Estate Commission			N	N	Y
Site Plan Requirements	Referenced in 2030 Comprehensive Plan			Y	N	N
Subdivision Regulations	Referenced in 2030 Comprehensive Plan			Y	N	N
Wildfire Ordinance						
Zoning Ordinances	Zoning Ordinance			Y	N	N

Administrative and Technical Capabilities

The City of Dacula has a number of administrative and technical capabilities. City departments include Administration, Planning and Development, Inspections, the Planning and Zoning Board, Public Works,

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Marshal's Office, Elections, and the Municipal Court. The City government includes a Mayor and four city council members. The administrative functions of the City are managed by the City Administrator, City Planner and Public Works Director.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan.

**Table 4
Mitigation Actions**

Goal 1: Reduce Gwinnett County’s risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County’s capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	Home First Gwinnett a collaboration between Gwinnett County and the United Way	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	
1.3.7	Identify and bury utility lines in densely populated and commercial areas in the City of Dacula.	City of Dacula	City Officials, Public Works	\$250,000		City Budget, Grants	2019-2024	Ongoing from 2015	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low- income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert warning and notification systems for visually-impaired and hearing- impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	Existing	

Objective 2.2: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events, including thunderstorms and windstorms.

2.2.2	Purchase and install a generator for Dacula City Hall	City of Dacula	City Officials,	\$55,000	\$100,000	City Budget, Grants	2019-2024	New	Existing	
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County’s capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

Goal 5: Reduce Gwinnett County’s risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget	Ongoing	Ongoing	N/A	

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 6.2: Encourage the protection of residential and commercial structures.										
6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	

Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 7.1: Improve Gwinnett County's flooding information distribution and warning to citizens.										
7.1.6	Maintain NFIP status for Flood Mitigation	City of Dacula	City Officials	\$5,000	\$100,000	City Budget	2019-2024	Ongoing	N/A	

Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	New and Existing	
8.1.3	Continue to identify and implement water conservations efforts before/during and after times of extreme drought	All	County EMA, County Departments and Individual Jurisdictions	Staff Time		County and Individual Jurisdictions budgets	2019-2024	Deferred form 2015	New and Existing	

Goal 9: Reduce Gwinnett County’s risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County’s earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County/City Budget	Ongoing	Ongoing	N / A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 10: Reduce Gwinnett County’s risk and vulnerability to dam failure events.

Objective 10.1: Improve Gwinnett County’s capabilities to prepare for and respond to a dam failure.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	
10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget / Grants	2019-2024	New	Existing	

Goal 12: Reduce Gwinnett County’s risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County’s risk and vulnerability to hazardous materials events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	N / A	
12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	Existing	

Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City/County Budget, School Budget	Ongoing	Ongoing	Existing	
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Goal 13: Reduce Gwinnett County’s risk and vulnerability to pandemic/epidemic events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 13: Reduce Gwinnett County’s risk and vulnerability to pandemic/epidemic events.

Objective 13.2: Improve Gwinnett County’s first responder capabilities to prepare for and respond to pandemic/epidemic events.

13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

Goal 14: Reduce Gwinnett County’s risk and vulnerability from domestic and international terrorism incidents.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
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Objective 14.2: Improve first responders capability to prepare for and respond to terrorism incidents.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel.	Existing	
14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

Objective 15.1: Improve Gwinnett County's information distribution and warning capabilities to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	

Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.

15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	
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Objective 15.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from all-hazards events.

15.3.2	Develop/maintain/revise a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing	
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**CITY OF DULUTH, GEORGIA
MITIGATION ACTION PLAN**

Geography/History

The City of Duluth (City) is located at 34°0'11"N, 84°8'44"W (34.003, -84.114). According to the City's Geographic Information System, the City has a total area of 10.35 square miles (25.9 km²), of which 10.25 square miles (25.6 km²) is land and 0.1 square miles (0.3 km²) is water.

In the early eighteenth century, the Duluth area was a part of the Cherokee Indian territory and was an important crossroads used by Native Americans. In 1818, Gwinnett County was created by an act of the General Assembly of Georgia, and the area was opened to settlers. Evan Howell, a successful farmer and merchant, had a vision of a railway system that would run from Howell Crossing (Duluth, Georgia) to Duluth, Minnesota. In 1871 the railroad came to Duluth, Georgia, bringing with it new prosperity and growth. In 1906 the City was officially incorporated as the City of Duluth.

In 1989 Duluth was named Tree City for its dedication to preserving green space. Now Duluth is recognized as a model city for Gwinnett County. It is the second largest city in Gwinnett County and is noted first in financial stability throughout the State of Georgia. Despite its phenomenal growth, Duluth has retained its small-town character.

Significant Characteristics

The Southeastern Railway Museum preserves, restores and operates historical railway equipment.

Eddie Owens Presents at the Red Clay Theatre is a new musical venue featuring state of the art sound, lighting and multi-media projection technology. It has stadium style seating for 280 people, making it perfect for small and mid- scale concerts, as well as corporate events and presentations.

Duluth's historic downtown is also home to many shops and restaurants. Parsons Alley, a new award-winning redevelopment project in Downtown Duluth has transformed Downtown into a regional entertainment and restaurant district.

Population and Demographics

As of the 2017 American Community Survey, there were 28,988 people and 10,986 households. The population density was 2,661.6 people per square mile. The racial makeup of the City was 36 percent White, 22.6 percent African American, 13.2 percent Hispanic or Latino (of any race), 25.6 percent Asian, and 2.2 percent from two or more races.

There were 10,986 households, of which 11 included children under the age of 5, 34.2percent included children under the age of 18, and 27.9 percent had someone 60 or older. The average household size was 2.63.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

The median age of a Duluth resident is 37 years old. In the City the population was spread out, with 23.9 percent under the age of 18, 6 percent from 20 to 24, 15.1 percent from 25 to 34, 15.3 percent from 35 to 44, 15.7 percent from 45 to 54, 11.7 percent from 55 to 64 and 10.1 percent who were 65 or older.

The City's population has grown more than 30 percent since 2000.

Table I
City of Duluth Population Since 1970

Year	1980	1990	2000	2010	2017
Population	2,956	9,029	22,122	28,404	28,988

Economy

The median income for a household in the City is \$62,520. Males have a median income of \$45,192 versus \$36,181 for females. The per capita income for the City is \$30,063. About 11 percent of families and 12.8 percent of the population are below the poverty line, including 18.2 percent of individuals under age 18 and 17.5 percent age 65 or over.

Duluth is poised with a perfect blend of small businesses, entrepreneurial enterprise, major corporations and visionary developers. More than 1,600 businesses are located within the City limits.

The most common industries for males are professional, scientific and technical services (22 percent); manufacturing (12 percent); construction (10 percent); accommodation and food services (8percent); retail trade (10 percent); finance and insurance, real estate (7 percent).

The most common industries for females are health care and social assistance (16 percent); finance and insurance (6 percent); retail trade (10 percent); educational services (11 percent); manufacturing (8 percent); accommodation and food services (10 percent); and professional, scientific and technical services (8 percent).

Duluth-area historical tornado activity is slightly above the Georgia state average. It is 98 percent greater than the overall U.S. average.

On November 22, 1992, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 29.2 miles away from the City center, injuring 46 people and causing between \$5 million and \$50 million in damages.

On April 3, 1974, an F4 tornado struck 34.7 miles away from the City center, killing six people and injuring 30 others. Damages were estimated between \$500,000 and \$5 million in damages.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Table 2
Estimated Range of Home Values

Value	Number of Homes
\$100,000 to 149,000	1103
\$150,000 to 199,000	1735
\$200,000 to 299,000	1734
\$300,000 to 499,000	537
\$500,000 to 999,000	136
\$1,000,000 or above	11

Infrastructure

The City of Duluth Police Department consists of 76 well-trained and professional officers. The department is organized in the following four divisions: Community Oriented Policing, Criminal Investigations, Support Services, and Uniform.

Fire services are provided to the City of Duluth by the Gwinnett County Department of Fire and Emergency Services.

Gwinnett County Public Schools have the following schools in the City of Duluth:

Table 2
Duluth School Infrastructure

School	Type	Enrollment
Berkeley Lake	Elementary	852
Burnette	Elementary	668
Chattahoochee	Elementary	1394
Harris	Elementary	838
M.H. Mason	Elementary	968
Parsons	Elementary	773
Coleman	Middle	837
Duluth	Middle	1487

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

School	Type	Enrollment
Hull	Middle	1326
Duluth	High	2741
Peachtree Ridge	High	3285
New Life Academy	Special Entities	571

Land Usage

The City has a total area of 10.35 square miles (25.9 km²), of which 10.25 square miles (25.6 km²) is land and 0.1 square miles (0.3 km²) is water.

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

**Table 3
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type:	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
	Ordinance Resolution Codes Plans, Etc.					
Building Codes	Code of Ordinances	Chapter 5		Y	N	N
Capital Improvements Plan	Referenced in the Code of Ordinances	Part I - Article VI		Y	N	N
Comprehensive Plan	2040 Comprehensive Plan		February 2019	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan			N	N	Y
Community Rating System	County Rating			N	N	Y

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type: Ordinance	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
	Resolution Codes Plans, Etc.					
Economic Development Plan	County Plan and Referenced in the 2040 Comprehensive Plan	Chapter 14		N	N	Y
Emergency Management Accreditation Program Certified				N	N	Y
Emergency Response Plan	County Emergency Operations Plan (EOP)			N	N	Y
Flood Management Plan	Referenced in the Code of Ordinances	Article 8		Y	N	N
Growth Control Ordinance	Code of Ordinances and Referenced in the 2040 Comprehensive Plan	Chapter 5 - Article IV		Y	N	N
Hazard Setback Regulations						
Hillside Ordinance						
Historic Ordinance	Referenced in the 2040 Comprehensive Plan	Chapter 5		Y	N	N
National Flood Insurance Program (NFIP) Participant	Participates in NFIP			N	N	Y
Post-Disaster Ordinance						
Post-Disaster Recovery Plan	County EOP			N	N	Y
Real Estate Disclosure	Real Estate Commission			N	N	Y
Site Plan Requirements	Unified Development Code	Article 2 Article 4 Article 5 Article 7 Article 8 Article 9 Article 10		Y	N	N
Subdivision Regulations	Unified Development Code	Article 5		Y	N	N
Wildfire Ordinance						

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Zoning Ordinances	Unified Development Code	Article 2		Y	N	N

Administrative and Technical Capabilities

The City of Duluth has a number of administrative and technical capabilities. City departments include Administration, Clerk, Human Resources, Municipal Court, Parks and Recreation, Planning and Development, Police Department, Public Information and Marketing, and Public Works. The City government includes a Mayor and five Council Members. The administrative functions of the City are managed by the City Manager.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan

**Table 4
Mitigation Actions**

Goal 1: Reduce Gwinnett County’s risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County’s capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	City and County Officials	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-20204	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low- income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert warning and notification systems for visually-impaired and hearing- impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

Goal 5: Reduce Gwinnett County's risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget	Ongoing	Ongoing	N/A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	

Objective 6.2: Encourage the protection of residential and commercial structures.

6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	
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Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Objective 7.2: Improve Gwinnett County's capability to prepare for, respond to, and recover from flood events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
7.2.5	Increase Culvert sizes at identified locations throughout the City of Duluth	City of Duluth	City Officials	3.5 Million	8 Million	City Budget, FEMA, Grants	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.										
7.2.6	Purchase any repetitive flood loss properties	City of Duluth	City Officials	\$500,000		City Budget, FEMA, Grants	2019-2024	New	Existing	
7.2.7	Develop an analysis of the draining network, to identify failing infrastructure along Rogers Creek to mitigate ongoing flooding issues	City of Duluth	City Officials	\$100,000	\$350,000	City Budget, FEMA Grants	2019-2024	New	Existing	
7.2.8	Design implement and upgrade storm water management infrastructure in residential and commercial areas	City of Duluth	City Officials	\$250,000		City Budget, FEMA, Grants	2019-2024	New	New	

Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.										
Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

8.1.3	Continue to identify and implement water conservations efforts before/during and after times of extreme drought	All	County EMA, County Departments and Individual Jurisdictions	Staff Time		County and Individual Jurisdictions budgets	2019-2024	Deferred form 2015	New and Existing	
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Goal 9: Reduce Gwinnett County’s risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County’s earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County/City Budget	Ongoing	Ongoing	N / A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 10: Reduce Gwinnett County's risk and vulnerability to dam failure events.										
Objective 10.1: Improve Gwinnett County's capabilities to prepare for and respond to a dam failure.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	
10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget, Grants	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County’s risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	N / A	
12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	Existing	

Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City/Coun ty Budget, School Budget	Ongoing	Ongoing	Existing	
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.										
13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 14: Reduce Gwinnett County's risk and vulnerability from domestic and international terrorism incidents.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.										
14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel.	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	
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Goal 15: Improve Gwinnett County’s capability to reduce risk and vulnerability to all-hazards events.

Objective 13.1: Improve Gwinnett County’s information distribution and warning capabilities to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.										
Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.										
15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	
Objective 13.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from all-hazards events.										
15.3.2	Develop/maintain/revise a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing	

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**CITY OF GRAYSON, GEORGIA
MITIGATION ACTION PLAN**

Geography/History

The City of Grayson (City) is located at 33°53'36"N, 83°57'20"W (33.893306, -83.955420). According to the U.S. Census Bureau, the City has a total area of 1.8 square miles (4.6 km²), all of which is land.

The City of Grayson has experienced many name changes over the years. It was first called Trip based on a suggestion given by a leading merchant and public figure at Lawrenceville. Later, John Jacobs, Grayson's first mayor and postmaster, wrote to change the name to Berkeley. The name was approved in 1901; however, Jacobs was later notified that there was already a Berkeley, Georgia. The name Grayson was suggested after Jacobs received a letter from his wife, who was visiting Grayson County in Texas.

In 1820 the first settlers came to Grayson; however, it wasn't founded until 1879, when James Patterson McConnell purchased 80 acres. Grayson grew quickly and attracted merchants, a railway, more settlers, educators and religious leaders. Because of the increase, schools and churches were established in order to better serve the community.

On December 1, 1898, the L&L Railroad came to Grayson. The train completed two round trips through the City each day, carrying mail, freight and passengers. While it ran from 1898 to 1932, the train became a huge part of life for Grayson and its economy.

Grayson is a vibrant "live, work and play" community close enough to the big city for easy access but far enough to experience personalized home-town living. With excellent schools, sports programs, parks, restaurants and shopping Grayson is a popular destination for families. Throughout the year, The City of Grayson offers family-friendly community events including concerts, festivals and movies. Though Grayson is known for the excellent amenities of a sophisticated and professional city, we pay homage to our past with an extensive collection of historical Grayson memorabilia housed in the Arts and History Center.

Significant Characteristics

Grayson Park is a smaller park that offers pavilions in various sizes.

The Grayson Arts and History Center promotes the collection and display of memorabilia that pertains to the history of Grayson, in addition to serving as an outlet to showcase the local arts of the community.

Population and Demographics

As of the 2018 the census estimates, there are 4,409 people and 1,032 households in the City. The population density is 559 people per square mile. The racial makeup of the City is 60.4 percent White, 23.7 percent African American, 4.8 percent Hispanic or Latino (of any race), 0.65 percent Pacific Islander, 9 percent Asian, 1.5 percent from two or more races, and 0.2 percent from other races.

There are 1,032 households, of which 44.6 percent include children under the age of 18. Approximately 15.2 percent of all households are made up of individuals, while 7.6 percent have someone living alone who is 65 or older. The average household size is 2.77.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

The median age of a Grayson resident is 41 years old. In the City the population is spread out, with 29.5 percent under the age of 18, 4.6 percent from 18 to 24, 34.0 percent from 25 to 44, 22.5 percent from 45 to 64, and 9.4 percent who are 65 or older.

According to the U.S. Census Bureau, the City's Population changes since 2000: +263.4% and is one of the fastest growing areas in Gwinnett County.

Table I
City of Grayson Population Since 1990

Year	1990	2000	2012	2018
Population	529	765	2,780	4,409

Economy

The median income for a household in the City is \$91,964, while the median income for a family is \$61,618. Males have a median income of \$62,744 versus \$46,261 for females. The per capita income for the City is \$37,557. Percentage of residents living in poverty in 2016 was 6.2% (1.1% for White Non-Hispanic residents, 13.9% for Black residents, 19.8% for Hispanic or Latino residents).

From 2016 to 2017, employment in Grayson, GA grew at a rate of 5.69%, from 1.44k employees to 1.52k employees.

The most common job groups, by number of people living in Grayson, GA, are Management Occupations (258 people), Office & Administrative Support Occupations (195 people), and Sales & Related Occupations (153 people).

Compared to other places, Grayson, GA has an unusually high number of residents working as Health Diagnosing & Treating Practitioners & Other Technical Occupations (2.04 times higher than expected), Health Technologists & Technicians (1.85 times), and Management Occupations (1.66 times).

Grayson-area historical tornado activity is slightly above the Georgia state average. It is 95 percent greater than the overall U.S. average.

On November 22, 1992, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 39.3 miles away from the City center, injuring 46 people and causing between \$5 million and \$50 million in damages.

On April 3, 1974, an F4 tornado struck 33.3 miles away from the City center, killing six people and injuring 30 others. Damages were estimated between \$500,000 and \$5 million.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Table 2
Single Family Home Values

Value	# Of Homes
< - \$100,000	30
\$100,000 - \$200,000	153
\$200,000 - \$300,000	444
\$300,000 - \$400,000	270
\$400,000 - \$500,000	60
\$500,000 - \$750,000	40
\$750,000 - \$1,000,000	7
\$1,000,000 and up	9

Infrastructure

The South and East Precincts of the Gwinnett County Police Department serve Grayson.

Fire services are provided to Grayson by the Gwinnett County Department of Fire and Emergency Services.

Gwinnett County Public Schools have the following schools in Grayson:

Table 3
Grayson School Infrastructure

School	Type	Enrollment
Grayson	Elementary	1,580
Starling	Elementary	1,066
Couch	Middle	1,068

Land Usage

The City has a total area of 1.8 square miles (4.6 km²), all of which is land.

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

**Table 4
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type:		Date Adopted	Local Authority	State Prohibited	Higher Authority
	Ordinance	Resolution Codes Plans, Etc.				
	Reference Number					
Building Codes	Code of Ordinances and City Zoning Ordinance	Chapter 18	Updated 4/30/2019	Y	N	N
Capital Improvements Plan	Referenced in the 2040 Comprehensive Plan		1/22/2019	Y	N	N
Comprehensive Plan	2040 Comprehensive Plan		1/22/2019	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan			N	N	Y
Community Rating System	County Rating			N	N	Y
Economic Development Plan	Referenced in the 2030 Comprehensive Plan			N	N	Y
Emergency Management Accreditation Program Certified				N	N	Y
Emergency Response Plan	County Emergency Operations Plan (EOP)			N	N	Y
Flood Management Plan	Referenced in the 2040 Comprehensive Plan	Pg. 61,62	1/22/2019	Y	N	N
Growth Control Ordinance	Referenced in the 2040 Comprehensive Plan	Pg. 63,64	1/22/2019	Y	N	N
Hazard Setback Regulations						
Hillside Ordinance						
Historic Ordinance	Code of Ordinances and Referenced in the 2040 Comprehensive Plan	Chapter 18 - Article IV. Sec 18-256	5/19/2008	Y	N	N
National Flood Insurance Program (NFIP) Participant	Participate in NFIP			N	N	Y
Post-Disaster Ordinance						

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type:		Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
	Ordinance	Resolution Codes Plans, Etc.					
Post-Disaster Recovery Plan	County EOP				N	N	Y
Real Estate Disclosure	Real Estate Commission				N	N	Y
Site Plan Requirements	City Zoning Ordinance	Chapter 18-Article IV.	December 2007	Y	N	N	
Subdivision Regulations	City Zoning Ordinance	Chapter 18-Article IV.	December 2007	Y	N	N	
Wildfire Ordinance							
Zoning Ordinances	City Zoning Ordinance		December 2007	Y	N	N	

Administrative and Technical Capabilities

The City of Grayson has a number of administrative and technical capabilities. City departments include the Planning and Zoning Commission, Zoning Board of Appeals, and the Code Enforcement Board. The City government includes a Mayor and four City Council Members.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan.

**Table 5
Mitigation Actions**

Goal 1: Reduce Gwinnett County’s risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County’s capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	Home First Gwinnett a collaboration between Gwinnett County and the United Way	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	
Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)										
Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-20204	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low- income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert warning and notification systems for visually-impaired and hearing- impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	Existing	

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 5: Reduce Gwinnett County's risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget	Ongoing	Ongoing	N/A	
5.1.2	Install Lightning Detection and notification system for the City Park / Ampavilion	City of Grayson	City Officials	\$10,000	\$20,000	City Budget	2019-2024	New	New	

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Objective 6.2: Encourage the protection of residential and commercial structures.

6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	
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Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Objective 7.2: Improve Gwinnett County's capability to prepare for, respond to, and recover from flood events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
7.2.9	Identify and replace or repair culverts, catch basins, storm water ditches, and outflows to mitigate flooding issues	City of Grayson	City Officials	\$20,000	\$50,000	City Budget, FEMA, Grants	2019-2024	New	Existing	
7.2.10	Develop and maintain storm water management plans for the city to mitigate identified flooding areas.	City of Grayson	City Officials	\$80,000	\$150,000	City Budget, FEMA Grants	2019-2024	New	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	New and Existing	
8.1.3	Continue to identify and implement water conservations efforts before/during and after times of extreme drought	All	County EMA, County Departments and Individual Jurisdictions	Staff Time		County and Individual Jurisdictions budgets	2019-2024	Deferred form 2015	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 9: Reduce Gwinnett County's risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County's earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County/ City Budget	Ongoing	Ongoing	N / A	

Goal 10: Reduce Gwinnett County's risk and vulnerability to dam failure events.

Objective 10.1: Improve Gwinnett County's capabilities to prepare for and respond to a dam failure.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget, Grants	2019-2024	New	Existing	
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Goal 12: Reduce Gwinnett County's risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	N / A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County’s risk and vulnerability to hazardous materials events.

12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	Existing	
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Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City/County Budget, School Budget	Ongoing	Ongoing	Existing	
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Goal 13: Reduce Gwinnett County’s risk and vulnerability to pandemic/epidemic events.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.										
13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 14: Reduce Gwinnett County's risk and vulnerability from domestic and international terrorism incidents.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.										
14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel.	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	
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Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

Objective 15.1: Improve Gwinnett County's information distribution and warning capabilities to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	

Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.

15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

Objective 15.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from all-hazards events.

15.3.2	Develop/maintain/re vise a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing	
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**CITY OF LAWRENCEVILLE, GEORGIA
MITIGATION ACTION PLAN**

Geography/History

The City of Lawrenceville (City) is located at 33°57'11"N, 83°59'33"W (33.953052, -83.992469). According to the U.S. Census Bureau, the City has a total area of 13.44 square miles (34.80 km), of which 13.3 square miles (34.4 km) is land and 0.1 square miles (0.2 km or 0.57 percent) is water.

The City of Lawrenceville, which is the county seat of Gwinnett, was incorporated on December 15, 1821. Also known as the second oldest city in the Greater Atlanta area, the City is named after Captain James Lawrence, a naval commander in the War of 1812.

In its early years, the City was a thriving farming community. The downtown area became known for retail and business, as locals would come to town to sell and trade produce and livestock and also purchase dry goods.

The original City courthouse was destroyed by fire in 1871. The building that replaced it served as the official county courthouse until the Gwinnett Justice and Administration Center was completed in 1988.

For several years, the City's primary industry was cotton farming. The Lawrenceville Manufacturing Company, one of the very first cotton factories, made goods for the Confederate Army during the Civil War. Also supporting the City's rural economy was the sale of corn, brick manufacturing, lumber and livestock.

Around the turn of the century, a modern railroad system was built in Lawrenceville, although most residents continued to utilize mules as their primary mode of transportation. U.S. Highway 29, the City's first paved road, arrived in 1929.

Significant Characteristics

Rhodes Jordan Park, located off of Crogan Street, is a 162 acre park featuring a 22 acre lake, a multipurpose recreational trail, a playground, swimming pool, football field, soccer fields, baseball fields and a large community center.

Gwinnett County's only professional theatre, the Aurora Theatre, has found a home in downtown Lawrenceville on Pike Street. This venue features live performances throughout the year. The theatre also boasts a children's playhouse, educational seminars, and a "ghost tour" through downtown Lawrenceville hosted by professional storytellers.

One of the premier hospitals in the region, Gwinnett Medical Center, is located in Lawrenceville. The Gwinnett Medical Center is a non-profit, 500-bed health care network comprised of two hospitals, plus several supporting medical facilities, with more than 4,300 employees and more than 800 affiliated physicians. The main campus is located near the intersection of Highway 316 and Duluth Highway 120.

Georgia Gwinnett College, located in Lawrenceville, was established in 2005, and is the first 4-year public institution created in Georgia in more than 100 years. The fall 2018 enrollment exceeds 12,000 students, with 66% full-time, and 34% part-time students. GGC boasts 17 major disciplines, with over 45 areas of concentration. GGC's diversity reflects that of Gwinnett County with over 120 nations represented within the student body.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Population and Demographics

As of 2018, there are 29,795 people and 11,300 households in the City. The population density is 2,223.5 people per square mile. The racial makeup of the City is 46 percent White, 36.0 percent Black or African American, 21 percent Hispanic or Latino (of any race), 1 percent Native American, 3 percent Asian, and 3 percent from two or more races.

There are 11,300 households, of which 8.8 percent include children under the age of 5, 29.8 percent include children under the age of 18, and 9.2 percent have someone who is 65 or older. The average household size is 2.96.

The median age of a Lawrenceville resident is 35 years old. In the City the population is spread out, with 29 percent under the age of 19, 9 percent from 20 to 24, 25 percent from 25 to 44, 25 percent from 45 to 64, and 12 percent who are 65 or older.

Economy

The median income for a household in the City is \$43,339. The per capita income for the City is \$22,671. About 11.7 percent of families and 21.6 percent of the population are below the poverty line, including 16.0 percent of individuals under the age of 18 and 11.9 percent age 65 or over.

Lawrenceville has three major job centers: Gwinnet Medical Center, Gwinnet County government complex, and GGC. Between 2002 and 2011, the percentage of employment in Lawrenceville's big three - health care/social services, government services, and educational services—went from 36 percent of all employment in 2002 to 55 percent in 2011. In this same period, 1,150 manufacturing jobs were lost. These industries were largely replaced with warehousing and distribution enterprises; while these uses still require substantial real estate, they have far fewer jobs than the industries they replaced.

The most common sectors of employment for Lawrenceville residents are educational services/health care /social assistance (18.7 percent) and retail trade (16.7 percent). While the percentage employed in educational/health/social assistance is unsurprising given the presence of GGC, Gwinnett Medical Center, and County services, the percentage employed in retail is not reflected by an equally robust amount of retail jobs within the city. Compared to the rest of the County, City residents have high employment rates in retail, information, education/health/social assistance, but lower percentages in construction, manufacturing, transportation/warehousing/utilities, finance/insurance/real estate, and professional/scientific/management jobs

Lawrenceville-area historical tornado activity is slightly above the Georgia state average. It is 98 percent greater than the overall U.S. average.

On November 22, 1992, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 29.2 miles away from the City center, injuring 46 people and causing between \$5 million and \$50 million in damages.

On April 3, 1974, an F4 tornado struck 34.7 miles away from the City center, killing six people and injuring 30 others. Damages were estimated between \$500,000 and \$5 million.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Table I
Single-Family New House Construction Building Permits

Year	Permits
1996	101
1997	97
1998	74
1999	126
2000	273
2001	200
2002	260
2003	111
2004	124
2005	134
2006	109
2007	89
2008	17
2009	4
2010	5
2011	11
2012	21
2013	14
2014	39
2015	85
2016	100
2017	60
2018	43

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Table 2 Single Family Home Values

Value	# Of Homes
< - \$100,000	561
\$100,000 - \$200,000	2481
\$200,000 - \$250,000	680
\$250,000 - \$300,000	305
\$300,000 - \$400,000	191
\$400,000 - \$500,000	118
\$500,000 - \$750,000	46

Infrastructure

Law enforcement for the City of Lawrenceville is provided by the Lawrenceville Police Department, which offers excellent coverage from well-trained and professional officers. The police department is divided into four divisions, including the following:

Executive Staff – Consists of the Chief of Police and Assistant Chief – 2, Uniform Services Bureau – Consists of Uniform Patrol, and Special Operations – 52, Criminal Investigations Bureau – Consists of Investigations, Gang Intelligence, and Property/Evidence – 18, Administrative Bureau – Consists of Training, Communications and Records – 25,

Fire protection and emergency medical services for the City of Lawrenceville are provided by the Gwinnett County Fire and Rescue Department

Gwinnett County Public Schools have the following schools in Lawrenceville

**Table 3
Lawrenceville School Infrastructure**

School	Type	Enrollment
Benefield	Elementary	1280
Jenkins	Elementary	852
Lawrenceville	Elementary	676
Winn Holt	Elementary	1131
Jordan	Middle	944
Central Gwinnett	High	2011
Phoenix	High	390

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

School	Type	Enrollment
Discovery	High	2645
Oakland Meadow School	High	243

Land Usage

Lawrenceville has a total area of 13.44 square miles (34.8 km), of which 13.3 square miles (34.4 km) is land and 0.1 square miles (0.2 km or 0.57 percent) is water.

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

**Table 4
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Building Codes	Development Regulations	Article VII	2/5/07	Y	N	N
Capital Improvements Plan				Y	N	N
Comprehensive Plan	2040 Comprehensive Plan		12/3/18	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan			N	N	Y
Community Rating System	County Rating			N	N	Y
Economic Development Plan	County Plan and Referenced in the 2040 Comprehensive Plan			N	N	Y
Emergency Management Accreditation Program Certified				N	N	Y
Emergency Response Plan	County Emergency Operations Plan (EOP)			N	N	Y
Flood Management Plan	Development Regulations	Article VIII	9/12/05	Y	N	N

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Growth Control Ordinance	Development Regulations and Referenced in the 2040 Comprehensive Plan	Article XVI	2/5/07	Y	N	N
Hazard Setback Regulations						
Hillside Ordinance						
Historic Ordinance	Referenced in the 2040 Comprehensive Plan	Chapter 3.4	10/6/08	Y	N	N
National Flood Insurance Program Participant				N	N	Y
Post-Disaster Ordinance	City Code of Ordinances	Chapter 16	9/12/05			
Post-Disaster Recovery Plan	County EOP			N	N	Y
Real Estate Disclosure	Real Estate Commission			N	N	Y
Site Plan Requirements				Y	N	N
Subdivision Regulations	Development Regulations	Article IV	4/5/09	Y	N	N
Wildfire Ordinance						
Zoning Ordinances	Planning and Zoning Code of Ordinances			Y	N	N

Administrative and Technical Capabilities

The City of Lawrenceville has a number of administrative and technical capabilities. City departments include Utilities (Electric and Gas), Public Safety, Public Works, Taxes, Licenses and Permits, Planning and Zoning, and the Municipal Court, as well as a number of Boards and Commissions. The City government includes a Mayor, four Council Members and a City Manager and a City Clerk.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan.

**Table 5
Mitigation Actions**

Goal 1: Reduce Gwinnett County's risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County's capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	City and County Officials	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	
1.3.8	Purchase Equipment for Lawrenceville Electric Department to maintain and clear trees and debris along city overhead power lines	City of Lawrenceville	City Officials	\$40,000	\$,100,000	City Budget, FEMA, Grants	2019-2024	New	Existing	City of Lawrenceville Electric Dept. provides electric power to citizens within the city limits

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-20204	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low- income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert warning and notification systems for visually-impaired and hearing- impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	Existing	

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
	along power lines									

Goal 5: Reduce Gwinnett County's risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget	Ongoing	Ongoing	N/A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	

Objective 6.2: Encourage the protection of residential and commercial structures.

6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	
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Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Objective 7.2: Improve Gwinnett County's capability to prepare for, respond to, and recover from flood events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
7.2.11	Increase Culvert sizes at identified locations throughout the City of Lawrenceville	City of Lawrenceville	City Officials	3.5 Million	8 Million	City Budget, FEMA, Grants	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

7.2.12	Purchase any repetitive loss properties	City of Lawrenceville	City Officials	\$250,000		City Budget, FEMA, Grants	2019-2024	New	Existing	
7.2.13	Design implement and upgrade storm water management infrastructure in residential and commercial areas	City of Lawrenceville	City Officials	\$500,000		City Budget, FEMA, Grants	2019-2024	New	New	

Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	New and Existing	
8.1.3	Continue to identify and implement water conservations efforts before/during and after times of extreme drought	All	County EMA, County Departments and Individual Jurisdictions	Staff Time		County and Individual Jurisdictions budgets	2019-2024	Deferred form 2015	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 9: Reduce Gwinnett County's risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County's earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County/City Budget	Ongoing	Ongoing	N / A	

Goal 12: Reduce Gwinnett County's risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	N / A	
12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	Existing	

Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County's risk and vulnerability to hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City/County Budget, School Budget	Ongoing	Ongoing	Existing	
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Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.										
13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 14: Reduce Gwinnett County's risk and vulnerability from domestic and international terrorism incidents.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.										
14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel involved	Existing	
14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

Objective 15.1: Improve Gwinnett County's information distribution and warning capabilities to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	

Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.

15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	
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Objective 15.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from all-hazards events.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

15.3.2	Develop/maintain/re vise a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing	
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**CITY OF LILBURN, GEORGIA
MITIGATION ACTION PLAN**

Geography/History

The City of Lilburn (City) is located at 33°53'20"N, 84°8'27"W (33.888853, -84.140897). According to the U.S. Census Bureau, The City has a total area of 7 square miles (18.1 km²), of which 6.9 square miles (17.9 km²) is land and 0.1 square miles (0.1 km² or 0.81 percent) is water.

The City of Lilburn was won in a land lottery by William McDaniel. Around 1890 the Georgia Carolina and Northern Railroad began purchasing property for tracks, including McDaniel's portion of what is present day Lilburn. The City was originally named McDaniel after William. During the construction phase of the railways, Seaboard Airline Railway purchased the Georgia Carolina and Northern Railroad. On April 24, 1982, the first train with passengers came through. During that period, Lilburn had a depot, telegraph office and several mercantile businesses; however, cotton was the base of the local economy, with a cotton gin built along Railroad Avenue.

Around 1900, the name was changed to Lilburn after Lilburn Trigg Myers, who at the time was the general superintendent for the Seaboard Airline Railway. The City of Lilburn was incorporated in 1910, and by 1919 the town had grown to include a bank, school, auto dealer, two doctors and about nine merchants.

A disastrous fire ruined the business section of Lilburn in 1920. The town was rebuilt, but the cotton crops were attacked by boll weevils, destroying the crops. Because the cotton crop was what stimulated the economy, the destruction of it resulted in the destruction of the town's economic support. The Great Depression of 1929 also hurt Lilburn, and the town and the government gradually died.

The town gradually relocated along Highway 29 with the help of automobiles. This created an Old and New Lilburn. The need for a water line in 1955 helped with the creation of a new city government, and the town began to grow again. In 1975 a new city hall was built, helping to create the growth that is now present.

Significant Characteristics

Lilburn City Park is a 10 acre park that has been newly renovated. This park features a walking/jogging path, an open field area, children's playground, and tennis courts, plenty of public restrooms, a rental pavilion and a bandstand.

Camp Creek Greenway Trail is a trail that allows people and pets to enjoy the outdoors. The trail includes bridges, rest areas, boardwalks, trail access from neighborhoods, and parks.

Lilburn Daze is an Arts and Crafts festival celebrated every second Saturday in October, featuring over 400 vendors.

Population and Demographics

As of the 2018 census, there are 12,644 people and 4,107 households in the City. The population density is 1,806 people per square mile. The racial makeup of the City is 31.3 percent White, 25.2 percent Hispanic or Latino (of any race), 18.8 percent African American, 0.2 percent Native American, 21.3 percent Asian, 0.03 percent Pacific Islander, and 3 percent from two or more races.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

There are 3,857 households, of which 7.1 percent include children under the age of 5, 26.6 percent include children under the age of 18, and 10.8 percent have someone who is 65 or older. The average household size is 3.04.

The median age of a Lilburn resident is 36.8 years old. In the City the population is spread out, with 25.7 percent under the age of 18, 9.1 percent from 18 to 24, 33.7 percent from 25 to 44, 23.3 percent from 45 to 64, and 8.3 percent who are 65 or older. For every 100 females, there are 97.1 males.

The City's population has grown more than 10.9 percent since 2000.

Economy

The median income for a household in the City is \$55,447. Males have a median income of \$29,179 versus \$19,901 for females. The per capita income for the City is \$54,276. Percentage of residents living in poverty in 2016: 15.2% (9.5% for White Non-Hispanic residents, 14.4% for Black residents, 25.2% for Hispanic or Latino residents, 22.9% for other race residents, 26.2% for two or more races residents)

The most common jobs held by residents of Lilburn, GA, by number of employees, are Construction & Extraction Occupations (878 people), Sales & Related Occupations (591 people), and Office & Administrative Support Occupations (585 people). The highest paid jobs held by residents of Lilburn, GA, by median earnings, are Business & Financial Operations Occupations (\$78,438), Architecture & Engineering Occupations (\$77,813), and Management, Business, & Financial Occupations (\$70,417).

The most common industries for females are health care and social assistance (20 percent); educational services (17 percent); retail trade (12 percent); manufacturing (9 percent); other services, other than public administration (10 percent); finance and insurance (8 percent); and accommodation and food services (12 percent).

Lilburn-area historical tornado activity is above the Georgia state average. It is 103 percent greater than the overall U.S. average.

On November 22, 1992, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 25.5 miles away from the City center, injuring 46 people and causing between \$5 million and \$50 million in damages.

On March 24, 1975, an F3 tornado with maximum wind speeds of 158-206 mph struck 10.9 miles away from the City center, killing three people and injuring 152 people. Damages were estimated between \$50 million and \$500 million.

Table I
Estimated Range of Home Values

Value Range	# Of Single Family Resd.	Total Value
<175,000	1,269	\$183,528,500
175,000 – 199,999	393	\$73,642,000
200,000 – 249,999	670	\$148,684,500
250,000 – 299,999	411	\$112,024,600

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Value Range	# Of Single Family Resd.	Total Value
300,000 – 399,999	252	\$86,305,000
400,000 – 499,999	135	\$59,027,100
500,000 – 749,999	23	\$12,998,400
750,000 – 999,999	2	\$1,571,500
1,000,000 or more	0	\$0

Infrastructure

The Lilburn Police Department consists of 35 uniform officers who patrol the City under the supervision of five sergeants, three lieutenants and two police captains and the Chief of Police. The department is open 24 hours a day, 365 days a year responding to emergency and non-emergency calls.

Fire services are provided to Lilburn by the Gwinnett County Department of Fire and Emergency Services.

Gwinnett County Public Schools have the following schools in Lilburn.

**Table 2
Lilburn School Infrastructure**

School	Type	Enrollment
Arcado	Elementary	998
Lilburn	Elementary	1429
Berkmar	Middle	1207
Lilburn	Middle	1755
Trickum	Middle	2183
Berkmar	High	2911

Land Usage

The City has a total area of 7 square miles (18.1 km²), of which 6.9 square miles (17.9 km²) is land and 0.1 square miles (0.1 km² or 0.81 percent) is water.

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

**Table 3
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Building Codes	City Code	Chapter 105 Appendix A Appendix B		Y	N	N
Capital Improvements Plan	Referenced in the City Code and the Five Year Financial Plan	Subpart A - Article VI		Y	N	N
Comprehensive Plan	2030 Comprehensive Plan		2008	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan			N	N	Y
Community Rating System	County Rating			N	N	Y
Economic Development Plan	County Plan and Referenced in the 2030 Comprehensive Plan			N	N	Y
Emergency Management Accreditation Program Certified				N	N	Y
Emergency Response Plan	County Emergency Operations Plan (EOP)			N	N	Y
Flood Management Plan	Referenced in the City Code	Chapter 109 - Article III		Y	N	N
Growth Control Ordinance	2030 Comprehensive Plan			Y	N	N
Hazard Setback Regulations						
Hillside Ordinance						
Historic Ordinance	City Code and Referenced in the 2030 Comprehensive Plan	Chapter 109 - Article III Appendix A		Y	N	N
National Flood Insurance Program Participant				N	N	Y

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Post-Disaster Ordinance						
Post-Disaster Recovery Plan	County EOP			N	N	Y
Real Estate Disclosure	Real Estate Commission			N	N	Y
Site Plan Requirements	City Code	Appendix A Appendix B		Y	N	N
Subdivision Regulations	City Code	Appendix A Appendix B		Y	N	N
Wildfire Ordinance						
Zoning Ordinances	City Code	Appendix A		Y	N	N

Administrative and Technical Capabilities

The City of Lilburn has a number of administrative and technical capabilities. City departments include Administration, Police, Planning and Development, Code Enforcement, Public Works, Parks and Recreations, and Courts, as well as other Boards and Commissions. The City government includes a Mayor and four Council Members. The administrative functions of the City are managed by the City Manager and administrative staff.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan.

**Table 4
Mitigation Actions**

Goal 1: Reduce Gwinnett County's risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.2: Improve first responder capability to prepare for, respond to, and recover from severe winter storms.										
1.2.1	Identify/acquire/equip all emergency response vehicles with tire chains.	County, City of Lilburn	County EMA, City maintenance and road staff, and County Officials	\$2,000	\$20,000	City/County Budget, FEMA, National Fire Grant	2016	Deferred from 2010	Existing	Most vehicles have been outfitted, but not all
Objective 1.3: Improve Gwinnett County's capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	Home First Gwinnett a collaboration between Gwinnett County and the United Way	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	
1.3.9	Identify and bury utility lines in densely populated and commercial areas in the City of Lilburn.	City of Lilburn	City Officials, Public Works	\$250,000		City Budget, Grants	2019-2024	Ongoing from 2010	Existing	
1.3.10	Purchase and install generators at City of Lilburn public works facility	City of Lilburn	City Officials	\$100,000	\$400,000	City Budget, Grants	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-20204	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low-income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert warning and notification systems for visually-impaired and hearing- impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	Existing	

Objective 2.2: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events, including thunderstorms and windstorms.

2.2.3	Purchase and install generators at critical facilities	City of Lilburn	City Officials	\$250,000		City Budget, Grants	2019-2024	New	Existing	
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County’s capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

Goal 5: Reduce Gwinnett County’s risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget	Ongoing	Ongoing	N/A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.										
Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	
Objective 6.2: Encourage the protection of residential and commercial structures.										
6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Objective 7.2: Improve Gwinnett County's capability to prepare for, respond to, and recover from flood events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
7.2.14	Address flooding issues at Hillcrest Rd between Hwy 29 and Indian Trail Road by replacing culverts and raising the roadway bridge	City of Lilburn	City Officials	\$250,000		City Budget, Federal Grants	2019-2024	New	Existing	

Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

8.1.3	Continue to identify and implement water conservations efforts before/during and after times of extreme drought	All	County EMA, County Departments and Individual Jurisdictions	Staff Time		County and Individual Jurisdictions budgets	2019-2024	Deferred form 2015	New and Existing	
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Goal 9: Reduce Gwinnett County's risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County's earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County/City Budget	Ongoing	Ongoing	N / A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 10: Reduce Gwinnett County’s risk and vulnerability to dam failure events.

Objective 10.1: Improve Gwinnett County’s capabilities to prepare for and respond to a dam failure.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	
10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget, Grants	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County’s risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	N / A	
12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	Existing	

Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City/County Budget, School Budget	Ongoing	Ongoing	Existing	
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.										
13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 14: Reduce Gwinnett County's risk and vulnerability from domestic and international terrorism incidents.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.										
14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel involved	Existing	.
14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.										
Objective 15.1: Improve Gwinnett County's information distribution and warning capabilities to citizens.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	
15.1.3	Implement an all-hazards notification system for the City of Lilburn.	City of Lilburn	City Officials	\$250,000		City Budget, FEMA, Grants	2010-2012	In progress, adopting Reverse 911 system, working with GEMA to update wireless notifications	New	
Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.										
15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

15.3.2	Develop/maintain/re vise a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing	
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**CITY OF NORCROSS, GEORGIA
MITIGATION ACTION PLAN**

Geography and History

The City of Norcross (City) is located at 33°56'19"N, 84°12'31"W (33.938551, -84.208630). According to the U.S. Census Bureau, the City has a total area of 6.01 square miles (10.6 km²), of which 5.77 square miles (14.9 km²) is land and 0.24 percent of it is water.

The City of Norcross was founded by J.J. Thrasher and named after his good friend, Jonathan Norcross, who happened to be a former Mayor of Atlanta. It was incorporated on October 26, 1870, making it Gwinnett County's second oldest city.

With the creation of the Richmond-Danville Railroad and the help of John J. Thrasher, Norcross was born. With the building of the Brunswick Hotel in 1856, Norcross became known as a resort-like area. People from all over migrated to the area in order to be near the railroad and to build houses, churches and schools.

Norcross still preserves its historic center as a nineteenth century railroad town, but it is on the upswing as new restaurants and shops move downtown and as a new generation of citizens join.

Significant Characteristics

Norcross Baseball Hall of Fame has a great display of local baseball memorabilia, including a vintage uniform, autographed baseballs and bats, trophies and more. It is located in the City's Welcome Center.

Lionheart Theater Company is a community theater where professionals and talented amateurs provide affordable quality entertainment.

The City of Norcross also maintains the following city parks: Rossie Brundage Park, Thrasher Park, Lillian Webb Park, Betty Mauldin Park, Veteran's Park, Barton Street Green space and Fickling Pond, and Pinnacle Park

Population and Demographics

As of 2017, there are 16,707 people and 5,381 households in the City. The racial makeup of the City is 34.9 percent White, 49.6 percent Hispanic or Latino (of any race), 20.1 percent African American, 0.8 percent Native American, 12 percent Asian, 0.1 percent Pacific Islander, and 4.9 percent from two or more races.

There are 5,381 households, of which 9 percent include children under the age of 5, 32 percent include children under the age of 18, and 6 percent have someone who is 65 or older. The average household size is 3.10.

The median age of a Norcross resident is 30.8 years old. In the City the population is spread out, with 24 percent under the age of 18, 13.3 percent from 18 to 24, 36 percent from 25 to 44, 19.1 percent from 45 to 64, and 6.1 percent who are 65 or older. 52.3 percent of the population is Male and 47.7 percent of the population is Female.

The City's population has grown by 1.46 percent annually since 2010.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Economy

The median income for a household in the City is \$44,836. Males have a median income of \$26,485 versus \$27,347 for females. The per capita income for the City is \$21,232. About 18.8 percent of families and 17.9 percent of the population are below the poverty line, including 20.0 percent of individuals under the age of 18 and 17.2 percent age 65 or over.

Some of the local companies in Norcross include Waffle House Corporate, Birchwood Foods, Zerorez, Advance Disposal, Digitrax, Unisource, Institute of Industrial Engineers, Salwa, Reddy US Therapeutics, Avalon International, Hitachi Koki USA, Ltd., The Athlete's Foot, Woody's Halfpipe, EMS Technologies, FinishLine, Technologies, Visix, American Megatrends, FIS, Car Max, Fed Ex Ground, NAPA, Archway, and 7up Snapple.

Norcross-area historical tornado activity is above the Georgia state average. It is 108 percent greater than the overall U.S. average.

On November 22, 1992, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 20.4 miles away from the City center, injuring 46 people and causing between \$5 million and \$50 million in damages.

On April 3, 1974, an F4 tornado struck 30.6 miles away from the City center, killing six people and injuring 30 others. Damages were estimated between \$500,000 and \$5 million.

Table I
City of Norcross Home Values based on Square Footage

Square Feet	Value	# of Homes
324 – 1423.3 sq. ft.	\$58,320 to \$256,185	852
1423.4 to 1780 sq. ft.	\$256,186 to \$320,400	850
1781 to 2344 sq. ft.	\$329,401 to \$421,920	855
2345 to 6134 sq. ft.	\$421,921 to \$1,104,120	845

The above average is based on the range of square footages, 320 sq. ft. to 6,134 sq. ft. multiplied by \$180.00 per square foot. The estimated replacement value to single family homes is between \$140 to \$220 per sq. ft. and the average being \$180 so that was used to determine the value.

Infrastructure

The Norcross Police Department covers an area of 6.01 square miles and consists of 44 sworn officers, 2 Part-Time officers and 17 full-time civilian employees.

Fire services are provided to Norcross by the Gwinnett County Department of Fire and Emergency Services.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Gwinnett County Public Schools have the following schools in Norcross.

**Table 2
Norcross School Infrastructure**

School	Type	Enrollment
Baldwin	Elementary	1,037
Norcross	Elementary	860
Susan Stripling	Elementary	747
Summerour	Middle	1,704
Paul Duke STEM	High	602
Norcross	High	3,300
Gwinnett Intervention Education Center West	Alternate 6-12	285

Land Usage

The City has a total area of 6.01 square miles (10.6 km²), of which 5.77 square miles (14.9 km²) is land and 0.24 percent is water.

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

**Table 3
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Building Codes	City Code and the Development Regulations	Chapter 103 Article VII	2/5/07	Y	N	N
Capital Improvements Plan	Referenced in City Code	Chapter 2 - Article VI Chapter 16 - Article II		Y	N	N
Comprehensive Plan	2040 Comprehensive Plan		3/4/19	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan			N	N	Y
Community Rating System	County Rating			N	N	Y
Economic Development Plan	County Plan			N	N	Y
Emergency Management Accreditation Program Certified				N	N	Y
Emergency Response Plan	County Emergency Operations Plan (EOP)			N	N	Y
Flood Management Plan	City Code and the Development Regulations	Chapter 107 Article VIII	9/12/05	Y	N	N
Growth Control Ordinance	Development Regulations	Article XVI	2/5/07	Y	N	N
Hazard Setback Regulations						
Hillside Ordinance						
Historic Ordinance	City Code	Chapter 114		Y	N	N
National Flood Insurance Program Participant	City Code	Chapter 107	9/18/06	N	N	Y
Post-Disaster Ordinance	City Code of Ordinances	Chapter 16	9/12/05			
Post-Disaster Recovery Plan	County EOP			N	N	Y
Real Estate Disclosure	Real Estate Commission			N	N	Y

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Site Plan Requirements	City Code	Chapter 103 - Article IV Chapter 107 - Article II Chapter 115 - Article III		Y	N	N
Subdivision Regulations	City Code, Development Regulations	Chapter 115 - Article III Article IV	4/5/09	Y	N	N
Wildfire Ordinance						
Zoning Ordinances	City Code and the Planning and Zoning Code of Ordinances	Chapter 115		Y	N	N

Administrative and Technical Capabilities

The City of Norcross has a number of administrative and technical capabilities. City departments include Economic Development, City Clerk, Community Development, Downtown Development Authority, Court Services, Information Technology, Police, Public Works, Parks and Recreation and Utilities. The City government includes a Mayor and five Council Members. The administrative functions of the City are managed by the City Manager and City Clerk.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan.

**Table 4
Mitigation Actions**

Goal 1: Reduce Gwinnett County's risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County's capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	Home First Gwinnett a collaboration between Gwinnett County and the United Way	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	
1.3.11	Identify and bury utility lines in densely populated residential and commercial areas in the City of Norcross.	City of Norcross	City Officials, Public Works	\$250,000		City Budget, Grants	2019-2024	Ongoing from 2015	Existing	
1.3.12	Purchase and install generators at critical facilities	City of Norcross	City Officials	\$250,000		City Budget, Grants	2019-2024	New	Existing	
1.3.13	Purchase winter weather salting and sanding equipment	City of Norcross	City Officials, Public Works	\$50,000	\$200,000	City Budget, Grants	2019-2024	New	New	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-20204	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low-income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert, warning, and notification systems for visually-impaired and hearing-impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2015-2019	Ongoing from 2010	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

Goal 5: Reduce Gwinnett County's risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/ County Budget	Ongoing	Ongoing	N/A	
5.1.3	Purchase and install equipment for all city parks to alert citizens of lightning during inclement weather	City of Norcross	City Officials	\$250,000		City Budget	2019-2024	New	New/ Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	

Objective 6.2: Encourage the protection of residential and commercial structures.

6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	
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Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Objective 7.1: Improve Gwinnett County's flooding information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
7.1.7	Maintain NFIP status for Flood Mitigation	City of Norcross	City Officials	\$5,000	\$100,000	City Budget	2019-2024	Ongoing	N/A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action informatio n
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	New and Existing	
8.1.3	Continue to identify and implement water conservations efforts before/during and after times of extreme drought	All	County EMA, County Departments and Individual Jurisdictions	Staff Time		County and Individual Jurisdictions budgets	2019-2024	Deferred form 2015	New and Existing	

Goal 9: Reduce Gwinnett County's risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County's earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action informatio n
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County/ City Budget	Ongoing	Ongoing	N / A	
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Goal 10: Reduce Gwinnett County’s risk and vulnerability to dam failure events.

Objective 10.1: Improve Gwinnett County’s capabilities to prepare for and respond to a dam failure.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget, Grants	2019-2024	New	Existing	
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Goal 12: Reduce Gwinnett County's risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	N / A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County's risk and vulnerability to hazardous materials events.

12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	Existing	
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Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City/ County Budget, School Budget	Ongoing	Ongoing	Existing	
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Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
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Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.

13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

Goal 14: Reduce Gwinnett County's risk and vulnerability from domestic and international terrorism incidents.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.										
14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel.	Existing	
14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.										
Objective 15.1: Improve Gwinnett County's information distribution and warning capabilities to citizens.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	City and County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	
Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.										
15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	
Objective 13.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from all-hazards events.										
15.3.10	Expand and update 911 center facility	City of Norcross	City Officials	\$250,000		City Budget	2019-2024	New	New/ Existing	
15.3.11	Purchase electronic signage for the City of Norcross	City of Norcross	City officials	\$50,000		City Budget	2019-2024	New		

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

15.3.12	Construct and install Safe rooms and tornado shelters at the cities community centers	City of Norcross	City Officials	\$250,000	\$250,000	City Budget	2019-2024	New	New	
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CITY OF PEACHTREE CORNERS, GEORGIA MITIGATION ACTION PLAN

Geography/History

The City of Peachtree Corners is located at 33°57'30.3"N, 84°13'30" W (33.958406, -84.224978).

Peachtree Corners was incorporated in 2012, so no census or demographic data is available for the city from the 2010 U.S. Census. Peachtree Corners is a city in southwestern Gwinnett County, Georgia located along the banks of the Chattahoochee River. It is a northeastern suburb of Atlanta and is the largest city in Gwinnett County. Peachtree Corners is the only one of all of Atlanta's northern suburbs that was developed as a planned community.

In 2010, it was announced that the United Peachtree Corners Civic Association (UPCCA) was pursuing the incorporation of Peachtree Corners. The decision to pursue incorporation was spurred in part by a failed attempt of the City of Norcross to annex a portion of Technology Park, which if successful would have prevented a City of Peachtree Corners from ever forming. In a referendum held on November 8, 2011, residents of Peachtree Corners voted to incorporate as Gwinnett County's 16th city, and, with a population of 34,274 at the time, its largest. Municipal operations began on July 1, 2012.

Significant Characteristics

Peachtree Corners is defined as the area bordered by the cities of Dunwoody and Sandy Springs (DeKalb and Fulton counties) on the west, Buford Highway and Norcross city limits on the east, Johns Creek and Roswell (both also in Fulton) at the Chattahoochee River on the north, and the city limits of Berkeley Lake and Duluth on the north.

Communities

The Forum: The Forum is a 580,000-square-foot (54,000 m²), mixed-use development located in central Peachtree Corners at the intersection of Peachtree Corners Circle and State Route 141/Peachtree Parkway. The Forum features some of the country's most popular fashion retailers, home furnishings and home accessory merchants that are typically found in regional and super-regional malls throughout the United States. The City is currently developing a Town Center project that will be a mix of live, work and play that will serve as a central gathering opportunity and give the area a sense of place. The development will include a 2 Acre Town Green, Veterans Memorial Park, many new restaurants and commercial spaces, residential homes and a movie theater.

Simpsonwood-Spalding Corners: The historic core of Peachtree Corners is a large residential district that is bordered by Peachtree Parkway, the Chattahoochee River, Holcomb Bridge, and Simpsonwood Park. There are numerous subdivisions within the area, many of which are located along the banks of the Chattahoochee. The area is home to three recreational areas - the public Jones Bridge Park and Holcomb Bridge Park, and the private Simpsonwood Conference and Retreat Center. All of the neighborhoods are zoned to either Simpson Elementary School, Gwinnett County's top elementary school, or Peachtree Elementary School, as well as Pinckneyville Middle School. This area is sometimes referred to as "Paul Duke's Peachtree Corners," as it was planned and developed by Paul Duke in the 1970s.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Technology Park: Technology Park is a major suburban office park developed in the 1960s and 1970s and an instrumental player in the growth of Peachtree Corners. Featuring 500 acres dedicated to creating a supportive environment for companies involved in the world of technology, with 3,800,000 square feet (350,000 m²) developed to date, there are 7,000 plus tenants that call Technology Park home.

Winters Chapel: Winters Chapel is located along Peachtree Corners' border with DeKalb County. The area shares a name with its main road, which travels through Fulton, Gwinnett and DeKalb Counties and was an important 19th century route connecting Decatur and Roswell. The district is named after Winters Chapel (now Winters Chapel Methodist Church), which has resided at its present location since the 1870s. The church itself is named after an instrumental founder, Jeremiah Winters.

Population and Demographics

Since Peachtree Corners was not a city (nor even a census-designated place) at the time of the 2017 census, no demographic data is available for the city from the 2017 U.S. Census. However, the city contains the entirety of ZIP code 30092, which in 2017 had an average adjusted gross income (AGI) of

\$66,905. The median home price in 2017 was \$308,200. As of 2017, 30092 was 58.4% white, 23.4% black, 9.6% Asian, and 2% two or more races. Hispanics of any race made up 15.1% of the population. ZIP Code 30092 that is entirely within the city limits had a population of 38004 at the 2010 census. With parts of ZIP Codes 30071, 30096, 30097, and 30360 being within the city limits of Peachtree Corners, the estimated population is 43,268.

Table I
City of Peachtree Corners Population

Year	2018
Population	42,268

Economy

The economy of Peachtree Corners is largely driven by the concentration of businesses, particularly engineering firms and information technology companies, located in the city's nearly 8 million square feet of office space varying from low-rise to mid-rise office buildings located in campus settings. The evolution of Peachtree Corners as an Atlanta-area office submarket began in the 1960s with the development of Technology Park, metro Atlanta's first successful office, research and development center. Technology Park remains a center of activity for the city's economy, complimented by other developments such as the mid-rise buildings in park-like settings, all of which office developments compliment, and do not impinge on, the city's residential neighborhoods. Supporting the office businesses are a range of shopping and eating establishments, lodging including a Marriott hotel, service businesses, medical, dental, law, and other professional offices, residential neighborhoods and schools, all conveniently located.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

**Table 2
Main Industries Based on Data from 2016**

Industry Description	Number of Establishments	Number of Employees
Wholesale Trade	304	5065
Retail Trade	271	2765
Information	142	3929
Real Estate, Rental, Leasing	162	438
Professional, Scientific and Technical services	520	5876
Administrative and Support and Waste Management and Remediation Service	236	3231
Educational Services	69	309
Health Care and Social Assistance	274	1421
Accommodation and Food Services	255	6522
Other Services	845	17957

**Table 3
Single-Family New House Construction Building Permits**

Year	Permits	Average Cost
2017	08	\$2,906.00
2018	15	\$1,912.00

Estimated Range of Home Values

Amount	# of Homes
\$175,000 to \$199,999	65
\$200,000 to \$249,999	242
\$250,000 to \$299,999	1092
\$300,000 to \$399,999	3002

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Amount	# of Homes
\$400,000 to \$499,999	1431
\$500,000 to \$749,999	1295
\$750,000 to \$999,999	118
\$1,000,000 or more	45

Infrastructure

The city is governed by a mayor and six city council members. City Hall is located at 310 Technology Parkway, Peachtree Corners, GA 30092, telephone: 678-691-1200. Day to day operations of the city are under the oversight of the City Manager. The city's Planning Commission, Public Works, Code Enforcement, Business License, Stormwater Department, Zoning Board of Appeals, and Downtown Development Authority are made up of citizen members. The city has its own municipal court and employs a city attorney.

Although, in order to operate, the city is authorized to collect property taxes of up to one mill a year, lately the city has operated only on business licenses and other fees and without levying any property taxes.[24]

The United States Postal Service operates the Peachtree Corners Post Office. The ZIP Code 30092 is entirely within the city limits of Peachtree Corners. A significant portion of the city is within ZIP Code 30360, which is currently identified as "Atlanta", and portions of ZIP Codes 30071, 30096, and 30097 are included in the city.

Wesleyan School, Seigakuin Atlanta International School and Cornerstone Academy (K-8th grade) are private schools located in Peachtree Corners.

Gwinnett County Public Schools have the following schools in Peachtree Corners

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Table 4
City of Peachtree Corners School Infrastructure

School	Type	Enrollment
Peachtree Elementary	Elementary	940
Simpson Elementary	Elementary	852
Norcross High School	High School	3778
Stripling Elementary	Elementary	901
Pinckneyville Middle School	Middle	1286

Land Usage

Land use in the City of Peachtree Corners consists of single family homes which occupy 43.6% of the City's land area; and commercial uses occupy 17.5%; Parks occupy nearly 3%; and 7.4% of the City's land area is undeveloped. City size is 17.37 square miles (44.98 square kilometers)

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

Table 5
Legal and Regulatory Capability

Regulatory Tools/Plans	Regulatory Type:	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
	Ordinance Resolution Codes Plans, Etc.					
Building Codes	All codes are the latest edition adopted by the State of GA. IBC, IRC, IMC, IPC, IFC, IFGC, NEC, IECC, and ISPSC		8/18/15	N	Y	N
Capital Improvements Plan						
Comprehensive Plan 2040	Ordinance	2018-09-199	10/23/2018	Y	N	N

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Continuity of Operations/Continuity of Government (COOP/COG) Plan	Adopted Gwinnett County			N	N	Y
Community Rating System				N	N	Y
Economic Development Plan						
Emergency Management Accreditation Program Certified	Adopted Gwinnett County			N	N	Y
Emergency Response Plan	Adopted Gwinnett County	O2017-04-90 R2013-01-04	05/16/2017 01/29/2013	N	N	Y
Flood Management Plan	Adopted Gwinnett County	2017-04-90	06/20/2017	N	N	Y
Growth Control Ordinance						
Hazard Setback Regulations	Adopted Gwinnett County			N	N	Y
Hillside Ordinance						
Historic Ordinance						
National Flood Insurance Program Participant						
Post-Disaster Ordinance						
Post-Disaster Recovery Plan	Adopted Gwinnett County			N	N	Y
Real Estate Disclosure	Ordinance	02013-01-01	01/29/2013	Y	N	N
Site Plan Requirements				Y	N	N
Subdivision Regulations	Ordinance	02012-07-61	07-24-2012	Y	N	N
Wildfire Ordinance						
Zoning Ordinances						

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Administrative and Technical Capabilities

The City of Peachtree Corners has a number of administrative and technical capabilities. City departments include Administrative, Downtown Development Authority, Licenses and Permits, Municipal Court, Parks and Leisure, Planning, Police, Public Library, Public Works, Storm Water Pollution, Tax, Economic Development and Utilities. The City government includes a Mayor and six City Council Members. The City Administrator and City Clerk manage administrative functions.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan.

**Table 6
Mitigation Actions**

Goal 1: Reduce Gwinnett County’s risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County’s capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	Home First Gwinnett a collaboration between Gwinnett County and the United Way	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-20204	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low-income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert warning and notification systems for visually-impaired and hearing- impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

Goal 5: Reduce Gwinnett County's risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/ County Budget	Ongoing	Ongoing	N/A	

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	

Objective 6.2: Encourage the protection of residential and commercial structures.

6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	
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Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Objective 7.1: Improve Gwinnett County's flooding information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
7.1.4	Develop and maintain actions to participate in the NFIP program	City of Peachtree Corners	City Officials	\$5000	\$250,000	City Budget, FEMA, Grants	2019-2024	Started	New	In progress

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	New and Existing	
8.1.3	Continue to identify and implement water conservations efforts before/during and after times of extreme drought	All	County EMA, County Departments and Individual Jurisdictions	Staff Time		County and Individual Jurisdictions budgets	2019-2024	Deferred form 2015	New and Existing	

Goal 9: Reduce Gwinnett County's risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County's earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County/ City Budget	Ongoing	Ongoing	N / A	

Goal 10: Reduce Gwinnett County's risk and vulnerability to dam failure events.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Objective 10.1: Improve Gwinnett County's capabilities to prepare for and respond to a dam failure.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	
10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget, Grants	2019-2024	New	Existing	

Goal 12: Reduce Gwinnett County's risk and vulnerability to hazardous materials events.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County’s risk and vulnerability to hazardous materials events.

Objective 10.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	N / A	
12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	Existing	

Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City/ County Budget, School Budget	Ongoing	Ongoing	Existing	
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Goal 13: Reduce Gwinnett County’s risk and vulnerability to pandemic/epidemic events.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.										
13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 14: Reduce Gwinnett County's risk and vulnerability from domestic and international terrorism incidents.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
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Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.

14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel.	Existing	
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2014-2015	New; four elementary schools selected for pilot program	New and Existing	
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Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

Objective 15.1: Improve Gwinnett County's information distribution and warning capabilities to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.										
15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	
Objective 15.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from all-hazards events.										
15.3.2	Develop/maintain/revis a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing	
15.3.13	Purchase and install generators at critical city facilities	City of Peachtree Corners	City Officials	\$250,000		City Budget, FEMA, Grants	2019-2024	New	New	

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**CITY OF SNELLVILLE, GEORGIA
MITIGATION ACTION PLAN**

Geography and History

The City of Snellville (City) is located at 33°51'30"N, 84°0'23"W (33.858439, -84.006324). According to the U.S. Census Bureau, the City has a total area of 9.7 square miles (25.1 km²), of which 9.7 square miles (25.0 km²) is land and 0.04 square miles (0.1 km² or 0.41 percent) is water.

The City of Snellville began when two friends, James Sawyer and Thomas Snell, settled there from London, England. Commerce in Snellville was born when they built a small wood framed building and started a business that sold things that local farmers couldn't make or borrow from their neighbors. The store became prosperous, attracting people from neighboring towns. Originally named New London, it is uncertain when the City's name was changed to Snellville; however, Snell and Sawyer identified their store's location as Snellville.

The religious community grew as commerce did, with several churches beginning during that time. All of the original churches are still in existence in Snellville, all with their original structures. Despite the growth of the religious community and commerce, Snellville's growth was slow in its early days due to the fact that it was not located on any navigable body of water and was bypassed by the railroads.

Snellville was incorporated in 1923 and its city limits enlarged to a one-mile radius from the center of town. The growth remained slow until the 1960s, when suburban development patterns of segregated uses and automobiles became commonplace. Snellville continues to be one of the most successful cities in the Atlanta region.

Significant Characteristics

Thomas W. Briscoe Park is an 87 developed acre park full activities for all ages, including ball fields, eight soccer fields, basketball courts, swimming pool, trails, a sand volleyball court, picnic areas, playgrounds, a gazebo and plenty more.

Snellville is known for having the second largest shopping area in Gwinnett County.

Emory Eastside Medical Center is a major hospital in Snellville serving the southern Gwinnett County Region.

Population and Demographics

As of the 2018 census, there are 19,906 people and 6,265 households in the City. The population density is 2,052 people per square mile. The racial makeup of the City is 57.2 percent White, 7.4 percent is Hispanic or Latino (of any race), 29.3 percent African American, 0.2 percent Native American, 3.2 percent Asian, 0.08 percent Pacific Islander, and 2.1 percent from two or more races.

There are 6,265 households, of which 5.8 include children under the age of 5, 24.6 percent include children under the age of 18, and 15.9 percent have someone who is 65 or older. The average household size is 2.79.

The median age of a Snellville resident is 39 years old. In the City the population is spread out, with 26.6 percent under the age of 18, 7.3 percent from 18 to 24, 27.4 percent from 25 to 44, 26.5 percent from 45 to 64, and 12.3 percent who are 65 or older. For every 100 females, there are 91.5 males.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Economy

The median income for a household in the City is \$63,007, while the median income for a family is \$68,667. Males have a median income of \$29,083 versus \$25,639 for females. The per capita income for the City is \$25,992. Percentage of residents living in poverty in 2016: 14.7% (5.1% for White Non-Hispanic residents, 16.6% for Black residents, 42.0% for Hispanic or Latino residents, 35.5% for other residents)

Over 1,150 businesses operate in Snellville, bringing in more than \$1 billion in revenue yearly. The most common industries for males are construction (13 percent); professional, scientific and technical services (8 percent); administrative and support and waste management services (5 percent); broadcasting and telecommunications (5 percent); educational services (4 percent); finance and insurance (4 percent); and public administration (4 percent).

The most common industries for females are health care (16 percent); educational services (14 percent); professional, scientific and technical services (7 percent); finance and insurance (6 percent); social assistance (5 percent); accommodation and food services (4 percent); and administrative and support and waste management services (4 percent).

Snellville-area historical tornado activity is slightly above the Georgia state average. It is 96 percent greater than the overall U.S. average.

On November 22, 1992, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 32.5 miles away from the City center, injuring 46 people and causing between \$5 million and \$50 million in damages.

On March 24, 1975, an F3 tornado with maximum wind speeds of 158-206 mph struck 18.8 miles away from the City center, killing three people and injuring 152 people. Damages were estimated between \$50 million and \$500 million.

Table I
Single-Family New House Construction Building Permits

Year	Permits	Average Cost
1996	103	\$78,100
1997	53	\$85,200
1998	127	\$121,700
1999	98	\$124,700
2000	75	\$155,600
2001	146	\$141,500
2002	208	\$106,900
2003	273	\$106,600
2004	243	\$110,400
2005	202	\$135,300

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Year	Permits	Average Cost
2006	112	\$251,500
2007	42	\$208,900
2008	15	\$178,100
2009	27	\$176,400
2010	24	\$212,500
2011	0	n/a
2012	4	\$157,500

Infrastructure

The City of Snellville Police Department consists of 60 well trained Police Officers and civilian employees. The Department is organized in the following divisions; Uniform, Criminal Investigations, Communications, Records and Administrative.

Fire services are provided to Snellville by the Gwinnett County Department of Fire and Emergency Services.

Gwinnett County Public Schools have the following schools in Snellville:

**Table 2
Snellville School Infrastructure**

School	Type	Enrollment
Britt	Elementary	621
Snellville	Middle	918
South Gwinnett	High	2,561

Land Usage

The City has a total area of 9.7 square miles (25.1 km²), of which 9.7 square miles (25.0 km²) is land and 0.04 square miles (0.1 km² or 0.41 percent) is water.

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

**Table 3
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Building Codes	City Code	Chapter 18		Y	N	N
Capital Improvements Plan	Referenced in the City Code	Part I - Article III Article VI		Y	N	N
Comprehensive Plan	2040 Comprehensive Plan		2/11/19	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan			N	N	Y
Community Rating System	County Rating			N	N	Y
Economic Development Plan	County Plan and Referenced in the 2030 Comprehensive Plan			N	N	Y
Emergency Management Accreditation Program Certified				N	N	Y
Emergency Response Plan	County Emergency Operations Plan (EOP)			N	N	Y
Flood Management Plan	City Code	Chapter 30	8/28/2006	Y	N	N
Growth Control Ordinance	City Code Appendix B – Zoning Ordinance	Article 9	2/24/2003	Y	N	N
Hazard Setback Regulations						
Hillside Ordinance						
Historic Ordinance	City Code	Article 5		Y	N	N
National Flood Insurance Program Participant				N	N	Y
Post-Disaster Ordinance						
Post-Disaster Recovery Plan	County Plan			N	N	Y
Real Estate Disclosure	Real Estate Commission			N	N	Y

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Site Plan Requirements	City Code	Chapter 30 - Article III Appendix A		Y	N	N
Subdivision Regulations	City Code	Appendix A		Y	N	N
Wildfire Ordinance						
Zoning Ordinances	City Code	Appendix B		Y	N	N

Administrative and Technical Capabilities

The City of Snellville has a number of administrative and technical capabilities. City departments include Administration, Parks and Recreation, Planning and Development, Public Safety, and Public Works. The City government includes a Mayor and five Council Members. The administrative functions of the City are managed by the City Manager. Other key administrative personnel include the City Clerk, Controller, Information Technology Administrator and Facilities Coordinator.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan.

**Table 4
Mitigation Actions**

Goal 1: Reduce Gwinnett County’s risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County’s capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	City and County Officials	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	
1.3.14	Identify and bury utility lines in densely populated and commercial areas in the City of Snellville.	City of Snellville	City Officials, Public Works	\$250,000		City Budget, Grants	2019-2024	New	New and Existing	
1.3.15	Purchase winter weather salting and sanding equipment	City of Snellville	City Officials, Public Works	\$50,000	\$200,000	City Budget, Grants	2019-2024	New	New	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-20204	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low-income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert warning and notification systems for visually-impaired and hearing-impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	Existing	

Objective 2.2: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events, including thunderstorms and windstorms.

2.2.4	Purchase and install generators at critical facilities	City of Snellville	City Officials	\$250,000		City Budget, Grants	2019-2024	New	Existing	
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

Goal 5: Reduce Gwinnett County's risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/ County Budget	Ongoing	Ongoing	N/A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	

Objective 6.2: Encourage the protection of residential and commercial structures.

6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New and Existing	
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Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

8.1.3	Continue to identify and implement water conservations efforts before/during and after times of extreme drought	All	County EMA, County Departments and Individual Jurisdictions	Staff Time		County and Individual Jurisdictions budgets	2019-2024	Deferred form 2015	New and Existing	
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Goal 9: Reduce Gwinnett County's risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County's earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County/ City Budget	Ongoing	Ongoing	N / A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 10: Reduce Gwinnett County’s risk and vulnerability to dam failure events.

Objective 10.1: Improve Gwinnett County’s capabilities to prepare for and respond to a dam failure.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	
10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget, Grants	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County's risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	N / A	
12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	Existing	

Objective 10.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City /County Budget, School Budget	Ongoing	Ongoing	Existing	
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.										
Objective 13.1: Improve Gwinnett County's pandemic/epidemic information distribution and warning to citizens.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.										
13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 14: Reduce Gwinnett County's risk and vulnerability from domestic and international terrorism incidents.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.										
14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel.	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	
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Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

Objective 15.1: Improve Gwinnett County's information distribution and warning capabilities to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	
15.1.4	Implement an all-hazards notification system for the City of Snellville.	City of Snellville	City Officials	\$250,000		City Budget, FEMA, Grants	2019-2024	Not started deferred from 2015	New	Perusing funding

Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing
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Objective 15.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from all-hazards events.

15.3.2	Develop/maintain/revise a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing
15.3.14	Develop a Continuity of Operations Plan for the City of Snellville	City of Snellville	City Officials	Staff Time		City Budget, Grants	2019-2024	New	Existing

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**CITY OF SUGAR HILL, GEORGIA
MITIGATION ACTION PLAN**

Geography and History

The City of Sugar Hill (City) is located at 34°6'8"N, 84°2'39"W (34.102123, -84.044094). According to the U.S. Census Bureau, the City has a total area of 9.57 square miles (24.78 km²), all of which is land.

The City of Sugar Hill is rumored to receive its name from an incident in which a heavily loaded freight wagon lost its wheel on a high hill and spilled a part of its load. Included in the load that fell was several large bags of sugar. The wheel was repaired and the wagon was reloaded; however, the only thing that wasn't reloaded onto the wagon were the bags of sugar, which had broken open and spilled onto the hill. The area became known as "the hill where the sugar spilled," which was eventually shortened to Sugar Hill. It existed as part of the Georgia Militia District for many years, until it was charted as a city on March 24, 1939.

Significant Characteristics

The E Center is the city's mixed-use development that boasts a 406-seat performing arts theatre, The Eagle, a gymnasium and 43,000 square feet of restaurant, retail, office and meeting space all overlooking the outdoor amphitheater, The Bowl.

The Bowl, located directly behind city hall and the E Center, is the city's 1,750 seat outdoor amphitheater where many concerts and events are held.

Sugar Hill Golf Club opened in 1992 and has become one of the most beautiful and artfully laid out golf courses of the North Georgia

E.E. Robinson Park is a 54-acre park that has two of each of the following: softball fields, pavilions, tennis courts, basketball courts, beach volleyball courts and concession stands. The park also features a soccer field, jogging trail, playgrounds and much more.

Gary Pirkle Park is a 35-acre park for passive recreation like walking or jogging, and a 14-acre sports complex for basketball, racquetball, exercise rooms and more.

Sugar Loop Greenway will travel around the city with approximately 16.5 miles of trail of paved pathways intended for shared use by pedestrians, bicyclists, wheelchair users and joggers. The greenway will bring economic, health, environmental, community and transportation benefits to the city. The greenway will also provide connectivity to the citizens and guests.

Population and Demographics

As of 2018, there are an estimated 23,500 people and 7,263 households in the City. The estimated population density is 2,455 people per square mile. The racial makeup of the City is 70.4 percent White, 19.9 percent Hispanic or Latino (of any race), 8.4 percent African American, 0.1 percent Native American, 6.8 percent Asian, and 4.8 percent from two or more races. The average household is 3.22

The median age is 37.7. 27.6% of the population is under 18 years of age, 22.5% is under age 15, 25.1% is age 25 to 54, 8.6% is over age 65. For every 100 females there are 96.1 males.

The city's population has grown 16.6% since 2010.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Sources: US Census Bureau, 2013-2017 American Community Survey and 2017 official population estimate

Economy

The median household income is \$78,429 while the median family income is \$83,864. Median income for male full-time year-round workers is \$56,701 and \$44,706 for females. The per-capita income is \$30,202.

The most common industries for civilian employed population 16 years and over are education, healthcare and social assistance (18.6%); retail trade (14.8%); professional, scientific and management and administrative and waste management services (13.3%); manufacturing (10.7%); and construction (9.6%).

Sugar Hill-area historical tornado activity is above the Georgia state average. It is 103 percent greater than the overall U.S. average.

On November 22, 1992, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 22.6 miles away from the City center, injuring 46 people and causing between \$5 million and \$50 million in damages.

On April 3, 1974, an F4 tornado struck 24.7 miles away from the City center, killing six people and injuring 30 others. Damages were estimated between \$500,000 and \$5 million.

Table I
Single-Family New House Construction Building Permits

Year	Permits	Average Cost
1996	323	\$76,700
1997	325	\$79,400
1998	348	\$87,600
1999	351	\$103,100
2000	297	\$118,000
2001	384	\$147,400
2002	256	\$151,300
2003	410	\$147,600
2004	163	\$173,200
2005	160	\$161,500
2006	262	\$180,000
2007	192	\$168,600
2008	77	\$175,800
2009	43	\$224,300

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Year	Permits	Average Cost
2010	89	\$186,500
2011	54	\$171,200
2012	95	\$198,300
2013	164	\$206,355
2014	244	\$221,967
2015	140	\$220,200
2016	164	\$224,971
2017	238	\$226,141
2018	153	\$216,203

Infrastructure

The North Precinct of the Gwinnett County Police Department, which covers an area of 87 square miles in north Gwinnett County, serves Sugar Hill.

Fire services are provided to Sugar Hill by the Gwinnett County Department of Fire and Emergency Services.

Gwinnett County Public Schools have the following schools in Sugar Hill

**Table 2
Sugar Hill School Infrastructure**

School	Type	Enrollment
Roberts	Elementary	845
Sugar Hill	Elementary	1,190
White Oak	Elementary	705
Lanier	Middle	1,425
North Gwinnett	Middle	2,252
Lanier	High	1,851

Land Usage

The City has a total area of 9.57 square miles (24.78 km²), all of which is land.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

**Table 3
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Building Codes	City Code and 2002 Development Regulations	Chapter 14		Y	N	N
Capital Improvements Plan	Referenced in the City Code	Article VI		Y	N	N
Comprehensive Plan	2019 Comprehensive Plan		2019	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan			N	N	Y
Community Rating System	County Rating			N	N	Y
Economic Development Plan	County Plan and the 2019 Comprehensive Plan			N	N	Y
Emergency Management Accreditation Program Certified				N	N	Y
Emergency Response Plan	County Emergency Operations Plan (EOP)			N	N	Y
Flood Management Plan	City Code and the Flood Plain Management Ordinance	Chapter 34	2006	Y	N	N
Growth Control Ordinance	2002 Development Regulations and the 2019 Comprehensive Plan			Y	N	N
Hazard Setback Regulations						
Hillside Ordinance						

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Historic Ordinance	City Code and the 2009 Comprehensive Plan	Article II		Y	N	N
National Flood Insurance Program (NFIP) Participant	Participate in NFIP			N	N	Y
Post-Disaster Ordinance						
Post-Disaster Recovery Plan	County EOP			N	N	Y
Real Estate Disclosure	Real Estate Commission			N	N	Y
Site Plan Requirements	City Code & Development Regulations	Article II		Y	N	N
Subdivision Regulations	City Code & the 2002 Development Regulations	Article II Chapter 56, Article III		Y	N	N
Wildfire Ordinance						
Zoning Ordinances	City Code and Zoning Ordinance	Article III	1987 2000	Y	N	N

Administrative and Technical Capabilities

The City of Sugar Hill has a number of administrative and technical capabilities. City departments include the City Clerk, City Manager, Assistant City Manager, HR and Executive Services Manager, Economic Development, Events, Finance, Gas Customer Service and Utility, Parks and Recreation, Planning and Development, Public Works, Storm Water Utility, Public Safety and Golf Clubhouse Maintenance. The city holds Municipal Court on a monthly schedule for Code Enforcement matters. The City government includes a Mayor and five Council Members, one of which serves as Mayor Pro Tem. The administrative functions of the City are managed by the City Manager.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan.

**Table 4
Mitigation Actions**

Goal 1: Reduce Gwinnett County's risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County's capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	Home First Gwinnett a collaboration between Gwinnett County and the United Way	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	
1.3.19	Purchase Winter Weather salting/sanding/ scraping equipment	City of Sugar Hill	City Officials	\$100,000	\$200,000	City Budget Federal Grants	2019-2024	New	New	
1.3.20	Purchase and Install generators or transfer switches at identified critical facilities in the City of Sugar Hill	City of Sugar Hill	City Officials	\$50,000	\$50,000	City Budget, Federal Grants	2019-2024	New	New / Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-20204	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low-income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert warning and notification systems for visually-impaired and hearing-impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	Existing	
2.1.4	Maintain and Upgrade all outdoor warning systems	The City of Sugar Hill	City Officials	\$30,000	\$100,000	City Budget, Federal Grants	2019 – 2024	New	Existing	City of Sugar Hill updated system 2017, will continue to evaluate

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

Goal 5: Reduce Gwinnett County's risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City /County Budget	Ongoing	Ongoing	N/A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	

Objective 6.2: Encourage the protection of residential and commercial structures.

6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	
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Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Objective 7.1: Improve Gwinnett County's flooding information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
7.1.8	Maintain NFIP status for Flood Mitigation	City of Sugar Hill	City Officials	\$5,000	\$100,000	City Budget	2019-2024	Ongoing	N/A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	New and Existing	
8.1.3	Continue to identify and implement water conservations efforts before/during and after times of extreme drought	All	County EMA, County Departments and Individual Jurisdictions	Staff Time		County and Individual Jurisdiction s budgets	2019-2024	Deferred form 2015	New and Existing	

Goal 9: Reduce Gwinnett County's risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County's earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
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INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County/ City Budget	Ongoing	Ongoing	N / A	
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Goal 10: Reduce Gwinnett County's risk and vulnerability to dam failure events.

Objective 10.1: Improve Gwinnett County's capabilities to prepare for and respond to a dam failure.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget, Grants	2019-2024	New	Existing	
10.4.2	Review/Develop recommendations for Emergency Response Plan for Dam/Dike failure at Lake Lanier	City of Sugar Hill	City Officials	\$100,000	\$500,000	City Budget, Federal Grants	2019-2024	New	Existing	

Goal 12: Reduce Gwinnett County's risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	N / A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County's risk and vulnerability to hazardous materials events.

12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/City Budget	Ongoing	Ongoing	Existing	
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Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City/County Budget, School Budget	Ongoing	Ongoing	Existing	
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Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.

Objective 13.1: Improve Gwinnett County's pandemic/epidemic information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
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Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.

13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing

Goal 14: Reduce Gwinnett County's risk and vulnerability from domestic and international terrorism incidents.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
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Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel.	Existing	
14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.										
Objective 15.1: Improve Gwinnett County's information distribution and warning capabilities to citizens.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	
Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.										
15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	
Objective 15.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from all-hazards events.										

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

15.3.2	Develop/maintain/re vise a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing	
15.3.18	Develop a site Emergency Plan for the E Center	City of Sugar Hill	City Officials	\$80,000	\$250,000	City Budget, Federal Grants	2019-2024	New	New	

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**CITY OF SUWANEE, GEORGIA
MITIGATION ACTION PLAN**

Geography and History

The City of Suwanee (City) is located at 34°3'5"N, 84°4'22"W (34.051447, -84.072893). According to the U.S. Census Bureau, the City has a total area of 10.9 square miles (25.6 km²), of which 10 square miles (25.8 km²) is land and 0.1 square miles (0.2 km² or 0.71 percent) is water.

The City of Suwanee has various accounts as to how the City's received its name. One account cites the Indian word meaning "echo" as the origin of the City's name, while another points to the Creek word for "Shawnee." The final account posits that the City's name was derived from the way in which early white settlers pronounced "Shawnee." Regardless of which account is correct, the name appears to be closely tied with the city's Native American heritage. Suwanee began as an Indian village to the Shawnee, Creek and Cherokee Indians. White settlers moved in, and Suwanee was recognized as a town when the first Post Office was established in 1838.

Suwanee's growth is attributed to the evolution of transportation. The Southern Railroad and Depot created a station in Suwanee, as did the Richmond & Danville Railroad. Suwanee became a connecting station as people transferred between the two lines.

The City's economic foundation was cotton, which was grown by the majority of farmers until 1830. The first cotton gin house was built between 1872 and 1875. Suwanee wasn't incorporated until 1949 and remained a small agricultural based community into the 1970s, when the growth of the highway system spurred more development.

Significant Characteristics

Town Center Park is a 10 acre open space where visitors can walk, jog or bike with friends or pets. Amenities include pathways and sidewalks, garden areas, park benches, a big splash interactive water fountain, and an amphitheater with seating for 1,000. Most community gatherings are held at Town Center Park. A 25 acre extension of Town Center Park has been added to the master plan and construction began in 2019.

Suwanee Creek Greenway is a multipurpose trail that heads through almost 400 acres of parkland, residential and commercial areas.

Suwanee Creek Park is an 85 acre park for passive recreation and is ideal for family picnics or reunions. This park features a disk golf course, hard and soft surface trails, pavilions, picnic tables, grills and restrooms.

Play Town Suwanee is a huge children's playground featuring slides, swing sets, bridges, rock climbing, log cabin, boats, pavilion and more.

Sims Lake Park is Suwanee's newest park. At 62 acres, the park features a seven acre lake, trails, a playground, restrooms, pavilions and play meadows.

City Hall Park offers a gazebo and play equipment

George Pierce Park is a 300 acre park that offers many recreational facilities, stocked fishing pond, nature trails and more.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Population and Demographics

As of 2018 census data reflects, there were 18,655 people and 6,372 households in the City. The population density was 1,852 people per square mile. The racial makeup of the City was 54.7 percent White, 11 percent African American, 12.7 percent Hispanic or Latino (of any race), 0.2 percent Native American, 17.7 percent Asian, 0.1 percent Pacific Islander, and 1.8 percent from two or more races.

There were 6,372 households, of which 6.3 percent included children under the age of 5, 27.9 percent included children under the age of 18, and 6.6 percent had someone who was 65 or older. The average household size was 2.92.

The median age of a Suwanee resident is 37.6 years old. In the City the population was spread out, with 29.5 percent under the age of 18, 6.1 percent from 18 to 24, 39.3 percent from 25 to 44, 20.7 percent from 45 to 64, and 4.3 percent who were 65 or older.

Economy

The median income for a household in the City was \$85,306, while the median income for a family was \$91,519. Males had a median income of \$54,714 versus \$33,317 for females. The per capita income for the City was \$36,057. About 5.01% of the population for whom poverty status is determined in Suwanee, GA (921 out of 18.4k people) live below the poverty line, a number that is lower than the national average of 13.4%. The largest demographic livings in poverty are Females 35 - 44, followed by Females 25 - 34 and then Females 18 - 24.

The most common industries for males are professional, scientific and technical services (9 percent); broadcasting and telecommunications (8 percent); construction (7 percent); accommodation and food services (5 percent); finance and insurance (5 percent); computer and electronic products (4 percent); and motor vehicle and parts dealers (4 percent).

The largest industries in Suwanee, GA are Professional, Scientific, & Technical Services (1,429 people), Retail Trade (1,191 people), and Health Care & Social Assistance (1,131 people), and the highest paying industries are Construction (\$97,734), Transportation & Warehousing, & Utilities (\$80,417), and Transportation & Warehousing (\$80,417)..

Suwanee-area historical tornado activity is above the Georgia state average. It is 104 percent greater than the overall U.S. average.

On November 22, 1992, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 22.0 miles away from the City center, injuring 46 people and causing between \$5 million and \$50 million in damages.

On April 3, 1974, an F4 tornado struck 26.5 miles away from the City center, killing six people and injuring 30 others. Damages were estimated between \$500,000 and \$5 million.

Table I
Single-Family Home Values

Home Value	# Of Homes
< \$100K	97
\$100k - \$200k	963
\$200k - \$300K	2375

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Home Value	# Of Homes
\$300k - \$400K	1,075
\$400k - \$500k	411
\$500k - \$750k	266
\$750k - \$999,999	21
\$2,000,000 and up	20

Infrastructure

The Suwanee Police Department consists of 51 employees who serve the City of Suwanee.

Fire services are provided to Suwanee by the Gwinnett County Department of Fire and Emergency Services.

Gwinnett County Public Schools have the following schools in Suwanee:

**Table 2
Suwanee School Infrastructure**

School	Type	Enrollment
Level Creek	Elementary	1,042
Suwanee	Elementary	653
North Gwinnett	High	3,207

Land Usage

The City has a total area of 10.9 square miles (25.6 km²), of which 10 square miles (25.8 km²) is land and 0.1 square miles (0.2 km² or 0.71 percent) is water.

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

**Table 3
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
Building Codes	Code of Ordinances	Chapter 18		Y	N	N
Capital Improvements Plan	Referenced in the 2030 Comprehensive Town Master Plan			Y	N	N
Comprehensive Plan	2030 Comprehensive Town Master Plan		2019	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan			N	N	Y
Community Rating System	County Rating			N	N	Y
Economic Development Plan	County Plan and the 2040 Comprehensive Town Master Plan			N	N	Y
Emergency Management Accreditation Program Certified				N	N	Y
Emergency Response Plan	County Emergency Operations Plan (EOP)			N	N	Y
Flood Management Plan	Code of Ordinances	Chapter 38		Y	N	N
Growth Control Ordinance	Referenced in the Code of Ordinances and the 2030 Comprehensive Town Master Plan	Chapter 46		Y	N	N
Hazard Setback Regulations						
Hillside Ordinance						
Historic Ordinance	Referenced in the Code of Ordinances and the 2030 Comprehensive Town Master Plan	Chapter 38		Y	N	N

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Higher Authority
National Flood Insurance Program Participant				N	N	Y
Post-Disaster Ordinance						
Post-Disaster Recovery Plan	County EOP			N	N	Y
Real Estate Disclosure	Real Estate Commission			N	N	Y
Site Plan Requirements	Code of Ordinances	Chapter 46 - Article IV		Y	N	N
Subdivision Regulations	Code of Ordinances and the 2030 Comprehensive Town Master Plan	Chapter 46 - Article IV		Y	N	N
Wildfire Ordinance						
Zoning Ordinances	Code of Ordinances and the 2030 Comprehensive Town Master Plan	Appendix A		Y	N	N

Administrative and Technical Capabilities

The City of Suwanee has a number of administrative and technical capabilities. City departments include Administrative Services, Economic and Community Development, Financial Services, Planning, Police, Public Works, and Planning and Zoning Board. The City government includes a Mayor and five Council Members. The administrative functions of the City are managed by the City Manager. Other key administrative personnel include the Assistant to the City Manager, Administrative Services Director, Economic and Community Development Director, Financial Services Director, Planning and Inspections Director, Police Chief, Public Works Director, Accounting Manager, Accounting Analyst, Court Clerk, Court Services Administrator, Development Coordinator, Downtown Suwanee Manager, Economic and Community Development Special Projects Coordinator, Events Coordinator, Financial Services Special Projects Analyst, Human Resources Manager, Planning Division Manager, Public Information Officer, Public Works Administrative Assistant, Public Works Assistant to the Director, and Senior Environmental Planner.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan.

**Table 4
Mitigation Actions**

Goal 1: Reduce Gwinnett County's risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County's capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	Home First Gwinnett a collaboration between Gwinnett County and the United Way	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	
1.3.16	Purchase and install generators and transfer switches at critical facilities	City of Suwanee	City Officials	\$250,000		City Budget, Grants	2019-2024	New	New/ Existing	
1.3.17	Purchase winter weather salting and sanding equipment	City of Suwanee	Coty Officials	\$50,000	\$100,000	City Budget, Grants	2019-2024	New	New	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-20204	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low-income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert warning and notification systems for visually-impaired and hearing- impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2015	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

Goal 5: Reduce Gwinnett County's risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/ County Budget	Ongoing	Ongoing	N/A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	

Objective 6.2: Encourage the protection of residential and commercial structures.

6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	
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Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Objective 7.2: Improve Gwinnett County's capability to prepare for, respond to, and recover from flood events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
7.2.15	Increase Culvert sizes at identified locations throughout the City of Suwanee	City of Suwanee	City Officials	\$250,000		City Budget, FEMA, Grants	2019-2024	New	New/ Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

7.2.16	Design implement and upgrade storm water management infrastructure in residential and commercial areas	City of Suwanee	City Officials	\$250,000		City Budget, FEMA, Grants	2019-2024	New	New/ Existing	
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Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Time frame	Status	New/ Existing Infrastructure	Additional action information
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	New and Existing	
8.1.3	Continue to identify and implement water conservations efforts before, during, and after times of drought.	All	County EMA and Individual Jurisdictions	Staff Time		County and Individual Jurisdiction Budgets	2015-2019	Deferred from 2010	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 9: Reduce Gwinnett County's risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County's earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County /City Budget	Ongoing	Ongoing	N / A	

Goal 10: Reduce Gwinnett County's risk and vulnerability to dam failure events.

Objective 10.1: Improve Gwinnett County's capabilities to prepare for and respond to a dam failure.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget, Grants	2019-2024	New	Existing	
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Goal 12: Reduce Gwinnett County's risk and vulnerability to hazardous materials events.

Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	N / A	
12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.

12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City/County Budget, School Budget	Ongoing	Ongoing	Existing	
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Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Time frame	Status	New/ Existing Infrastruc ture	Additional action information
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Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.

13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

Goal 14: Reduce Gwinnett County's risk and vulnerability from domestic and international terrorism incidents.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.										
14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel.	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	
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Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

Objective 15.1: Improve Gwinnett County's information distribution and warning capabilities to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	

Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	
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Objective 15.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from all-hazards events.

15.3.2	Develop/maintain/revis a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing	
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TOWN OF BRASELTON, GEORGIA MITIGATION ACTION PLAN

Geography and History

The Town of Braselton (Town) is located at 34°5'56"N, 83°47'52"W (34.098764, -83.797814). According to the U.S. Census Bureau, the Town has a total area of 12.6 square miles (32.6 km²), all of which is land.

The Town of Braselton is located in not only Gwinnett County, but spans into three additional counties—including Hall, Jackson, and Barrow—giving Braselton a rich heritage. The portions of Braselton that fall under Gwinnett and Barrow Counties are part of the Atlanta-Sandy Springs-Marietta, GA-AL Metropolitan Statistical Area. The portion that is in Hall County is part of the Gainesville, GA Metropolitan Statistical Area. The remaining portion that falls under Jackson County is not part of any Core-Based Statistical Area.

The name Braselton comes from the Braselton family, who has lived in the area for some time. In 1989, the town was bought by the Ameritech Pension fund and actress Kim Basinger for \$20 million. The goal for the Basinger-Braselton partnership was to establish it as a tourist attraction with movie studios and a film festival. Later Basinger sold her portion of Braselton to the Ameritech Fund. Now, much of Braselton's property is under the ownership of developer Wayne Mason.

Significant Characteristics

As the largest winery in Georgia, the Chateau Elan Winery and Resort attracts more than half a million visitors each year. The wines there have won many regional awards.

Historical Braselton-Stover House is located in downtown Braselton. It was built in 1916 by Green Braselton. Green was also the second son of the Town's founder, William Harrison Braselton. In December 2000, the house was purchased by Mary and Marvin Stover, who have restored its beauty. This house now has a 6000 square foot banquet facility that can be used for weddings or business functions.

Downtown Braselton is listed on the National Register of historic places. In addition to the Braselton Brothers Store and other contributing buildings, the Braselton Event Center is located in downtown Braselton. It was built in 1916 by Green Braselton. Green was also the second son of the Town's founder, William Harrison Braselton. In December 2000, the house was purchased by Mary and Marvin Stover, who have restored its beauty. This house now has a 6000 square foot banquet facility that can be used for weddings or business functions.

The Mulberry River walk is an outdoor area that has trails, picnic areas and a view of the falls. Approximately 1100 feet of the trail is within Gwinnett County.

Braselton is also the headquarters of the American Junior Golf Association, the Panoz Motor Sports Group, and the International Motor Sports Association.

Population and Demographics

As of the 2018 the U.S. Census estimated that there are 11,652 people and 3,126 households in the Town. The population density is roughly 900 people per square mile. The racial makeup of the town is 77.5 percent White, 8.6 percent African American, 3.7 percent Asian, 0 percent Pacific Islander, 8.2 percent Hispanic or Latino (of any race), and 1.6 percent from two or more races.

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

There are 3,126 households, of which 9.2 percent included children under the age of 5, 30.2 percent include children under the age of 18, and 7.3 percent have someone who is 65 or older. The average household size is 3.2.

The median age of a Braselton resident is 36.3 years old. In the Town the population is spread out, with 26.5 percent under the age of 18, 60.9 percent from 18 to 64, 12.6 percent who are 65 or older.

The Town's growth has been rapid within the last decade, with the population increasing by 284 percent between 1990 and 2000.

Economy

The median income for a household in the Town is \$102,522. Males have a median income of \$55,720 versus \$33,688 for females. The per capita income for the Town is \$43,140. About 6.2 percent of the population is below the poverty line, including 3 percent of individuals under the age of 18 and 11 percent age 65 or over.

Major employers in the Town include distribution warehouses for Sears Appliance Division, Year One, Tractor Supply, Haverty's Furniture and Home Depot. From 2016 to 2017, employment in Braselton, GA grew at a rate of 15.6%, from 3.82k employees to 4.42k employees.

The most common job groups, by number of people living in Braselton, GA, are Management Occupations (846 people), Office & Administrative Support Occupations (817 people), and Sales & Related Occupations (632 people).

Compared to other places, Braselton, GA has an unusually high number of residents working as Law Enforcement Workers Including Supervisors (1.97 times higher than expected), Management Occupations (1.88 times), and Fire Fighting & Prevention, & Other Protective Service Workers Including Supervisors (1.8 times).

Braselton-area historical tornado activity is slightly above the Georgia state average. It is 92 percent greater than the overall U.S. average.

On April 3, 1974, an F4 tornado with maximum wind speeds of 207-260 miles per hour (mph) struck 35.0 miles away from the Town center, injuring 30 people and causing between \$500,000 and \$5 million in damages.

On December 13, 1973, an F3 tornado with maximum wind speeds of 158-206 mph struck 14.5 miles away from the Town center, injuring 21 people and causing between \$500,000 and \$5 million in damages.

Table I
Single-Family Home Values

Range of Home Values	# Of Homes
< - \$100,000	168
\$100,000 - \$200,000	753
\$200,000 - \$300,000	421
\$300,000 - \$400,000	419
\$400,000 - \$500,000	172

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Range of Home Values	# Of Homes
\$500,000 - \$750,000	427
\$750,000 - \$1,000,000	126
\$1,000,000 - \$1,500,000	35
\$1,500,000 - \$2,000,000	19

Infrastructure

The Braselton Police Department is located next to Town Hall and has about 19 police officers. An officer is on duty 24 hours each day.

Fire services are provided to the portion of Braselton in Gwinnett County by the Gwinnett County Department of Fire and Emergency Services.

There are currently no schools within Braselton’s city limits that fall within Gwinnett County.

Land Usage

The Town has a total area of 12.6 square miles (32.6 km²), all of which is land.

Legal and Regulatory Capabilities

The Legal and Regulatory Capability survey documents authorities available to the jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that support local hazard mitigation planning efforts. The identified planning and land management tools are typically used by states and local and tribal jurisdictions to implement hazard mitigation activities.

**Table 3
Legal and Regulatory Capability**

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Tribal Authority
Building Codes	Development Code	Article 18	01/12/2004	Y	N	N
Capital Improvements Plan	Braselton CIE	None	11/12/18	Y	N	N
Comprehensive Plan	2030 Comprehensive Plan	None	11/09/15	Y	N	N
Continuity of Operations/Continuity of Government (COOP/COG) Plan	County COOP/COG Plan			N	N	Y
Community Rating System	County Rating			N	N	Y

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Regulatory Tools/Plans	Regulatory Type: Ordinance Resolution Codes Plans, Etc.	Reference Number	Date Adopted	Local Authority	State Prohibited	Emergency Authority
				N	N	Y
Economic Development Plan	County Plan			N	N	Y
Emergency Management Accreditation Program Certified				N	N	Y
Emergency Response Plan	County Emergency Operations Plan (EOP)			N	N	Y
Flood Management Plan	Braselton Code of Ordinances	34-1	04/2011	Y	N	N
Growth Control Ordinance	Development Code	None	01/12/04	Y	N	N
Hazard Setback Regulations						
Hillside Ordinance						
Historic Ordinance				N	N	N
National Flood Insurance Program (NFIP) Participant	Participates in NFIP			N	N	Y
Post-Disaster Ordinance						
Post-Disaster Recovery Plan	County EOP			N	N	Y
Real Estate Disclosure	Real Estate Commission			N	N	Y
Site Plan Requirements	Development Code	None	01/12/04	Y	N	N
Subdivision Regulations	Development Code	None	01/12/04	Y	N	N
Wildfire Ordinance						
Zoning Ordinances	Development Code	None	01/12/04	Y	N	N

Administrative and Technical Capabilities

The Town of Braselton has a number of administrative and technical capabilities. Town departments include Police, Planning, Finance, Public Works, Wastewater, and the Zoning Board of Appeals. The Town government includes a Mayor and four Council Members. The administrative functions of the town are managed by the Town Manager/Clerk. Other key personnel include the Police Chief, Planning

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Director, Finance Director, Director of Public Works, Water Superintendent, Wastewater Superintendent and the Planning Commission.

Mitigation Actions

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the adopted mitigation action plan. In each mitigation action plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process. A complete list of countywide mitigation strategies and additional action information is provided in Section 5 of the Gwinnett County Hazard Mitigation Plan.

**Table 4
Mitigation Actions**

Goal 1: Reduce Gwinnett County's risk and vulnerability to severe winter storms.										
Objective 1.1: Increase citizen severe winter storm awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
1.1.1	Distribute severe winter weather preparedness literature at appropriate/identified community events.	All	County Emergency Management Agency (EMA), City and County Officials	\$2,000	\$20,000	City/County Budget	2019-2024	Ongoing	N/A	
Objective 1.3: Improve Gwinnett County's capability to prepare for, respond to and recover from severe winter storms.										
1.3.1	Establish programs to protect the homeless, poor, ill, and elderly during extreme winter temperatures.	All	Home First Gwinnett a collaboration between Gwinnett County and the United Way	\$3,000	\$100,000	City/County Budget, FEMA	2019-2024	Ongoing	Existing	
1.3.18	Purchase winter weather salting and sanding equipment	Town of Braselton	Coty Officials	\$50,000	\$100,000	City Budget, Grants	2019-2024	New	New	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 2: Minimize losses of life and property due to high winds from severe thunderstorms and windstorms in Gwinnett County, including all municipalities. (* These actions also can apply to Hurricane and Tropical Storms)

Objective 2.1: Increase citizen severe thunderstorm/windstorm awareness, preparedness and response.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
2.1.1	Distribute severe weather preparedness literature at appropriate/identified events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget, FEMA	2019-20204	Ongoing from 2015	N/A	
2.1.2	Provide Oceanic and Atmospheric Administration (NOAA) weather radios to identified functional needs citizens (e.g., elderly, rural, low-income).	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2019-2024	Ongoing from 2010	Existing	
2.1.3	Implement alert, warning, and notification systems for visually-impaired and hearing-impaired citizens.	All	County EMA, City and County Officials	\$5,000	\$200,000	City/County Budget, FEMA	2015-2019	Ongoing from 2010	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 4: Reduce the loss of life and property caused by tornadoes in Gwinnett County.

Objective 4.1: Improve Gwinnett County's capability to prepare for, respond to and recover from severe weather events involving tornadoes.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
4.1.2	Work with utility companies to improve tree clearing program along power lines	All	County EMA, City and County Officials	\$250,000		City/ County Budget	2019-2024	New	Existing	

Goal 5: Reduce Gwinnett County's risk and vulnerability to lightning.

Objective 5.1: Increase citizen lightning awareness.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
5.1.1	Distribute lightning awareness literature at appropriate/identified community events.	All	County EMA, City and County Officials	\$2,000	\$20,000	City/County Budget	Ongoing	Ongoing	N/A	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 6: Minimize losses of life and property in Gwinnett County due to wildfires.

Objective 6.1: Protect critical facilities and vulnerable populations from the effects of wildfires.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
6.1.2	Gwinnett County parks wildland fire buffer protection zones management plan	All	County EMA, First Responder Agencies, County Departments	\$500,000		FEMA, State, County Budget	2018-2024	New	Existing	

Objective 6.2: Encourage the protection of residential and commercial structures.

6.2.1	Educate homeowners and Businesses on Fire Prevention year round. "Prevention 365" program	All	County EMA, County Fire/Rescue, City and County Officials	Staff Time		City / County Budget, FEMA	2019-2024	Ongoing	New / Existing	
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Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

Objective 7.2: Improve Gwinnett County's capability to prepare for, respond to, and recover from flood events.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
7.2.17	Update the City of Braselton's storm water management plans and identify problem areas	Town of Braselton	City Officials	\$100,000	\$800,000	City Budget, FEMA Grans	2019-2024	NEW	New / Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 7: Reduce Gwinnett County's risk and vulnerability to flood events.

7.2.18	Increase Culvert sizes at identified locations throughout the Town of Braselton	Town of Braselton	City Officials	3.5 Million	8 Million	City Budget, FEMA, Grants	2019-2024	New	Existing	
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Goal 8: Minimize agricultural and property losses in Gwinnett County resulting from drought conditions.

Objective 8.1: Protect critical facilities and vulnerable agriculture from effects of drought conditions.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/Existing Infrastructure	Additional action information
8.1.2	Identify vulnerable areas (e.g., farms) and develop a protective action plans	All	County EMA, City and County officials	\$1,000	\$50,000	County and Individual Jurisdiction Budgets	2019-2024	Ongoing	New and Existing	
8.1.3	Continue to identify and implement water conservations efforts before/during and after times of extreme drought	All	County EMA, County Departments and Individual Jurisdictions	Staff Time		County and Individual Jurisdictions budgets	2019-2024	Deferred form 2015	New and Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 9: Reduce Gwinnett County's risk and vulnerability to earthquake events.

Objective 9.1: Improve Gwinnett County's earthquake information distribution and warning to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
9.1.1	Distribute earthquake preparedness literature at community events	All	County EMA, City and County Officials	\$2,555	\$1,000,000	County/ City Budget	Ongoing	Ongoing	N / A	

Goal 10: Reduce Gwinnett County's risk and vulnerability to dam failure events.

Objective 10.1: Improve Gwinnett County's capabilities to prepare for and respond to a dam failure.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
10.3.1	Identify vulnerable areas (e.g., areas surrounding community dams) and develop a protective action and response plans	All	Department of Water Resources, County EMA, City and County Officials	\$50,000	\$100,000	City / County Budget	2019-2024	New	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

10.4.1	Perform a study to identify impact and recovery from dam failures to include public infrastructure vital to county welfare and economy downstream of all dams	All	County EMA, City and County Officials, Water Resource, Planning and Development	\$150,000	\$2,000,000	County Budget, Grants	2019-2024	New	Existing	
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Goal 11: Reduce Gwinnett County’s risk and vulnerability to cyber security attacks.

Goal 11.1: Reduce Gwinnett County’s risk and vulnerability to cyber security attacks.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
11.1.2	Purchase and maintain offsite and offline data backups for the Town of Braselton	Town of Braselton	City Officials	\$20,000	\$50,000	City Budget, Grants	2019-2024	New	New	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 12: Reduce Gwinnett County's risk and vulnerability to hazardous materials events.										
Objective 12.1: Increase citizen hazardous materials event awareness, preparedness, and response.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
12.1.1	Provide the public with information on hazardous materials hazards, including how to identify and report hazardous materials incidents	All	County EMA, County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County /City Budget	Ongoing	Ongoing	N / A	
12.1.2	Educate the public on shelter-in-place procedures for hazardous materials incidents	All	County EMA County Fire/Rescue, City and County Officials	\$2,000	\$20,000	County/ City Budget	Ongoing	Ongoing	Existing	
Objective 12.2: Improve first responder capability to prepare for, respond to, and recover from hazardous materials events.										
12.2.1	Participate in annual chemical, biological, radiological, nuclear and high-yield explosives exercises with all first responder agencies	All	City and County Officials, School Officials, County EMA, County Fire/Rescue Department	\$5,000	\$50,000	City /County Budget, School Budget	Ongoing	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 13: Reduce Gwinnett County's risk and vulnerability to pandemic/epidemic events.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 13.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to pandemic/epidemic events.										
13.2.1	Train county staff and first responders on pandemic flu response.	All	Gwinnett, Newton, and Rockdale County Health Departments	\$2,500	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	2019-2024	Not Started Deferred from 2015	N / A	
13.2.2	Participate in Strategic national Stockpile drills and exercises	All	Gwinnett, Newton, and Rockdale County Health Departments	\$5,000	\$50,000	State Budget, County Budget, FEMA, Public Health Grants	Ongoing	Ongoing	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 14: Reduce Gwinnett County's risk and vulnerability from domestic and international terrorism incidents.										
Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/ Existing Infrastructure	Additional action information
Objective 14.2. Improve first responders capability to prepare for and respond to terrorism incidents.										
14.2.1	Train all first responders on terrorism response	All	County Sheriff, County EMA, County Police Department, Municipal Police, School Officials and SRO's	\$5,000	\$100,000	County Budget, School Budget, FEMA	Ongoing	All School Resource Officers have received active shooter training. Collaborative Active Shooter training at Mill Creek High School during the summer of 2014 included numerous Gwinnett County Public Schools, Gwinnett County law enforcement and Emergency medical service personnel.	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

14.2.2	Develop and implement a visitor management system to restrict facility access through electronic locks and provide an alarm feature to alert authorities in an emergency.	All	School Officials	\$250,000		School Budget	2019-2024	Ongoing	New and Existing	
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Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.

Objective 15.1: Improve Gwinnett County's information distribution and warning capabilities to citizens.

Action	Action/Project Description	Jurisdiction	Responsible	Estimated Cost	Estimated Benefit	Funding Sources	Timeframe	Status	New/Existing Infrastructure	Additional action information
15.1.1	Publish news articles and distribute educational literature regarding safe rooms and shelter-in-place procedures to the public.	All	Gwinnett County EMA with City and other County Officials	\$2,000	\$20,000	County / City Budget	2019-2024	Ongoing from 2015	Existing	

INDIVIDUAL JURISDICTION MITIGATION ACTION PLANS

Goal 15: Improve Gwinnett County's capability to reduce risk and vulnerability to all-hazards events.										
Objective 15.2: Improve Gwinnett County's first responder capabilities to prepare for and respond to all-hazards events.										
15.2.1	Conduct annual multiagency disaster exercises involving all response agencies and County departments	All	County EMA, First Responder Agencies, County Departments	\$50,000	\$1,000,000	County Budget, Grants, FEMA	Ongoing	Ongoing from 2015	Existing	
Objective 15.3: Improve Gwinnett County's capability to prepare for, respond to, and recover from all-hazards events.										
15.3.2	Develop/maintain/revise a resource management inventory that is compliant with National Incident Management System (NIMS) guidelines.	All	County EMA, City / County Officials	\$30,000	\$200,000	County Budget, Grants, FEMA	2019-2024	Ongoing	Existing	
15.3.16	Conduct study of riverbank erosion and identify mitigating actions to restore the riverbank	Town of Braselton	City Officials	\$500,000	\$100,000,000	City Budget, Grants	2019-2024	New	New	
15.3.17	Purchase mobile electric signage for public notification	Town of Braselton	City Officials	\$20,000	\$50,000	City Budget, Grants	2019-2024	New	New	

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