



MEMORANDUM

To: Mayor and City Council

From: Mike Carlson, Deputy Chief of Police

Date: March 20, 2023

Subject: Approval of Update to DeKalb County Multi-Jurisdictional Hazard Mitigation Plan

ACTION

Approve the updated 2022 DeKalb County Multi-Jurisdictional Hazard Mitigation Plan.

BACKGROUND/SUMMARY

In order to continue to qualify for grants through the Georgia Emergency Management Agency (GEMA) and the Federal Emergency Management Agency (FEMA) for hazard mitigation, the city must adopt the updated 2022 DeKalb County Multi-Jurisdictional Hazard Mitigation Plan. The 2022 plan is an update to the adopted plan from 2016.

In 2011, the City of Dunwoody became a full participant in the DeKalb County Hazard Mitigation Planning effort. Unlike other planning efforts, hazard mitigation planning focuses on steps and actions the City can complete or can complete working with the County, our Emergency Management Agency, GEMA, and FEMA.

For Dunwoody, flooding and winter storms were identified as "frequent and historical" hazards, with tornados identified as "historical" hazards. The plan also includes a prioritization and implementation strategy for hazard mitigation action items to address each of the identified top hazards. The actual implementation of each mitigation action will be further dictated by the City Council through the annual budgeting process and the City's efforts to secure grant awards based on Council's priorities.



According to DEMA, the plan has some dates that must be added to match the Final Approval Letter date when issued by FEMA, which cannot be attained until all participating jurisdictions have provided proof of plan adoption to GEMA/FEMA.

The plan is 'Approved Pending Adoption' by FEMA in its current state, and upon receipt of the Jurisdiction Adoption Resolutions, they will send DeKalb County the Final Approval Letter. Once they have Final Approval, they will fill in the dates, remove any other markups/comments from the document, add copies of the Adoption Resolutions and a copy of the Final Approval Letter, and then submit the completed copy of the plan to DeKalb EMA, GEMA, and FEMA.

The updated plan has been reviewed by the Police Department and Public Works.

RECOMMENDATION

Staff recommends the City adopt the updated DeKalb County Multi-Jurisdictional Hazard Mitigation Plan by Resolution. By doing so, Dunwoody will be eligible to apply for grants through GEMA and FEMA to begin working to reduce and eliminate the long-term effects of disasters in our community.



DeKalb County

GEORGIA

2022 Countywide Hazard Mitigation Plan Update

(Insert Month) (2022)

Encompassing Unincorporated DeKalb County, Georgia, and the Municipalities of Avondale Estates, Brookhaven, Chamblee, Clarkston, Decatur, Doraville, Dunwoody, Lithonia, Pine Lake, Stone Mountain, Stonecrest and Tucker.



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Executive Summary

The 2022 Countywide Hazard Mitigation Update was developed to 1) revise the previous hazard mitigation activities of Unincorporated DeKalb County, Georgia, and the municipalities of Avondale Estates (City), Brookhaven (City), Chamblee (City), Clarkston (City), Decatur (City), Doraville (City), Dunwoody (City), Lithonia (City), Pine Lake (City), and Stone Mountain (City), and 2) identify the hazard mitigation activities of new plan participants, Stonecrest (City) and Tucker (City), which together form the 'planning area.'

The plan update was prepared in partnership with the DeKalb County Emergency Management Agency, the DeKalb County Mitigation Planning Committee, and Tennessee-based BOLDplanning Inc., a division of Agility (<https://www.agilityrecovery.com>). It supersedes DeKalb's 2016 Countywide Hazard Mitigation Plan Update and outlines a mitigation strategy for five (5) years following plan approval and adoption by all plan participants.

Formal adoption and implementation of a federally approved hazard mitigation plan (HMP) presents many benefits to DeKalb County and the participating jurisdictions. Most notably, by identifying problems and possible solutions in advance of natural disasters, the planning area will be in a better position to obtain hazard mitigation funding from the Federal Emergency Management Agency (FEMA). This may include both pre- and post-disaster financial assistance.

The 2022 Countywide Hazard Mitigation Plan Update aims to produce the following strategic outcomes:

- Reduce loss of life and decrease property losses due to the occurrence of natural disasters within the planning area; and
- Provide the framework and coordination to encourage government, and both public and private sector organizations at all levels, to undertake mitigation to minimize potential disasters and to employ mitigation strategies in the recovery following disasters.

Specifically, these strategic outcomes will be brought about through the following planning process:

- 1) Identify, describe, and characterize the hazards to which the planning area is susceptible; and
- 2) Assess the risk of each hazard, including probability, frequency, exposure, and vulnerability; and
- 3) Examine feasible mitigation opportunities appropriate for the identified hazards, and prioritize those opportunities; and
- 4) Implement mitigation actions to reduce loss of life and damage to property; and
- 5) Identify mitigation opportunities for long-term planning consideration.



Glossary

ACS – American Community Survey
 ASCE – American Society of Civil Engineers
 BFE – Base Flood Elevation
 CDC – Centers for Disease Control and Prevention
 CRS – Community Rating System
 CUSEC – Central U.S. Earthquake Consortium
 CWPP – Community Wildfire Protection Plan
 DEMA – DeKalb County Emergency Management Agency
 DHS – Department of Homeland Security
 DMA 2000 – Disaster Mitigation Act of 2000
 EAP – Emergency Action Plan
 EOC – Emergency Operations Center
 EOP – Emergency Operations Plan
 FEMA – Federal Emergency Management Agency
 FIRM/DFIRM – Flood Insurance Rate Map/Digital Flood Insurance Rate Map
 FMA – Flood Mitigation Assistance (Grant Program)
 GEMA - Georgia Emergency Management and Homeland Security Agency
 GIS – Geographic Information System
 HAZUS – GIS System (FEMA)
 HMGP – Hazard Mitigation Grant Program
 HMP – Hazard Mitigation Plan
 HMPC – Hazard Mitigation Planning Committee
 ICS – Incident Command System
 LEPC – Local Emergency Planning Committee
 LEOP – Local Emergency Operations Plan
 MJHMP – Multijurisdictional Hazard Mitigation Plan
 NCEI – National Centers for Environmental Information
 NEIC –National Earthquake Information Center
 NFHL – National Flood Hazard Layer
 NFIP – National Flood Insurance Program
 NFPA – National Fire Protection Association
 NOAA – National Oceanic and Atmospheric Administration
 NRCS – National Resources Conservation Service
 NWS – National Weather Service
 OES – Office of Emergency Services
 PDM – Pre-Disaster Mitigation (Grant Program)
 PDSI – Palmer Drought Severity Index
 POC – Point of Contact
 RL – Repetitive Loss
 SFHA – Special Flood Hazard Area
 SRL – Severe Repetitive Loss
 SSURGO – Soil Survey Geographic Database
 UAISI – Urban Area Security Initiative
 UDC – Unified Development Code
 USACE – U.S. Army Corps of Engineers
 USDA – U.S. Department of Agriculture
 USGS – U.S. Geological Survey
 WID – Watershed Improvement District
 WUI – Wildland Urban Interface



INTRODUCTION TO MITIGATION

Introduction to Mitigation

The Emergency Management Cycle & Mitigation

Understanding the emergency management cycle is the first step in effectively planning and operating in relation to all disaster-related activities. The emergency management cycle is an open-ended and ongoing process. The four phases in the process are mitigation, preparedness, response, and recovery. Each phase of the cycle can last for years, months, or only moments in duration, while different paths can exist simultaneously.



Mitigation planning is the process of determining how to reduce or eliminate loss of life and damage to property resulting from natural disasters. It is carried out as any sustained action to reduce or eliminate long-term risk to life and property from a hazard event. Mitigation encourages long-term reduction of hazard vulnerability. As is the goal of emergency management, so is the goal of mitigation to save lives and reduce property damage.

The Disaster Mitigation Act of 2000 (DMA 2000)

In the past, federal legislation has provided funding for disaster relief, recovery, and some hazard mitigation planning. The Disaster Mitigation Act of 2000 (DMA 2000) became law on October 30, 2000, amending the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the “Stafford Act”) (Public Law 93-288, as amended). Regulations for this activity can be found in Title 44 of the Code of Federal Regulations Part 206, Subpart M.

This legislation reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur. This act establishes a pre-disaster hazard mitigation program and new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP).

Section 322 of the act specifically addresses mitigation planning at the state, local, and tribal levels. It identifies new requirements that allow HMGP funds to be used for mitigation planning activities and increases the amount of HMGP funds available to states that have developed a comprehensive, enhanced mitigation plan prior to a disaster. States and communities must have an approved mitigation plan in place prior to receiving post-disaster HMGP funds. Local and tribal mitigation plans must demonstrate that their proposed mitigation measures are based on a sound planning process that accounts for the risk to and the capabilities of the individual communities and identifiable gaps.

DMA 2000 is intended to facilitate cooperation between state and local authorities, prompting them to work together. It encourages and rewards local and state pre-disaster planning and promotes sustainability as a strategy for disaster resistance. This enhanced planning network will better enable local and state governments to articulate accurate needs for mitigation, resulting in faster allocation of funding and more effective risk reduction projects. To implement the new DMA 2000 requirements, the Federal Emergency Management Agency (FEMA) prepared an interim final rule, published in the Federal Register on February 26, 2002, at 44 CFR Parts 201 and 206, which establishes planning and funding criteria for states and local communities.

On October 31, 2007, FEMA subsequently published an Interim Rule in the Federal Register, which ensures the Flood Mitigation Assistance (FMA) program planning requirements are consistent with the mitigation planning regulations as cited in the Code of Federal Regulations (CFR) at Title 44, Chapter 1, Part 201 (44CFR Part 201).

This interim rule established that local communities must comply with mitigation planning requirements to be eligible to apply for FEMA mitigation project grant funding, including FMA and FEMA's Severe Repetitive Loss (SRL) Program. Meeting the requirements of the regulations cited above ensures participating jurisdictions within the planning area will be eligible to receive disaster assistance, including hazard mitigation grants



INTRODUCTION TO MITIGATION

available through the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended.

DeKalb County has the responsibility to coordinate activities relating to hazard evaluation and mitigation, and to prepare and submit to FEMA a local hazard mitigation plan, following the criteria established in 44 CFR 201.6 and Section 322 of the DMA 2000 (Public Law 106- 390).



SECTION 1: PLANNING PROCESS

Section 1: Planning Process

1.1 – Plan Introduction

The DeKalb County, Georgia (GA) – 2022 Countywide Hazard Mitigation Update involves 13 participants, 11 of which were included in the previous plan (2016) and two (2) of which are new. These consist of DeKalb County, i.e., unincorporated DeKalb County, and the municipalities of Avondale Estates (City), Brookhaven (City), Chamblee (City), Clarkston (City), Decatur (City), Doraville (City), Dunwoody (City), Lithonia (City), Pine Lake (City), and Stone Mountain (City), as well as Stonecrest (City) and Tucker (City), respectively. The cities of Stonecrest and Tucker were incorporated in 2016.

As mentioned in the Executive Summary, this plan update was prepared in partnership with the DeKalb County Emergency Management Agency (DEMA), the DeKalb County Mitigation Planning Committee (MPC), and Tennessee-based BOLDplanning Inc., a division of Agility (<https://www.agilityrecovery.com>). It supersedes the DeKalb County, GA – 2016 Countywide Hazard Mitigation Update and outlines a mitigation strategy for five (5) years following plan adoption.

1.2 – Plan Development

1.2.1 – Plan Revision Process

On September 25, 2021, the DeKalb County Emergency Management Agency (DEMA) applied for a Hazard Mitigation Grant Program (HMGP) grant under FEMA Project HMGP-DR 4400-18, Hurricane Michael. Once awarded, the county hired Tennessee-based BOLDplanning Inc. (BOLDplanning) to facilitate the plan update's development.

The plan revision process was initiated shortly thereafter, with an initial mitigation planning team established. Members were asked to seek out other interested parties for the formation of the DeKalb County Mitigation Planning Committee, or MPC. The MPC provided proper jurisdictional representation and actively participated in all aspects of the plan update's development. Details are provided in Section 1.2.3 – Participating Jurisdictions, MPC Contributions by Planning Phase.

A variety of planning events and activities, including meetings and conference calls, took place throughout the plan revision process. Most were conducted virtually via Zoom® due to the ongoing COVID-19 pandemic. If a committee member could not attend a meeting, they were contacted by phone, provided the specifics of the meeting, and asked to offer comments or suggestions. A summary of the major planning events and activities can be found in Section 1.3.3.

The public, as required by FEMA and the Sunshine Laws, was given multiple opportunities to ask questions, voice concerns, review plan drafts, and provide input toward the plan update's development. The public was also invited to provide feedback on hazard identification, hazard ranking, and mitigation project prioritization. These outreach efforts were accomplished through BOLDplanning's launching of two online surveys.

The first survey, the DeKalb County, GA Hazard Mitigation Plan Survey (<https://publicinput.com/S4057>), allowed for MPC members, plan stakeholders, and the public to provide input to hazards and potential hazard mitigation projects that are ongoing for the county. The second survey, the DeKalb County, GA Hazard Mitigation Plan – Open Comment Survey (<https://publicinput.com/I2514>) allowed all MPC members, plan stakeholders, and the public to provide feedback and input on the mitigation update prior to its submission to GEMA/HS and FEMA. Information specific to these efforts can be found Section 1.3 as well as Appendix C – Public Participation.

Planning Process

- Plan Introduction
- Plan Development
- Stakeholder Participation
- Community Involvement

Local Procedures & Resources

Planning Area

Hazard Risk Assessment

Mitigation Strategy



SECTION 1: PLANNING PROCESS

In preparation for plan drafting, BOLDplanning reviewed DeKalb County's previous mitigation update (2016) and performed a gap analysis of policies, procedures, resources, etc. Additionally, the company reviewed the Georgia Hazard Mitigation Strategy, Standard and Enhanced Plan (Effective March 18, 2019 – March 17, 2024) and other state and local documents in relationship to mitigation planning. BOLDplanning also consulted with GEMA/HS staff (as needed) throughout the plan revision process.

All plan drafts were reviewed by the MPC and other plan stakeholders, including the public, and modifications were made as deemed necessary. The DeKalb County, GA – 2022 Countywide Hazard Mitigation Update was submitted to GEMA/HS and FEMA for review on **Date** and the final, approved plan was adopted by all participating jurisdictions with the signing of plan adoption resolution letters.

The MPC will monitor the mitigation update's progress over the course of the next five years and make modifications if deemed necessary. Additionally, DeKalb County will begin the process of preparing its next mitigation update (2027) in 2025.

Plan Revision Process Summary

- DEMA engaged BOLDplanning to provide staff support in facilitating the plan revision process and preparing the 2022 Countywide Hazard Mitigation Update.
- All jurisdictions participating in the plan update's development appointed a representative to service on the mitigation planning committee (MPC), along with DEMA, other stakeholders and BOLDplanning.
- Various planning events and activities ensured the MPC's understanding and agreement of the planning process, including organizing resources, assessing hazards, developing the plan update, implementing the plan update, and monitoring its progress over the next five (5) years.
- The public was given the opportunity to participate in the mitigation plan's development as required by FEMA and the Sunshine Laws.

1.2.2 – What's New in this Mitigation Update?

While certain elements of DeKalb County's previous mitigation plan (2016) have been retained, outdated information has been either revised or removed from the 2022 update. Particular emphasis was given to revising the list of critical facilities, updating the hazard risk assessment, determining the status of prior mitigation projects (2016), and identifying new mitigation projects, as explained below.

What's New? Section 3 – Planning Area (Critical Facilities Summary)

The DeKalb County MPC evaluated the list of critical facilities uploaded to the Georgia Mitigation Information System and used in the previous plan (2016). For mitigation planning purposes, this list is the basis for vulnerability assessments and loss estimates. DEMA staff updated the critical facilities list to produce the maps appearing in the 2022 mitigation update. The complete list can be found in Appendix C - Critical Facilities & Infrastructure.



SECTION 1: PLANNING PROCESS

What's New? Section 4 – Hazard Risk Assessment

The DeKalb County MPC evaluated the hazards identified in the previous mitigation update (2016) as well those included in the State of Georgia 2019 Hazard Mitigation Strategy, Standard and Enhanced Plan to properly determine which hazards to include/exclude in the 2022 Countywide Hazard Mitigation Update. A comparison of these plans, along with the MPC's final decisions, are provided in the table below.

Table 1: Summary of Hazards, 2022 Countywide Hazard Mitigation

Summary of Hazards, 2022 Countywide Hazard Mitigation Update			
Hazard	DeKalb County 2016 Countywide Hazard Mitigation Update	2019 Georgia Hazard Mitigation Strategy, Standard and Enhanced Plan	Final Decision to Include/Exclude in 2022 DeKalb County 2022 Hazard Mitigation Update
Coastal Hazards	Excluded	Included	Exclude – Not Applicable to Planning Area
Dam Failure	Included as Flood (Dam Breach)	Included	Include in Flooding – Reasonable Risk
Drought	Included	Included	Include – Disaster History
Earthquake	Included	Included	Include – Reasonable Risk
Extreme Heat	Included	Included	Include – Disaster History
Geologic Hazards	Excluded	Included	Exclude – No Reasonable Risk
Hurricane Wind	Included as Wind Hazards	Included	Include in Wind Hazards – Disaster History
Inland Flooding	Included as Flood	Included	Include in Flooding – Disaster History
Severe Weather	Included as Wind Hazards	Included	Include in Wind Hazards – Disaster History
Severe Winter Weather	Included as Winter Storm	Included	Include – Disaster History
Tornado	Included as Wind Hazards	Included	Include in Wind Hazards – Disaster History
Wildfire	Included	Included	Include
Wind	Included as Wind Hazards	Included	Include as Wind Hazards – Disaster History



SECTION 1: PLANNING PROCESS

What's New? Section 5 – Mitigation Strategy

DeKalb County's 2016 Countywide Hazard Mitigation Update contained a risk assessment of identified hazards for the planning area along with a mitigation strategy to address the identified hazards' risk and vulnerability. Fittingly, many open discussions took place with the MPC and other plan stakeholders to update these sections of the plan for 2022. From these discussions came the identification of mitigation projects and goals for plan inclusion, which typically focus on strengthening critical facilities and infrastructure.

A Mitigation Strategy Update Meeting, facilitated by DEMA and BOLDplanning, provided the participating jurisdictions with information on how to offer additional insight related to the identified hazards, and subsequently the mitigation projects and goals. The DeKalb County mitigation planning points of contact (POCs) learned how BOLDplanning would assist them in providing input to update the mitigation projects from 2016 as well as how and when to offer any new/proposed projects to include in the 2022 update.

Following this meeting, representatives from BOLDplanning worked with DeKalb County and the participating jurisdictions to provide updates relevant to previous mitigation projects (2016), including their current status (completed, deferred, or carryover). The DeKalb County MPC was tasked with identifying any new mitigation projects for the 2022 update and entering them into the BOLDplanning.com platform, dubbed DeKalbReady.com.

All mitigation projects selected for the 2022 Countywide Hazard Mitigation Update, whether carried over or new, are based upon the potential to reduce risk to life and property with an emphasis on new and existing infrastructure, ease of implementation, community and agency support, consistency with local/jurisdictional plans and capabilities, available funding, vulnerability, and total risk.

The 2022 mitigation update includes 29 carryover projects from the 2016 plan as they are still relevant, in progress or ongoing. The 2022 mitigation update also includes 23 new projects. All were assessed using STAPLEE or a similar methodology to ensure the projects reflect current mitigation priorities. Details specific to these projects can be found in Section 5 - Mitigation Strategy.

NOTE: As with previous mitigation updates (2011 and 2016), DeKalb County will continue to take a multijurisdictional approach to planning; thus, ensuring the mitigation goals and objectives of the county and the participating jurisdictions remain consistent.

What's New? Section 5.5 – Planning Integration

Mitigation does not end at plan approval. Plan approval is only the beginning. The successful implementation of any number of mitigation projects requires the coordination and collaboration of different local agencies, departments, and organizations. All have varying decision-making processes and authorities governing their actions. This mitigation update, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

DeKalb County's 2022 Countywide Hazard Mitigation Update is not only useful for implementing mitigation projects but also critical to development plans and capital improvement projects. The plan's risk assessment is of particular value as it can help prevent unmanaged and dangerous development in identified hazard areas such as floodplains.

Accordingly, DeKalb County intends to incorporate elements of the 2022 Countywide Hazard Mitigation Update into other planning documents. These may include the DeKalb County Emergency Operations Plan (EOP) and the DeKalb County Comprehensive Plan, among others. Likewise, the participating jurisdictions will integrate parts of the 2022 mitigation update into similar local plans.

1.3 – Stakeholder Participation

The DeKalb County MPC is made up of stakeholders working together for the development and ongoing maintenance of this plan update. The participants are grouped into actively participating representatives from the participating jurisdictions within DeKalb County.



SECTION 1: PLANNING PROCESS

- **Mitigation Planning Committee (MPC)** – This group consists of the jurisdictional representatives from the planning area, the Georgia Emergency Management Agency and Homeland Security (GEMA/HS), supporting state and federal agencies, and BOLDplanning.
- **Other Stakeholders** – This group consists of interested parties from the local community and a state university. This plan was developed with the support and input from various commercial interests.
- **Members from the General Public** – FEMA requires this planning effort to be open to constant input from interested citizens in compliance with the Sunshine Laws. In Georgia, public meetings must comply with the State's Open Meetings Act, unless established by statutory exemption. Therefore, any individual citizen who wishes to be involved in this effort to mitigate future disasters is encouraged to attend the MPC meetings and to solicit relevant comments to be included in the draft sections of the written plan.

1.3.1 - Participating Jurisdictions, MPC Contributions by Planning Phase

The following table provides information specific to the jurisdictions participating in the 2022 Countywide Hazard Mitigation Update, along with their MPC contributions by planning phase.



SECTION 1: PLANNING PROCESS

Table 2: Participating Jurisdictions, MPC Contributions by Planning Phase

Participating Jurisdictions, MPC Contributions by Planning Phase				
Jurisdiction and Representative	Planning Process	Risk Assessment	Mitigation Strategy	Plan Maintenance
DeKalb County Representative, Title (requested)	<ul style="list-style-type: none"> Led the Mitigation Planning Committee (MPC) Provided information on hazards, critical facilities, Points of Contact (POCs), etc. Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> Completed hazard history documentation Completed risk assessment questionnaire Reviewed risk assessment 	<ul style="list-style-type: none"> Provided mitigation project updates and actions history Proposed mitigation projects Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> Will lead in the MPC as prescribed in Section 2 – Plan Maintenance
DeKalb County (Unincorporated) Representative, Title (requested)	<ul style="list-style-type: none"> Provided administrative support for the MPC Provided information on hazards, critical facilities, POCs, etc. 	<ul style="list-style-type: none"> Completed hazard history documentation Completed risk assessment questionnaire Reviewed risk assessment 	<ul style="list-style-type: none"> Provided mitigation project updates and actions history Proposed mitigation projects Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> Will participate in the MPC as prescribed in Section 2 – Plan Maintenance
Avondale Estates (City) Representative, Title (requested)	<ul style="list-style-type: none"> Participated in MPC Provided information on hazards, critical facilities, POCs, etc. Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> Completed hazard history documentation Completed risk assessment questionnaire Reviewed risk assessment 	<ul style="list-style-type: none"> Provided mitigation project updates and actions history Proposed mitigation projects Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> Will participate in the MPC as prescribed in Section 2 – Plan Maintenance



SECTION 1: PLANNING PROCESS

Participating Jurisdictions, MPC Contributions by Planning Phase				
Jurisdiction and Representative	Planning Process	Risk Assessment	Mitigation Strategy	Plan Maintenance
Brookhaven (City) Representative, Title (requested)	<ul style="list-style-type: none"> • Participated in MPC • Provided information on hazards, critical facilities, POCs, etc. • Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> • Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment 	<ul style="list-style-type: none"> • Provided mitigation project updates and actions history • Proposed mitigation projects • Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> • Will participate in the MPC as prescribed in Section 2 – Plan Maintenance
Chamblee (City) Representative, Title (requested)	<ul style="list-style-type: none"> • Participated in MPC • Provided information on hazards, critical facilities, POCs, etc. • Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> • Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment 	<ul style="list-style-type: none"> • Provided mitigation project updates and actions history • Proposed mitigation projects • Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> • Will participate in the MPC as prescribed in Section 2 – Plan Maintenance
Clarkston (City) Representative, Title (requested)	<ul style="list-style-type: none"> • Participated in MPC • Provided information on hazards, critical facilities, POCs, etc. • Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> • Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment 	<ul style="list-style-type: none"> • Provided mitigation project updates and actions history • Proposed mitigation projects • Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> • Will participate in the MPC as prescribed in Section 2 – Plan Maintenance



SECTION 1: PLANNING PROCESS

Participating Jurisdictions, MPC Contributions by Planning Phase				
Jurisdiction and Representative	Planning Process	Risk Assessment	Mitigation Strategy	Plan Maintenance
Decatur (City) Representative, Title (requested)	<ul style="list-style-type: none"> • Participated in MPC • Provided information on hazards, critical facilities, POCs, etc. • Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> • Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment 	<ul style="list-style-type: none"> • Provided mitigation project updates and actions history • Proposed mitigation projects • Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> • Will participate in the MPC as prescribed in Section 2 – Plan Maintenance
Doraville (City) Representative, Title (requested)	<ul style="list-style-type: none"> • Participated in MPC • Provided information on hazards, critical facilities, POCs, etc. • Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> • Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment 	<ul style="list-style-type: none"> • Provided mitigation project updates and actions history • Proposed mitigation projects • Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> • Will participate in the MPC as prescribed in Section 2 – Plan Maintenance
Dunwoody (City) Representative, Title (requested)	<ul style="list-style-type: none"> • Participated in MPC • Provided information on hazards, critical facilities, POCs, etc. • Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> • Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment 	<ul style="list-style-type: none"> • Provided mitigation project updates and actions history • Proposed mitigation projects • Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> • Will participate in the MPC as prescribed in Section 2 – Plan Maintenance



SECTION 1: PLANNING PROCESS

Participating Jurisdictions, MPC Contributions by Planning Phase				
Jurisdiction and Representative	Planning Process	Risk Assessment	Mitigation Strategy	Plan Maintenance
Lithonia (City) Representative, Title (requested)	<ul style="list-style-type: none"> Participated in MPC Provided information on hazards, critical facilities, POCs, etc. Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> Completed hazard history documentation Completed risk assessment questionnaire Reviewed risk assessment 	<ul style="list-style-type: none"> Provided mitigation project updates and actions history Proposed mitigation projects Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> Will participate in the MPC as prescribed in Section 2 – Plan Maintenance
Pine Lake (City) Representative, Title (requested)	<ul style="list-style-type: none"> Participated in MPC Provided information on hazards, critical facilities, POCs, etc. Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> Completed hazard history documentation Completed risk assessment questionnaire Reviewed risk assessment 	<ul style="list-style-type: none"> Provided mitigation project updates and actions history Proposed mitigation projects Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> Will participate in the MPC as prescribed in Section 2 – Plan Maintenance
Stonecrest (City) Representative, Title (requested)	<ul style="list-style-type: none"> Participated in MPC Provided information on hazards, critical facilities, POCs, etc. Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> Completed hazard history documentation Completed risk assessment questionnaire Reviewed risk assessment 	<ul style="list-style-type: none"> Provided mitigation project updates and actions history Proposed mitigation projects Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> Will participate in the MPC as prescribed in Section 2 – Plan Maintenance



SECTION 1: PLANNING PROCESS

Participating Jurisdictions, MPC Contributions by Planning Phase				
Jurisdiction and Representative	Planning Process	Risk Assessment	Mitigation Strategy	Plan Maintenance
Stone Mountain (City) Representative, Title (requested)	<ul style="list-style-type: none"> Participated in MPC Provided information on hazards, critical facilities, POCs, etc. Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> Completed hazard history documentation Completed risk assessment questionnaire Reviewed risk assessment 	<ul style="list-style-type: none"> Provided mitigation project updates and actions history Proposed mitigation projects Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> Will participate in the MPC as prescribed in Section 2 – Plan Maintenance
Tucker (City) Representative, Title (requested)	<ul style="list-style-type: none"> Participated in MPC Provided information on hazards, critical facilities, POCs, etc. Served as primary POC for the jurisdiction 	<ul style="list-style-type: none"> Completed hazard history documentation Completed risk assessment questionnaire Reviewed risk assessment 	<ul style="list-style-type: none"> Provided mitigation project updates and actions history Proposed mitigation projects Prioritized mitigation projects using STAPLEE (or similar) methodology 	<ul style="list-style-type: none"> Will participate in the MPC as prescribed in Section 2 – Plan Maintenance

1.3.2 – Other Plan Stakeholders

The following table details plan stakeholders outside the DeKalb County MPC. Among them are relevant government agencies (local, state, and federal) with the authority to regulate development, as well as any/all regional organizations. Also represented, if applicable, are the public, neighboring communities, academia, and private organizations.

Table 3: Other Plan Stakeholders, Involvement

Other Plan Stakeholders, Involvement			
Name	Organization	Position	Involvement
Principal Plan Developers			
Brittney Bond	BOLDplanning	Mitigation Planner	Organized planning schedule, meetings, and plan development process; plan writer and editor



SECTION 1: PLANNING PROCESS

Other Plan Stakeholders, Involvement			
Name	Organization	Position	Involvement
Michael Amberson	BOLDplanning	Mitigation Planner	Researched and developed plan content
Karla O'Grady	BOLDplanning	Project Support	Provided additional support and input; coordinated kick-off meeting
Will Minkoff	BOLDplanning	Project Support, Plan Reviewer	Provided additional support and input; coordinated kick-off meeting; reviewed plan drafts
Kiana Freeman	BOLDplanning	Mitigation Planner	Final plan review and editing
Local Governments			
LaThaydra Sands	City of Lithonia	City Administrator	MPC Chair; represented jurisdiction, and provided additional support and input
Donovan Cushnie	DeKalb County Government, Department of Planning and Sustainability	Floodplain Coordinator	MPC Co-Chair; represented jurisdiction, and provided additional support and input
Courtney Frisch	City of Chamblee	Assistant Director of Public Works	MPC Administrative Support; represented jurisdiction, and provided additional support and input
Patrick Bailey	DeKalb County Medical Examiner	Director-Medical Examiner	Represented jurisdiction, and provided additional support and input
DC Ward	DeKalb Emergency Management	Deputy Director	Represented jurisdiction
Joseph Whelchel	DeKalb County Police Department (DKPD)	Police Officer	Represented jurisdiction, and provided additional support and input
Paul Hanebuth	City of Avondale Estates - Avondale	Asst. City Manager	Represented jurisdiction
Philemon Harrington	DeKalb County Police Department (DKPD)	Detective	Represented jurisdiction, and provided additional support and input
ChaQuias Miller-Thornton	City of Stone Mountain	City Manager	Represented jurisdiction



SECTION 1: PLANNING PROCESS

Other Plan Stakeholders, Involvement			
Name	Organization	Position	Involvement
Yolanda Harkley	DeKalb County Emergency Management (DEMA)	Emergency Manager	Represented jurisdiction, and provided additional support and input
Kristopher Matson	Children's Healthcare of Atlanta	Emergency Manager	Represented jurisdiction, and provided additional support and input
Jim Tavenner	City of Stone Mountain Public Works Department	Director	Represented jurisdiction, and provided additional support and input
J Walker	DeKalb County Police Department (DKPD)	Sergeant	Provided additional support and input
Carl Thomas	City of Dunwoody	Stormwater Utility Manager	Represented jurisdiction
Chief J.K. Cox	DeKalb County Emergency Management Agency (DEMA)	Director	Provided additional support and input
William Voorhies	DeKalb County Fire Rescue	Deputy Chief of Planning and Risk Reduction	Represented jurisdiction
Matthew Murrery	Brookhaven Police Department	EMA Team Lead	Represented jurisdiction, and provided additional support and input
Gerald Selby	Community Member	Community	Represented jurisdiction, and provided additional support and input
Toni Washington	City of Decatur	Fire Chief/Emergency Manager	Represented jurisdiction
Adam Wade	DeKalb County Police Department (DKPD)	Detective	Represented jurisdiction, and provided additional support and input
Robin Pitts	Citizen	Mother	Represented jurisdiction
Akin Akinsola	DeKalb Roads and Drainage	Floodplain Management Supervisor	Represented jurisdiction
Alesia Guest	DeKalb County E-911 Communications Center	E-911 Deputy Director	Represented jurisdiction
Regional Organizations			



SECTION 1: PLANNING PROCESS

Other Plan Stakeholders, Involvement			
Name	Organization	Position	Involvement
State Agencies			
Lucy Herring	Georgia Emergency Management and Homeland Security (GEMA/HS)	Hazard Mitigation Planning Specialist	Represented agency, and provided additional support and input
Federal Agencies			
Plan Reviewer(s)	Federal Emergency Management Agency (FEMA)	Designated Plan Reviewers, FEMA Region 4	Reviewed and approved plan
Academia & Private Organizations			



SECTION 1: PLANNING PROCESS

1.3.3 – Planning Meetings and Activities

As expected, much time and effort went into the development of the DeKalb County, GA - 2022 Countywide Hazard Mitigation Update. Following is a synopsis of the major, public, and private, mitigation planning meetings and other plan-related activities that took place throughout the plan development process. Proof of the meetings, sign-in sheets, public notification documentation, etc. can be found in Appendix C – Public Participation.

Hazard Mitigation Plan Update Kick-Off and Public Information Meeting, October 7, 2021 – Hosted by BOLDplanning and conducted remotely using Zoom® web conferencing due to ongoing COVID-19 concerns, this meeting was open to DEMA, the MPC, and the public. Prior to the meeting, a public announcement ran for two weeks on DEMA's Next Door social media page and DeKalb County's Facebook page. During the meeting, everyone was encouraged to ask questions, voice concerns, and provide input to the mitigation plan update. Of the 48 people in attendance, one (1) was from the public. BOLDplanning worked with the MPC to collect contact information, hazard history, facility information, and other pertinent jurisdictional information. Documentation pertaining to this meeting is in Appendix C – Public Participation.

Image 1: Screenshot, Kick-off and Public Information Meeting, October 7, 2021



Image Source: BOLDplanning

Hazard Mitigation Plan, Mitigation Strategy Update Meeting, October 6, 2021 – DEMA hosted a mitigation strategy update meeting for the MPC and plan stakeholders to gain additional insight into the county's hazards and determine how best to represent the jurisdictions during the plan update's development. Participants learned about the BOLDplanning process for updating previously identified mitigation projects (2016) and were encouraged to ask questions and express any/all concerns. The meeting took place virtually through Zoom® web conferencing due to ongoing COVID-19 concerns. It was attended by 27 stakeholders; the public was not invited given the topic(s) of discussion. Documentation pertaining to this meeting is in Appendix C – Public Participation.

Hazard Mitigation Plan Update, Public Review Period, TBD – Prior to the Public Review Period, a public announcement ran for **x weeks in XXX** and for x weeks in the **XXX**. DeKalb County also utilized social media by posting the public announcement on the county's Facebook page for **x** days. Additionally, DEMA publicized the Public Review Period on their website for the duration of the period (14 days). Due to the COVID-19 pandemic and DeKalb County government reopening with operations modified for COVID-19 Safe Practices, MPC members and the public were asked to review a draft copy of the updated plan online (available on DEMA's website) before asking questions or expressing concerns. The MPC, plan stakeholders, and the public



SECTION 1: PLANNING PROCESS

provided feedback for the plan draft using an online survey tool, i.e., Public Input. Documentation pertaining to the Public Review Period is in Appendix C – Public Participation.

Hazard Mitigation Plan Update, Final Review Meeting, Date TBD – The updated DeKalb County mitigation plan was reviewed by the MPC and other stakeholders, as requested, prior to its submission to the Georgia Emergency Management Agency (GEMA). However, due to the ongoing COVID-19 pandemic, the Final Review Meeting was not conducted in person. Rather, DEMA emailed the MPC and plan stakeholders, requesting final plan review and final comments via email reply.

Hazard Mitigation Plan Update, Plan Adoption Signing, Date TBD – Upon plan approval, adoption letters pertaining to the 2022 Countywide Hazard Mitigation Update were disseminated and signed by the 13 plan participants: Unincorporated DeKalb County, Georgia, and the municipalities of Avondale Estates (City), Brookhaven (City), Chamblee (City), Clarkston (City), Decatur (City), Doraville (City), Dunwoody (City), Lithonia (City), Pine Lake (City), Stonecrest (City), Stone Mountain (City), and Tucker (City). The signing of these resolution letters codifies the plan update's adoption.

Additional planning efforts included meetings with representation from other jurisdictions and the public at large. Planning events also included conference calls

1.4 – Community Involvement

The Dekalb County MPC provided the opportunity for neighboring communities, agencies, businesses, academia, non-profits, and other interested parties to be involved in the mitigation planning process. The public was notified of open meetings via Dekalb County's website, and local newspapers. BOLDplanning and DEMA invited all non-covered jurisdictions, including school districts and others with expiring mitigation plans, to participate in the plan update. Any jurisdiction or school district not covered in the 2022 Countywide Hazard Mitigation Update is either covered under another plan or declined to participate.

Local and regional agencies and the representatives of participating jurisdictions, including mayors, public officials, police/fire/EMS, GIS, planning, building, and zoning, and others, were notified of MPC meetings via email and phone. Emergency managers from neighboring Georgia counties, Gwinnett, Rockdale, Henry, Clayton, and Fulton, were personally invited to attend the kick-off and public draft review meeting.

For two weeks prior to each public meeting, an announcement appeared on DEMA's website (<https://www.dekalbcountyga.gov/>). For documentation, see Appendix C – Public Participation.

At the first public planning (virtual) meeting, attendees ranked and identified hazards, aided in the creation of a community profile, prioritized mitigation projects, and completed a risk assessment questionnaire. During this meeting, and the latter public review meeting, citizens and other parties were invited to review the most current draft, provide any input of feedback, and ask any relevant questions of the Dekalb County MPC and BOLDplanning.

Due to the COVID-19 pandemic and government reopening/COVID-19 Safe Practices for Dekalb County and the participating jurisdictions, the Public Review Period of the plan draft, as previously stated, was held virtually. MPC members and the public were invited to review a draft copy of the Dekalb County HMP (update) posted to DEMA's website (<https://www.dekalbcountyga.gov/dema/dekalb-emergency-management-agency>) before asking questions or voicing concerns. The MPC, stakeholders, and the public provided feedback and input on the plan draft by completing a feedback questionnaire (<https://publicinput.com/12514>).

Relevant federal, regional, state, and local governments as well as any private and non-profit organizations were invited to provide input and technical expertise. The entities, who volunteered, either in person or by providing hazard data, are listed in the following table.



SECTION 1: PLANNING PROCESS

Table 4: Partner Involvement by Entity

Partner Involvement by Entity		
Entity Classification	Entity	Entity Input
Federal Agencies	Environmental Protection Agency (EPA), National Parks, National Oceanic and Atmospheric Administration/ National Centers for Environmental Information (NOAA/NCEI), American Society of Civil Engineers (ASCE), Army Corp of Engineers, United States Department of Agriculture (USDA), FEMA, Natural Resources Conservation Service (NRCS), National Inventory of Dams, United States Geological Survey (USGS), National Weather Service (NWS), U.S. Census Bureau	Provided census data, weather data, dam data, land use data, and geological data
State Agencies	GEMA, Georgia Bureau of Investigation (GBI), Georgia Department of Transportation (GDOT), Georgia Environmental Protection Division, Georgia Forestry Commission, State Courts	Provided oversight and technical assistance; provided hazard records; provided hazard data
Local Governments	DeKalb County Emergency Management Agency (DEMA); Dekalb County Planning and Zoning Division, Participating Municipalities (Cities of Avondale Estates, Brookhaven, Chamblee, Clarkston, Decatur, Doraville, Dunwoody, Lithonia, Pine Lake, Stonecrest, Stone Mountain, and Tucker), Dekalb County School District, Dekalb County Water System	Provided input as MPC members / principal subjects; Provided input – GIS (maps); Provided input – public school map; provided input from various interests
Private Organizations	BOLDplanning, Dekalb County-Marietta Water Authority; Metropolitan North Georgia Water Planning District; Central United States Earthquake Consortium	Directed planning effort as principal planners; provided input from various interests; provided hazard data
Academia	University of Georgia Information Technology Outreach Services (ITOS)	Provided input – Hazus report



SECTION 2: LOCAL PROCEDURES & RESOURCES

Section 2: Local Procedures & Resources

2.1 – Available Resources

2.1.1 – Documentation Resources

The DeKalb County MPC conducted a comprehensive review of DeKalb County and the cities of Avondale Estates, Brookhaven, Chamblee, Clarkston, Decatur, Doraville, Dunwoody, Lithonia, Pine Lake, Stonecrest, Stone Mountain, and Tucker, to determine the availability of existing emergency management and preparedness information for mitigation planning purposes. Following is a synopsis of their findings.

Planning Process

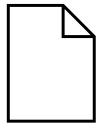
Local Procedures & Resources

- Available Resources
- Continued Public Involvement
- Plan Maintenance Process

Planning Area

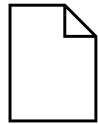
Hazard Risk Assessment

Mitigation Strategy



DeKalb County, GA – 2016 Countywide Hazard Mitigation Update

DeKalb County and the cities of Avondale Estates, Brookhaven, Chamblee, Clarkston, Decatur, Doraville, Dunwoody, Lithonia, Pine Lake, and Stone Mountain, are currently covered by this plan. The cities of Stonecrest and Tucker were not incorporated until 2016 and thus, considered part of unincorporated DeKalb at the time of the plan's development and adoption.



Georgia Hazard Mitigation Strategy, Standard and Enhanced Plan, March 18, 2019 - March 17, 2024

The Georgia Hazard Mitigation Strategy (GHMS) is a result of the state's continued efforts to reduce its exposure to losses from natural hazards, and to maintain eligibility for the full range of disaster assistance available under the Robert T. Stafford Disaster Relief and Emergency Assistance Act as amended by the Disaster Mitigation Act of 2000 (DMA 2000). The Enhanced Plan documents the state's commitment to the objectives of hazard mitigation. This designation recognizes Georgia as a proactive leader in implementing a comprehensive statewide program. The 'enhanced' status acknowledges the extra effort the state has made to reduce losses, protect resources, and create safer communities.



DeKalb County Critical Facilities List

The DeKalb County MPC assessed the list of critical facilities uploaded to the Georgia Mitigation Information System. The list was used throughout the development of the 2022 mitigation update and is the basis for the vulnerability assessments and loss estimates. The complete list is available in Appendix C – Critical Facilities & Infrastructure.



DeKalb County Continuity of Operations (COOP) Plan

Developed by DEMA using the BOLDplanning.com platform and a 'best practices' methodology, this 'living document' helps ensure the agency can continue to perform mission-essential functions during a wide range of emergencies.

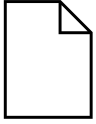


DeKalb County Local Emergency Operations Plan (LEOP)

Developed by DEMA using the BOLDplanning.com platform and a 'best practices' methodology, this 'living document' describes the management and coordination of resources and personnel during periods of major emergency.

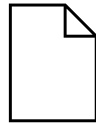


SECTION 2: LOCAL PROCEDURES & RESOURCES



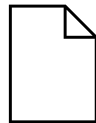
DeKalb County Comprehensive Plan, DeKalb County 2050 Unified Plan

The DeKalb County 2050 Unified Plan combines two of the county's long-range plans into one: a Comprehensive Transportation Plan that identifies priority transportation projects and policy recommendations, and a Comprehensive Land Use Plan that establishes the framework for future growth and development. Transportation and land use investments have a direct impact on one another, so the combined plan creates a more consistent and unified strategy. The combined plan addresses housing, health and wellness, public safety, arts and culture, sustainability, retail, and annexation.



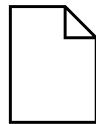
City of Avondale Estates Comprehensive Plan Update (2021)

This plan presents a vision for progress and provide a framework for the execution of that vision. It is aimed at guiding the city on investment planning and organization to promote quality of life for citizens by provision of adequate infrastructure and amenities.



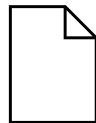
City of Brookhaven Comprehensive Plan Update (2019)

This plan (update) affirms the city's 'big picture' vision, defines goals, and lays out a task list for city leaders, staff, and citizens to address issues as well as position the city to be a leader within the Metro-Atlanta area. It includes updated policies, data, and a new work program.



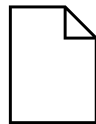
City of Chamblee Comprehensive Plan 2034

Adopted in 2016, this plan is a 20-year policy guide that assesses current conditions, projects future trends, develops strategies and goals, and creates a work program to achieve these goals. The plan, as required by the Georgia Planning Act, includes the following elements: Community Goals, Needs and Opportunities, Community Work Program, Land Use, Housing, and Transportation.



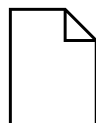
City of Clarkston Comprehensive Plan 2040

This plan updates the previous plan (2006) while building off the momentum of recent development.



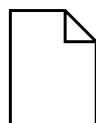
City of Decatur Comprehensive Plan

This plan serves as a guide for making rezoning and capital investment decisions by city officials and staff. It also provides the Decatur community a snapshot of where it is today and wants to be tomorrow (through the year 2040).



City of Dunwoody Comprehensive Plan

This plan assists decision-making and administrative actions in an effort to guide the City of Dunwoody toward the community's preferred future. Subsequent to the original Comprehensive Plan's adoption, the city has also adopted the Comprehensive Transportation Plan, Parks and Recreation Master Plan, Dunwoody Village Master Plan, and Georgetown/North Shallowford Mast Plan as addenda, demonstrating the city's continued commitment and efforts to establish an encompassing guiding policy document.

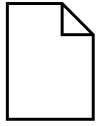


City of Lithonia 2020 Comprehensive Plan Update

Lithonia is one of DeKalb County's smallest cities, both in population and geography. Citizens appreciate the quality of life offered in the community, while simultaneously advocating for increased opportunities for economic and community development. Creating new opportunities while preserving the existing quality of life will achieve the balance the community is looking for in attaining the vision set out in this Comprehensive Plan.

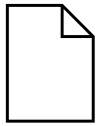


SECTION 2: LOCAL PROCEDURES & RESOURCES



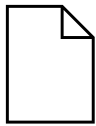
City of Pine Lake Comprehensive Plan

Pine Lake is DeKalb County's smallest city, both in population and geography. Thus, it is a strongly connected community where individuals are valued. It elevates the arts, the environment, and civic participation. To sustain these values, Pine Lake will plan growth and maintain the environment, while improving services, city finances, and the quality of life for residents. Adopted October 12, 2021, this plan demonstrates the city's resiliency for over 75 years and supports its vision for the future.



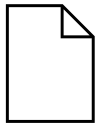
City of Stonecrest Comprehensive Plan

The City of Stonecrest is one of DeKalb County's newest cities; it was incorporated in 2016. The city's Comprehensive Plan sets the vision, mission, policies, and goals. It is the guide that current and future administrations will use for future development and growth.



City of Stone Mountain Comprehensive Plan 2021

As an update to the City of Stone Mountain's previous Comprehensive Plan (2016), this plan builds upon well-established vision, goals, and policies. It incorporates recent planning efforts from the last five years, current trends and data, and new community input, and includes a new work program to define the city's path for the future.



City of Tucker Comprehensive Plan

Tucker is one of DeKalb County's two newest cities; it was incorporated in 2016. The city's Comprehensive Plan expresses the community's aspirations and goals for the future, while articulating a corresponding set of policies and recommendations to guide future decisions regarding land use, development, and capital improvements.

Other Planning Documents

Dekalb County, Georgia Flood Insurance Study

The Dekalb County Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in this specific geographic area. This FIS aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations (CFR) at 44 CFR, 60.3.

Hazard Risk Analyses Supplement to the Dekalb County Joint Hazard Mitigation Plan

In 2020, the Georgia Department of Emergency Management partnered with the Carl Vinson Institute of Government at the University of Georgia to develop a detailed risk assessment focused on defining hurricane, riverine flood, and tornado risks in Dekalb County. This assessment identifies the characteristics and potential consequences of the disaster, how much of the community could be affected by the disaster, and the impact on community assets.

Georgia Safe Dams Programs

Pursuant to the Georgia Safe Dams Act, O.C.G.A. Secs. 12-5-370 et seq., the Safe Dams Program (<https://epd.georgia.gov/watershed-protection-branch/safe-dams-program>), is responsible for developing and maintaining an inventory of dams, classifying dams, and ensuring compliance of all regulated dams. The Dam Diagram and Inventory of Dams information is included in the Dam Failure hazard identified within this HMP update.



SECTION 2: LOCAL PROCEDURES & RESOURCES

DeKalb County Planning Documents

DeKalb County's participating jurisdictions provided a host of planning, zoning, and development-related documents. These documents were reviewed, assessed, and cataloged to compile Section 5.1 – Mitigation Capabilities as well as Section 5.5 - Planning Integration of this HMP update.

2.1.2 – Fiscal Resources

The DeKalb County MPC assessed all available funding options for hazard mitigation planning purposes. Following is a list of federal, state, and local funding sources that are either available or relevant to the 2022 Countywide Hazard Mitigation Update.

Flood Mitigation Assistance Program (FMA)

The FMA program is designed to aid in the buyout of repetitive loss (RL) and severe repetitive loss (SRL) properties as well as assist in the funding of flood mitigation projects and activities.

Fire Prevention & Safety Grants (FP&S)

These grants are administered by FEMA to enhance safety of the public and firefighters from fire and fire-related hazards. The primary goal is to target high-risk populations and reduce injury. Fire departments, local governments, and recognized community organizations are eligible to receive this funding.

Hazard Mitigation Grant Program (HMGP)

The Hazard Mitigation Grant Program (HMGP) is managed by FEMA and administered GEMA. DeKalb County does not have any HMGP funds available for mitigation planning.

Local Revenues & Budgets

Recognizing the importance of hazard mitigation planning, DeKalb County and the participating jurisdictions have self-funded the 25% match required by FEMA's PDM grant.

Pre-Disaster Mitigation Grant Program (PDM)

PDM, which is managed by FEMA, is a nationally competitive grant program. The development of this mitigation update was funded by a PDM grant at a 75% match.

2.1.3 – Technical Resources

The DeKalb County MPC employed a variety of technical resources in this plan's development. These technical resources were instrumental in completing an accurate vulnerability and risk assessment.

BOLDplanning (now a division of Agility, <https://www.agilityrecovery.com>)

Over 17 years in business, and as the principal plan writer, BOLDplanning has helped state and local agencies across the country create more than 10,000 Hazard Mitigation Plans (HMPs), Continuity of Operations Plans (COOPs), Emergency Operations Plans (EOPs), and Local Emergency Operations Plans (LEOPs). The company offers clients a unique combination of expert consulting and a world-class online software solution, the BOLDplanning.com platform, that together make the planning process easier, more efficient, and more effective.

Company capabilities also include project management, stakeholder engagement, GIS (mapping), and Homeland Security Exercise and Evaluation (HSEEP)-based exercises.

Throughout the course of developing the DeKalb County, GA - 2022 Countywide Hazard Mitigation Update, the BOLDplanning.com platform (shown below) was used to capture key data and keep the project on schedule. The platform, dubbed DeKalbReady.com, will remain available for plan maintenance and project tracking, as well as integrating additional plans, including DeKalb County's Continuity of Operations (COOP) Plan and Emergency Operations Plan (EOP), if desired.



SECTION 2: LOCAL PROCEDURES & RESOURCES

Image 2: Screenshot, DeKalb Ready.com

Login to DeKalbReady.com

Username or Email Address

Password (Case-Sensitive)

Login Clear

Forgot Username/Password?

Development

BOLD
planning

DEKALB COUNTY • GEORGIA
1822

Welcome to DeKalbReady.com!
Emergency Operations & Continuity of Operations Planning Platform

DeKalb County, Georgia has initiated a comprehensive project to develop Continuity of Operations Plans (COOP) and Emergency Operations Plan (EOP) for each of its individual departments to ensure Continuity of Government (COG). DeKalb County has selected the BOLDplanning.com platform to assist in the creation of these plans and to manage the ongoing plan development process for all participating stakeholders and first responders.

BOLDplanning.com is a web-based emergency planning platform, designed to guide organizations through the process of developing Emergency and Continuity Plans. The BOLDplanning.com system walks planners through each step of the continuity planning process. The platform helps develop a plan that outlines a clear, concise understanding of the roles and responsibilities needed to ensure an organization's transition during times of change.

For this project, the BOLDplanning.com platform was modified to meet the specific needs of DeKalb County. It is accessed via the internet at www.DeKalbReady.com this county-wide planning process.

For questions or technical assistance, please contact us at Help@BOLDplanning.com

Image Source: BOLDplanning

NOTE: BOLDplanning has a 100% FEMA approval rate for well over 50 state, local and tribal mitigation plans since 2004, including numerous first-submission approvals.

ESRI ArcGIS v10

Most, if not all, of the maps within this plan (including the Hazus models), were developed using ESRI's ArcGIS v10.

FEMA Digital Flood Insurance Rate Map (DFIRM), National Flood Hazard Layer (NFHL)

FEMA's NFHL data was instrumental in mapping floodplain locations and estimating potential flood impacts and loss estimates for this mitigation update.

National Oceanic and Atmospheric Administration, National Centers for Environmental Information (NOAA/NCEI)

NOAA/NCEI's Storm Events Database was the primary source of weather-related historical data for this mitigation update.

U.S. Army Corps of Engineers (USACE)

Data from USACE's National Inventory of Dams was instrumental in determining the location of high-hazard dams in the planning area and assessing the hazard level.

2.2 – Continued Public Involvement

DeKalb County is dedicated to involving the public in the continual shaping of its mitigation plan and the development of its mitigation projects and activities.

The DeKalb County MPC will continue to keep the public informed about its hazard mitigation projects and activities through DEMA's website. Additionally, it will provide a "comments/suggestions" option for the public to submit input through the website.

The public will also be invited to participate in annual MPC meetings to review and discuss the mitigation-related events of the past year.

DeKalb County used a public input website to collect data from local plan stakeholders during the hazard mitigation planning process. All collected data was used to create a local hazard profile and provide insight on



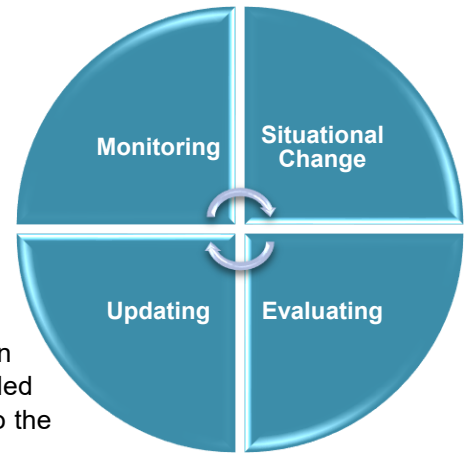
SECTION 2: LOCAL PROCEDURES & RESOURCES

the public's concerns. A public input site will continue be used as needed to track the status of previous hazard mitigation actions and elicit feedback for future hazard mitigation actions.

Copies of the 2022 Countywide Hazard Mitigation Update will be available online through DEMA's website and the participating jurisdictions.

2.3 – Plan Maintenance Process

The DeKalb County MPC has developed a method to ensure monitoring, evaluation, and updating of its 2022 Countywide Mitigation Update. Upon adoption of the plan, DEMA will utilize the MPC to provide plan updates, revisions, and data collection for future mitigation planning purposes. The MPC Chair will form a subcommittee comprised of the DEMA director and jurisdictional representatives from the MPC, to analyze the proposed mitigation projects. The Chair of the subcommittee will be determined by a vote in the subcommittee. Additional subcommittee members may be added based on necessity. The subcommittee will submit a quarterly report to the MPC, which in turn, will submit an annual report to DEMA.



DEMA may request a non-scheduled report on the monitoring, evaluation, or updating of any portion of this plan due to irregular progress on mitigation actions and or projects, in the aftermath of a hazard event, or for any reason deemed appropriate.

NOTE: Hazard mitigation plans are required to be updated every five (5) years per FEMA. DeKalb County will meet this requirement by starting the planning process three (3) years after this plan is formally adopted.

2.3.1 – Plan Monitoring & Situational Change

Plan monitoring can be defined as the ongoing process by which stakeholders obtain regular feedback on the progress being made towards achieving their goals and objectives. In the more limited approach, monitoring may focus on tracking projects and the use of the agency's resources. In the broader approach, monitoring also involves tracking strategies and actions being taken by partners and non-partners, and figuring out what new strategies and actions need to be taken to ensure progress towards the most important results.

A monitoring report will be written and submitted for review to the MPC and after the annual MPC meeting, or when triggered by situational change. The monitoring report answers the questions on the following page.

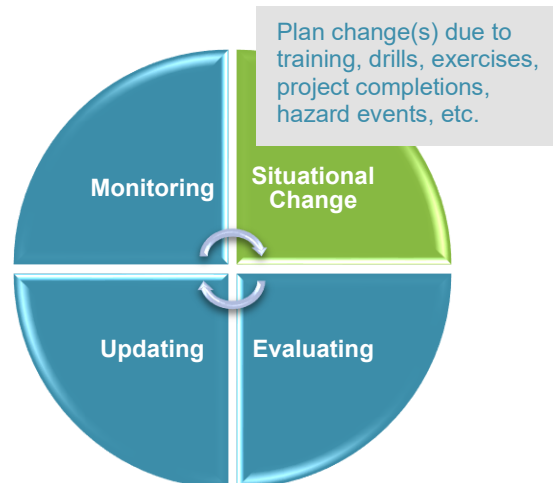
Regularly report on the progress of mitigation actions and projects from start to finish





SECTION 2: LOCAL PROCEDURES & RESOURCES

- ✓ *Is the mitigation project under, over, or on budget?*
- ✓ *Is the mitigation project behind, ahead of, or on schedule?*
- ✓ *Are there any changes in DeKalb County's capabilities which impact the hazard mitigation plan?*
- ✓ *Are there any changes in DeKalb County's hazard risk?*
- ✓ *Has the mitigation action been initiated, or its initiation planned?*
- ✓ *If applicable, has participation in a mitigation action's collaboration been regular?*
- ✓ *If any, what plan updates occurred, why did they occur, and what is their impact?*



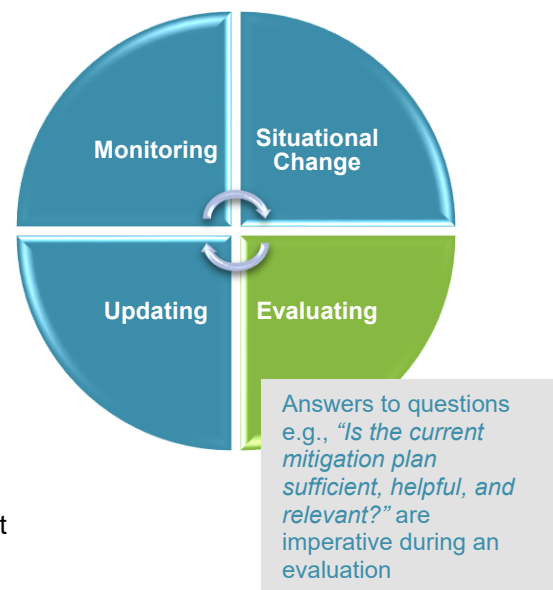
The plan maintenance process is cyclical and maintenance items can operate simultaneously within the process.

2.3.2 – Plan Evaluating

A plan evaluation is a rigorous and independent assessment of either completed or ongoing activities to determine the extent to which they are achieving stated objectives and contributing to decision making.

An evaluation report will be written and submitted to DeKalb County's MPC when the situation dictates. The following situations are typical examples of when an evaluation will be necessary.

- Post hazard event
- Post training exercise
- Post tabletop or drill exercise
- Significant change or completion of a mitigation project
- Significant change or completion of a mitigation action



An evaluation report will ask the following questions in response to the previously listed events.

- ✓ *Do the mitigation objectives and goals continue to address the current hazards?*
- ✓ *Are there new or previously unforeseen hazards?*
- ✓ *Are current resources appropriate for implementing a mitigation project?*
- ✓ *Was the outcome of a mitigation action/project expected?*
- ✓ *Are there implementation problems?*
- ✓ *Are there coordination problems?*



SECTION 2: LOCAL PROCEDURES & RESOURCES

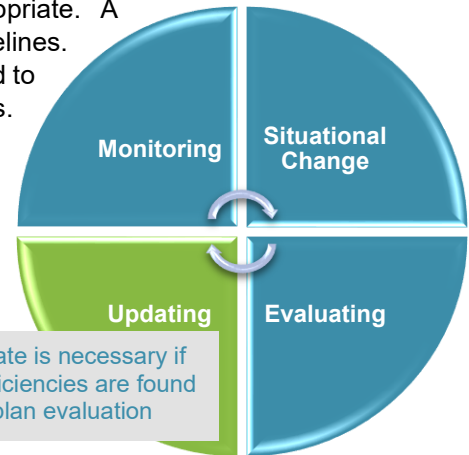
2.3.3 – Plan Updating

Typically, the updating of a hazard mitigation plan is initiated upon the completion of a plan evaluation and even then, only when the evaluation determines an update is appropriate. A plan update also occurs every five (5) years per FEMA guidelines. Additionally, when new hazard data becomes available, it will be added to the plan. New data will be confirmed or denied at future MPC meetings.

For whatever reason, a plan update can be written anytime it is deemed necessary by the DEMA.

To ease this process, DeKalb County will continue to use the online platform, DeKalbReady.com. The website, as previously mentioned, serves as a repository for information specific to hazard mitigation and increases collaboration between plan stakeholders. Users can

track the plan's progress in real time and document their concerns.



According to FEMA/DMA 2000 guidelines for mitigation planning, DeKalb County will begin the process of updating its plan three (3) years from its formal adoption. It will do so under the direction of the county's EMA Director. DEMA will coordinate and facilitate a bi-annual meeting within the five-year cycle with stakeholders from the participating jurisdictions to gather relevant information needed for the next plan update. These meetings will ensure that status is known for the projects and goals identified in the mitigation strategy are up to date (as required by FEMA), in the next, five-year plan update (2027).



SECTION 2: LOCAL PROCEDURES & RESOURCES

2.3.4 – Evaluation Report

DeKalb County Mitigation Planning Committee DeKalb County Hazard Mitigation Plan Evaluation Report

Hazard Mitigation Plan Sub-Committee Chair: _____

Meeting Date: _____

Plan Approval Date: _____

Plan Expiration Date: _____

Have there been any disasters or training event since the last report? If so, list them below:

Disaster Number/ Training Event	Hazard Type(s)	Was the hazard expected or unforeseen?	Is a plan update required?
<i>Example: DR-1000</i>	<i>Tornado</i>	<i>Unforeseen</i>	<i>Yes</i>
<i>Example: Annual Training</i>	<i>Flash Flooding</i>	<i>Expected</i>	<i>No</i>

Mitigation Projects:

Mitigation Project	Participating Jurisdiction(s)	Proposed/Scheduled/In Progress/Completed	Behind/Ahead/On- Schedule	Estimated Completion Date
<i>Example: Tornado Safe Room</i>	<i>Anytown</i>	<i>In Progress</i>	<i>On-Schedule</i>	<i>1/1/2022</i>

Public Engagement and Outreach Notes:

Miscellaneous Notes:

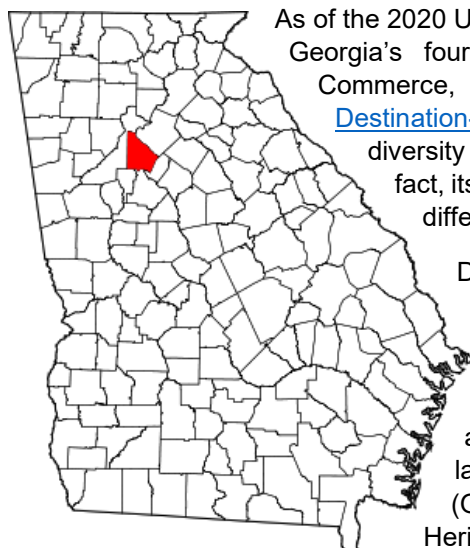


SECTION 3: PLANNING AREA

Section 3: Planning Area

DeKalb County, one of 159 counties in the State of Georgia, was created in 1822 from Henry, Gwinnett, and Fayette Counties. It is located in the north central portion of the state and situated on a natural ridge that runs between Atlanta and Athens, aka the Continental Divide. The county encompasses 267.7 square miles of land area, making it the 113th largest county in Georgia by total area.

Today, DeKalb County is included in the Atlanta-Sandy Springs-Roswell, Georgia Metropolitan Statistical Area, aka Metro Atlanta area. It contains roughly 10% of the City of Atlanta, of which the other 90% lies within nearby Fulton County. Adjacent to DeKalb County are Gwinnett County (north), Rockdale County (east), Henry County (south), Clayton County (southwest), and Fulton County (west).



As of the 2020 U.S. Census, DeKalb County had a population of 764,382, making it Georgia's fourth-most populous county. The DeKalb County Chamber of Commerce, <https://www.dekalbchamber.org/wp-content/uploads/2019/09/Destination-DeKalb-County-GA-2018-6-26-18.pdf>, credits the county's diversity for its continued growth and international appeal over the years. In fact, its numerous businesses and residences presently represent over 30 different countries and speak at least 200 languages.

DeKalb County is located only minutes from the Hartsfield-Jackson Atlanta International Airport (the second busiest airport in the world) and is the site of the former Naval Air Station Atlanta. It is home to nine colleges and other postsecondary institutions, including Emory University, Georgia State University, and Mercer University, as well as the Centers for Disease Control (CDC). Notable landmarks of DeKalb County include Stone Mountain Park (Georgia's most-visited attraction) and the Arabia Mountain National Heritage Area.

For mitigation planning purposes, the planning area for this HMP update includes unincorporated DeKalb County, and the cities of Avondale Estates, Brookhaven, Chamblee, Clarkston, Decatur (the county seat), Doraville, Dunwoody, Lithonia, Pine Lake, Stone Mountain, Stonecrest, and Tucker.

NOTE: The cities of Stonecrest and Tucker did not participate in the previous plan update as they were incorporated after its adoption in 2016.

Employment & Economy

U.S. Census data (2019) indicates the presence of 17,293 employer establishments in DeKalb County. The county's diverse industry base includes manufacturing, retail, construction, trade, finance, engineering, healthcare, and management. Large employers include AT&T Mobility and Emory Healthcare (Atlanta Regional Commission, <https://atlantaregional.org/atlanta-region/county-profiles/dekalb-county/>).

DeKalb County's unemployment rate, 4.8% (December 2021) is generally less than the national average, 6.0% (December 2021) and future job growth, i.e., over the next ten years, is predicted to be 44.7%, which is higher than the U.S. average of 33.5% (<https://www.bestplaces.net/economy/county/georgia/dekalb>). The county has seen the job market increase by 2.9% over the last year (2020-2021) alone.

The median household income is \$62,399 (2019 dollars), which is above the State of Georgia's average of \$61,980 (U.S. Census 2020).

Planning Process

Local Procedures & Resources

Planning Area

- Demographics & Topography
- Land Use & Development Trends
- Floodplain Management & National Flood Insurance Program (NFIP) Participation
- Critical Facilities & Infrastructure

Hazard Risk Assessment

Mitigation Strategy



SECTION 3: PLANNING AREA

Housing

According to the U.S. Census (2020), there are 289,829 households in DeKalb County. A household includes all the people who occupy a housing unit as their usual residence. There are also 326,101 housing units in the county. A housing unit is a house, apartment, mobile home or trailer, a group of rooms, or a single room occupied as separate living quarters (or if vacant, intended for occupancy as separate living quarters).

Table 5: Population Summary, DeKalb County

Population Summary, DeKalb County			
Jurisdiction	Population	Households	Housing Units
DeKalb (County)	764,382	289,829	326,101
Avondale Estates (City)	3,567	1,422	1,726
Brookhaven (City)	55,161	22,549	25,945
Chamblee (City)	30,164	11,526	13,198
Clarkston (City)	14,756	3,727	5,398
Decatur (City)	24,928	8,841	11,205
Doraville (City)	10,623	3,231	3,751
Dunwoody (City)	51,683	20,482	22,514
Lithonia (City)	2,662	938	1,100
Pine Lake (City)	752	386	400
Stone Mountain (City)	6,703	2,351	2,777
Stonecrest (City)	59,194	20,325	24,452
Tucker (City)	37,005	14,479	16,255

Data Source: U.S. Census Bureau (2020 Decennial Census),

<https://data.census.gov/cedsci/profile?q=0500000US13089>

NOTE: The population of DeKalb County includes 390,344 who live inside the Atlanta-DeKalb County Census Division (CCD). The City of Atlanta participates in the Fulton County Multi-Jurisdictional Hazard Mitigation Plan.

The U.S. Census Bureau (v2019) reported the median value of owner-occupied housing units in DeKalb County to be \$215,600. However, BestPlaces, <https://www.bestplaces.net/housing/county/georgia/dekalb>, shows the current median home cost in DeKalb County to be \$275,300. BestPlaces also indicates home appreciation is up 16.5% in 2021.

Regarding new housing stock, the U.S. Census Bureau indicates the issuance of 2,225 building permits in DeKalb County for 2020. However, since not all permits become actual housing starts, and starts lag the permit stage of construction, this number does not represent total new construction, but should provide a general indicator on construction activity and the local real estate market.

The following table provides a structural summary, by sector, for DeKalb County, as identified by FEMA's geographic information system-based natural hazard analysis tool, Hazus.

Table 6: General Building Stock (GBS) Exposure Updates by Occupancy Class, DeKalb County

General Building Stock (GBS) Exposure Updates by Occupancy Class, DeKalb County				
General Occupancy	Default Hazus-MH Count	Updated Count	Default Hazus-MH Exposure	Updated Exposure
Commercial	13,947	6,670	\$13,046,956,000	\$12,186,755,000



SECTION 3: PLANNING AREA

General Building Stock (GBS) Exposure Updates by Occupancy Class, DeKalb County				
General Occupancy	Default Hazus-MH Count	Updated Count	Default Hazus-MH Exposure	Updated Exposure
Industrial	3,328	951	\$2,315,533,000	\$1,871,459,000
Residential	206,947	213,813	\$65,913,862,000	\$124,235,839,000
Agricultural	525	0	\$196,471,000	0
Religious	1,583	230	\$1,526,135,000	\$250,159,000
Government	491	0	\$547,765,000	0
Education	639	89	\$1,513,469,000	\$323,004,000
TOTAL	227,460	221,753	\$85,060,191,000	\$138,867,216,000

Data Source: DeKalb County EMA

NOTE: Per the Hazus report, the GBS records for DeKalb County were replaced with data derived from parcel and property assessment data obtained from DeKalb County. The county provided-property assessment data was current as of July 2022. The exposure values represent the total number and replacement costs for DeKalb County buildings.

Based upon the numbers indicated above, DeKalb County has a total of \$138,867,216,000 billion in structural (building value) exposure.

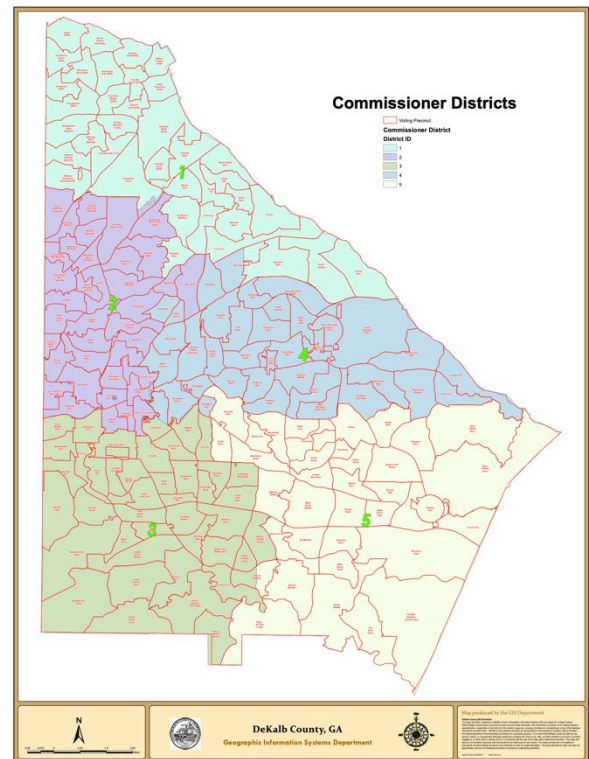
Government

The Board of Commissioners serves as the legislative branch of the DeKalb County government. The Board is comprised of seven part-time commissioners, all elected to a four-year term. DeKalb County is divided into five districts with one commissioner serving each district. There are also two “super districts,” one on the east end of the county and the other on the west end, each making up about half of the county population. Each super district is served by one commissioner. Therefore, every citizen of DeKalb County is served by two commissioners, one with the district and one with the super district.

Each of the cities within DeKalb County have their own local governing bodies in place. These consist of an elected mayor and city council, and an appointed city manager who oversees the day-to-day operations of their respective city’s functions, i.e., zoning, code enforcement, building permits, site inspections, business licenses, public safety, etc.

Emergency Services

The DeKalb County E-911 Center serves as the planning area’s primary Public Safety Answering Point (PSAP). Its staff handles more than one million calls each year, over 800,000 of which are 9-1-1 calls, providing full dispatch services to all of unincorporated DeKalb County and to the cities of Avondale Estates, Clarkston, Lithonia, Pine Lake, Stone Mountain, Stonecrest, and Tucker. The center also provides fire-rescue dispatch services to the cities of Brookhaven, Chamblee, Decatur (rescue only), Doraville, and Dunwoody. Additionally, the center provides rescue dispatch services to that portion of Atlanta which lies in DeKalb.





SECTION 3: PLANNING AREA

The cities of Chamblee, Decatur, and Doraville operate their own PSAPs. The cities of Brookhaven and Dunwoody utilize the services of the Chattahoochee River 911 Authority (ChatComm) as their public safety answering point.

DeKalb County residents are served and protected by the DeKalb County Police Department, the DeKalb County Sheriff's Office, and Georgia State Patrol. The Uniform Division of the DeKalb County Police Department consists of four precincts and the Tactical Response Team (TRT). The DeKalb County Sheriff's Office is one of only 41 sheriff's offices nationwide (3,083) to hold the distinctive "Triple Crown" accreditation status by the National Sheriff's Association.

Fire services are provided by the DeKalb County Fire Rescue Department and others within their jurisdictional borders. The Department operates 26 strategically located to provide coverage throughout the planning area. The stations are staffed by 600 well-trained men and women and handle nearly 90,000 calls for service annually.

Mutual aid agreements are in place to support large-scale, multi-department emergency response. Collectively, there are 26 fire facilities, ten (10) police facilities, and one (1) Emergency Operations Center (EOC) located in DeKalb County and participating jurisdictions.

The DeKalb Emergency Management Agency (DEMA) is the lead organization responsible for providing management and coordination of mitigation, preparedness, response, and recovery activities within the county.

Hospitals & Medical Facilities

DeKalb County has multiple hospitals and health care facilities that range in size and primary function, including emergency/trauma care, primary care, long-term care, and walk-in care. Among them are Emory University Hospital, Emory DeKalb Medical, and the Atlanta VA Medical Center.

Senior Care & Living Facilities

DeKalb County has an extensive system of programs and services for its senior (65+) population. This includes seven (7) nursing homes, senior centers, and senior housing facilities, all of which are considered vulnerable to the impacts from disasters.

NOTE: FEMA/DMA 2000 requires that hazard mitigation plans consider socially vulnerable populations. These populations can be more susceptible to hazard events, based on several factors, including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Accordingly, the elderly (65+ population) as well as those living in low-income households are considered vulnerable populations within this update to this plan update.

Schools

As for public education, the planning area is served by the DeKalb County School District (DCSD), <https://www.dekalbschoolsga.org>. DCSD is Georgia's third-largest school system. The district serves nearly 102,000 students, 137 schools & centers, and 15,500 employees.

Transportation

Highways – Five (5) major road arteries, i.e., interstates, traverse DeKalb County: Interstates 20, 85, and 285. I-20 runs east to west, while I-85 runs northeast to southwest. I-285, aka "the Perimeter," is a beltway that encircles most of Atlanta. It has come to mark the boundary between the interior of the region and its surrounding suburbs. Numerous, heavily traveled state routes are also present within DeKalb County.

Airports – DeKalb County is located within minutes of the Hartsfield-Jackson Atlanta International Airport (ATL), which is presently the world's second busiest airport (only behind Guangzhou Baiyun International Airport in China). The county itself is home to the DeKalb-Peachtree Airport (PDK), the second busiest airport in the State of Georgia. As such, PDK has averaged about 228,000 operations (take-offs and landings) per year over the past 30 years.



SECTION 3: PLANNING AREA

Rail Systems – DeKalb began as a railroad town and it still serves as a major rail junction, with several freight lines belonging to Norfolk Southern and CSX intersecting below street level in downtown.

Public Transportation – The Metropolitan Atlanta Rapid Transit Authority, or MARTA, is the principal rapid-transit system in the Metro Atlanta area, and is the eighth largest in the U.S. Though originally formed in 1971 as strictly a bus system, MARTA today also consists of 48 miles of rail track and 38 train stations. It also maintains a single rail station at Hartsfield-Jackson Atlanta International Airport (ATL). Presently, MARTA serves nearly 400,000 passengers a day, including residents of DeKalb County.

High-Hazard Dams

After considerable study and evaluation by several sources, it has been determined that Georgia has nearly 31 Class II Dams and 16 Class I Dams located in DeKalb County.

Evacuation Measures

Depending on a hazard's severity and impact, certain locations within DeKalb County may need to be evacuated. In these instances, the county assists with the coordination and communication of evacuation routing as necessitated by the execution of local municipal Emergency Operations Plans (EOPs).

Specific evacuation plans are identified in Atlanta's Regional Coordination Evacuation Plan and DeKalb County's emergency plans; most of the plans' content is not shared with the public until warranted.

DeKalb County and all participating jurisdictions have identified mitigation actions to protect critical facilities and critical infrastructure, including facilities available to support sheltering and transportation routes that facilitate evacuation and the movement of emergency vehicles.

Shelters

With the support and cooperation of the American Red Cross (ARC) and local jurisdictions, DeKalb County assists with the coordination and communication of shelter availability as necessitated by the execution of local municipal EOPs.

Climate & Physical Environment

DeKalb County is categorized as having a humid, subtropical climate, influenced by the Appalachian Mountains to the north, the Gulf of Mexico to the south, and the Atlantic Ocean to the southeast. The summer (July) high is around 89 degrees, and the winter (January) low is around 32 degrees. The county receives 52.3 inches of rain and 1.4 inches of snow, on average, each year, which is below the U.S. average of 38 and 28 inches respectively.

According to the National Weather Service, <https://www.weather.gov/ffc/2019AnnualClimateSummary>, 2019 ended up being warmer and drier across north and central Georgia. Average temperatures were at least two degrees above normal. Ranked by average temperatures, Atlanta (66.1 degrees) recorded its warmest year on record. Climate change is generally considered to be the root cause for the increase.

The annual BestPlaces Comfort Index for DeKalb County is 7.6 (10=best), which means it is one of the most pleasant places in Georgia.

As for the physical environment of the planning area, DeKalb County is largely built out and suburban in nature. Most of the county is in the Winder Slope District of Georgia's Piedmont Province. The Winder Slope District is characterized by gently to strong sloping hillsides bisected by headwaters of major streams flowing to the Atlantic Ocean. The soils of DeKalb County fall into 12 U.S. Natural Resource Conservation (NRCS) categories, ranging from poorly drained or nearly level ground to well-drained soils on steep slopes.

There are three major drainage basins: the Chattahoochee River Basin, South River Basin, and the Yellow River Basin. Most of the land in the Chattahoochee River Basin drains westward to the Chattahoochee River via Nancy Creek, Peachtree Creek, and several smaller tributaries. The South River tributaries, Pole Bridge, Snapfinger, Shoal, and Entrenchment Creeks, drain the southern part of DeKalb County. The southeastern portion of DeKalb is drained by the Yellow River, which flows through the extreme eastern part



SECTION 3: PLANNING AREA

of the County and flows toward the south. The Yellow River Basin includes Stone Mountain, Swift, and Crooked Creeks.

Soils along the South River, Yellow River, Peachtree Creek, Nancy Creek, and their tributaries are nearly level. The floodplains are typically narrow and frequently flood during the spring and winter months. (For additional information, see Section 4.4 – Flood.)

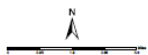
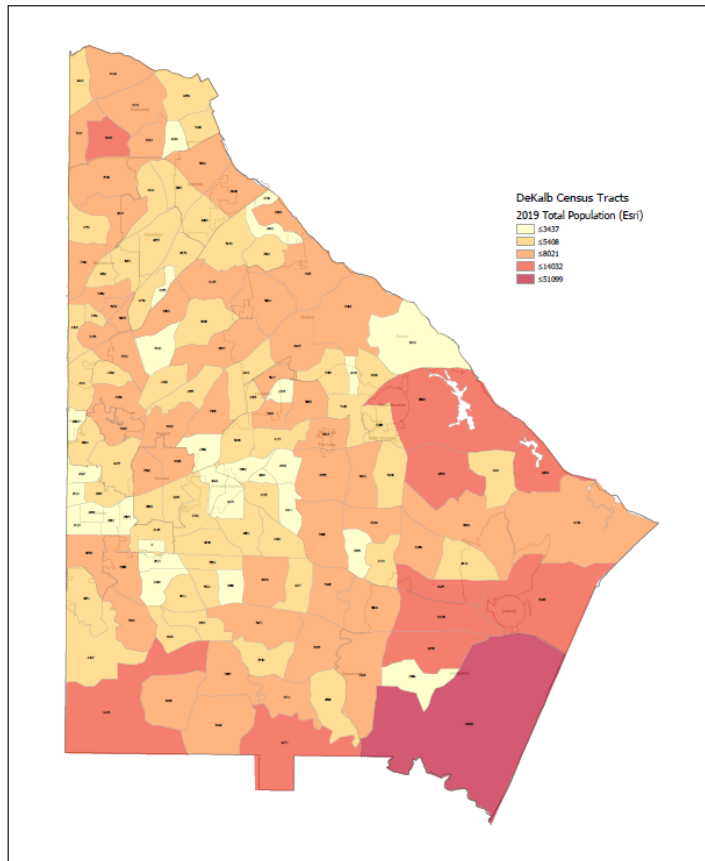
Tree species commonly found in the DeKalb County include Loblolly Pine, Northern Red Oak, White Oak, Short Leaf Pine, White Ash, and Winged Elm.

Given its many attributes, including location (proximity to Atlanta), continued financial and economic vitality, cultural diversity, rich history, and natural beauty, DeKalb County remains attractive to new residents, businesses, and visitors alike. As evidence, the Atlanta Regional Council (ARC) predicts that the county's population will grow to just over one million in 2050.

3.1 – Demographics

Of the 159 counties in the State of Georgia, DeKalb County is ranked as 112th in land area (267.58 square miles) and fourth in population size (707,185). According to the U.S. Census Bureau, the population of DeKalb County increased from 691,893 in 2010 to 764,382 in 2020. This represents an increase of 72,489 people, or a 10.48% increase over a ten-year period.

MAP: 1 JURISDICTIONAL MAP



Total Population 2019
DeKalb County, GA
Geographic Information Systems Department



Map produced by the GIS Department
DeKalb County, GA
Geographic Information Systems Department

Source: Geographic Information Systems Department



SECTION 3: PLANNING AREA

The following table details the population demographics specific to DeKalb County and its participating jurisdictions.

Table 7: Community Demographics, DeKalb County

Community Demographics, DeKalb County							
Jurisdiction	Size (Sq. Mi.)	Population			% Population Change		
		2000	2010	2020	2000 – 2010	2010 – 2020	2000 – 2020
DeKalb County	267.7	665,865	691,893	764,382	+3.91%	+10.48%	+14.8%
Avondale Estates (City)	1.23	2,609	2,960	3,567	+13.45%	+20.5%	+36.7%
Brookhaven (City)	12	38,579	40,456	55,161	+4.87%	+36.35%	+43%
Chamblee (City)	7.7	9,552	9,892	30,164	+3.56%	+205%	+216%
Clarkston (City)	2.1	7,231	7,554	14,756	+4.47%	+95.3%	+104%
Decatur (City)	4.4	18,147	19,335	24,928	+6.55%	+28.9%	+37.4%
Doraville (City)	4.9	9,862	8,330	10,623	-15.53%	+27.5%	+7.72%
Dunwoody (City)	13.2	-	46,267	51,688	-	+11.7%	-
Lithonia (City)	0.9	2,187	1,924	2,662	-12.03%	+38.36%	+21.7%
Pine Lake (City)	0.2	621	730	752	+17.55%	+3.014%	+21.1%
Stone Mountain (City)	1.6	-	5,802	6,703	-	+15.53%	-
Stonecrest (City)	37.4	-	-	59,194	-	-	-
Tucker (City)	20.25	-	-	37,005	-	-	-

Data Source: U.S. Census Bureau (2020 Decennial Census)

*Percent of Population Change Calculation: <https://www.omnicalculator.com/math/percentage-change#how-to-calculate-the-percent-change>

NOTE: No population data exists for the DeKalb County cities of Stonecrest and Tucker as they were only incorporated since 2017 and 2016 respectively.



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The Atlanta Regional Commission (ARC), as previously stated, projects that DeKalb County's population will grow to just over one million in 2050.

The U.S. 2020 Decennial Census, in combination with the 2019 American Community Survey, also included the following demographic values specific to DeKalb County:

- Of the total population (764,382), 388,963 are categorized as Black or African American; 225,752 are categorized as White; 81,471 are categorized as Hispanic or Latino; 50,834 are categorized as Asian. The balance of the population is comprised of Other/Combined races.
- Of the total population, 7.1% of people are under the age of five; 76.7% are age 18 and over; and 12.9% are over the age of 65.
- Of the total population, 9.8% of people have a health-related disability.
- Of the total population, 62.9% are enrolled in school (K-12), compared to the State of Georgia at 67.5%.
- The employment rate within DeKalb County is 65.4% versus the State of Georgia at 59.6%.
- Of the total population, 12.4% of people live below the poverty level, which is lower than the State of Georgia at 13.3%.

It is important to note that population trends can be used as a basis for estimating future changes within the planning area. Population trends can provide a basis for making decisions on the type of mitigation approaches to consider and the locations in which these approaches should be applied. This information can also be used to support planning decisions regarding future development in vulnerable locations, e.g., nursing homes or low-income households.

Map 2: DeKalb County, Community Profile

*Has been requested

Map Source: Insert



SECTION 3: PLANNING AREA

3.2 – Land Use & Development Trends

As previously mentioned, DeKalb County was originally carved from the Georgia counties of Henry, Gwinnett, and Fayette, and formally established in 1822. Today, it is part of the thriving Metro Atlanta area, and encompasses 267.7 square miles of land area. Its population, as of the 2020 U.S. Decennial Census, is 764,832, which is up from 691,893, or 10.48%, from 2010.

Like other locations in and around the Metro Atlanta area, DeKalb County has experienced considerable change within jurisdictional boundaries over the last few decades. Most recently, two new municipalities were carved from unincorporated areas within the County. These are The City of Tucker, established 2016, to the northeast and the City of Stonecrest, established 2017, to the southeast. According to public record, it appears more change may be on the way as many are hoping to incorporate a new city, the City of DeKalb, in the not-so-distant future.



Photo Source: Unknown

The largest land use in DeKalb County is Medium Density Residential, followed by Forested/Undeveloped, Commercial, and High Density Residential. This reflects the county's development pattern, which is predominately single-family residential with commercial and multi-family uses along major roadway corridors and intersections. Most of the DeKalb County follows an automobile-oriented decentralized suburban development pattern. This pattern, which is very common within the Metro Atlanta region, has high building and land use separation resulting in low pedestrian orientation and accessibility.

The current pace of residential development is expected to greatly reduce the amount of Forest/Undeveloped land as the county approaches build out. Most of the county's remaining large tracts of undeveloped land are found in the far southern and eastern portions of DeKalb, while many smaller tracts still exist within developed areas.

With the U.S. Census Bureau reporting the issuance 10,074 building permits issued for 2020, 11,405 issued for 2021 and 3,279 issued so far for 2022, it is evident that new construction and structural improvements continue at a steady pace in DeKalb County. It presently follows the Updated Georgia State Minimum Standard Codes, which went into effect on January 1, 2020.

To meet the current and future demands of an increasing population, DeKalb County and its participating jurisdictions must continue to implement proactive measures pertaining to land use and development. It is there that housing, transportation, education, historic preservation, and the environment, among other things, are of greatest concern.

Accordingly, and as required by state statute, OCGA 50-8-7.1 et seq., every local government in Georgia is required to have a Comprehensive Plan to guide public policy. The 2014 update to the Minimum Standards and Procedures for Local Comprehensive Planning further requires that each government update its comprehensive plan at least once every five years.

Three elements are required for every community's Comprehensive Plan: Community Goals, Needs and Opportunities, and the Community Work Program. Additional elements may also be required based upon local conditions within the specific community. Examples of optional elements include Infrastructure and Community Facilities, Natural Resources, Community Sustainability, Disaster Resilience, Education, Greenspace, Historic and Cultural Resources, Human Services, Intergovernmental Coordination, Public Safety, Recreation, and Solid Waste Management.



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The Comprehensive Plans of DeKalb County, and the cities of Avondale Estates, Brookhaven, Chamblee, Clarkston, Decatur, Doraville, Dunwoody, Lithonia, Pine Lake, Stonecrest, Stone Mountain, and Tucker are available online through the Georgia Department of Community Affairs website, <https://www.dca.gov>.

Following are the links to all participating jurisdictions' comprehensive plans:

DeKalb/Unincorporated DeKalb (County),

https://www.dca.ga.gov/sites/default/files/2021.09.16.dekalbco.compplanupdate_adopted.pdf

Avondale Estates (City), <https://www.avondaleestates.org/DocumentCenter/View/1468/2016-Comprehensive-Plan-Update---Adopted-?bidId=>

Brookhaven (City),

https://www.dca.ga.gov/sites/default/files/2019.09.30.brookhavencompplanupdate_adopted.pdf

Chamblee (City),

https://www.dca.ga.gov/sites/default/files/2019.12.20.chambleecomprehensiveplan_adopted.pdf

Clarkston (City), <https://www.dca.ga.gov/sites/default/files/2016.10.06.clarkstoncompplanadopted.pdf>

Decatur (City), https://www.dca.ga.gov/sites/default/files/2021.10.29.cityofdecatur.compplan_adopted.pdf

Doraville (City),

https://www.dca.ga.gov/sites/default/files/doravillecompplanupdate20211020_adopted.pdf

Dunwoody (City),

https://www.dca.ga.gov/sites/default/files/2021.01.20.cityofdunwoody.compplanupdate_adopted.pdf

Lithonia (City),

https://www.dca.ga.gov/sites/default/files/2021.03.16.cityoflithonia.2020compplanupdate_adopted_reduce_d.pdf

Pine Lake (City), https://www.dca.ga.gov/sites/default/files/pinelakecompplan2021014_adopted.pdf

Stone Mountain (City),

https://www.dca.ga.gov/sites/default/files/2021stonemountaincompplan20211102_adopted.pdf

Stonecrest (City),

https://www.dca.ga.gov/sites/default/files/2019.07.12.stonecrestcicompplan_adopted.pdf

Tucker (City), <https://www.dca.ga.gov/sites/default/files/2018.07.20.tuckercompplanadopteddca.pdf>

In addition to local comprehensive plans, the State of Georgia, which is divided into 12 planning regions, requires Regional Plans to aid with future land use and development. Regional Plans, as described the Georgia Department of Community Affairs, are a guide for future decision-making that address critical regional issues and opportunities and provide a framework for advancing the state's planning goals. Regional Plans are also wider in scope than local plans, and deal with broader issues that involve a variety of entities, including state and federal agencies, local governments, and private organizations. Each of Georgia's twelve Regional Commissions develops a regionally specific plan, which must be approved by DCA and adopted by its Regional Council. (Georgia Department of Community Affairs, <https://www.dca.ga.gov/local-government-assistance/planning/regional-planning/regional-comprehensive-planning>.)

DeKalb County lies within the Atlanta Planning region, which also includes Cherokee, Clayton, Cobb, Fulton, Douglas, Fayette, Forsyth, Gwinnett, Henry, and Rockdale counties, and the City of Atlanta. Information pertaining to the Atlanta Planning region's Comprehensive Plan is available online at: <https://www.dca.ga.gov/node/2767>. (Note: The 2016 plan is currently in the process of being updated.)



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With the Atlanta Regional Commission, <https://www.atlantaregional.org>, predicting DeKalb County's population to grow to one million in 2050, the information within the aforementioned plans is essential to making meaningful, long-term decisions pertaining to community development. This includes mitigating the hazards that pose risk to all and/or portions of the planning area. A hazard-specific analysis, as it relates to land use and development trends within DeKalb County, is included within each identified hazard in Section

4 – Hazard Risk Assessment.

As explained by the Georgia Municipal Association, <https://www.gacities.com/Resources/GMA-Handbooks-Publications/Handbook-for-Georgia-Mayors-and-Councilmembers/Part-Three-MANAGEMENT-of-MUNICIPAL-GOVERNMENT/Planning-and-Land-Use.aspx>, the placement of certain infrastructure, i.e., roads and bridges, water/sewer/stormwater facilities, schools and libraries, police/fire/EMS facilities, and parks and recreation facilities, determine in large part where future development will go as well. Land adjacent to public investment is more easily developed and is more likely to be converted from agriculture, conservation, or another “green” use to a more intensive use when public facilities become available. For this reason, city leaders should be careful to avoid environmentally sensitive areas when choosing the location of common infrastructure.

Unfortunately, several major environmental problems associated with rapid land development persist within the planning area. Among them are the loss of trees and other vegetation, loss of wildlife habitat, poor air quality, and the creation of severe micro-climates, e.g., urban heat islands. Of equal concern is reduced water quality since the Chattahoochee River is the source of drinking water for most of DeKalb County. Additionally, the conversion of undeveloped land to impervious surfaces has significantly increased storm water runoff, which directly impacts the quality and flow of DeKalb County's streams. (See Section 5 for a complete list of mitigation projects addressing these and other issues within the planning area).

All participating jurisdictions within DeKalb County, including Decatur, the county seat, participate in the National Flood Insurance Program (NFIP) and the Community Rating System (CRS). There are presently 186 properties identified as Repetitive Loss (RL) or Severe Repetitive Loss (SRL). See Table 37 for a complete list of Repetitive Loss (RL) or Severe Repetitive Loss (SRL).

3.3 – Critical Facilities

Certain facilities have a net positive value on the community, i.e., they contribute to the public good by facilitating the basic functions of society. These facilities maintain order, public health, and education, and help the economy function. Additionally, there are infrastructure and facilities integral to disaster response and recovery operations. Conversely, some facilities and infrastructure are of extreme importance due to the negative externalities created when they are impacted by a disaster. What fits this definition will vary slightly from community to community, but the definition remains as a guideline for identifying critical facilities and infrastructure. For DeKalb County and its participating jurisdictions, the table below lists the **353** identified critical facilities and infrastructure by category. A complete list, including the locations (by jurisdiction) of these 353 identified critical facilities and infrastructure, can be found in Appendix C – Critical Facilities & Infrastructure.

Table 8: Critical Facilities by Category, DeKalb County

Critical Facilities by Category, DeKalb County	
Category	Number of Facilities
Communications	19
Courts/Courthouse(s)	5
Fire	27



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Government Office(s)	66
Hospital	5
K-12	163
Library	18
Medical Office(s) & Clinic(s)	3
Police	13
Private	10
Sheriff's Office/Jail	1
Transportation	1
University	5
Water Treatment/Wastewater Facility	17
Total	353

Data Source: DEMA



SECTION 4: RISK ASSESSMENT

Section 4 – Risk Assessment

The goal of hazard mitigation is to reduce the future impacts of hazards, including property damage, disruption to local and regional economies, and the amount of public and private funds spent to assist recovery. To be done correctly, mitigation decision-making should be based on risk assessment. A risk assessment provides the foundation for the rest of the mitigation planning process, which is focused on identifying and prioritizing actions to reduce risk to hazards. The risk assessment can also be used to establish emergency preparedness and response priorities, for land use and comprehensive planning, and for decision making by elected officials, city and county departments, businesses, and organizations in the community.

Planning Process

Local Procedures & Resources

Planning Area

Risk Assessment

- Identifying Hazards
- Profiling Hazards
- Identifying Community Assets
- Risk Analysis
- Hazard Risk Summary
- Excluded Hazards

Mitigation Strategy

Risk is the potential for damage, loss, or other impacts created by the interaction of natural hazards with community assets. Hazards are natural processes, such as tornadoes and earthquakes. The exposure of people, property, and other community assets to natural hazards can result in disasters depending on the impacts. Impacts are the consequences or effects of the hazard on the community and its assets. The type and severity of impacts are based on the extent of the hazard and the vulnerability of the asset, as well as the community's capabilities to mitigate, prepared for, respond to, and recover from events.

A review of recently declared disasters, from 2016 to the present, provides an overview of the hazards facing DeKalb County and its participating jurisdictions. This timeframe is referenced because DeKalb County has a FEMA-approved HMP that will expire on December 12, 2021. Since 2016, DeKalb County and its participating jurisdictions have experienced two presidentially declared disasters. These disaster declarations were due to a hurricane and epidemic/pandemic. A list of the declared disasters occurring in DeKalb County and its participating jurisdictions since 2016 is presented in the following table. Smaller events are more frequent and are not reflected in the table.

Note: Human-caused hazards such as Epidemic/Pandemic were not identified in the 2019 Georgia Hazard Mitigation Strategy Standard and Enhanced Plan (March 18, 2019 – March 17, 2024) and Statewide Hazard Assessment, or the 2016 DeKalb County Hazard Mitigation Plan. This disaster declaration was included in the table below due to the COVID-19 pandemic affecting DeKalb County and its participating jurisdictions during the drafting of this plan update.

Table 9: Presidential Disaster Declarations, DeKalb County

Presidential Disaster Declarations, DeKalb County		
Designation	Incident Period	Incident Type
DR - 4338	09/7/2017 – 09/20/2017	Hurricane Irma
DR - 4501	01/20/20 – Continuing	COVID-19 Pandemic

Data Source: FEMA

4.1 – Identifying Hazards

The first step in developing a hazard assessment is to identify the hazards that have a reasonable risk of occurring in DeKalb County and its participating jurisdictions. Proper identification allows for appropriate



SECTION 4: RISK ASSESSMENT

and well-planned action to mitigate the extent and impact of a hazard event. It also helps facilitate emergency response and recovery operations. Further, while not all disaster contingencies can be planned for, applying an all-hazards approach to the mitigation process does yield greater awareness and better preparedness for unforeseen hazard events overall.

The following table lists the 13 hazards identified in the Georgia Hazard Mitigation Strategy, as well as the justification for their inclusion/exclusion within this DeKalb County HMP update. Research indicates two of the 13 hazards (coastal hazards and geological hazards) pose no reasonable risk to the planning area. As such, they are excluded from this plan update. Justification for their exclusion can be found in Section 4.3 – Excluded Hazards.

Of the 13 state-identified hazards, 11 pose a risk to DeKalb County and/or at least one of its participating jurisdictions. These are hurricane wind, wind, severe weather, tornadoes, inland flooding, severe winter weather, drought, wildfire, earthquake, dam failures, and extreme heat. This plan integrates dam failure and inland flooding into the flooding hazard section, and hurricane winds, severe weather, and tornadoes into the wind hazard section. Details for each of these hazards and their potential impact on DeKalb County and its participating jurisdictions are in Section 4.3 – Hazard Risk Summary.

Table 10: State of Georgia Identified Hazards

State of Georgia Identified Hazards			
Hazards in State / Previous County HMP	Previous Inclusions	Included/Excluded	Justification
Hurricane Wind	State Plan, Prior Plan	Included in Wind Hazard Section	Disaster History
Coastal Hazards	State Plan	Not Included	No Reasonable Risk
Wind	State Plan, Prior Plan	Included	Disaster History
Severe Weather	State Plan, Prior Plan	Included in Wind Hazard Section	Disaster History
Tornado	State Plan, Prior Plan	Included in Wind Hazard Section	Disaster History
Inland Flooding	State Plan, Prior Plan	Included in Flood Hazard Section	Disaster History
Severe Winter Weather	State Plan, Prior Plan	Included	Disaster History
Drought	State Plan, Prior Plan	Included	Disaster History
Wildfire	State Plan, Prior Plan	Included	Disaster History
Earthquake	State Plan, Prior Plan	Included	Reasonable Risk
Geological Hazards	State Plan	Excluded	No Reasonable Risk
Dam Failure	State Plan, Prior Plan	Included in Flood Hazard Section	Reasonable Risk
Extreme Heat	State Plan, Prior Plan	Included	Disaster History



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4.2 – Profiling Hazards

4.2.1 – Hazard Description

This section describes the general characteristics of the specified hazard.

4.2.2 – Location & Extent

Location. This section contains information about the geographic areas within the planning area that are affected by the hazard.

Extent. This section describes the strength or magnitude of the hazard.

4.2.3 – Previous Occurrences

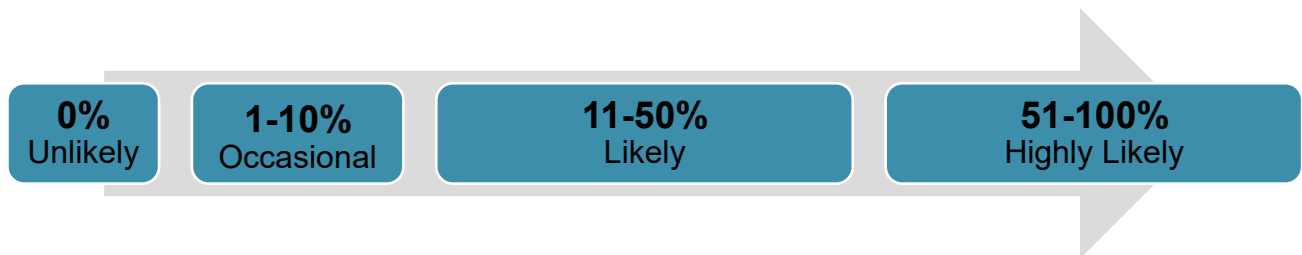
This section contains a history of previous hazard events for the profiled hazard.

Methodology: *Most of the historical data used in the risk assessment originates from the National Oceanic and Atmospheric Administration/National Centers for Environmental Information (NOAA/NCEI). In most instances, the hazard affects a large geographic area, and thus, the hazard data is reported at a county level. This is the best available data for these hazards. The calculations for Previous Occurrences and the Probability of Future Events are based on county-level data as well.*

4.2.3A – Probability of Future Events

This section of the plan describes the likelihood, or probability, of the identified hazard occurring within the planning area. If discrete quantitative data is available, a finite probability will be listed. See the table below for additional information related to the probability of future events.

Illustration 1: Probability Categories/Range per Year



4.2.4 – Vulnerability of Community Assets

This section identifies assets at risk to hazards. The assets include people, economy, built environment, and natural environment.

4.2.5 – Risk Analysis

This section evaluates the vulnerability of community assets, describes potential impacts, and estimates losses for each hazard. Methods for analyzing risk include exposure analysis, historical analysis, and scenario analysis. These methods can be expressed qualitatively or quantitatively. Qualitative evaluations describe the types of impacts that might occur during a hazard event. Quantitative evaluations assign values and measure the potential losses to the assets at risk.

Exposure Analysis. Identifies the existing and future assets located in the identified hazard areas. It may also consider the magnitude of the hazard. Exposure analysis may quantify the number, type, and value of structures, critical facilities, and infrastructure located in identified hazard areas.



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Historical Analysis. Uses information on impacts and losses from previous hazard events to predict potential impacts and losses during a similar future event. Historical analysis is used to address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged.

Scenario Analysis. Predicts the impacts of a particular event. Scenario analysis may be used to predict potential impacts and losses in terms of monetary costs, casualties, infrastructure downtime, and other risk elements.

In 2022, the Georgia Department of Emergency Management partnered with the Carl Vinson Institute of Government at the University of Georgia to develop a detailed risk assessment focused on defining hurricane, riverine flood, and tornado risks in DeKalb County, Georgia. This assessment identifies the characteristics and potential consequences of the disaster, how much of the community could be affected by the disaster, and the impact on community assets.

Hazus-MH Version 2.2 SP1 was used to perform the analyses for DeKalb County. The Hazus-MH application includes default data for every county in the US. This Hazus-MH data was derived from a variety of national sources and in some cases the data are also several years old. Whenever possible, using local provided data is preferred. DeKalb County provided building inventory information from the county's property tax assessment system. This section describes the changes made to the default Hazus-MH inventory and the modeling parameters used for each scenario.

The default Hazus-MH site-specific point inventory was updated using data compiled from the Georgia Emergency Management Agency (GEMA). The default Hazus-MH aggregate inventory (General Building Stock) was also updated prior to running the scenarios. Reported losses reflect the updated data sets.

The GBS records for DeKalb County were replaced with data derived from parcel and property assessment data obtained from DeKalb County. The county provided property assessment data was current as of November 2021 and the parcel data current as of November 2021. Records without improvements were deleted. The parcel boundaries were converted to parcel points located in the centroids of each parcel boundary; then, each parcel point was linked to an assessor record based upon matching parcel numbers. The parcel assessor match-rate for DeKalb County is 100%. The generated building inventory represents the approximate locations (within a parcel) of structures. The building inventory was aggregated by census block. Both the tract and block tables were updated. Table 11 shows the results of the changes to the GBS tables by occupancy class.

*Table 11: GBS Building Exposure Updates by Occupancy Class**

GBS Building Exposure Updates by Occupancy Class				
General Occupancy	Default Hazus-MH County	Updated Count	Default Hazus-MH Exposure	Updated Exposure
Agricultural	525	0	\$196,471,000	\$0
Commercial	13,947	6,670	\$13,046,956,000	\$12,186,755,000
Education	639	89	\$1,513,469,000	\$323,004,000
Industrial	3,328	951	\$2,315,533,000	\$1,871,459,000
Government	491	0	\$547,765,000	\$0
Religious	1,583	230	\$1,526,135,000	\$250,159,000
Residential	206,947	213,813	\$65,913,862,000	\$124,235,839,000
Total	227,460	221,753	\$85,060,191,000	\$138,867,216,000

*The exposure values represent the total number and replacement cost for all DeKalb County Buildings

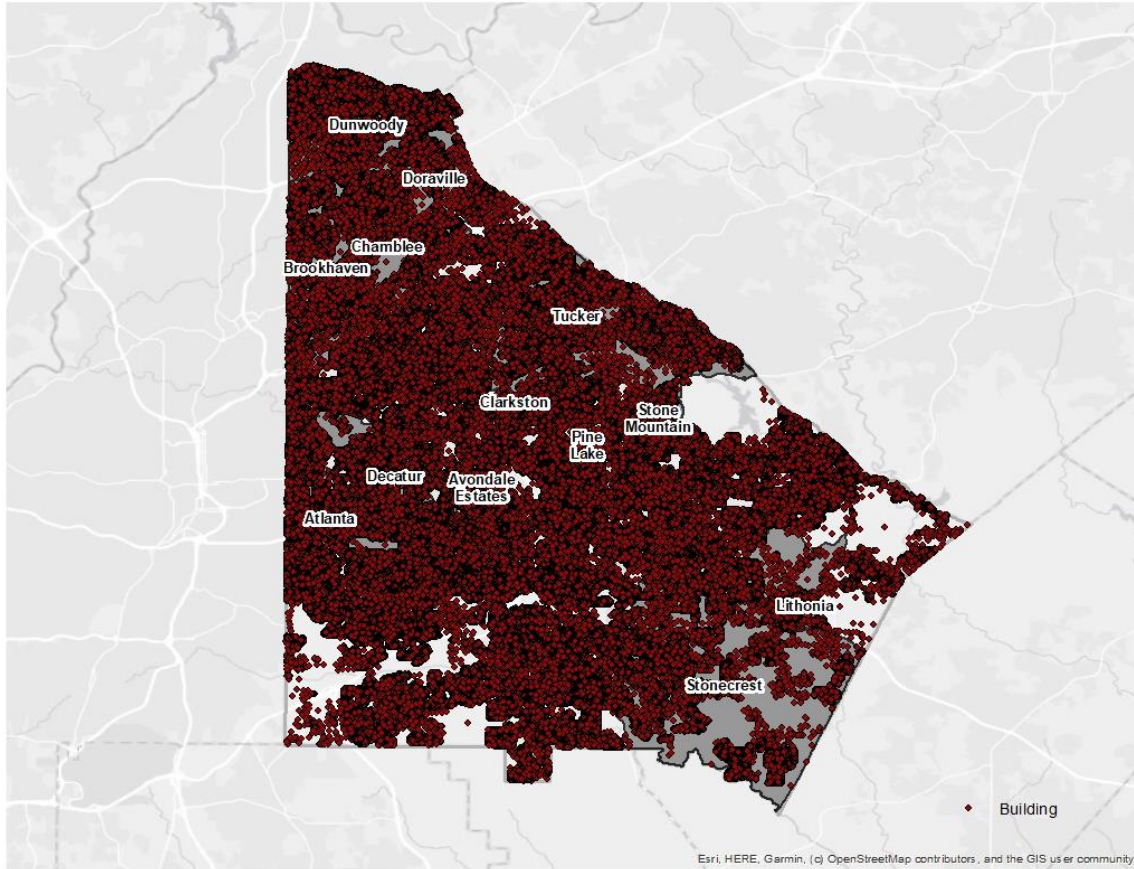


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Source: *Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan*

For DeKalb County, the updated GBS was used to calculate hurricane wind losses. The flood losses and tornado losses were calculated from building inventory modeled in Hazus-MH as User-Defined Facility (UDF), or site-specific points. The following map shows the distribution of buildings as points based on the county provided data.

Map 3: DeKalb County Overview



Source: *Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan*

4.2.6 – Problem Statements

Problem statements combine potential consequences and impacts of the identified hazard with other community characteristics to express vulnerability.



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4.3 (W) – Wind

4.3.1 – Hazard Description

Several different events can generate wind hazards. The National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI) Database divides wind events into several types, including High Wind, Hurricane (Typhoon), Marine High Wind, Marine Strong Wind, Marine Thunderstorm Wind, Strong Wind, Thunderstorm Wind, Tornado, Tropical Depression, and Tropical Storm. Marine High Wind, Marine Strong Wind, and Marine Thunderstorm Wind present no reasonable risk for DeKalb County. This plan will profile Straight-Line Winds (High Wind, Strong Wind, and Thunderstorm Wind), Tropical Systems (Hurricane, Tropical Storm, and Tropical Depression), and Tornadoes. Other hazards associated with thunderstorms, such as lightning and hail, will be included in profile for Straight-Line Winds.

Straight-Line Winds: Naturally occurring, wind is simply moving air that is caused by differences in air pressure within the Earth's atmosphere. Air under high pressure moves toward areas of low pressure. The greater the difference in pressure, the faster the air flows. The definitions of the three wind types addressed in this section come from the NOAA/NCEI Storm Data Preparation document:

- High Wind: Sustained, non-convective winds of 40 mph or greater lasting for one hour or longer, or winds (sustained or gusts) of 58 mph for any duration on a widespread or localized basis.
- Strong Wind: Non-convective winds gusting less than 58 mph, or sustained winds less than 40 mph, resulting in a fatality, injury, or damage.



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- **Thunderstorm Wind:** Winds, arising from convection (occurring within 30 minutes of lightning being observed or detected), with speeds of at least 58 mph, or winds of any speed (non-severe thunderstorm winds below 58 mph) producing a fatality, injury, or damage.

Downbursts, including dry or wet microbursts or macrobursts, are classified as Thunderstorm Wind events. In some cases, the downburst may travel several miles from the parent thunderstorm, or the parent thunderstorm may have dissipated. A gustnado is a small and usually weak whirlwind that forms as an eddy in thunderstorm outflows. It does not connect with any cloud-base rotation and is not a tornado. Since their origin is associated with cumuliform clouds, gustnadoes are classified as Thunderstorm Wind events.

Thunderstorms form when warm, moist air near the Earth's surface is forced upward through some catalyst (convection or frontal weather system). As the air rises, it cools, condenses, and forms cumulonimbus clouds that can reach up to 40,000 feet in altitude. When the rising air reaches its dew point, water droplets (rain) and ice (hail) form and begin falling the long distance through the clouds towards the ground. As the droplets fall, they collide with other droplets and become larger. The falling droplets create a downdraft of air that spreads out at the Earth's surface, resulting in strong, oftentimes damaging winds. The collision of the water and ice particles in the cloud(s) form a large electrical field, discharging as dangerous cloud-to-ground or ground-to-cloud lightning.

There are four ways in which thunderstorms can organize: single cell, multi-cell cluster, multi-cell lines (squall lines), and supercells. The average single-cell thunderstorm develops rapidly, is approximately 15 miles in diameter, and lasts less than 30 minutes at a single location. Multi-cell clusters and multi-cell lines, which can also form relatively quickly, can travel for distances exceeding 600 miles. Supercells are usually associated with severe weather phenomena. Regardless of the type of thunderstorm, warm, humid conditions are most favorable for their development.

A thunderstorm is classified as "severe" by NWS when it contains one or more of the following: hail one inch or greater, winds gusting more than 50 knots (57.5 mph), and/or a tornado. In these instances, Severe Thunderstorm Watches or Severe Thunderstorm Warnings will be issued by the national/local weather authorities.

A Severe Thunderstorm Watch is issued by NOAA's Storm Prediction Center when conditions are favorable for severe thunderstorms. A watch can cover parts of a state or several states. A Severe Thunderstorm Warning, on the other hand, is issued by local NOAA NWS Forecast office meteorologists and is specific to a designated area. Warnings, which can cover parts of counties or even several counties, mean severe weather has been reported by spotters or indicated by radar and that there is a serious threat to life and property.

According to NOAA, many hazardous weather events are associated with thunderstorms. Under the right conditions, rainfall from thunderstorms causes flash flooding, which kills more people each year than hurricanes, tornadoes, or lightning. Lightning is responsible for many fires around the world each year and causes fatalities. Hail up to the size of softballs damages cars and windows, and kills livestock caught out in the open. Strong (up to more than 120 mph) straight-line winds associated with thunderstorms knock down trees, power lines and mobile homes.

Lightning is one of the more dangerous weather hazards in the United States. The NWS describes lightning as a giant spark of electricity in the atmosphere or between the atmosphere and the ground. As the rapid discharge between positive and negative regions of a thunderstorm, lightning flashes are composed of a series of strokes (with an average of about four). The length and duration of each lightning strike vary, but typically average around 30 microseconds. People and objects can be directly struck by lightning, or damage can occur indirectly when the current (up to 100 million volts of electrical potential) passes through or near them.

Per the NWS, lightning strikes the U.S. about 25 million times a year, killing an average of 51 people and accounting for hundreds of injuries including serious burns. Interestingly, lightning is hotter than the surface of the sun and can reach temperatures around 50,000° Fahrenheit. Lightning is also responsible for millions



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of dollars of property damage annually, including damage to buildings, communications systems, powerlines, and electrical systems. Moreover, lightning causes forest and brush fires, as well as deaths and injuries to livestock and other animals.

According to the National Lightning Safety Institute (NLSI), lightning triggers more than 26,000 fires in the U.S. each year. The Institute estimates property damage, increased operating costs, production delays, and lost revenue from lightning and secondary effects to be \$6-7 billion dollars/year.

Hail, which is associated with thunderstorms, forms when updrafts carry raindrops into extremely cold areas of the atmosphere and form ice. The frozen precipitation falls to the ground when it becomes heavy enough to overcome the strength of the updraft. Hailstones can range from the size of a pea to the size of a grapefruit, and they can span a variety of shapes, though most are spherical. They are usually less than two inches in diameter and can fall at speeds of 120 mph.

The largest recorded hailstone in the U.S. was nearly as big as a volleyball and fell on July 23, 2010, in Vivian, South Dakota. It was eight inches in diameter and weighed almost two pounds.

On average, hail causes nearly \$1 billion in damage in the U.S. each year to crops and property including automobiles, aircraft, and structures. According to the NOAA's Severe Storms database, there were 6,045 major hailstorms in 2017 resulting in \$1.8 billion in property and crop damage. Hail also poses a safety threat to both humans and animals. In fact, NOAA estimates that 24 people in the U.S. are injured each year with some injuries significant enough to send them to the hospital.

Tropical Systems: A tropical weather system, as described by the National Weather Service (NWS), is one with organized convection (generally 100-300 miles in diameter) originating in the tropics or subtropics, having a non-frontal migratory character, and maintaining its identity for 24 hours or longer. It may or may not be associated with a detectable perturbation of the wind field.

Tropical systems include several types of tropical cyclones (the generic term for a non-frontal synoptic scale low-pressure systems over tropical or sub-tropical waters with organized convection, i.e., thunderstorm activity, and definite cyclonic surface wind circulation (Holland 1993). For the purpose of this HMP update, tropical systems include tropical depressions, tropical storms, and hurricanes as defined below:

- 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 mph to 73 mph (34–63 knots).
- Hurricane: An intense tropical weather system with a well-defined circulation, producing maximum sustained winds of 74 mph (64 knots) or greater. Hurricane intensity is classified into five categories using the Saffir-Simpson Hurricane Scale (see Illustration 2). Winds in a hurricane range from 74 to 95 mph for a Category 1 hurricane to greater than 156 mph for a Category 5 hurricane. Hurricanes reaching Category 3 are considered major hurricanes because of their potential for significant loss of life and property damage. Category 1 and 2 storms are still dangerous and require preventative measures.

It is important to note that while hurricanes pose the greatest threat to life and property, tropical storms and depressions can also be devastating. Floods from heavy rains can cause widespread damage and loss of life, as can hurricane-spawned tornadoes. Both are common occurrences of tropical systems, particularly those that develop in the Atlantic Ocean.

Tornadoes: A tornado is a violent, dangerous, rotating column of air that is in contact with both the surface of the earth and a cumulonimbus cloud or, in rare cases, the base of a cumulus cloud. Often referred to as a twister or a cyclone, they can strike anywhere and with little warning. Tornadoes come in many shapes and sizes but are typically in the form of a visible condensation funnel, whose narrow end touches the earth



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and is often encircled by a cloud of debris and dust. Tornadoes are usually born in “supercell” thunderstorms and present certain physical signs that include a dark, greenish sky, large hail, and a powerful train-like roar.

Tornadoes have the potential to produce winds in excess of 200 mph and can be very expansive –some in the Great Plains have exceeded two miles in width. According to the NWS, the widest tornado ever recorded in the U.S. was 2.6 miles wide, and it occurred on May 31, 2013, in El Reno, Oklahoma. Sadly, it claimed the lives of eight people, all of whom were in vehicles, and left a path of destruction (\$40-\$50 million in damage). The costliest tornado on record hit Joplin, Missouri, on May 22, 2011, resulting in \$2.8 billion in damage. It killed 158 people and injured more than a thousand others.

As evidenced by past events, tornadoes can cause all kinds of damage to buildings, infrastructure, and property. Tornadoes have been known to lift and move objects weighing more than three tons, toss homes more than 300 feet from their foundations, and siphon millions of tons of water. However, less spectacular damage is much more common.

Tornadoes can also generate a tremendous amount of flying debris. If wind speeds are high enough, airborne debris can be hurled at buildings with enough force to penetrate windows, roofs, and walls. Most tornado-related injuries or deaths are caused by flying debris.

Violent tornadoes comprise only about two percent of all tornadoes, but they cause 70 percent of all tornado deaths and may last an hour or more. While tornado forecasters cannot provide the same kind of warning that hurricane watchers can, they can do enough to help save lives. Today the average warning time for a tornado alert is 13 minutes.

Until 2007 the Fujita Tornado Scale ranked the severity of tornadoes. The Fujita scale assigned a numerical F value, F0 through F5, based on the wind speeds and estimated damage. Since 2007 the U.S. switched over to the Enhanced Fujita Scale. The altered scale adjusted the wind speed values per F level and introduced a rubric for estimating damage. An EF0 tornado could lightly damage structures to the extent they would become unsafe to use until repaired. An EF1 or larger tornado could destroy the entire neighborhood, town, or city or damage any number of structures to the point where they would be unusable for at least a year.

4.3.2 – Location & Extent

All areas of DeKalb County are susceptible to wind hazards. Strong winds can form in association with thunderstorms, or in areas of high pressure. DeKalb County's proximity to the Gulf of Mexico creates the ideal conditions for thunderstorm and tornado development. Georgia borders the Atlantic Ocean and Gulf of Mexico, both of which provide an environment favorable for tropical systems. While DeKalb County is several hundred miles inland, it is still susceptible to the tropical system hazards.

According to NOAA, there are three basic ingredients needed for thunderstorm development: moisture, an unstable atmosphere, and some way to start the atmosphere moving (<https://www.weather.gov/safety/lightning-thunderstorm-development>). The National Weather Service in Peachtree City notes that all thunderstorms have the potential to produce tornadoes, but the type of storm that is most commonly tornadic is the supercell. This very severe, long-lived thunderstorm contains circulation aloft (mesocyclone) that grows upward through the storm and downward toward the ground. When conditions are favorable, tornadoes will be produced. Supercells have the potential to produce all magnitude of tornadoes. The key atmospheric ingredients that lead to tornado potential are instability - warm moist air near the ground, with cooler dry air aloft and wind shear - a change in wind speed and/or direction with height. An unstable airmass promotes the development of strong updrafts, while wind shear will further increase the strength of the updraft and promotes the rotation from which tornadoes are produced (<https://www.weather.gov/ffc/torntext>).

Thunderstorms are a common occurrence across the U.S., including the State of Georgia. According to SHELATUS™/NCEI data referenced in the Georgia Hazard Mitigation Strategy, an average of 331 severe weather events occurred across the State between 1952 and 2017. These events in total caused 990



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injuries, 168 fatalities, and more than \$1.2 billion in damages. Over the period from 1997 to 2017, the historic occurrence jumped to 499 severe weather events per year, which equates to a significant chance of a severe weather occurrence in any given year.

Wind observations or measurements are required for determining the probability of wind damage and the estimation of wind energy. To help with the planning, design, and construction of buildings for residential and commercial purposes, as well as mitigation efforts, the American Society of Civil Engineers (ASCE) calculates Average Hazard Wind Scores. The wind speeds correspond with the assigned hazard score with values ranging from one to five, as shown in the following table.

Table 11: American Society of Civil Engineers (ASCE) Average Hazard Wind Score(s)

ASCE Average Hazard Wind Scores	
Wind Score(s)	Wind Speeds (mph)
1	<90
2	91-100
3	101-110
4	111-120
5	>120

Data Source: ASCE

As documented in the Georgia Hazard Mitigation Strategy Standard and Enhanced Plan (March 18, 2019 – March 17, 2024), DeKalb County has an average ASCE wind score of 1 with wind speeds < 90 MPH. Winds associated with strong to severe thunderstorms contribute significantly to the rating. Potential impacts from localized wind events include, but are certainly not limited to, the following:

- Significant debris generation
- Residential and commercial property loss
- Economic impact from business interruption or loss of tourism
- Agricultural loss
- Displaced residents requiring temporary shelter
- Loss of critical infrastructure function, including roads blocked by debris, downed powerlines, and interruption of communication services

Wind speed is the determining factor in the Saffir-Simpson Hurricane Scale. The following describes the characteristics of each category storm using the Saffir-Simpson Scale's Extended Scale:



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Illustration 2: Saffir-Simpson Hurricane Scale

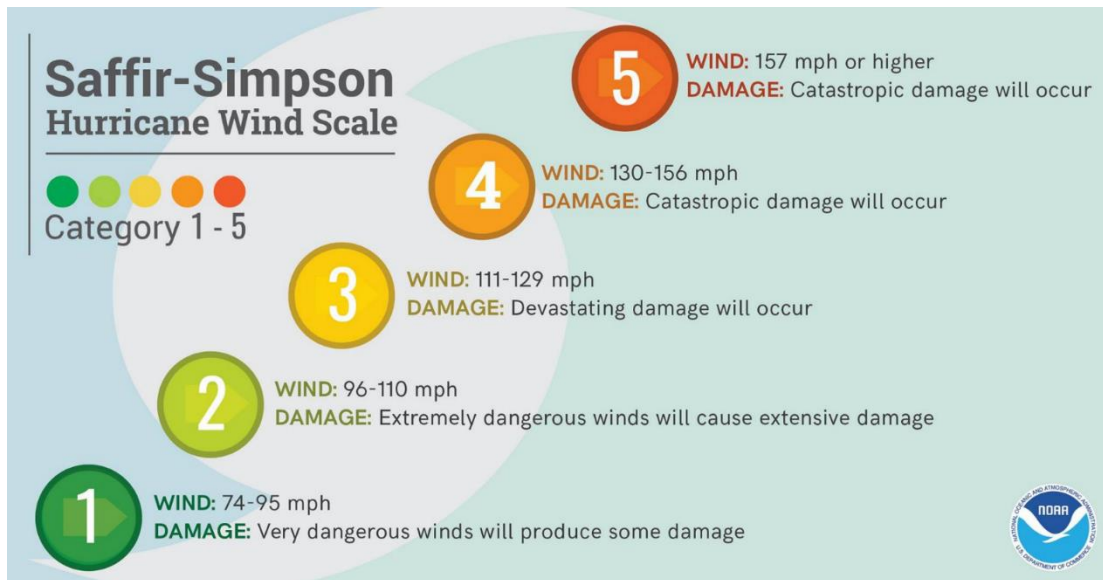


Illustration Source: NOAA

- Category 1 Hurricane:** Winds 74 –95 mph. Very dangerous winds will produce damage. People, livestock, and pets struck by flying or falling debris could be injured or killed. Older (mainly pre-1994 construction) mobile homes could be destroyed, especially if they are not anchored properly as they tend to shift or roll off their foundations. Newer mobile homes that are anchored properly can sustain damage involving the removal of shingle or metal roof coverings, and loss of vinyl siding, as well as damage to carports, sunrooms, or lanais. Some poorly constructed frame homes can experience major damage, involving loss of the roof covering and damage to gable ends as well as the removal of porch coverings and awnings. Unprotected windows may break if struck by flying debris. Masonry chimneys can be toppled. Well-constructed frame homes could have damage to roof shingles, vinyl siding, soffit panels, and gutters. Failure of aluminum, screened-in, swimming pool enclosures can occur. Some apartment building and shopping center roof coverings could be partially removed. Industrial buildings can lose roofing and siding especially from windward corners, rakes, and eaves. Failures to overhead doors and unprotected windows will be common. Windows in high-rise buildings can be broken by flying debris. Falling and broken glass will pose a significant danger even after the storm. There will be occasional damage to commercial signage, fences, and canopies. Large branches of trees will snap, and shallow rooted trees can be toppled. Extensive damage to power lines and poles will likely result in power outages that could last a few to several days.
- Category 2 Hurricane:** Winds 96-110 mph. Extremely dangerous winds will cause extensive damage. There is a substantial risk of injury or death to people, livestock, and pets due to flying and falling debris. Older (mainly pre-1994 construction) mobile homes have a very high chance of being destroyed and the flying debris generated can shred nearby mobile homes. Newer mobile homes can also be destroyed. Poorly constructed frame homes have a high chance of having their roof structures removed especially if they are not anchored properly. Unprotected windows will have a high probability of being broken by flying debris. Well-constructed frame homes could sustain major roof and siding damage. Failure of aluminum, screened-in, swimming pool enclosures will be common. There will be a substantial percentage of roof and siding damage to apartment buildings and industrial buildings. Unreinforced masonry walls can collapse. Windows



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in high-rise buildings can be broken by flying debris. Falling and broken glass will pose a significant danger even after the storm. Commercial signage, fences, and canopies will be damaged and often destroyed. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks. Potable water could become scarce as filtration systems begin to fail.

- **Category 3 Hurricane:** Winds 111-129 mph. Devastating damage will occur. There is a high risk of injury or death to people, livestock, and pets due to flying and falling debris. Nearly all older (pre-1994) mobile homes will be destroyed. Most post-1994 mobile homes will sustain severe damage with potential for complete roof failure and wall collapse. Poorly constructed frame homes can be destroyed by the removal of the roof and exterior walls. Unprotected windows will be broken by flying debris. Well-built frame homes can experience major damage involving the removal of roof decking and gable ends. There will be a high percentage of roof covering and siding damage to apartment buildings and industrial buildings. Isolated structural damage to wood or steel framing can occur. Complete failure of older metal buildings is possible, and older unreinforced masonry buildings can collapse. Numerous windows will be blown out of high-rise buildings resulting in falling glass, which will pose a threat for days to weeks after the storm. Most commercial signage, fences, and canopies will be destroyed. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to a few weeks after the storm passes.
- **Category 4 Hurricane:** Winds 130 to 156 mph. Catastrophic damage will occur. There is a very high risk of injury or death to people, livestock, and pets due to flying and falling debris. Nearly all older (pre-1994) mobile homes will be destroyed. A high percentage of newer mobile homes also will be destroyed. Poorly constructed homes can sustain complete collapse of all walls as well as the loss of the roof structure. Well-built homes also can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Extensive damage to roof coverings, windows, and doors will occur. Large amounts of windborne debris will be lofted into the air. Windborne debris damage will break most unprotected windows and penetrate some protected windows. There will be a high percentage of structural damage to the top floors of apartment buildings. Steel frames in older industrial buildings can collapse. There will be a high percentage of collapse to older unreinforced masonry buildings. Most windows will be blown out of high-rise buildings resulting in falling glass, which will pose a threat for days to weeks after the storm. Nearly all commercial signage, fences, and canopies will be destroyed. Most trees will be snapped or uprooted, and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Long-term water shortages will increase human suffering. Most of the area will be uninhabitable for weeks or months.
- **Category 5 Hurricane:** Winds 157 mph or higher. Catastrophic damage will occur. People, livestock, and pets are at very high risk of injury or death from flying or falling debris, even if indoors in mobile homes or framed homes. Almost complete destruction of all mobile homes will occur, regardless of age or construction. A high percentage of frame homes will be destroyed, with total roof failure and wall collapse. Extensive damage to roof covers, windows, and doors will occur. Large amounts of windborne debris will be lofted into the air. Windborne debris damage will occur to nearly all unprotected windows and many protected windows. Significant damage to wood roof commercial buildings will occur due to loss of roof sheathing. Complete collapse of many older metal buildings can occur. Most unreinforced masonry walls will fail which can lead to the collapse of the buildings. A high percentage of industrial buildings and low-rise apartment buildings will be destroyed. Nearly all windows will be blown out of high-rise buildings resulting in falling glass, which will pose a threat for days to weeks after the storm. Nearly all commercial signage, fences, and canopies will be destroyed. Nearly all trees will be snapped or uprooted,



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and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Long-term water shortages will increase human suffering. Most of the area will be uninhabitable for weeks or months.

Tornadoes are rated on the Enhanced Fujita Scale. Destruction, ranging from minor to catastrophic, is dependent upon the intensity, size, and duration of the tornado. Structures made of light materials such as mobile homes are most susceptible to damage. The following table shows the level of loss/damage associated with each tornado category of the EF scale.

Table 12: Fujita-Enhanced Fujita Scale Comparison

Fujita-Enhanced Fujita Scale Comparison			
Fujita (F) Scale		Enhanced Fujita (EF) Scale	
Fujita Scale	3-Second Gust Speed (MPH)	Enhanced Fujita Scale	3-Second Gust Speed (MPH)
F0	45-78	EF0	65-85
F1	79-117	EF1	86-109
F2	118-161	EF2	110-137
F3	162-209	EF3	138-167
F4	210-261	EF4	168-199
F5	262-317	EF5	200-234

Table Source: NOAA



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Illustration 3: Enhanced Fujita Scale, Damage

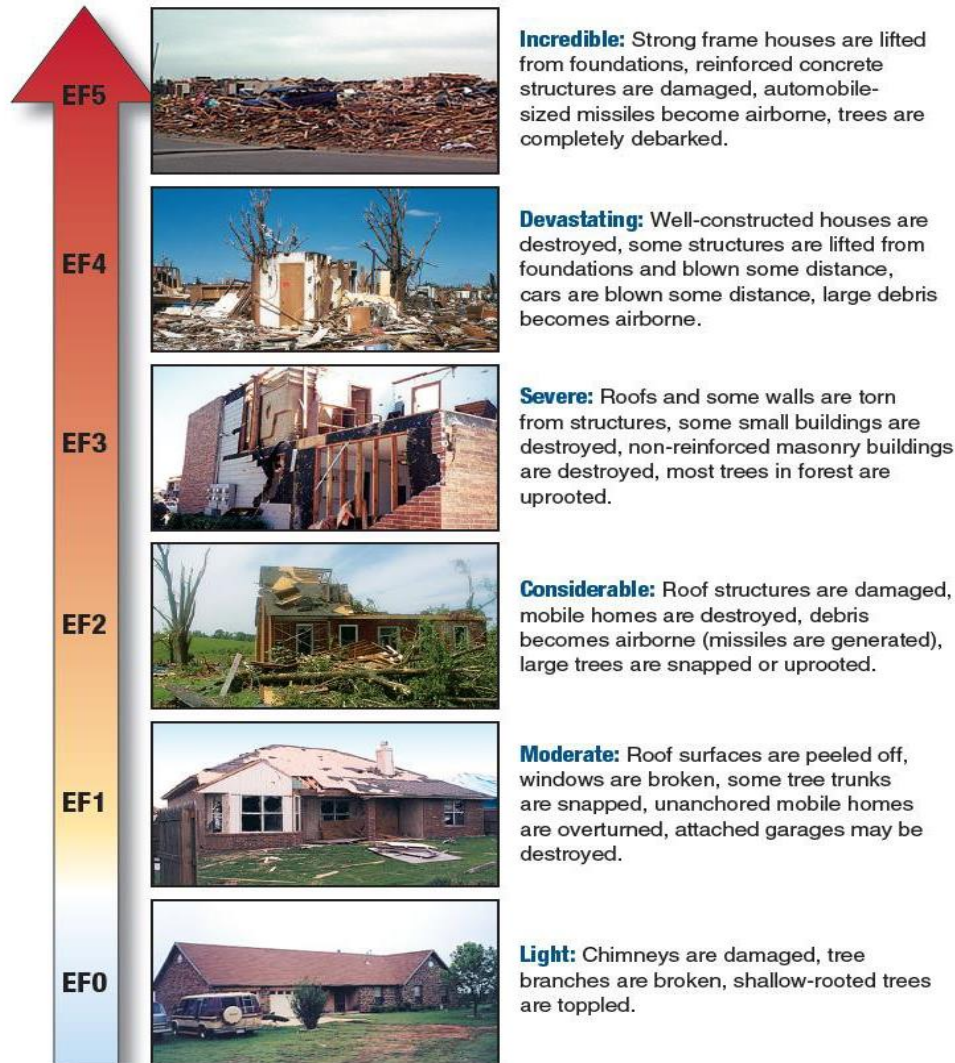


Illustration Source: FEMA

It is important to note how climate change affects the intensity and frequency of wind events (and their potential impacts). It is uncertain and is being studied intensively. For Georgia, until the impacts are better understood, the anticipated intensity and frequency of wind events will likely remain close to historical averages. However, damage to life and property will likely increase due to population and financial growth across the state, including DeKalb County.

4.3.3 – Previous Occurrences

Straight-Line Wind Events (Strong Winds, High Winds, Thunderstorms)

For this plan, hail and lightning damage will be included in this section. Between 1950 and 2019, significant straight-line wind events have impacted DeKalb County and the incorporated communities within its boundaries 261 times. These events caused four deaths, 12 injuries, and approximately \$18.628 million in property damage. Between January 1, 2016, and December 31, 2020, significant straight-line wind events have impacted DeKalb County and the incorporated communities within its boundaries 50 times. These events caused one death, two injuries, and approximately \$572,000 in damage.



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Table 13: Straight-Line Wind Events (1950-2020)

Straight-Line Wind Events (1950-2020)					
Decade	No. of Events	Deaths	Injuries	Property Damage	Crop Damage
1950s	0	0	0	\$0	\$0
1960s	4	0	0	\$0	\$0
1970s	10	0	0	\$0	\$0
1980s	43	0	1	\$0	\$0
1990s	91	0	1	\$448K	\$0
2000s	108	3	6	\$16.873M	\$0
2010s	81	1	3	\$1.188M	\$0
2020	15	0	1	\$117K	\$0
Total	352	4	12	\$18.628M	\$0

Data Source: NOAA/NCEI Storm Events Database

Table 14: Straight-Line Wind Events (2016-2020)

Straight-Line Wind Events (2016-2020)					
Year	No. of Events	Deaths	Injuries	Property Damage	Crop Damage
2016	11	1	0	\$130K	\$0
2017	9	0	0	\$187K	\$0
2018	10	0	1	\$55K	\$0
2019	5	0	0	\$83K	\$0
2020	15	0	1	\$117K	\$0
Total	50	1	2	\$572K	\$0
Average	10	0.2	0.4	\$114.4K	\$0

Data Source: NOAA/NCEI Storm Events Database

May 17, 2004, Dunwoody Lightning Event: The Atlanta-Journal/Constitution reported that a 34-year-old man of Douglasville, who was installing a pool at a private residence, was struck, and killed by lightning while leaning against a truck outside at the site. The bolt of lightning struck the ground about 30 feet from where the individual was located at the time. Another individual with the same construction crew had his back singed during the time of this same lightning strike.

June 27, 2004, Decatur Lightning Event: The Atlanta Journal-Constitution reported that lightning struck and knocked over a large tree onto the Emory Wood Nursing Center on Oxford Road near Emory University. Four residents were trapped in the structure as a result and required hospitalization following the incident. One of the residents was wedged between a back wall and the tree where it had fallen on the nursing home.



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Later in the evening, all 38 residents of the home were evacuated. Lightning also struck several power lines and transformers in the area leaving several people without power during the evening.

February 21, 2005, Druid Hills Hail Event: An employee of the DeKalb County Water Department reported that hail ranging in size from pennies to greater than golf ball, on the order of 2.0 inches in diameter fell.

July 10-11, 2005, DeKalb County Strong Wind Event: Strong winds, associated with the remnants of Hurricane Dennis, affected much of west Georgia from the late evening hours on the 10th through the early morning hours of the 11th. Sustained winds during this period were mostly 15 to 25 mph, but some gusts to near 40 mph were reported. The strong winds combined with heavy rain and saturated ground resulted in many downed trees and power lines across west Georgia, mainly west of a line from Americus to Atlanta, to Chatsworth. Many power outages were reported overnight and into the early morning hours. A large, 40-inch diameter poplar tree was blown down onto a home, killing a man sleeping in his bed. Several trees and power lines were blown down throughout the county during the night. Estimated Damage: \$50,000

January 23, 2016, DeKalb County Strong Wind Event: At approximately 12:30 PM EST northwest winds of 20 to 25 MPH with gusts 30 to 40 MPH caused a tree to fall at the Mystery Valley Golf Club in Lithonia. The tree struck a United States Postal Service vehicle driven by a 36-year-old male postal worker. The vehicle left the roadway and travelled down a hill before striking another tree. DeKalb County Fire Department officials believe the impact from the falling tree, which did not appear to be in good health, likely caused the postal worker's death.

March 21, 2017, Druid Hills Thunderstorm Wind Event: The DeKalb County Emergency Manager reported several trees blown down from North Druid Hills to Clarkston. Trees were blown down on cars and houses on Verona Drive and Tanner Drive and a large tree fell on a home on Coralwood Drive. No injuries were reported.

August 9, 2017, DeKalb County Strong Wind Event: Strong winds associated with a large area of persistent showers produced isolated reports of damage in DeKalb County, including a large tree that fell on an apartment building and a car on Northeast Expressway and another tree blown down across the intersection of LaVista Road and North Druid Hills Road blocking traffic in all directions. No injuries were reported.

June 11, 2018, Oak Grove Thunderstorm Wind Event: The DeKalb County Emergency Manager reported trees blown down from around the intersection of Sycamore Street and East Ponce De Leon Avenue to Sams Street and Shadowmoor Drive at South Columbia Drive. One tree fell onto a house at the Sycamore Street location with one person injured. No information was available concerning the extent of their injuries.

August 1, 2019, Pittsburg Thunderstorm Wind Event: The DeKalb County Emergency Manager and the local broadcast media reported dozens of trees and a few power lines blown down in the Embry Hills area along Embry Hills Drive. A wind gust of 57 mph was measured by Georgia DOT equipment in this area as well. Some trees fell onto homes and automobiles.

Tropical System Events

The information used to develop the tropical system events section is taken directly from the NOAA/NCEI database because it provides the most complete repository for natural hazards in the United States. The method for which NOAA/NCEI reports tropical system impacts varies. Inland tropical system impacts can cause flooding, wind damage, and tornadoes. Events associated with these impacts are sometimes categorized as flood, wind damage, or tornadoes and not with the associated tropical system. So, while the number below reflects NOAA/NCEI data, the tropical system events for DeKalb County are higher.

Between 1950 and 2019, tornado events have impacted DeKalb County and the incorporated communities within its boundaries 16 times. These events caused no deaths, no injuries, and approximately \$12 million in property damage. Between January 1, 2016, and December 31, 2020, tropical events have impacted



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DeKalb County and the incorporated communities within its boundaries two times. These events caused no deaths, no injuries, and approximately \$12 million in damage.

Table 15: Tropical System Events (1950-2020)

Tropical System Events (1950-2020)					
Decade	No. of Events	Deaths	Injuries	Property Damage	Crop Damage
1950s	0	0	0	\$0	\$0
1960s	0	0	0	\$0	\$0
1970s	0	0	0	\$0	\$0
1980s	0	0	0	\$0	\$0
1990s	0	0	0	\$0	\$0
2000s	13	0	0	\$0	\$0
2010s	2	0	0	\$12M	\$0
2020	1	0	0	\$0	\$0
Total	16	0	0	\$12M	\$0

Data Source: NOAA/NCEI Storm Events Database

Table 16: Tropical System Events (2016-2020)

Tropical System Events (2016-2020)					
Year	No. of Events	Deaths	Injuries	Property Damage	Crop Damage
2016	0	0	0	\$0	\$0
2017	1	0	0	\$12M	\$0
2018	0	0	0	\$0	\$0
2019	0	0	0	\$0	\$0
2020	1	0	0	\$0	\$0
Total	2	0	0	\$12M	\$0
Average	0.4	0	0	\$2.4M	\$0

Data Source: NOAA/NCEI Storm Events Database

September 11, 2017, Hurricane Irma: On the morning of August 30th Tropical Storm Irma developed rapidly over the eastern Atlantic Ocean, just west of the Cape Verde Islands. Tropical Irma quickly strengthened as it moved west, reaching hurricane strength by the morning of August 31st. Hurricane Irma continued to move steadily westward across the Atlantic Ocean, intensifying to category 4 storm on the Saffir-Simpson scale as it approached the northern Leeward Islands of the Lesser Antilles on September 4th. By the morning of the September 5th Hurricane Irma had reached category 5 and remained so into the morning of September 8th as it moved through the northern Antilles and approached the Bahamas. Irma



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continued moving west northwest as a category 4 storm before turning north over the Florida Straits and crossing the Florida Keys on the 9th and 10th. Hurricane Irma made landfall over southwest Florida as a category 4 storm during the evening of the 10th and travelled north northwest through western Florida before weakening to a category 1 hurricane as it crossed into southwest Georgia the afternoon of September 11th. Tropical Storm Irma crossed southwest Georgia through the day of the 11th before weakening to a tropical depression over north Alabama early on the morning of the 12th. Tropical storm strength winds produced widespread damage across central and north Georgia through the day of September 11th and into the early morning hours of the 12th. Isolated flash flooding associated with Tropical Storm Irma was reported as well.

The DeKalb County Emergency Manager reported hundreds of trees and many power lines blown down across the county. 267 homes and businesses were damaged, mainly by falling trees and large limbs, with 65 of them reported destroyed or sustaining major damage. Over 200 roads were blocked by downed trees, power lines and other debris with over 106 tons of debris cleared. Estimates are that over half of all customers lost electricity in the county for varying periods of time. A wind gust of 47 mph was measured at DeKalb-Peachtree Airport and a gust of 72 mph was measured on top of Stone Mountain, around 800 feet above the surrounding terrain. Radar estimated between 3 and 6.5 inches of rain fell across the county with 6.32 inches measured in Decatur. One firefighter received minor injuries while clearing debris. Around \$11 million in insured losses were reported.

October 28-29, 2020, Tropical Storm Zeta: During the late evening of October 28th through the morning of October 29th, Tropical Storm Zeta swept rapidly across north Georgia producing widespread wind damage and isolated flooding across north and portions of central Georgia. Around 1.5 million customers lost electricity for some period, some for several days.

Winds gusted between 35 and 55 mph for several hours. A gust to 47 mph was recorded at DeKalb-Peachtree Airport (KPDK) at 3:54 AM EST and a gust of 54 mph was recorded near Emory University. Numerous trees and power lines were blown down across the county.

Tornado Events

Between 1950 and 2019, tornado events have impacted DeKalb County and the incorporated communities within its boundaries 13 times. These events caused one death, two injuries, and approximately \$28.950 million in property damage. Between January 1, 2016, and December 31, 2020, tornado events have impacted DeKalb County and the incorporated communities within its boundaries two times. These events caused no deaths, no injuries, and approximately \$265,000 in damage.

Table 17: Tornado Events (1950-2020)

Tornado Events (1950-2020)					
Decade	No. of Events	Deaths	Injuries	Property Damage	Crop Damage
1950s	1	0	1	\$25K	\$0
1960s	2	0	1	\$500K	\$0
1970s	4	0	1	\$3.025M	\$0
1980s	1	0	0	\$25K	\$0
1990s	1	1	0	\$25M	\$0
2000s	1	0	0	\$50K	\$0
2010s	3	0	0	\$325K	\$0



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2020	0	0	0	\$0	\$0
Total	13	1	3	\$28.950M	\$0

Data Source: NOAA/NCEI Storm Events Database

Table 18: Tornado Events (2016-2020)

Tornado Events (2016-2020)					
Year	No. of Events	Deaths	Injuries	Property Damage	Crop Damage
2016	0	0	0	\$0	\$0
2017	1	0	0	\$15K	\$0
2018	0	0	0	\$0	\$0
2019	0	0	0	\$0	\$0
2020	1	0	0	\$250K	\$0
Total	1	0	0	\$265K	\$0
Average	0.4	0	0	\$53K	\$0

Data Source: NOAA/NCEI Storm Events Database

June 5, 1950, Tornado: An F1 tornado touched down in eastern DeKalb County. The tornado caused one injury and approximately \$25,000 in property damage.

June 30, 1966, Tornado: An F1 tornado moved through DeKalb County causing one injury and approximately \$250,000 in property damage.

May 14, 1976, Tornado: An F1 tornado touched down briefly in DeKalb County at 7:00 p.m. The tornado damaged a self-service gas station, injuring one person. At Interstate 285 and Flat Shoals Road, the tornado flipped a tractor-trailer.

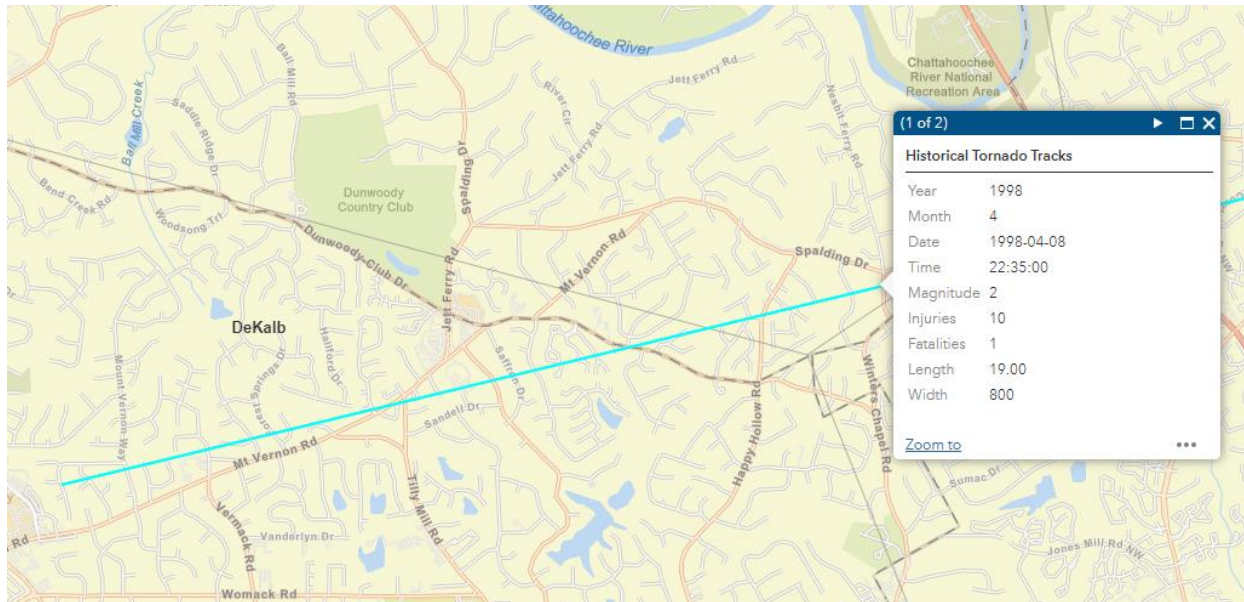
May 8, 1978, Tornado: At 5:20 p.m., an F2 tornado moved northeast from Forest Park in Clayton County to southern DeKalb County. Many homes had roof damage, and two apartment complexes and a shopping center were severely damaged. The tornado caused approximately \$2.5 million in property damage.

April 8, 1998, Dunwoody Tornado: An F2 tornado touched down in Dunwoody 11:35 p.m. The damage path began just northeast of Perimeter Mall in Dunwoody and extended well into Gwinnett County. There was significant widespread damage to trees and homes. One person was killed when a tree fell on his home. DeKalb College's north campus was closed after several buildings sustained major damage. The tornado, which is the most costly and deadly in DeKalb County in the past 70 years, caused approximately \$25 million in damage.



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Map 4: April 8, 1998, Dunwoody Tornado



Data Source: FEMA National Integration Center Header Resilience Analysis and Planning Tool (RAPT)

May 4, 2017, Tornado: A National Weather Service survey team found that an EF0 tornado with maximum wind speeds of 70 MPH and a maximum path width of 80 yards touched down near Forest Glen Circle in central DeKalb County where it broke several large branches and uprooted a few trees. The tornado moved northeast crossing I-285, North Decatur Road, Dial Road and Greenridge Circle snapping or uprooting a few more trees before ending just past Greenridge Circle. The tornado caused approximately \$15,000 in property damage.

October 10, 2020, Tornado: During the afternoon and evening of October 10th, as the remnants of Hurricane Delta passed northwest of Georgia, moisture from the Gulf of Mexico spread across the area. Several weak tornadoes occurred in north and central Georgia in addition to pockets of heavy rainfall and flooding across the Atlanta metropolitan area and portions of northeast Georgia.

A National Weather Service survey team found that an EF0 tornado with maximum wind speeds of 80 mph and a maximum path width of 250 yards travelled 1.7 miles across a portion of south-central DeKalb County. The tornado touched down just north of I-20 near Wesley Chapel Road and Cross Lane, snapping several small trees, and pulling a few shingles off of roofs. The tornado moved north northwest causing more extensive damage between Lindsey Drive and Oak Valley Road. In this residential area, including Sherwood Avenue and Hanes Drive, multiple large trees were snapped or uprooted with several falling on homes and taking down utility/power lines. The tornado weakened as it continued north northwest with several additional small trees snapped along its path over Belvedere Square and just across Covington Highway along South Indian Creek Drive. No injuries were reported. The tornado caused approximately \$250,000 in property damage.



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4.3.3A – Probability of Future Events, Wind

Table 19: Probability of Future Events, Wind

Probability of Future Events, Wind			
Decade	Event		
	Straight-Line Wind	Tropical System	Tornado
1950s	0	0	1
1960s	4	0	2
1970s	10	0	4
1980s	43	0	1
1990s	91	0	1
2000s	108	13	1
2010s	81	2	3
2020	15	1	0
Categorical Totals	352	16	13
Categorical Years	70	70	70
Categorical Averages	502% Highly Likely	23% Likely	19% Likely
Total Events = 381		Total Years = 210	
Likelihood of a Wind Event Each Year = 181%			

Data Source: NOAA/NCEI Storm Events Database

Based on this data, it is **HIGHLY LIKELY** a wind event will occur every year in DeKalb County and the incorporated jurisdictions within its boundaries.

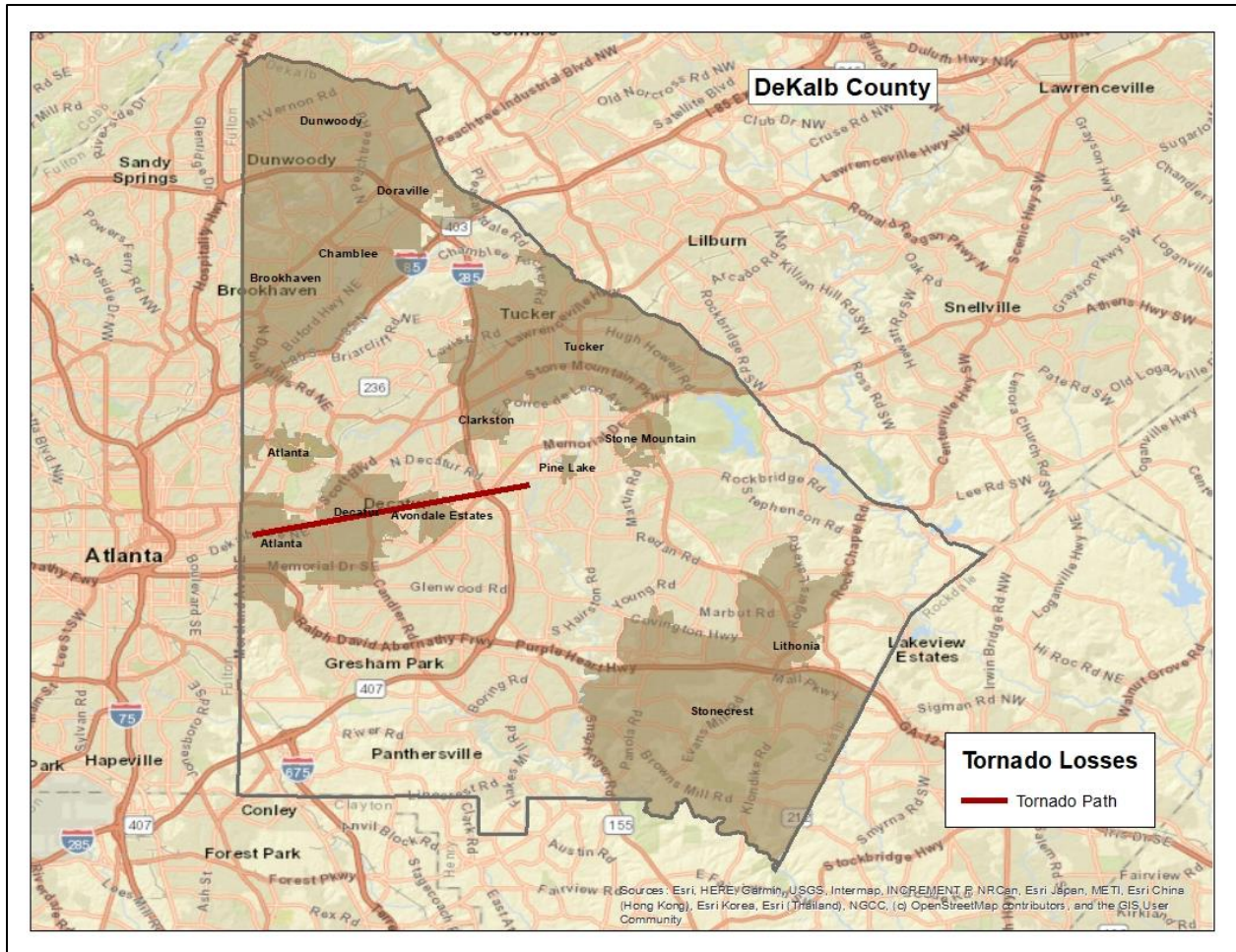
4.3.4 – Vulnerability of Community Assets

Note: As part of the hazard analysis conducted by the University of Georgia's Carl Vinson Institute of Government, separate hypothetical scenarios involving a tornado and a tropical storm impacting DeKalb County were run using Hazus-MH. The hypothetical tropical storm scenario involved maximum winds of 67 miles per hour. For the hypothetical tornado scenario, an EF-3 tornado was modeled to illustrate potential impacts to DeKalb County.



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Map 5: Hypothetical EF3 Tornado Path in DeKalb County

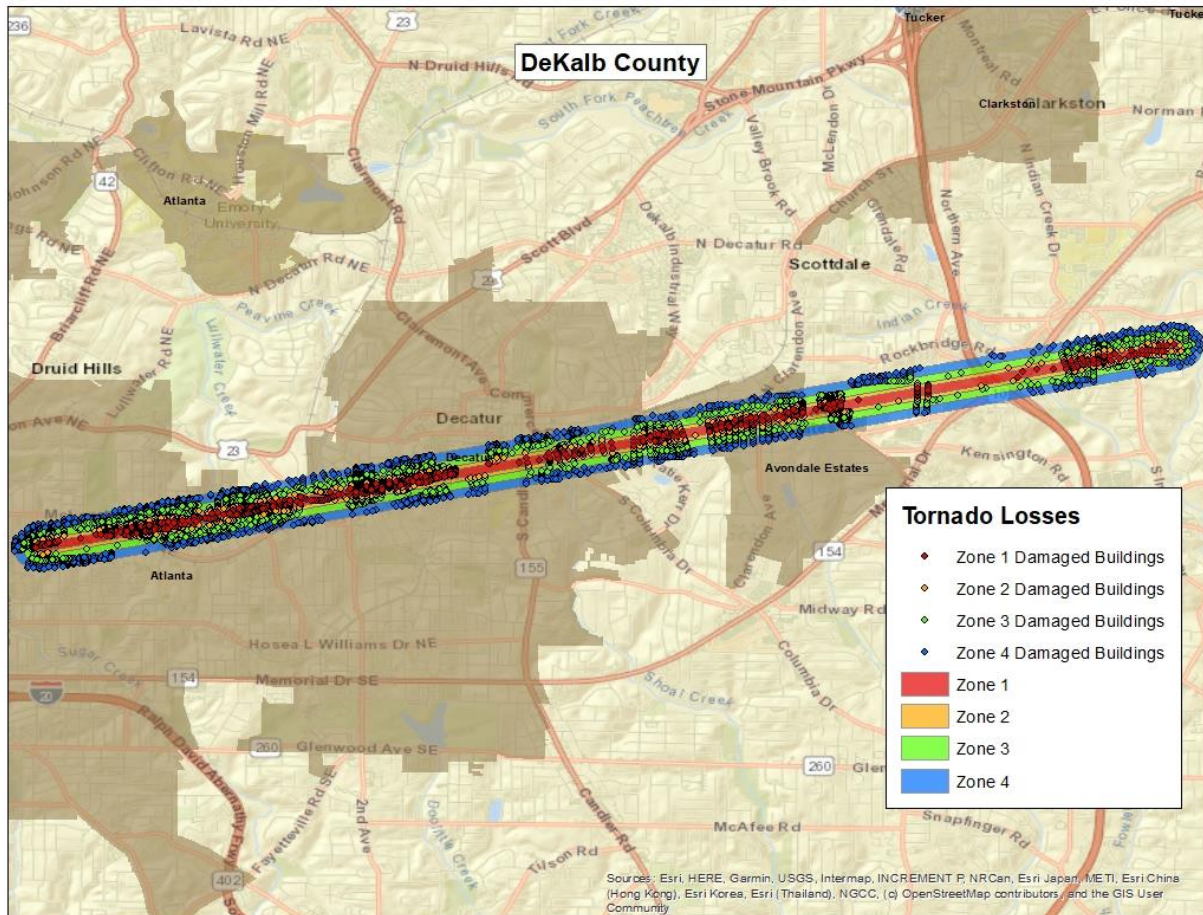


Map Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan



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Map 6: Modeled EF3 Tornado Damage Buffers in DeKalb County



Map Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan

People

All of DeKalb County's population are susceptible to wind hazards. Low-income individuals are more vulnerable to wind hazards. In its reported titled, "A Disaster in the Making, Addressing the Vulnerability of Low-Income Communities to Extreme Weather," the Center for American Progress argues that low-income people are disproportionately affected by extreme weather due to shoddy housing construction and the age of affordable housing (<https://www.americanprogress.org/wp-content/uploads/2013/08/LowIncomeResilience-2.pdf>). Low-income individuals also experience greater difficulties in recovering from wind hazard impacts. According to U.S. Census Bureau data, 15.1% of DeKalb County's population live in poverty. This represents 113,148 people. The cities of Lithonia (38.9%), Clarkston (30.9%), and Doraville (22.8%) have the highest levels of poverty in DeKalb County. The DeKalb County 2021 Comprehensive Plan 5-Year Update notes that poverty rates have increased in certain sections of central and south DeKalb County (<https://www.dekalbcountyga.gov/planning-and-sustainability/2021-comprehensive-plan-5-year-update>).

Individuals with access and functional needs are more vulnerable to wind hazard impacts. This may include children, the elderly, they physically or mentally disabled, non-English speakers, the medically or chemically dependent, and the transportation disadvantaged (https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf). In DeKalb County, this includes the following:

- Individuals with a disability: 10.2% (75,923 people)



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- Persons 65 years and over: 11.9% (89,507 people)
- Persons under 9 years: 13.5% (101,416 people)
- Speak English less than "very well" (age 5 years+): 8.7% (60,536 people)
- Households with no vehicles available: 8.6% (24,418 households)

The City of Stonecrest (11.4%) has the highest percentage of individuals with a disability. The City of Avondale Estates (23.4%) has the highest ratio of population aged 65 years or older. The City of Lithonia (22.3%), City of Clarkston (18.3%), and City of Decatur (18.2%) have the greatest percentage of people under 9 years. The City of Doraville (42.4%), City of Clarkston (40.9%), and City of Chamblee (28.7%) have the highest percentage of people who speak English less than "very well." The City of Lithonia (14.7%) and City of Clarkston (14.3%) have the highest ratio of households with no vehicle available.

Housing is also an important factor in determining the vulnerability of people to wind hazard impacts. There are indicators of increased vulnerability of some people in DeKalb County to wind hazard impacts due to housing characteristics. Many older multi-family developments are suffering from physical deterioration and are often concentrated in areas with higher poverty rates. There are 1522 people who reside in mobile homes, vans, boats, or recreational vehicles in DeKalb County. Of this number, Brookhaven (98), Chamblee (84), and Dunwoody (60) have the highest number of residents residing in these structures. This is important to note because these structures are much more vulnerable to tornadoes than site-built homes. Mobile homes and vehicles are not safe in any magnitude of tornado.

This data, retrieved from the American Community Survey and the DeKalb County 2021 Comprehensive Plan 5-Year Update, provides insight into certain characteristics of DeKalb County that are likely indicators of vulnerability. Based on this data, the greatest population vulnerabilities to wind hazards in DeKalb County are in the City of Clarkston, the City of Lithonia, and unincorporated areas of the county.

As part of the hypothetical tropical storm scenario, 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 DeKalb County is a tropical storm, the resulting damage is not enough to displace households or require temporary shelters

Vulnerability of the Economy

The leading industries in DeKalb County are Healthcare and Social Services (14.9% jobs), Retail Trade (10.9% of jobs), Accommodations and Food Services (7.2% of jobs), and Administrative and Support and Waste Management and Remediation Services (7.2% of jobs). Educational Services is another important industry in DeKalb County as it provides the fifth largest percentage of jobs (6.6%) and the highest average weekly wages of all industries (\$2105). The private sector provides 85.6% of employment, while the Federal, State, and local governments provide 14.4% of DeKalb County employment (<https://explorer.gdol.ga.gov/vosnet/mis/Profiles/Counties/DeKalb.pdf>). The largest employers in DeKalb County are, (1) Centers for Disease Control and Prevention (CDC); (2) Veterans Affairs Medical Center Atlanta; (3) Emory University Hospital; (4) Emory DeKalb Medical; (5) Children's Healthcare of Atlanta; (6) AT&T Mobility LLC; (7) State Farm Insurance Company/Atlanta Perimeter; (8) InterContinental Hotels Group Inc; (9) AirWatch LLC; and (10) Georgia Regional Hospital Atlanta (<https://www.dekalbchamber.org/why-dekalb/>).

All sectors of DeKalb County's economy are susceptible to the impacts of wind hazards. The loss of any of DeKalb County's leading industries could severely disrupt the community and its ability to recover from a disaster. Given the significance of the Healthcare industry in DeKalb County, a wind-related disaster impacting one of the community's hospitals would severely stress the capabilities of the community to respond to the medical needs of the community. The CDC, located in DeKalb County, is a Federal agency under the United States Department of Health and Human Services which works to protect America from health, safety and security threats, both foreign and in the United States



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(<https://www.cdc.gov/about/organization/mission.htm>). Its loss would not only affect DeKalb County's economy but would affect the entire nation.

Vulnerability of the Built Environment

The built environment includes infrastructure systems, critical facilities, and cultural resources. DeKalb County and each of its participating jurisdictions have developed a list of infrastructure and critical facilities which are vital to the community. The National Park Service's National Register of Historic Places is the official list of the Nation's historic places worthy of preservation.

Infrastructure systems are critical for life safety and economic viability and include transportation, power, communication, and water and wastewater systems. Critical facilities are structures and institutions which are necessary for the community's response to and recovery from emergencies. These critical facilities must continue to operate during and following disasters to reduce the severity of impacts and accelerate recovery. Appendix C of this plan lists the community's infrastructure and critical facilities. Appendix C of this plan lists the places in DeKalb County which are part of the National Register of Historic Places and are considered important cultural resources.

Considering the entire planning area is susceptible to wind hazard impacts, increased development and population growth can reasonably translate to exposure. The DeKalb County 2021 Comprehensive Plan 5-Year Update visualizes the development of three types of Activity Centers: Neighborhood Centers, Town Centers, and Regional Centers. There are 46 Activity Centers countywide. In addition, the plan includes residential designations: Rural, Suburban, and Traditional. DeKalb County's Future Land Use Map can be accessed via <https://dekalbgis.maps.arcgis.com/apps/webappviewer/index.html?id=f241af753f414cdfa31c1fdef0924584>.

The hypothetical tropical storm scenario was used to analyze impacts to the built environment in DeKalb County. Buildings in DeKalb 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 DeKalb County for the tropical storm. The loss ratio expresses building losses as a percentage of total building replacement cost in the county.

Table 20: Tropical Storm-Damaged Essential Facility Losses

Classification	Number of Buildings Damaged	Total Building Damage	Total Economic Loss ¹	Loss Ratio
Tropical Storm	232	\$53,991,190	\$69,558,650	0.04%

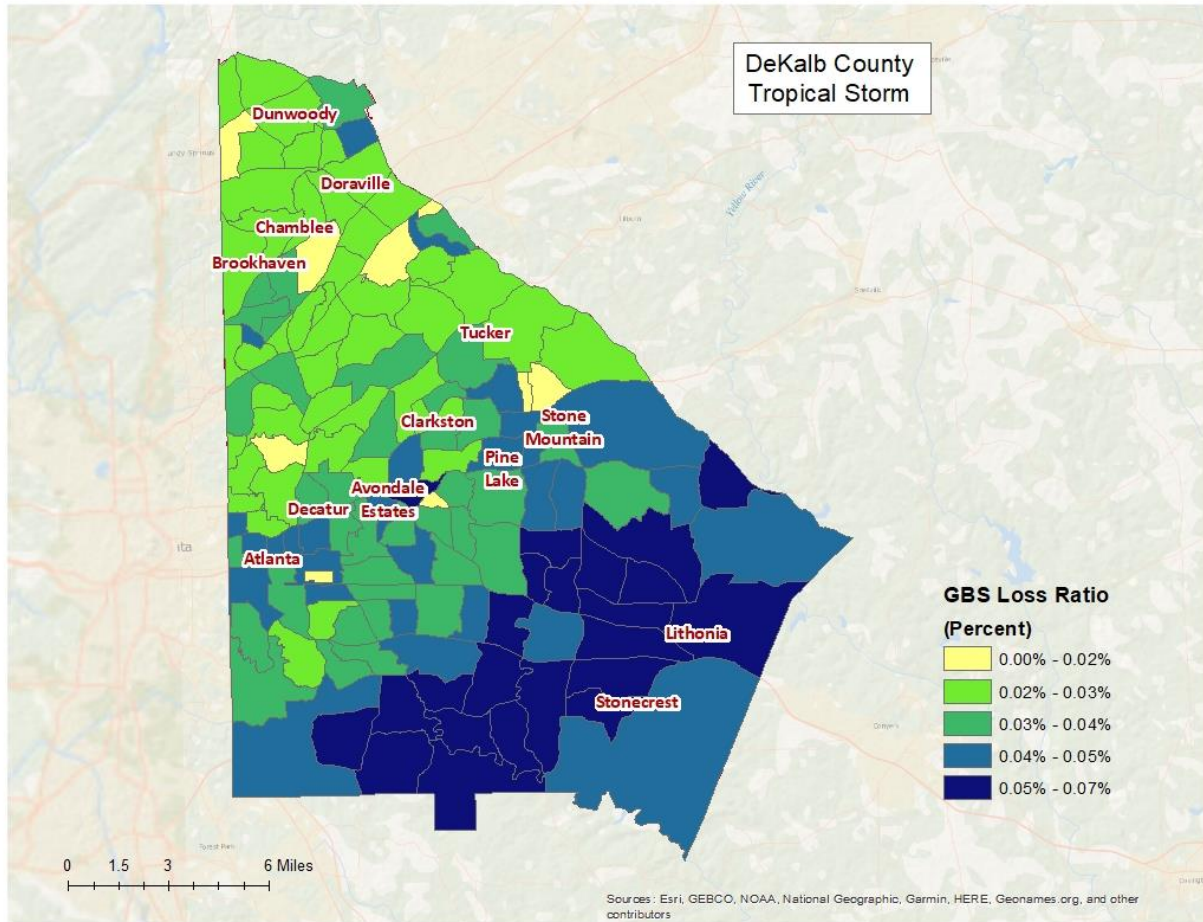
Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan

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



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Map 7: Tropical Storm Wind Building Loss Ratios



Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan

For the hypothetical tornado scenario, the analysis estimated that approximately 3708 buildings could be damaged, with estimated building losses of \$745 million. The building losses are an estimate of building replacement costs multiplied by the percentages of damage. The overlay was performed against parcels provided by DeKalb County that were joined with Assessor records showing estimated property replacement costs. The Assessor records often do not distinguish parcels by occupancy class if the parcels are not taxable and thus the number of buildings and replacement costs may be underestimated. The results of the analysis are depicted in the table below.

Table 21: Estimated Tornado Building Losses by Occupancy Type

Occupancy	Buildings Damaged	Building Losses
Commercial	184	\$29,799,298
Education	6	\$4,490,370
Industrial	23	\$2,407,978
Religious	2	\$44,173
Residential	3,493	\$707,780,592
Total	3,708	\$744,522,411

Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan



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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 a tropical storm or tornado. The results are compiled in the tables below.

Table 22: Tropical Storm-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	1	0	203

Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan

Table 23: Estimated Tornado Essential Facilities Damaged

Facility	Amount of Damage
Agnes Scott College	Major Damage
Decatur High School	Minor Damage
Dunaire Elementary School (PK-5)	Minor Damage
Renfroe Middle School	Minor Damage
Talley Street Upper Elementary School	Minor Damage
Fire Station 3	Minor Damage

Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan

According to the Georgia Department of Education, Decatur High School's enrollment was approximately 1,732 students, Dunaire Elementary (PK-5) School's enrollment was approximately 409 students, Renfroe Middle School's enrollment was approximately 1,339 students, and Talley Street Upper Elementary School's enrollment was approximately 697 students as of October 2021. Agnes Scott College's enrollment was approximately 1,014 students as of Fall Semester 2020. Depending on the time of day, a tornado strike as depicted in this scenario could result in significant injury and loss of life. In addition, arrangements would have to be made for the continued education of the students in another location.

Hazus-MH estimates the amount of debris that will be generated by tropical storm force-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 the following table. The amount of tropical storm 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 24: Estimated Tornado Essential Facilities Damaged

Classification	Brick, Wood, and Other	Reinforced Concrete and Steel	Eligible Tree Debris	Other Tree Debris	Total
Tropical Storm	757	0	5,922	3,259	9,938

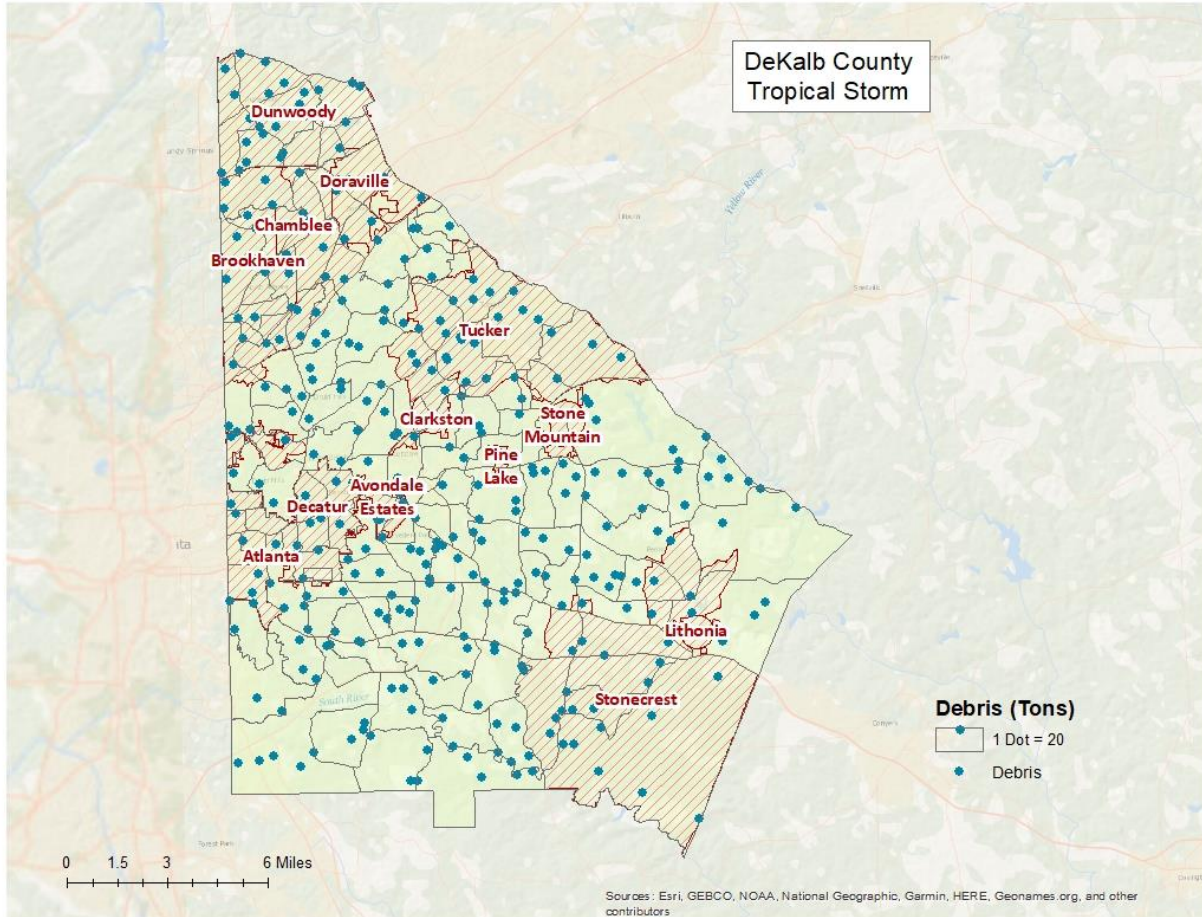
Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan



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The following figure shows the distribution of all wind related debris resulting from a Tropical Storm. Each dot represents 20 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.

Map 8: Tropical Storm Wind-Related Debris Weight (Tons)



Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan

Vulnerability of Natural Environment

The 2021 DeKalb County Comprehensive Plan – 5 Year Update lists two significant and unique geological features. Soapstone Ridge, located in the southwestern portion of the county, contains aboriginal steatite quarries which are of archeological and historic significance. Stone Mountain, located in the eastern area of the county, is the largest exposed granite outcropping in the world. The 2021 DeKalb County Comprehensive Plan – 5 Year Update also notes there are various Federally protected wetlands in the area, mostly in the flood prone areas of perennial creeks. These natural environmental resources are minimally vulnerable to wind hazard impacts.

4.3.5 – Risk Analysis

All community assets in DeKalb County and the jurisdictions within its boundaries are equally exposed to wind hazard impacts. FEMA's National Risk Index (NRI) estimates that DeKalb County and the jurisdictions within its boundaries have \$85,060,191,000 worth of structures exposed to wind hazards each year. The NRI projects annual losses of 0.76 lives and \$9,813,922 worth of structures to wind hazard impacts each year. This includes impacts associated with strong winds, tornadoes, and thunderstorms. According to the NRI, the most significant projected losses to population and structures are from tornadoes (0.52 deaths and



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\$7,476,579). In fact, the NRI projects tornadoes to be costliest hazard in terms of structure loss and the second costliest hazard in terms of lives lost.

DeKalb County's most costly wind event in the past 70 years was the April 8, 1998, Dunwoody Tornado. The F2 tornado killed one person and caused approximately \$25 million in damage. A similar event now would cost \$39,690,817. A violent tornado (EF4+) would likely cause more deaths, injuries, and damage. An analog for a worst-case scenario is the May 23, 2013, Moore, Oklahoma Tornado. In 2013, Moore, Oklahoma had a population of just over 55,000. That is a about 6,000 more than Dunwoody. On May 23, 2013, an EF5 tornado struck Moore, Oklahoma. The tornado killed 24 people, injured 387 people, destroyed an estimated 1,150 homes, and created an estimated \$2 billion in damage.

Table 25: Risk Analysis of Community Lifeline Systems to Wind, DeKalb County

Risk Analysis of Community Lifeline Systems to Wind, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
Safety and Security	Law Enforcement /Security	High Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources
	Fire Services	High Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources
	Search and Rescue	High Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources
	Government Services	High Risk. Impacts may: <ul style="list-style-type: none"> damage critical facilities and historical sites



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Risk Analysis of Community Lifeline Systems to Wind, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> disrupt power and communications to emergency operations centers disrupt essential government functions cause short-term or long-term school cancellations.
	Community Safety	Moderate Risk. Impacts may: <ul style="list-style-type: none"> damage flood control systems create secondary hazards
Food, Water, Shelter	Food	Moderate Risk. Impacts may: <ul style="list-style-type: none"> disrupt commercial food distribution and supply chains affect commercial and home perishable food supplies
	Water	Moderate Risk. Impacts may: <ul style="list-style-type: none"> generate secondary hazards which can contaminate drinking water systems damage wastewater systems
	Shelter	High Risk. Impacts may: <ul style="list-style-type: none"> damage homes damage shelters damage lodging facilities
	Agriculture	High Risk. Impacts may: <ul style="list-style-type: none"> injure livestock damage crops damage farm structures and equipment
Health and Medical	Medical Care	High Risk. Impacts may: <ul style="list-style-type: none"> damage hospitals, pharmacies, long-term care facilities, and veterinary clinics disrupt power and communications



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Risk Analysis of Community Lifeline Systems to Wind, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> contaminate water supply, affecting the provision of care expend resources
	Patient Movement	High Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources
	Public Health	Moderate Risk. Impacts may: <ul style="list-style-type: none"> damage facilities disrupt power and communications expend resources
	Fatality Management	Moderate Risk. Impacts may: <ul style="list-style-type: none"> expend resources damage facilities and equipment disrupt power and communications
	Medical Supply Chain	Moderate Risk. Impacts may: <ul style="list-style-type: none"> expend resources (e.g., blood supply, pharmaceuticals, devices, medical gases, raw materials) damage or block transportation routes
Energy	Power (Grid)	High Risk. Impacts may: <ul style="list-style-type: none"> damage generation systems damage transmission systems damage distribution systems



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Risk Analysis of Community Lifeline Systems to Wind, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
	Fuel	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage fuel storage resources • damage pipelines • damage fuel distribution locations
Communications	Infrastructure	High Risk. Impacts may: <ul style="list-style-type: none"> • damage or cause wireless systems to become overburdened • damage cable and wireline systems • damage or disrupt broadcast and satellite systems • damage or cause internet systems to become overburdened
	Alerts, Warnings, and Messages	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage physical warning systems • disrupt the delivery of emergency alerts and warnings
	911 and Dispatch	High Risk. Impacts may: <ul style="list-style-type: none"> • damage public safety answering points or dispatch centers • damage communication systems • overburden communication systems
	Responder Communications	High Risk. Impacts may: <ul style="list-style-type: none"> • damage communication systems • overburden communication systems
	Finance	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage banking facilities and equipment • disrupt communications
Transportation	Highway/Roadway	High Risk. Impacts may: <ul style="list-style-type: none"> • damage or block roads and bridges
	Mass Transit	Moderate Risk. Impacts may:



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Risk Analysis of Community Lifeline Systems to Wind, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> • damage buses or trains • damage or block transportation routes • delay routes
	Railway	Low Risk. Impacts may: <ul style="list-style-type: none"> • damage freight or passenger trains • damage or block transportation routes • delay routes
	Aviation	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage airports • damage aircraft • delay routes
	Maritime	No Risk.
Hazardous Materials	Facilities	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • generate oil/hazardous materials/toxic incidents from fixed facilities • damage facilities • disrupt power supply to facilities
	Hazmat, Pollutants, Contaminants	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • generate oil/hazardous materials/toxic incidents from non-fixed facilities, rail, and roadways



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4.3.5A – Problem Statements

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
W1	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, over a quarter of DeKalb County residents either live below the poverty line and/or have access and functional needs.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 25% of residents in DeKalb County have low-income and/or functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance recovering from the event.
W2	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 23.4% of Avondale Estates residents are aged 65 or older.	Older individuals are more vulnerable to disasters. Nearly a quarter of the City of Avondale's residents are at a greater risk for injury due to a high wind event and may require greater assistance recovery from the event.
W3	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 22.4% of Brookhaven residents are children, of which 20% live below the poverty line.	Children and low-income individuals are more vulnerable to disasters. The City of Brookhaven has a large population of children, of which about 20% live below the poverty line and are at a greater risk for injury due to a high wind event and may require more assistance recovering from the event.
W4	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 28.7% of Chamblee residents speak English less than "very well".	Individuals who don't speak English well are more vulnerable to disasters. The City of Chamblee has a large population of residents that do not speak English well and are therefore at a greater risk of injury due to a high wind event.
W5	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, in Clarkston, 30.9% of residents live below the poverty line, 32.4% are children, 40.9% do not speak English "very well", and 14.3% of households have no vehicle available.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 40% of residents in the City of Clarkston have low-income and/or functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
W6	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 32.2% of Decatur residents are children, of which 9.1% of live below the poverty line.	Children and low-income individuals are more vulnerable to disasters. The City of Decatur has a large population of children, of which 9.1% live below the poverty line and are at a greater risk for injury due to a high wind event and may require more assistance recovering from the event.
W7	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, in Doraville, 22.8% of residents live below the poverty line, and 42.4% speak English less than “very well”.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 40% of residents in the City of Doraville have low-income and/or functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.
W8	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 21.9% of Dunwoody residents are children, of which 10.8% live below the poverty line.	Children and low-income individuals are more vulnerable to disasters. The City of Dunwoody has a large population of children, of which about 11% live below the poverty line and are at a greater risk for injury due to a high wind event and may require more assistance recovering from the event.
W9	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, in Lithonia, 38.9% of residents live below the poverty line, 42.3% are children, and 14.7% have no access to a vehicle.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 38% of residents in the City of Lithonia have low-income and/or functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.
W10	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 16.8% of Pine Lake’s population is aged 65 or older.	Older individuals are more vulnerable to disasters. Nearly a 17% of the City of Pine Lake’s residents are at a greater risk for injury due to a high wind event and may require greater assistance recovery from the event.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
W11	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 10.9% of Stone Mountain's population have a physical or mental disability. 10.3% have no vehicle available, and 21.8% are children.	Individuals with functional and access needs are more vulnerable to disasters. Over 20% of residents in the City of Stone Mountain have functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.
W12	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, in Stonecrest, 11.4% of the population have a disability. Also, 26.7% of the population are children, of which 20.3% live in poverty.	Individuals with functional and access needs are more vulnerable to disasters. Over a quarter of residents in the City of Stonecrest have functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.
W13	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, in Tucker, 9.5% of residents have a disability. Also, 21.8% of the population are children.	Individuals with functional and access needs are more vulnerable to disasters. Over a 20% of residents in the City of Stonecrest have functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.
W14	Wind and built environment High wind events are highly likely to occur in DeKalb County each year.	Infrastructure systems and critical facilities are important for life safety, economic viability, disaster response operations, and disaster recovery operations.	Infrastructure systems and critical facilities are vulnerable to wind hazard impacts. A major wind-related disaster in DeKalb County could damage or destroy key lifeline systems, hinder response operations, and prolong recovery operations.



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Photo Source: istockphoto.com

4.4(FL) – Flood

4.4.1 – Hazard Description

Inland Flooding

Flooding, as defined by the National Weather Service (NWS), is the rising and overflowing of a body of water onto normally dry land. It can result from any overflow of inland or tidal waters, or an unusual accumulation or runoff of surface waters from any source.

Inland flooding, also known as “urban flooding” or “flash flooding,” can be caused by intense, short-term rain or by moderate rainfall over several days, which can overwhelm existing drainage infrastructure. Other factors that affect the dynamics of this type of flood include slope, width, and vegetation in place along the watercourse banks. The slope that flash floods traverse has a definite relationship to the overall speed in which the water will travel. The incline on which the water moves affects the width of the flooding area. Generally, the faster the water moves, the narrower that channel will be created, since the water digs the channel deeper as it flows. When water flows over shallower slope, it tends to spread out more, decreasing its potential to cause mass damage but still considered dangerous. Finally, the type of vegetation located along the flood’s path can prevent further erosion of the channel banks. A structure that lies along a flood channel with no surrounding vegetation is at risk of having its foundation undercut, which can cause structural damage, or in some cases, a building’s complete collapse. Riverine flooding occurs when excessive rainfall over an extended period causes a river to exceed its capacity. Typical causes of flooding, both inland and riverine, include tropical cyclonic systems, frontal systems, and isolated thunderstorms combined with other environmental variables such as changes to the physical environment, topography, ground saturation, soil types, basin size, drainage patterns, and vegetative cover. The rate of onset and duration of flooding events depends on the type of flooding (typical flood or flash flood). The spatial extent



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of a flooding event depends on the amount of water overflow but can usually be mapped because of existing floodplains.

As depicted in the following illustration, a floodplain is a flat or nearly flat land adjacent to a river or stream that experiences occasional or periodic flooding environment, topography, ground saturation, soil types, Floodplains, or Special Flood Hazard Areas (SFHAs), are made when floodwaters exceed the capacity of the main channel or escape the channel by eroding its banks. The sediments (rock and debris) that build up over time from the floodplain's floor. Floodplains also include a floodway, which consists of the water channel and adjacent areas that carry flood flows and the flood fringe, which are areas covered by the flood but do not experience a strong current.

Illustration 4: Characteristics of a Floodplain

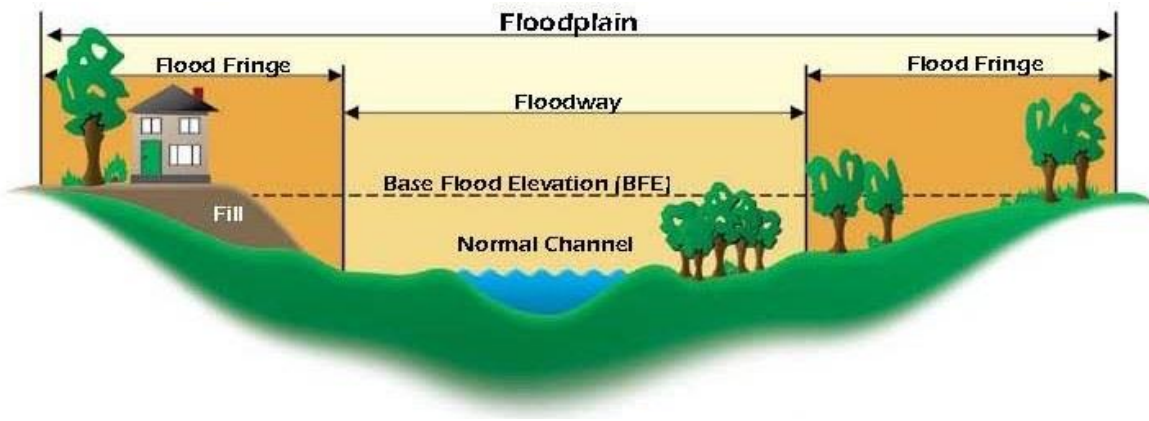


Illustration Source: www.co.mille-lacs.mn.us

All communities live with some risk of flooding. FEMA's community flood map program describes the flood risk for a particular area. The flood zones are used to determine insurance requirements and costs.

Moderate- to low- risk flood areas are designated with the letters B, C, and X on FEMA flood maps. In these areas, the risk of being flooded is reduced, but not completely removed. One-in-three insurance claims come from moderate- to low- risk flood areas.

High-risk flood areas begin with the letters A or V on FEMA flood maps. These areas face the highest risk of flooding. Property owners with a federally backed mortgage in these areas are required to purchase flood insurance as a condition of the loan. (<https://www.floodsmart.gov/all-about-flood-maps>)

The NFIP aims to reduce the impact of flooding on private and public structures. It does so by providing affordable insurance to property owners, renters, and businesses and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. Overall, the program reduces the socio-economic impact of disasters by promoting the purchase and retention of general risk insurance and flood insurance.

The adverse impacts of flooding can include structural damage; agricultural crop loss; the death of livestock; loss of access to critical facilities due to roads being washed out or overtopped; unsanitary conditions resulting from materials such as dirt, oil, solvents, and chemicals being deposited during the recession; infestations of disease-carrying mosquitoes; mold and mildew, which pose a severe health risk to small children and the elderly; and temporary backwater effects in sewers and drainage systems. Raw sewage is a breeding ground for bacteria, such as E. coli and other disease-causing agents. A boil order may need to be issued to protect people and animals from contaminated water.

Of equal concern is the long-term psychological effect that flooding has on the people impacted by it. They must contend with the loss of life, property, livelihood, etc., as they cope with the aftermath. The clean-up can take months. The cost to restore a home may be too much, especially for the unprepared or uninsured.



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Plus, there is the looming fear that it may flood again. The resulting stress on floodplain residents takes its toll in the form of aggravated physical and mental health problems.

Unfortunately, the risks from future floods are significant, given expanded development in coastal areas and floodplains, unabated urbanization, land-use changes, and climate change. Because of this, flooding may intensify in many regions across the country, even in areas where total precipitation is projected to decline. According to FEMA, water, and flooding account for about 40% of the Presidentially Declared Disasters in the United States.

Dam Failure

One of the potential causes of flooding is dam failure. A dam is a barrier across flowing water that obstructs, directs, or slows down the flow, often creating a reservoir, lake, or impoundment. Most dams have a section called a spillway or weir, over or through, which water flows, either intermittently or continuously. Dams commonly come in two types, embankment (the most common) and concrete (gravity, buttress, and arch), as well as sizes. They also serve several purposes and provide essential benefits, including drinking water, irrigation, hydropower, flood control, and recreation.

Large or small, dams have a powerful presence that is frequently overlooked until a failure occurs. Dams fail in two ways: 1) a controlled spillway release done to prevent full failure, or 2) the partial or complete collapse of the dam itself. In each instance, an overwhelming amount of water, and potentially debris, is released. Dam failures are rare, but when they do occur, they can cause loss of life and immense damage to property, critical infrastructure, and the environment.

Possible reasons for dam failure include but are not limited to:

- Sub-standard construction materials/techniques
- Spillway design error
- Geological instability caused by changes to water levels during filling or poor surveying
- Sliding of a mountain into the reservoir
- Poor maintenance, especially of outlet pipes
- Human, computer, or design error
- Internal erosion, especially in earthen dams
- Earthquakes
- Terrorism

There are three classifications of dam failure: 1) hydraulic, 2) seepage, and 3) structural. Following is an explanation of each these failure classifications:

1. Hydraulic: This failure is a result of an uncontrolled flow of water over and around the dam structure as well as the erosive action on the dam and its foundation. The uncontrolled flow causing the failure is often classified as wave action, toe erosion, or gullying. Earthen dams are particularly susceptible to hydraulic failure because earthen materials erode more quickly than other materials, such as concrete and steel. This type of failure constitutes approximately 40% of all dam failures.



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2. Seepage: Seepage is the velocity of an amount of water controlled to prevent failure. This occurs when the seepage occurs through the structure to its foundation, where it begins to erode within. This type of failure accounts for approximately 4% of all dam failures.
3. Structural: A failure that involves the rupture of the dam or the foundation by water movement, earthquake, or sabotage. When weak materials construct dams (large, earthen dams) are the primary cause of this failure. Structural failure occurs with approximately 30% of dam failures.

There are now approximately 90,000 dams nationwide with an average age of 56 years. A high number of these dams have received less than favorable Dam Safety Action Classification (DSAC) ratings from the U.S. Army Corps of Engineers (USACE). In fact, as of 2016, the federal government said there were approximately 15,000 U.S. dams classified as having high-hazard potential (HHP), meaning that their failure could result in loss of life. The worst dam failure in the United States occurred in 1889 in Johnstown, Pennsylvania, when over 2,200 people died, with many more were left homeless.

According to USACE, dams are unique components of the U.S. infrastructure in that most dams are privately owned. Dam owners are solely responsible for keeping their dams safe and financing maintenance, repairs, and upgrades. Most dams are regulated for safety by state and federal governments, much the same way as are bridges, food, drugs, factories, etc. States regulate most dams in the U.S. (about 80%). The federal government regulates the remaining number.

4.4.2 – Location & Extent

Flooding

Flash flooding is unpredictable and, therefore, can occur anywhere inside the planning area. A flash flood is an extremely dynamic event in which a high volume of water moves through an area at high velocity during a short period of time. This type of flooding can be challenging to predict and occur with little or no warning. In many cases, a flash flood can move through an area a mile from where rain has occurred, thereby increasing people's damage within the flood's path.

Flash floods occur when rainwater runs into small channels where it begins to collect. As these channels merge, the amount of water increases and picks up speed and force. This collection of water becomes a wall of water that can wash vegetation, structures, and debris. The debris then increases the amount of force available and increases the flood's destructive power.

In Georgia, flooding is greatly dependent upon precipitation amounts and is highly variable across the state. Georgia's climate is primarily affected by latitude, proximity to the Atlantic Ocean and the Gulf of Mexico, and topography. Certain seasons are more prone to present flooding based on the likelihood of excessive precipitation. Typically, the wet seasons are winter, early spring, and midsummer, and the drier seasons are fall and late spring. However, this varies across the state, with the northern portion receiving maximum precipitation amounts during the winter because of frontal systems. In contrast, central and coastal Georgia receive maximums in the mid-to-late summer because of tropical cyclones and convective thunderstorm activity.

The Flood Insurance Study of DeKalb County, GA, and incorporated areas indicates that the county lies within the Southern Piedmont major land resource area. The soils on uplands are mainly well drained and have a loamy surface layer and clayey subsoil. The landscape is made up of gently sloping soils on ridge tops with sloping to steep, well-drained loamy type soil. Although the county is planned mainly for urban use, some excellent farmland exists. Most of the county that has not been developed is in woodland or pastureland. The streams have a steep hydraulic gradient in their headwater reaches, but transition to a moderate gradient as they continue into the major channels.

The history of flooding in DeKalb County indicates that flooding may occur during any season of the year, but floods are most likely to occur in winter and spring when runoff conditions are most favorable. Major flood producing storms in these seasons are usually of the frontal type, which last from two to four days



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and often cover large areas. Summer storms are usually more intense, but they are typically of shorter duration and limited extent.

The Metropolitan North Georgia Water Planning District, which serves DeKalb County and its participating jurisdiction, is located on the eastern subcontinental divide. The planning district comprises three distinct river systems (Apalachicola, Chattahoochee, and Flint ACF; Alabama, Coosa, Tallapoosa ACT; and Altamaha River), six river basins, and nine separate 8- digit Hydrologic Unit Code (HUC-8) Basins. Those major river systems are the Chattahoochee, Coosa, Flint, Ocmulgee, Oconee, and Tallapoosa River Basins. Those river systems create the following river basin watershed within the County: Upper Chattahoochee (Cities of Avondale Estates, Brookhaven, Decatur, Doraville, and Dunwoody; and the Upper Ocmulgee (DeKalb County and the Cities of Clarkston, Lithonia, Pine Lake and Stone Mountain).

The overview and topography of each Watershed that flows in or near DeKalb County and its participating jurisdictions is as follows:

Upper Chattahoochee River Basin – The Upper Chattahoochee River Basin includes portions of the Gainesville Ridge, Central Highlands, and the Winder Slope physiographic districts. The Upper Chattahoochee River Basin covers twenty-nine (29) cities, including Cities of Avondale Estates, Brookhaven, Decatur, Doraville, and Dunwoody and seven counties, including DeKalb County. The river basin has its headwaters in the Blue Ridge Mountains northeast of the Metro Water District, flowing southwest to the confluence of the Chattahoochee River with Peachtree Creek. Approximately 43 percent, or 680 square miles, of this HUC-8 Basin is located upstream of the Metro Water District before it occupies a relatively narrow corridor through the center of the Metro Water District, averaging about 40 miles wide, starting in the northeast corner and extending to the southwest corner.

The Chattahoochee River (which includes the Upper Chattahoochee River Basin) joins the Flint River in southern Georgia to form the Apalachicola River, which flows to the Gulf of Mexico. The main tributaries feeding the Upper Chattahoochee River Basin through the Metro Water District include the Chestatee River, Wahoo Creek, Suwanee Creek, Big Creek, Sope Creek, Rottenwood Creek and Peachtree Creek. In contrast to the mainstem Chattahoochee River, all of the natural tributaries remain free-flowing within this basin. Groundwater availability is limited due to geologic conditions, which restrict the potential yield for water supply. More information about the Upper Chattahoochee River Basin can be found online at http://northgeorgiawater.org/wp-content/uploads/2017/05/Attachment_1_UpperChatt_RBP.pdf.

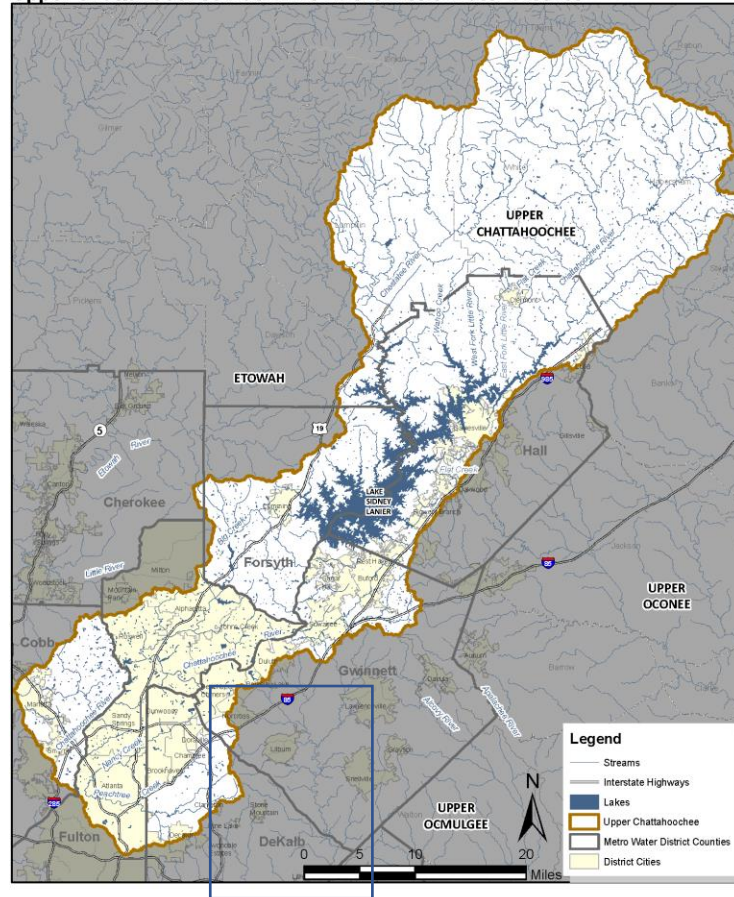
Note: *The previous HMP (2016) and DeKalb County Flood Insurance Study (updated August 15, 2020) mentions there have been numerous flood events in DeKalb County. Significant flood-related damage has been experienced along North Fork Peachtree Creek, South Fork Peachtree Creek, Nancy Creek, their tributaries, and other streams. Past floods have caused damage because of development in the floodplains of the impacted streams. As growth in the county continues, the demand for building sites to accommodate residential and industrial development may force the county to consider sites previously considered unacceptable. Such sites could be vulnerable to serious flooding if proper precautions are not implemented.*



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Map 9: Upper Chattahoochee River Basin Map (2017)

FIGURE UC-1
Upper Chattahoochee Basin within the Metro Water District



Map Source: Metropolitan North Georgia Water Planning District, Upper Chattahoochee River Basin Profile, http://northgeorgiawater.org/wp-content/uploads/2017/05/Attachment_1_UpperChatt_RBP.pdf

Upper Ocmulgee River Basin – The Upper Ocmulgee River Basin encompasses 982 square miles and includes portions of thirty (30) cities including the Clarkston, Lithonia, Pine Lake and Stone Mountain, and six (6) counties that include DeKalb County. Approximately 100 miles of Interstate 85, Interstate 75, Interstate 285 and Interstate 20 traverse the basin. The Ocmulgee streams and tributaries are classified as drinking or fishing, with the majority designated for fishing. The Upper Ocmulgee River Basin is entirely within the Piedmont province, which consists of a series of rolling hills and occasional isolated mountains. The Upper Ocmulgee River Basin includes portions of the Gainesville Ridge, Washington Slope and Winder Slope physiographic districts.

The headwaters of the Upper Ocmulgee River Basin originate in Clayton, DeKalb, Fulton and Gwinnett Counties and drain to the southeast through portions of Henry and Rockdale Counties. The Alcovy River, South River, Towaliga River and Yellow River are the main tributaries draining to this portion of the Metro Water District. This river basin includes one 8-digit HUC, ten 10-digit HUCs and forty 12-digit HUCs. While there are multiple smaller reservoirs, such as Big Haynes Creek, Blalock Lake, Lake Jodeco and Stone Mountain Lake in this basin, there are no major impoundments; however, Lake Jackson, a 4,570-acre

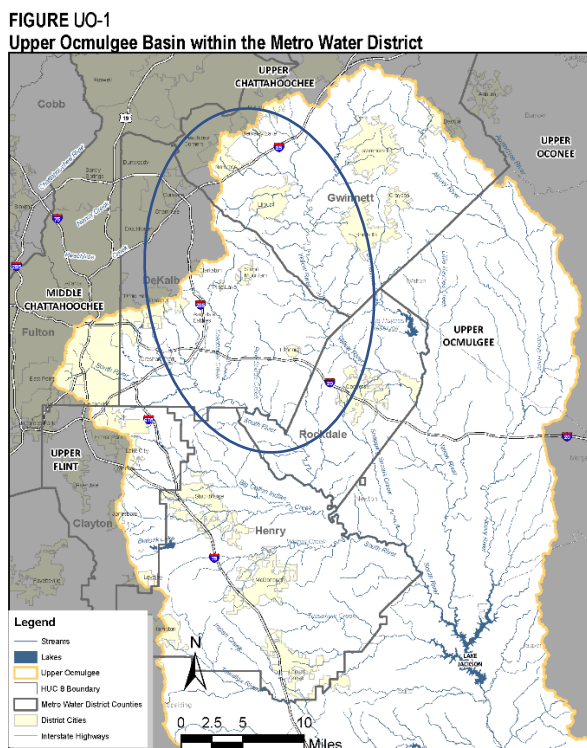


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Georgia Power-managed Project, is located just outside of and downstream of the Metro Water District. As such, it is influenced by the land cover and watershed conditions found within the Upper Ocmulgee River Basin. Jackson Lake is not supporting its designated use of recreation due to fish consumption guidelines for legacy polychlorinated biphenyl (PCB) contamination, which is attributed to urban runoff and nonpoint source pollution. More information about the Upper Ocmulgee River Basin can be found online at http://northgeorgiawater.org/wp-content/uploads/2017/05/Attachment_2_MiddleChat_RBP.pdf

Note: The previous HMP (2016) mentions that in the Unincorporated portion of the County, most significant flood related damages have been experienced along North Fork Peachtree Creek, South Fork Peachtree Creek, Nancy Creek, their tributaries, and other streams.

Map 10: Upper Ocmulgee River Basin Map (2017)



Map Source: Metropolitan North Georgia Water Planning District, Upper Ocmulgee River Basin Profile
http://northgeorgiawater.org/wp-content/uploads/2017/05/Attachment_3_Ocmulgee_RBP.pdf

In terms of the extent, or range of magnitude, floods can vary greatly in the planning area from localized drainage to dangerous flash floods with significant depths and high velocities. According to the 2019 DeKalb County Flood Insurance Study, updated August 15, 2019, "New hydrologic and hydraulic analyses were prepared for Camp Creek, Camp Creek Tributary A, Crooked Creek Tributary to Stone Mountain Creek, Crooked Creek Tributary A, Crooked Creek Tributary A-1, Pine Mountain Creek, Johnson Creek, Little Stone Mountain Creek, Stone Mountain Creek, Stone Mountain Creek Tributary A, Swift Creek, Swift Creek Tributary A, Swift Creek Unnamed Tributary 3, Tom George Creek and Yellow River. The detail hydrology and hydraulics were performed for 20-, 10-, 4-, 2-, 1-, 0.2-percent-annual-chance flood events. The hydrology and hydraulics parameters were based on DeKalb County's 2-foot interval topography map, or the 2010 Light Detection and Ranging (LiDAR) Terrain data. The Hydrologic Engineering Center (HEC) computer software HEC-HMS (version 3.5) was used to model rainfall-runoff for the new detailed study watersheds except Yellow River, which was based on gage analysis." The 2019 DeKalb County Flood Insurance Study can be obtained by contacting the County Floodplain Coordinator.



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The National Flood Insurance Program (NFIP) provides insurance to help reduce the socio-economic impact of floods. The NFIP status of community in the declared counties is published in the NFIP Community Status Book. The NFIP status has implications for disaster assistance to the community and its citizens. NFIP status means a community either:

- Participates in the NFIP
- Does not participate in the NFIP
- Is suspended or sanctioned

The Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirements of the NFIP. In CRS communities, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community's efforts that address the three goals of the program:

1. Reduce and avoid flood damage to insurable property.
2. Strengthen and support the insurance aspects of the NFIP.
3. Foster comprehensive floodplain management.



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Table 26: FEMA Community Status Book Report, DeKalb County

FEMA Community Status Book Report, DeKalb County									
CID	Community Name	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Reg-Emer Date	CRS Date	Curr Eff Date	% Disc SFHA	% Disc Non SFHA
130528C	City of Avondale Estates		5/7/01	8/15/19	1/21/10				
135175F	City of Brookhaven*	6/2/70	5/15/80	8/15/19	10/18/13				
130066C	City of Chamblee	6/7/74	9/15/77	8/15/19	9/15/77				
130067C	City of Clarkston	2/21/75	6/15/81	8/15/19	6/15/81				
135159C	City of Decatur	6/16/70	6/16/70	8/15/19	6/11/71	10/1/93	5/1/15	15%	5%
130065C	DeKalb County	6/2/70	5/15/80	8/15/19	5/15/80	10/1/92	10/1/08	15%	5%
130069C	City of Doraville	6/7/74	9/1/77	8/15/19	9/1/77				
130679C	City of Dunwoody**	6/2/70	5/15/80	8/15/19	10/14/09				
130472C	City of Lithonia		5/7/01	12/8/16	1/3/08				
130070#	City of Pine Lake	4/12/74	6/15/81	5/16/13	6/15/81				
130260C	City of Stone Mountain	4/12/74	8/1/86	12/8/16	8/1/86				
130268C	City of Stonecrest	6/2/70	5/15/80	12/8/16	12/5/19				
130681C	City of Tucker	6/2/70	5/15/80	8/15/19	9/16/19				

Source: FEMA (<https://www.fema.gov/cis/GA.pdf>)

*Brookhaven is located on DeKalb County FIRM Panels: 0011J, 0012J, 0013J, 0014J, and 0016J dated 5/16/13. The initial FIRM date for Brookhaven is 5/15/80.

**Dunwoody has adopted the DeKalb County FIRM panels 13089C005H, 0010H, 0012H, 0016H, and 0017H dated 5/7/01.



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The following information provides flooding sources, the most current Special Flood Hazard Areas (SFHAs), and flood insurance rate zones developed by FEMA for DeKalb County. SFHAs represent the areas subject to inundation by a 100-year flood event. Structures located within the SFHA have a 26 percent chance of flooding during the life of a standard 30-year mortgage. The following tables provide a summary of increases, decreases, and net charges of SFHA's for the County, Avondale Estates, Chamblee, Clarkston, Decatur, Doraville, Dunwoody, Lithonia, Pine Lake, Stone Mountain, and DeKalb County Unincorporated Areas.

Note: At the time of this plan update, The DeKalb County Risk Report (May 2013) is an indeterminate period with no record of an updated version. The Cities of Brookhaven, Stonecrest, and Tucker were not included in The DeKalb County Risk Report (May 2013), as they both did not incorporate in time to be included. They are counted in the DeKalb County Unincorporated Areas.

A. DeKalb County – SFHA Summary

SFHA Summary, DeKalb County				
Area of Study	Total Area (mi ²)	Increase (mi ²)	Decrease (mi ²)	Net Change (mi ²)
Within SFHA	276.56	4.76	2.64	2.12
Within Floodway	22.09	3.86	1.01	2.85

Source: DeKalb County Flood Risk Report (May 2013) – Georgia Department of Natural Resources, Environmental Protection Division

Note: Although the Flood Risk Database may contain Changes since the last FIRM information outside DeKalb County, the figures in this table only represent information within the DeKalb County.

B. City of Avondale Estates – SFHA Summary

SFHA Summary, City of Avondale Estates				
Area of Study	Total Area (mi ²)	Increase (mi ²)	Decrease (mi ²)	Net Change (mi ²)
Within SFHA	1.17	0.03	0	0.03
Within Floodway	0.32	0.02	0	0.02

Source: DeKalb County PMR Flood Risk Report – Georgia Department of Natural Resources, Environmental Protection Division

Note: Although the Flood Risk Database may contain changes since the last FIRM information outside of City of Avondale Estates, the figures in this table only represent information within the City of Avondale Estates.



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C. City of Chamblee – SFHA Summary

SFHA Summary, City of Chamblee				
Area of Study	Total Area (mi ²)	Increase (mi ²)	Decrease (mi ²)	Net Change (mi ²)
Within SFHA	4.88	0.03	0.6	-0.03
Within Floodway	.27	0	0	0

Source: DeKalb County PMR Flood Risk Report – Georgia Department of Natural Resources, Environmental Protection Division

Note: Although the Flood Risk Database may contain Changes since the last FIRM information outside the City of Chamblee, the figures in this table only represent information within the City of Chamblee

D. City of Clarkston – SFHA Summary

SFHA Summary, City of Clarkston				
Area of Study	Total Area (mi ²)	Increase (mi ²)	Decrease (mi ²)	Net Change (mi ²)
Within SFHA	1.07	0.03	0.0	0.03
Within Floodway	0.12	0.01	0.0	0.01

Source: DeKalb County PMR Flood Risk Report – Georgia Department of Natural Resources, Environmental Protection Division

Note: Although the Flood Risk Database may contain changes since the last FIRM information outside of City of Clarkston, the figures in this table only represent information within the City of Clarkston.

E. City of Decatur – SFHA Summary

SFHA Summary, City of Decatur				
Area of Study	Total Area (mi ²)	Increase (mi ²)	Decrease (mi ²)	Net Change (mi ²)
Within SFHA	0.20	0.04	0.08	-0.04
Within Floodway	0.09	0.02	0.03	-0.01

Source: DeKalb County PMR Flood Risk Report – Georgia Department of Natural Resources, Environmental Protection Division

Note: Although the Flood Risk Database may contain changes since the last FIRM information outside of City of Decatur, the figures in this table only represent information within the City of Decatur.



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F. City of Doraville – SFHA Summary

SFHA Summary, City of Doraville				
Area of Study	Total Area (mi ²)	Increase (mi ²)	Decrease (mi ²)	Net Change (mi ²)
Within SFHA	3.61	0.03	0.05	-0.02
Within Floodway	0.14	0.0	0.0	0.0

Source: DeKalb County PMR Flood Risk Report – Georgia Department of Natural Resources, Environmental Protection Division

Note: Although the Flood Risk Database may contain changes since the last FIRM information outside of City of Doraville, the figures in this table only represent information within the City of Doraville.

G. City of Dunwoody – SFHA Summary

SFHA Summary, City of Dunwoody				
Area of Study	Total Area (mi ²)	Increase (mi ²)	Decrease (mi ²)	Net Change (mi ²)
Within SFHA	13.44	0.02	0.13	-0.11
Within Floodway	0.26	0.0	0.02	-0.02

Source: DeKalb County PMR Flood Risk Report – Georgia Department of Natural Resources, Environmental Protection Division

Note: Although the Flood Risk Database may contain changes since the last FIRM information outside of City of Dunwoody, the figures in this table only represent information within the City of Dunwoody.

H. City of Lithonia – SFHA Summary

SFHA Summary, City of Lithonia				
Area of Study	Total Area (mi ²)	Increase (mi ²)	Decrease (mi ²)	Net Change (mi ²)
Within SFHA	0.94	0.0	0.0	0.0
Within Floodway	0.0	0.0	0.0	0.0

Source: DeKalb County PMR Flood Risk Report – Georgia Department of Natural Resources, Environmental Protection Division

Note: Although the Flood Risk Database may contain changes since the last FIRM information outside of City of Lithonia, the figures in this table only represent information within the City of Lithonia.



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I. City of Pine Lake – SFHA Summary

SFHA Summary, City of Pine Lake				
Area of Study	Total Area (mi ²)	Increase (mi ²)	Decrease (mi ²)	Net Change (mi ²)
Within SFHA	0.25	0.0	0.0	0.0
Within Floodway	0.04	0.0	0.01	-0.01

Source: DeKalb County PMR Flood Risk Report – Georgia Department of Natural Resources, Environmental Protection Division

Note: Although the Flood Risk Database may contain changes since the last FIRM information outside of City of Pine Lake, the figures in this table only represent information within the City of Pine Lake.

J. City of Stone Mountain – SFHA Summary

SFHA Summary, City of Stone Mountain				
Area of Study	Total Area (mi ²)	Increase (mi ²)	Decrease (mi ²)	Net Change (mi ²)
Within SFHA	1.66	0.02	0.0	0.02
Within Floodway	0.03	0.02	0.0	0.02

Source: DeKalb County PMR Flood Risk Report – Georgia Department of Natural Resources, Environmental Protection Division

Note: Although the Flood Risk Database may contain changes since the last FIRM information outside of City of Stone Mountain, the figures in this table only represent information within the City of Stone Mountain.

K. DeKalb County Unincorporated Areas Summary – SFHA Summary

SFHA Summary, DeKalb County Unincorporated Areas Summary				
Area of Study	Total Area (mi ²)	Increase (mi ²)	Decrease (mi ²)	Net Change (mi ²)
Within SFHA	238.06	4.44	2.26	2.18
Within Floodway	20.69	3.69	0.94	2.75

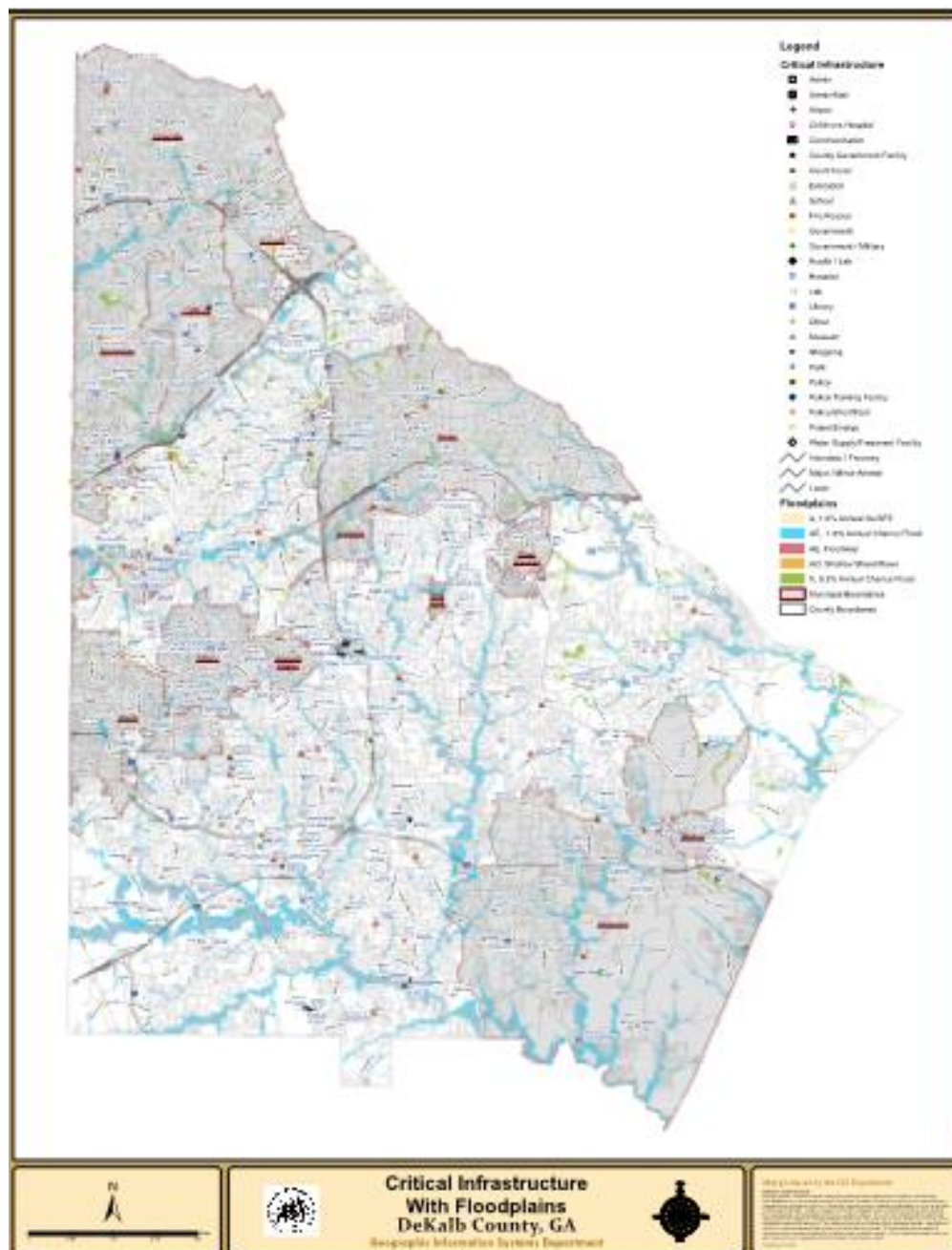
Source: DeKalb County PMR Flood Risk Report – Georgia Department of Natural Resources, Environmental Protection Division

Note: Although the Flood Risk Database may contain changes since the last FIRM information outside of DeKalb County Unincorporated Areas, the figures in this table only represent information within the DeKalb County Unincorporated Areas.



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Map 11: DeKalb County, GA – Critical Facilities and Floodplain Map

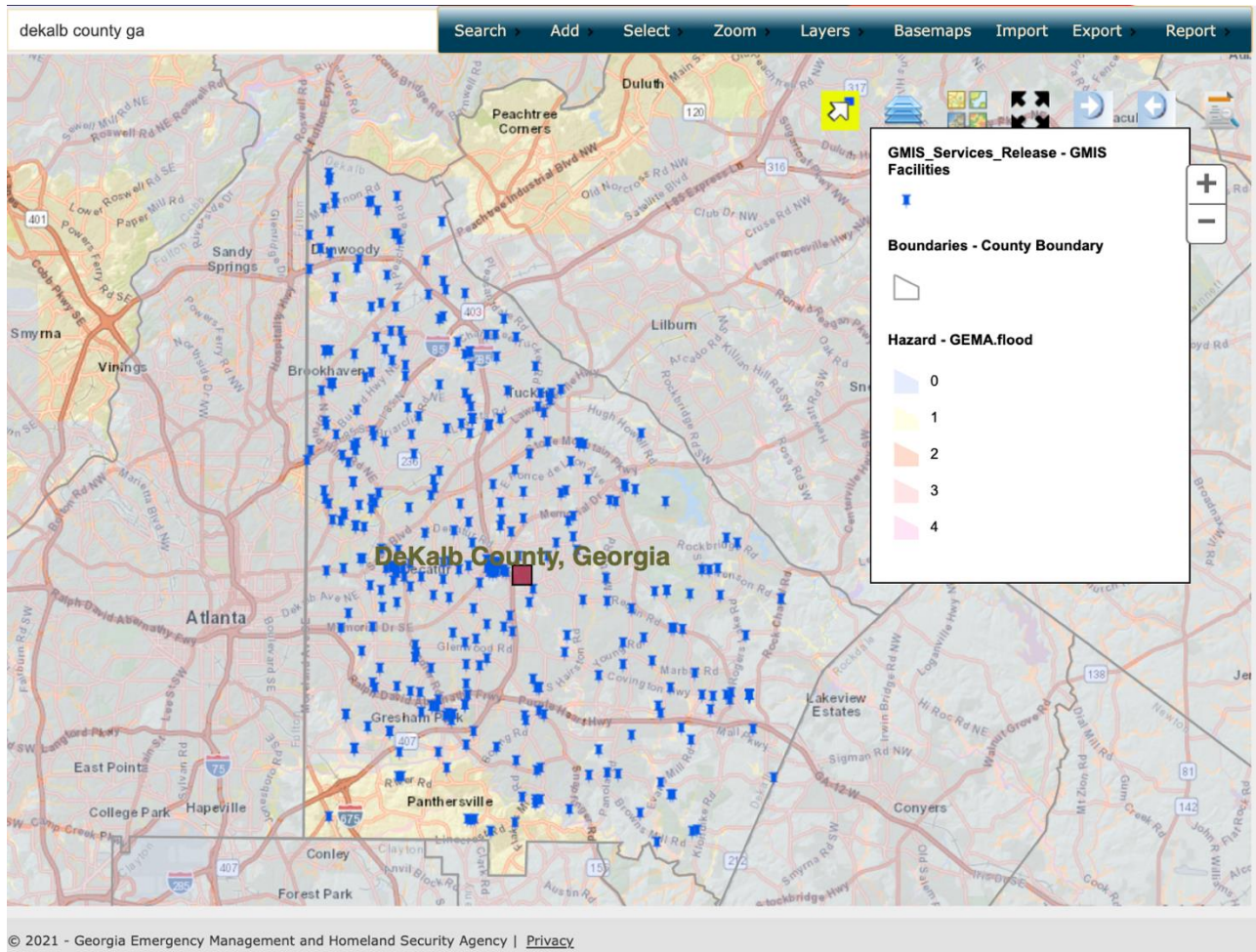


Map Source: DeKalb County GIS Department



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Map 12: DeKalb County, GA GMIS Map with Flood Layer



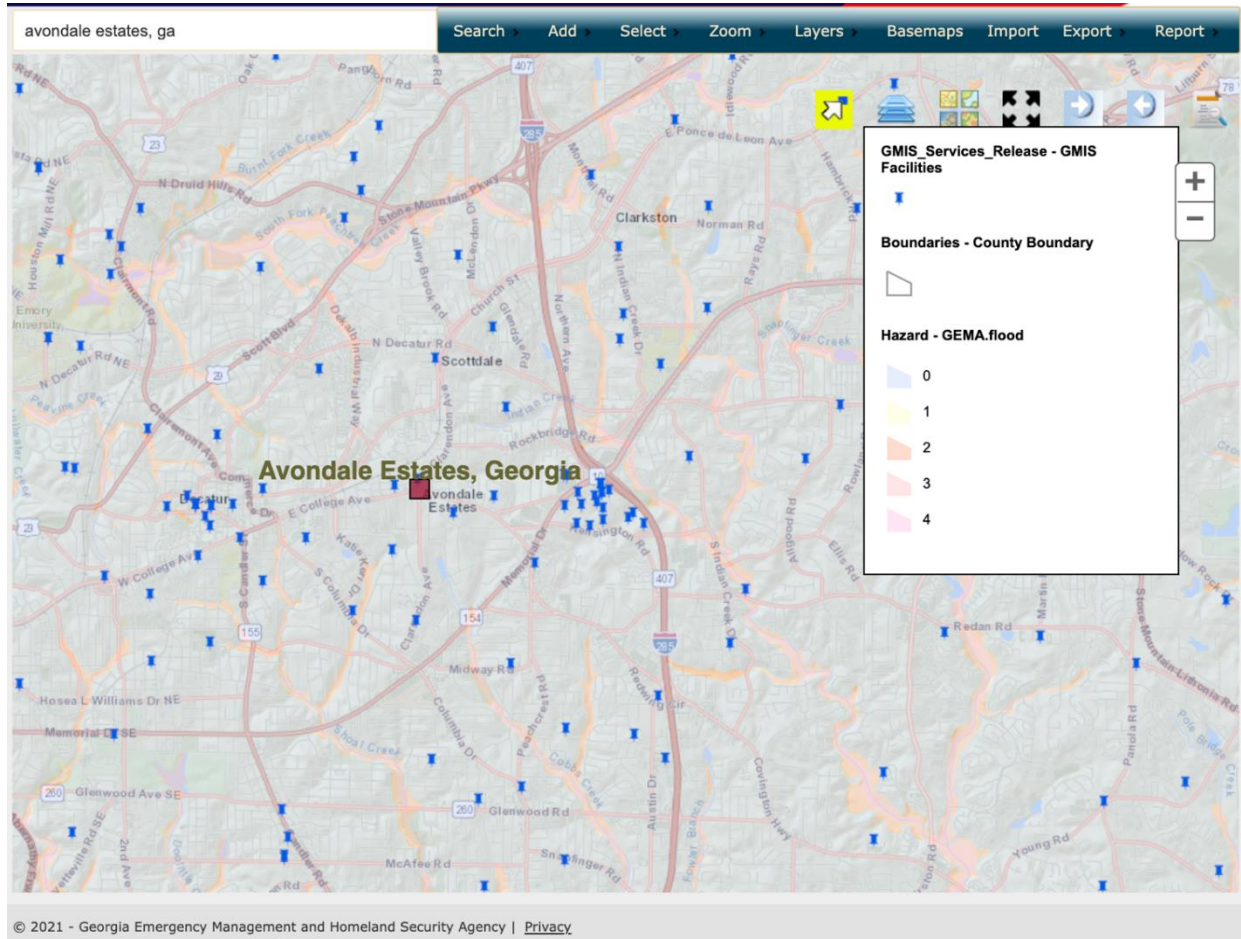
Map Source: Georgia Mitigation Information System (GMIS),
<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA "Q3" Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit <https://gema.georgia.gov/>.



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Map 13: City of Avondale Estates, GA GMIS Map with Flood Layer



Map Source: Georgia Mitigation Information System (GMIS),

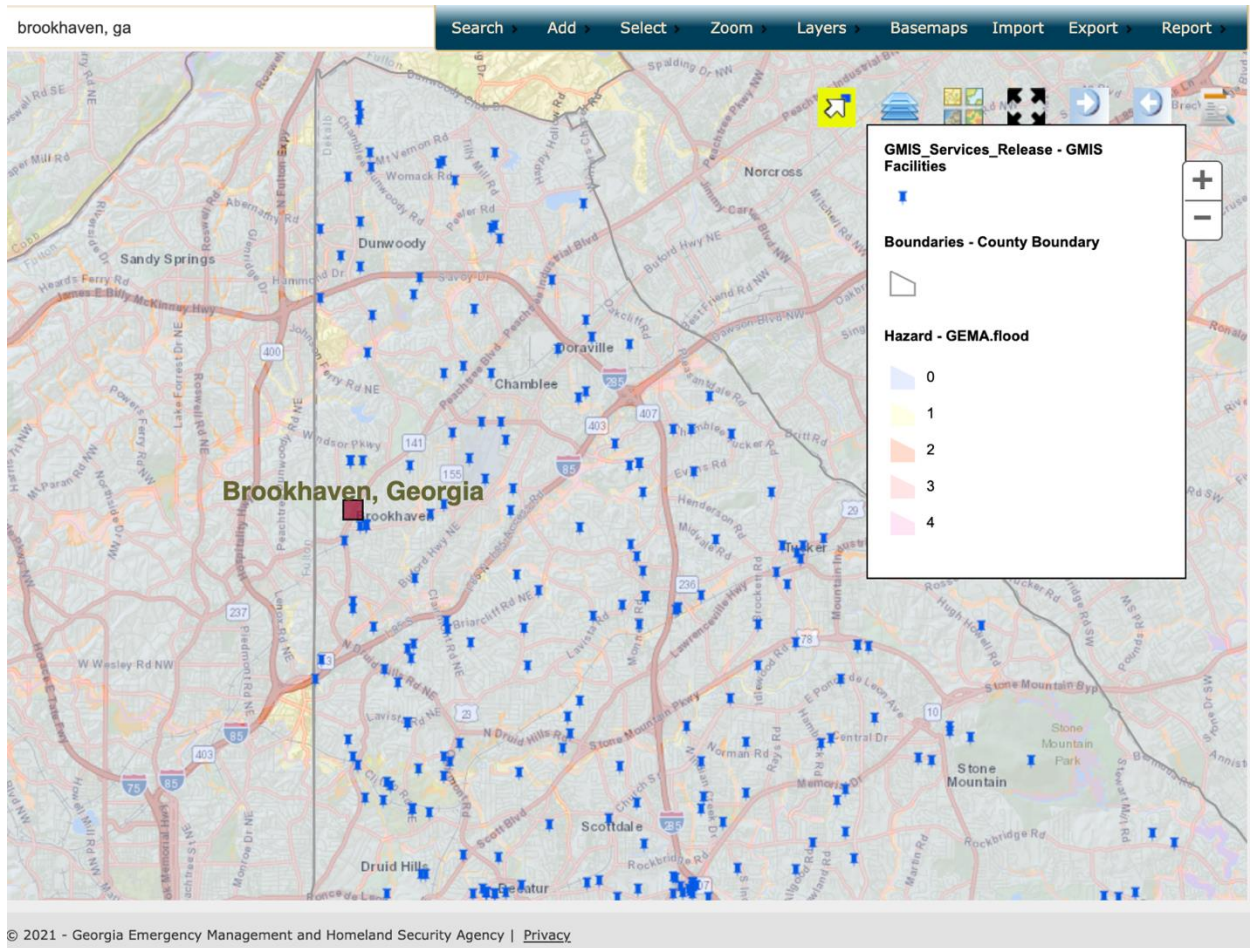
<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA "Q3" Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit <https://gema.georgia.gov/>.



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Map 14: City of Brookhaven, GA GMIS Map with Flood Layer



Map Source: Georgia Mitigation Information System (GMIS),

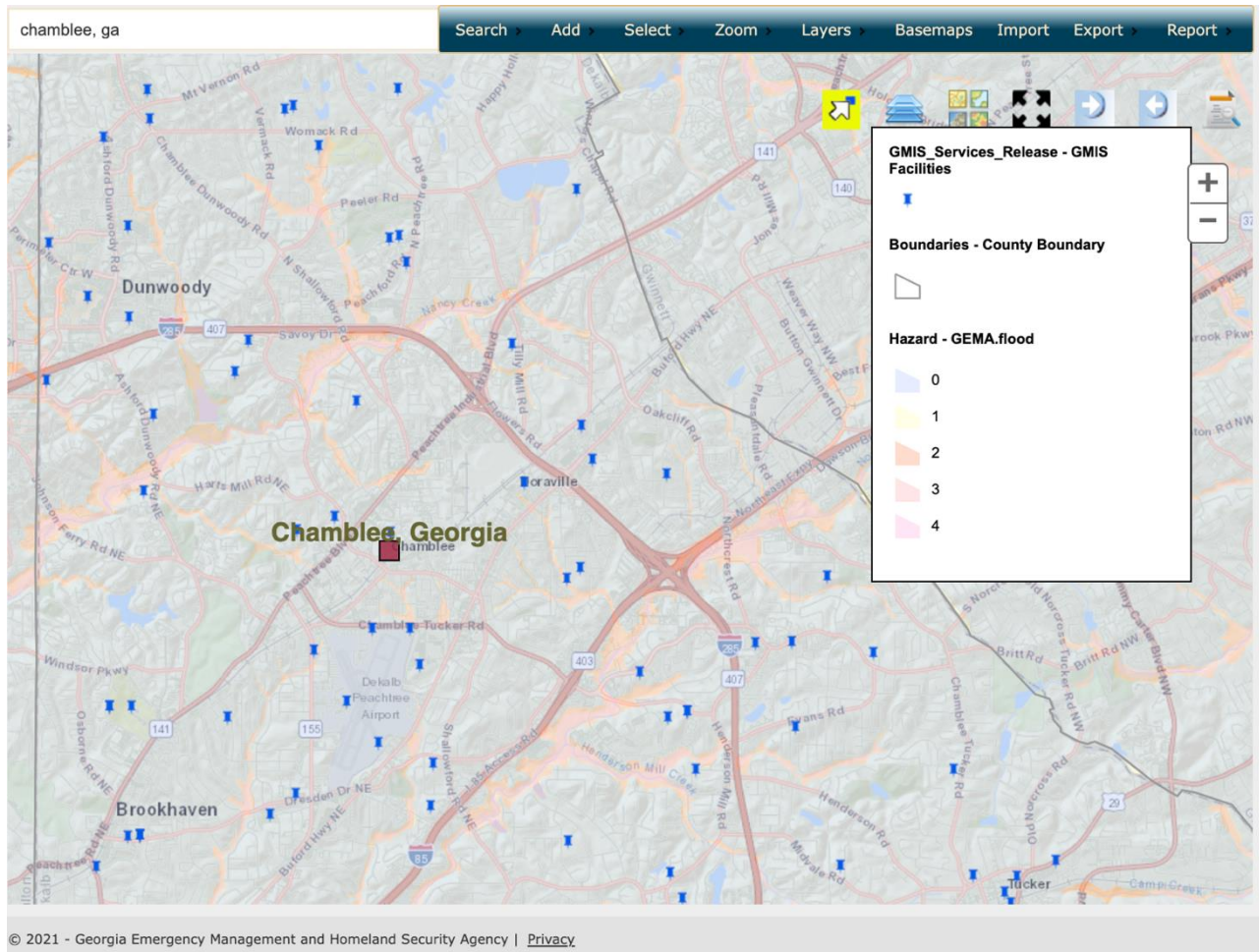
<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA "Q3" Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit <https://gema.georgia.gov/>.



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Map 15: City of Chamblee, GA GMIS Map with Flood Layer



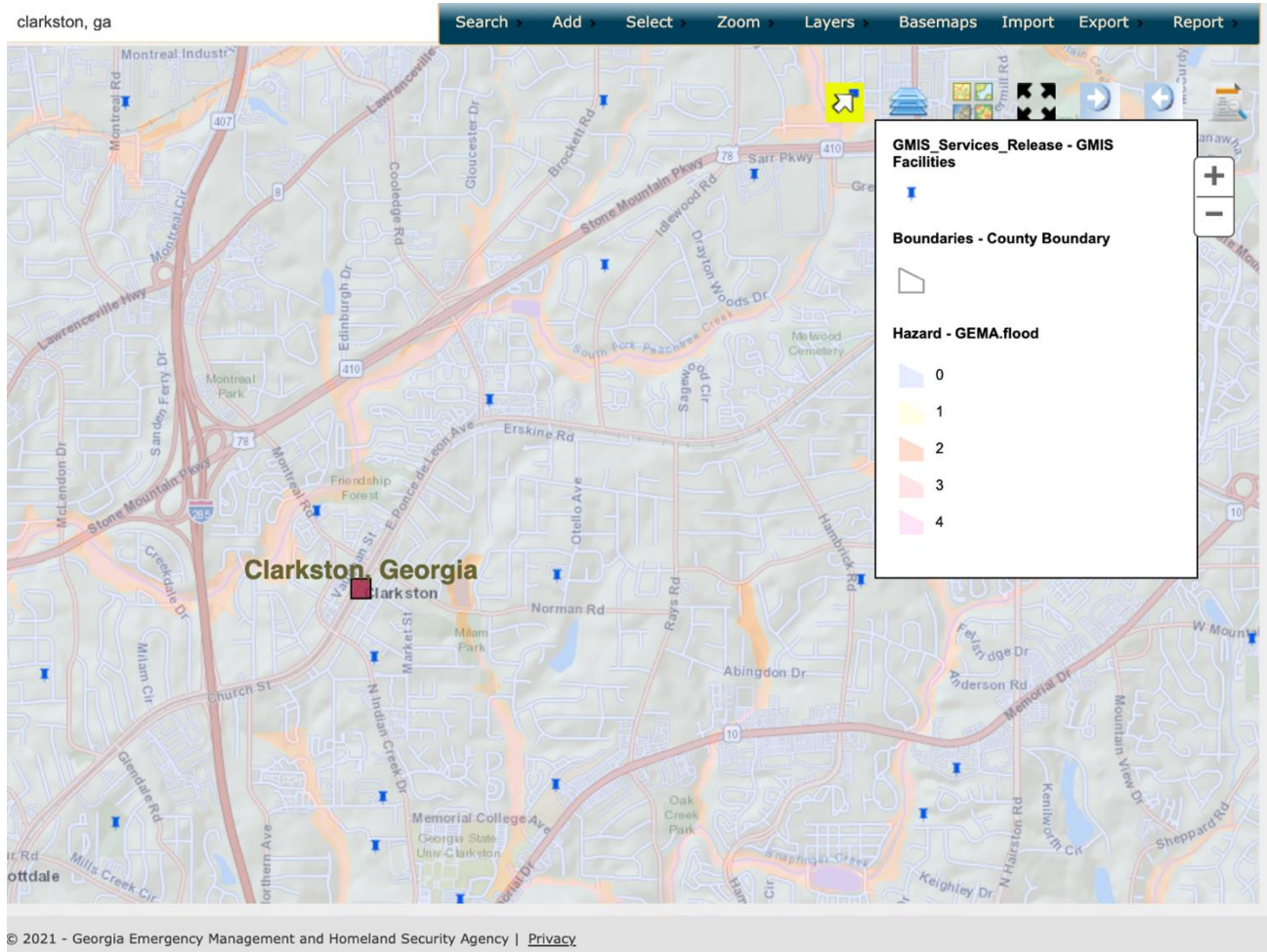
Map Source: Georgia Mitigation Information System (GMIS),
<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA “Q3” Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit <https://gema.georgia.gov/>.



SECTION 4: RISK ASSESSMENT

Map 16: City of Clarkston, GA GMIS Map with Flood Layer



Map Source: Georgia Mitigation Information System (GMIS),

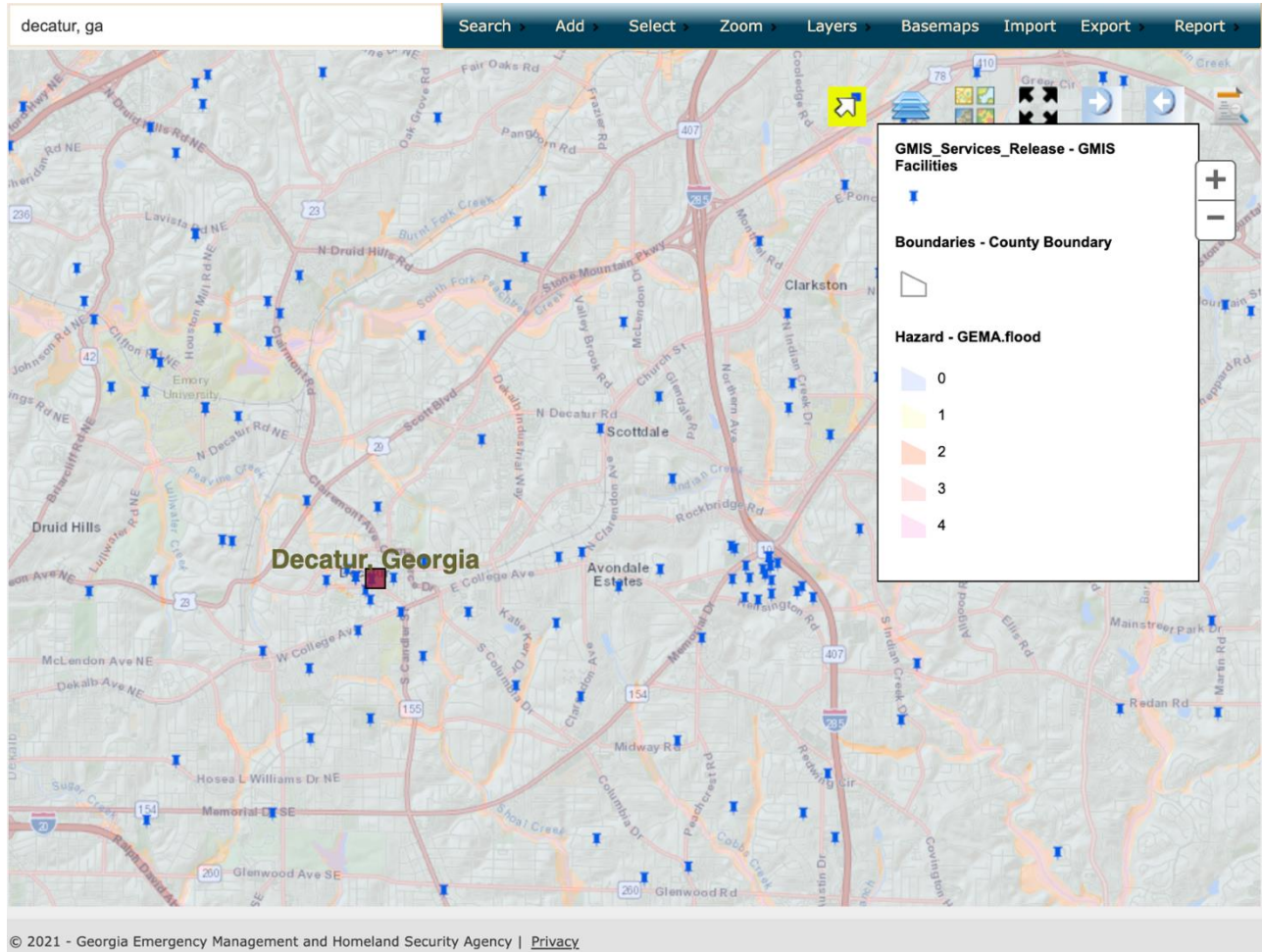
<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA "Q3" Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit <https://gema.georgia.gov/>.



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Map 17: City of Decatur, GA GMIS Map with Flood Layer



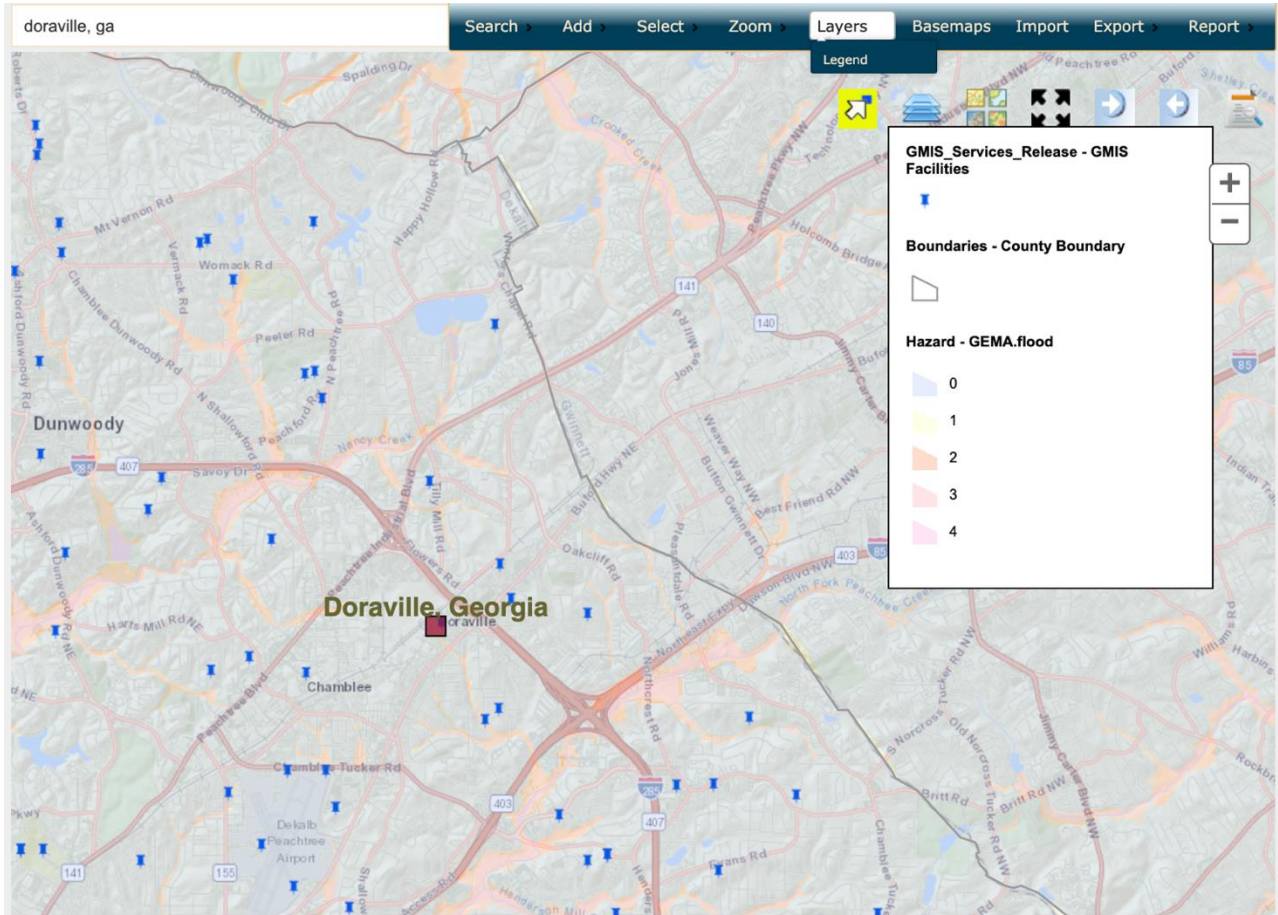
Map Source: Georgia Mitigation Information System (GMIS),
<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA "Q3" Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit <https://gema.georgia.gov/>.



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Map 18: City of Doraville, GA GMIS Map with Flood Layer



© 2021 - Georgia Emergency Management and Homeland Security Agency | [Privacy](#)

Map Source: Georgia Mitigation Information System (GMIS),

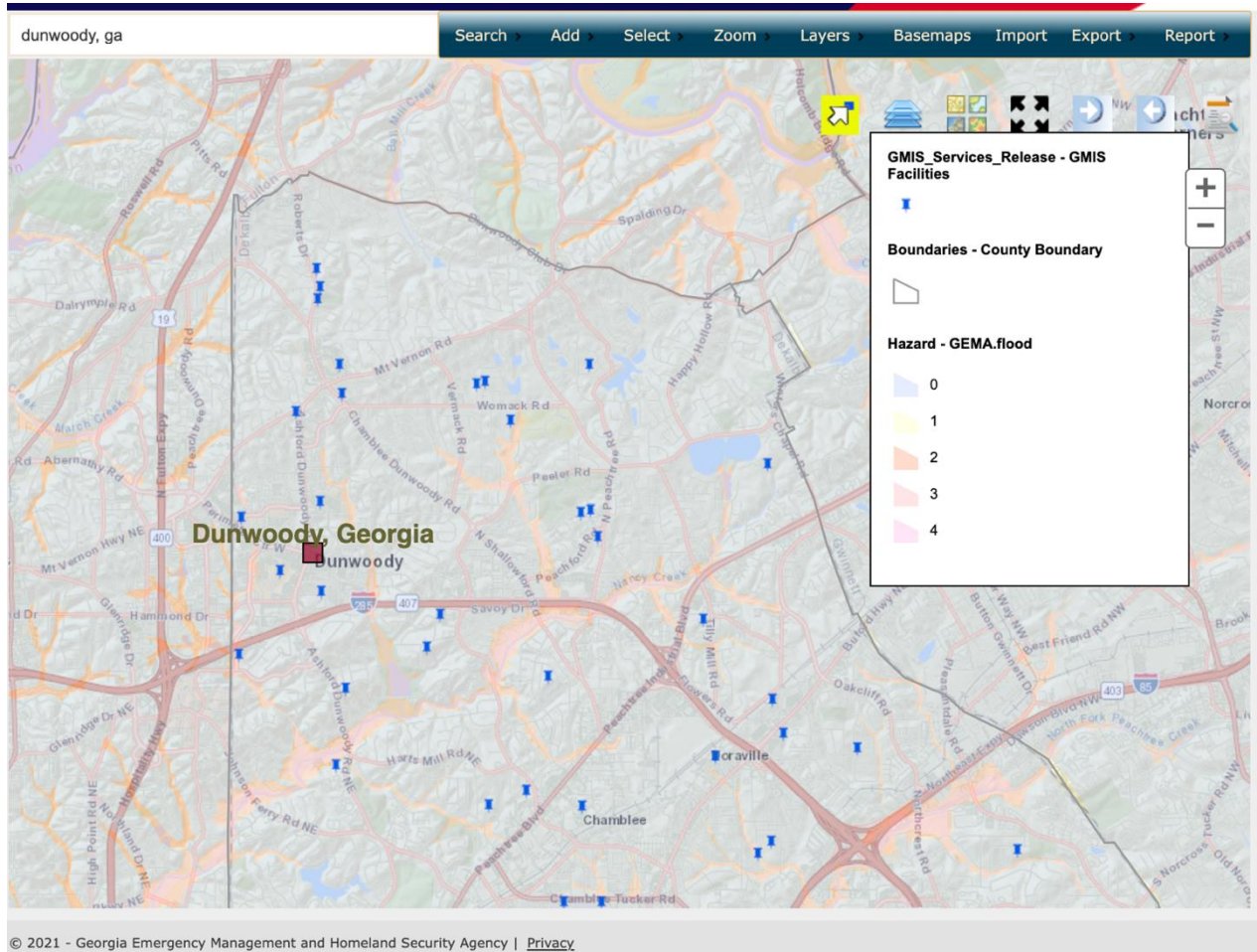
<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA “Q3” Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit <https://gema.georgia.gov/>.



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Map 19: City of Dunwoody, GA GMIS Map with Flood Layer



Map Source: Georgia Mitigation Information System (GMIS),

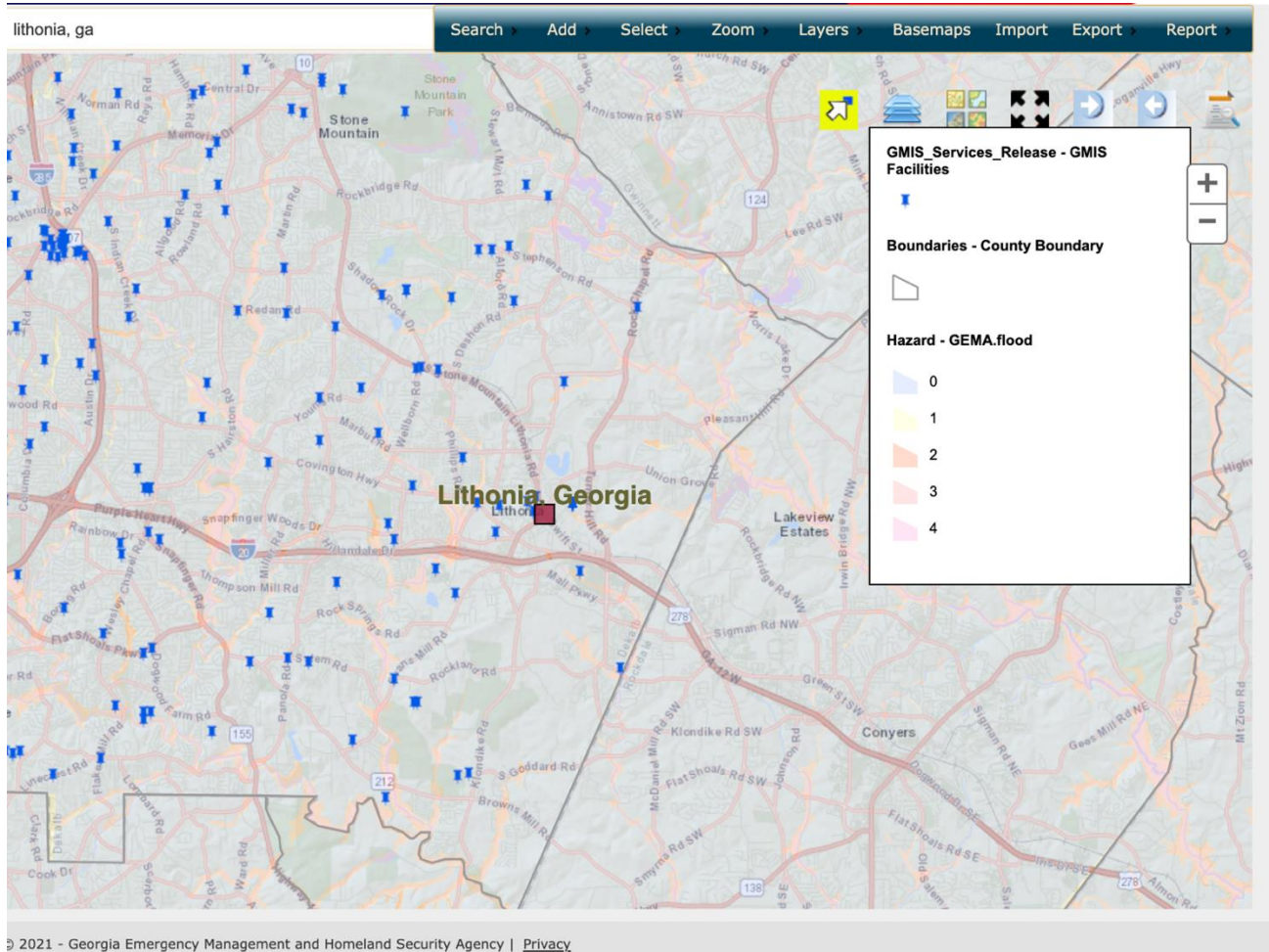
<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA "Q3" Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit <https://gema.georgia.gov/>.



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Map 20: City Lithonia, GA GMIS Map with Flood Layer



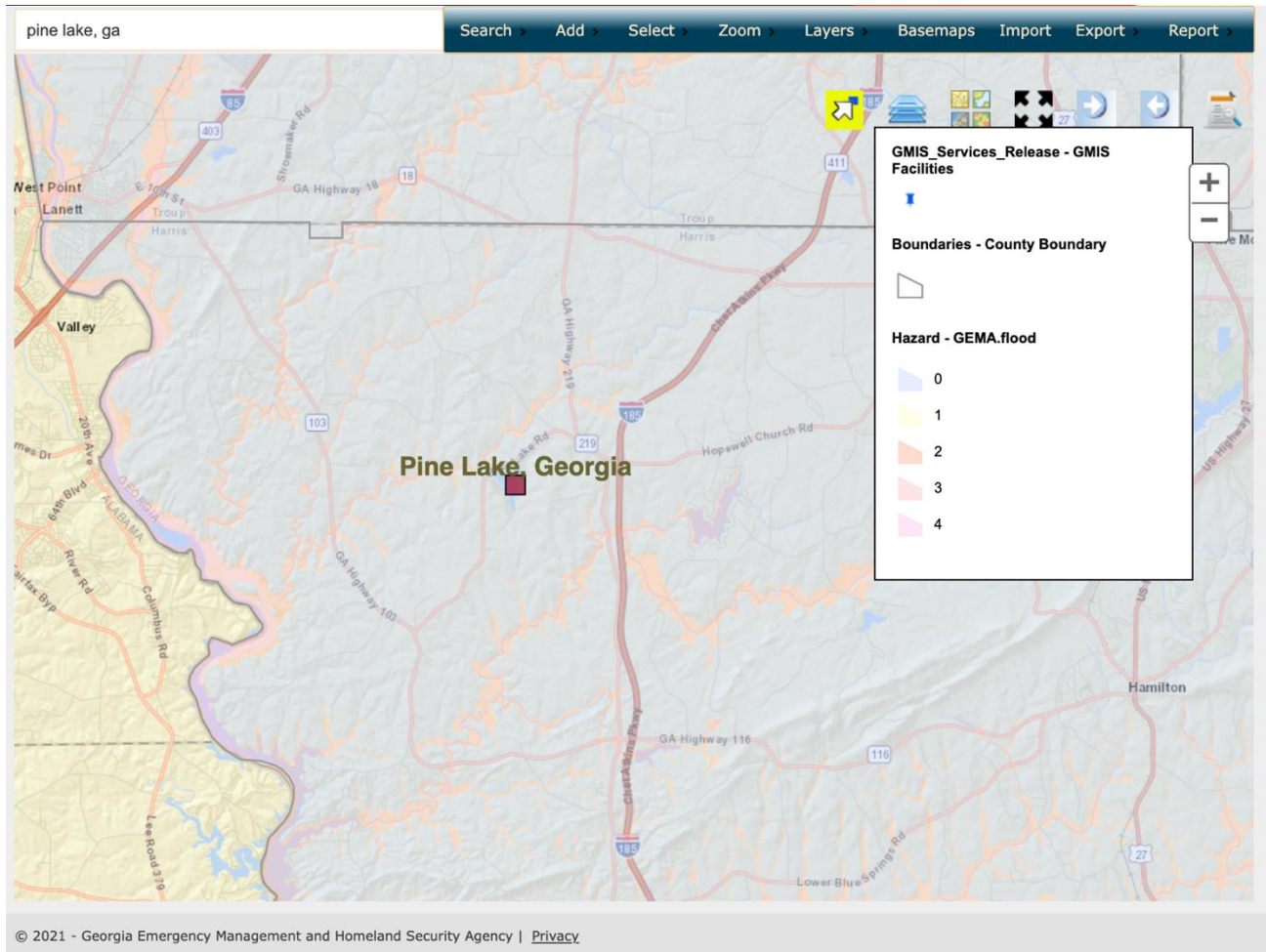
Map Source: Georgia Mitigation Information System (GMIS),
<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA "Q3" Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit <https://gema.georgia.gov/>.



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Map 21: City of Pine Lake, GA GMIS Map with Flood Layer



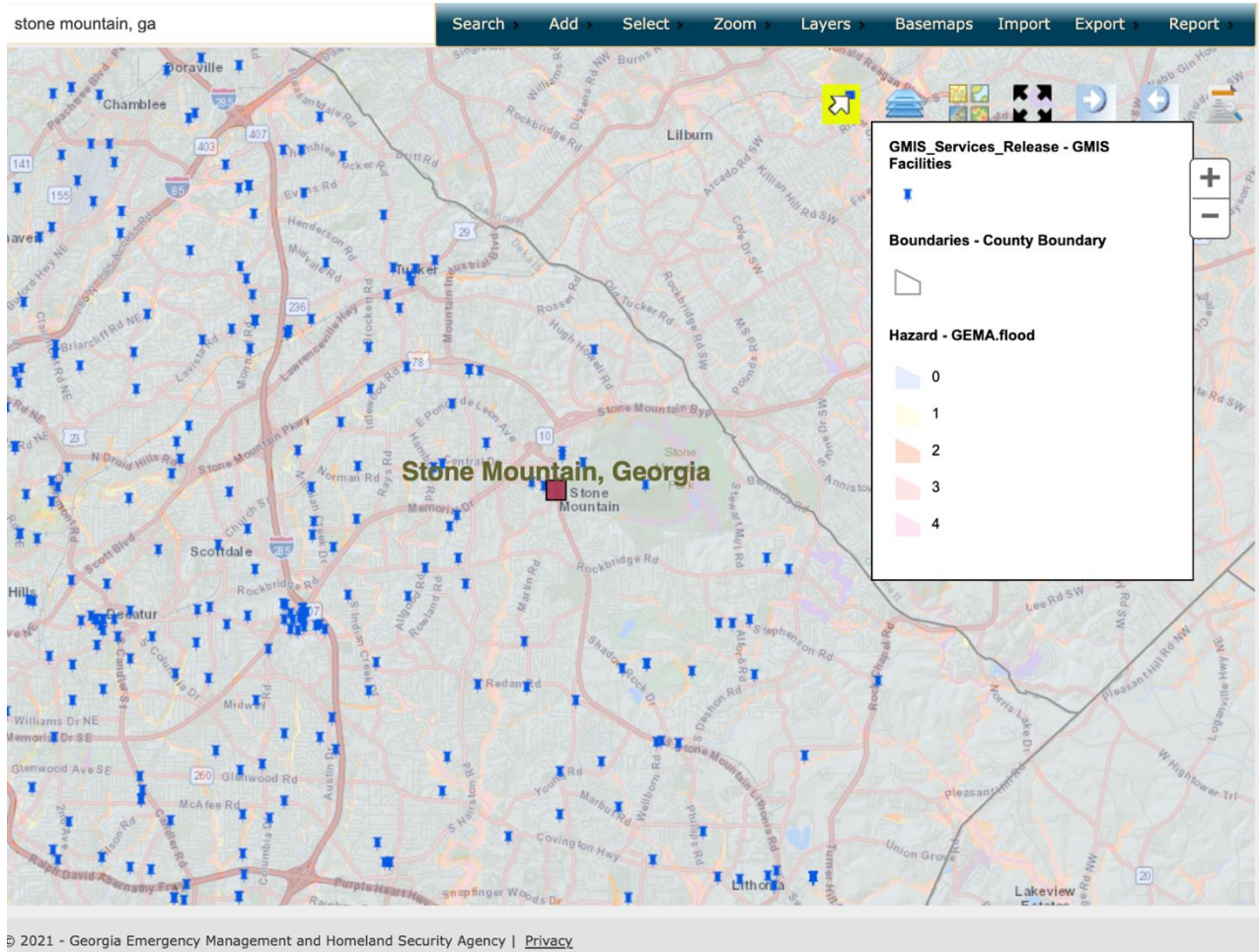
Map Source: Georgia Mitigation Information System (GMIS),
<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA "Q3" Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit <https://gema.georgia.gov/>.



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Map 22: City of Stone Mountain, GA GMIS Map with Flood Layer



Map Source: Georgia Mitigation Information System (GMIS),

<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

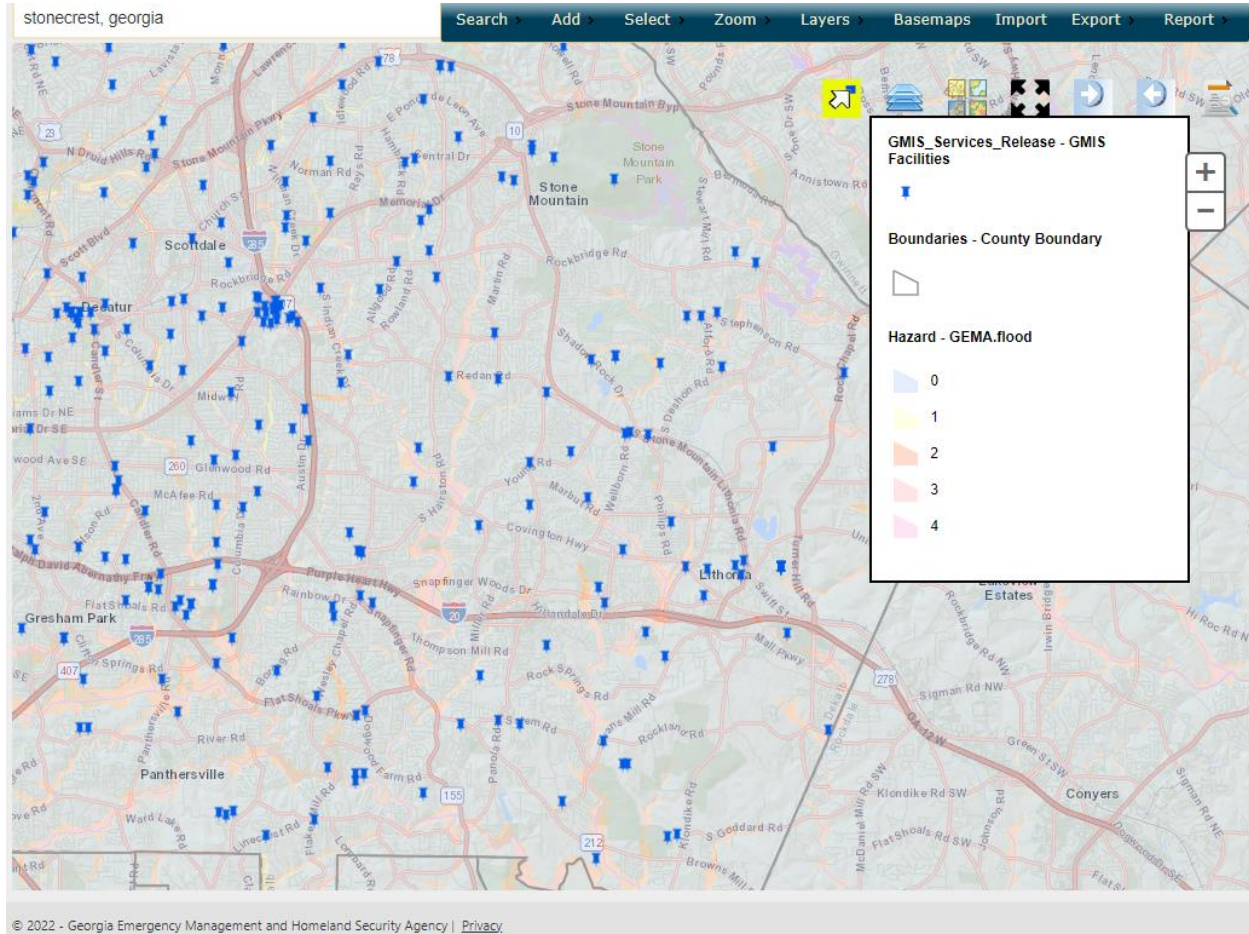
Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA "Q3" Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit

<https://gema.georgia.gov/>.



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Map 23: City of Stonecrest, GA GMIS Map with Flood Layer



Map Source: Georgia Mitigation Information System (GMIS),

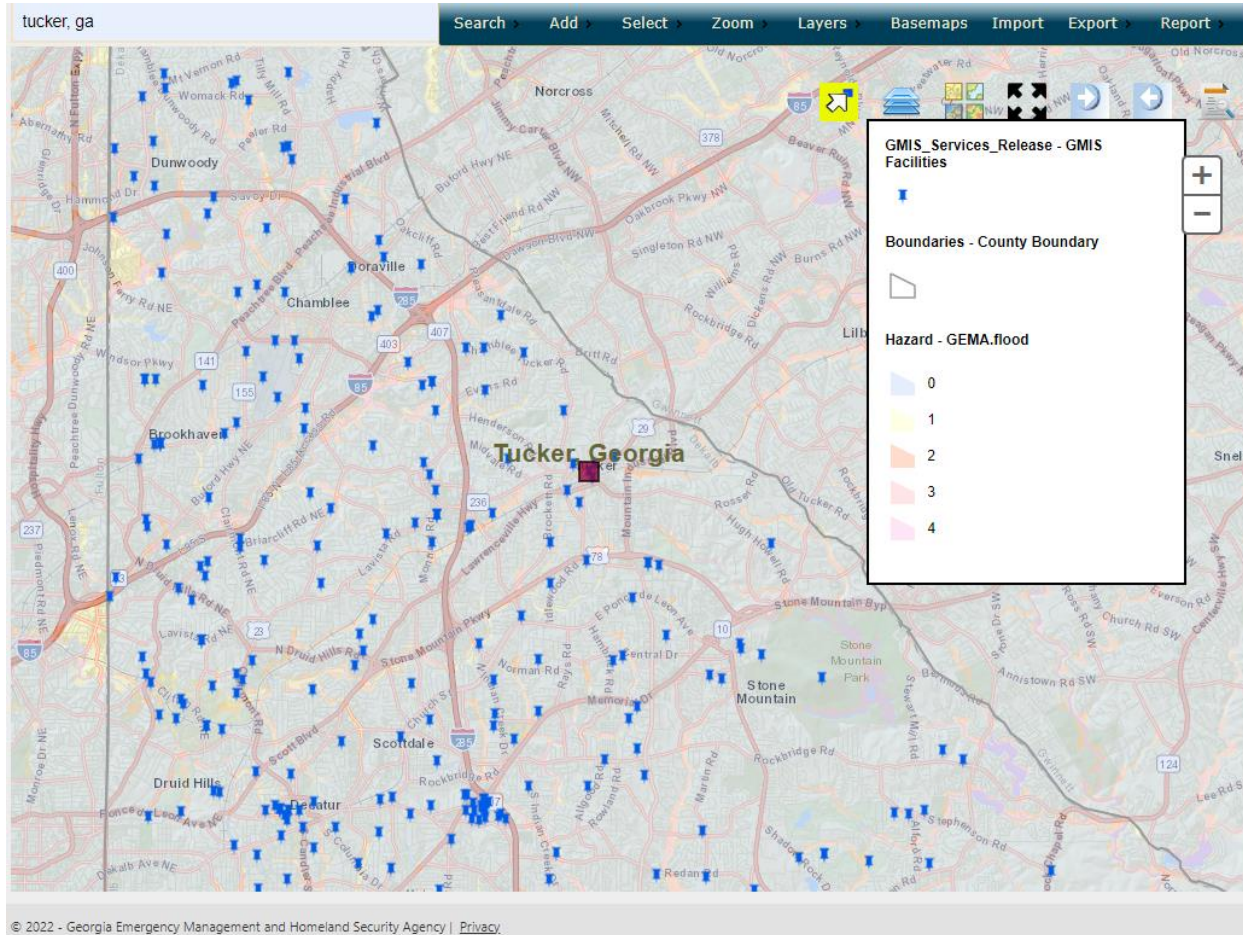
<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA “Q3” Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit <https://gema.georgia.gov/>.



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Map 24: City of Tucker, GA GMIS Map with Flood Layer



Map Source: Georgia Mitigation Information System (GMIS),

<https://apps.itos.uga.edu/GEMA.GMIS/Account/Login?ReturnUrl=%2fGEMA.GMIS%2fHome%2fIndex>

Note: The GMIS Flood Layer in the following map comes from hazard scores within the GMIS system. The flood hazard scores are derived from the FEMA “Q3” Zone values. The Q3 Layer is derived from the FEMA paper flood insurance rate maps. Although the resolution is 1:24,000, which has an allowable error of 40 feet, FEMA recommends using 250 feet as the potential error. This layer cannot be used for a legal flood determination. For information on designations described visit

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The following table explains the Floodplain Insurance Rate Map (FIRM) flood zone classifications associated with Maps on the proceeding pages. All DeKalb County FEMA DFIRM maps can be found in Appendix E.



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Table 27: Flood Zone Classifications

Flood Zone Classifications	
Zone	Description
A	An area inundated by 1% annual chance flooding, for which no BFEs have been determined. (100-Year Floodplain)
AE	An area inundated by 1% annual chance flooding, for which BFEs have been determined. (100-Year Floodplain)
Shaded X	Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood. An area inundated by 0.2% annual chance flooding.
Unshaded X	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100- year flood.

Note: For the following FEMA National Flood Hazard Layer (NFHL) maps, the A and AE zones have been combined as they are both considered 100-year floodplain.

Source: FEMA Flood Zone Designations: <https://snmapmod.snco.us/fmm/document/fema-flood-zone-definitions.pdf>



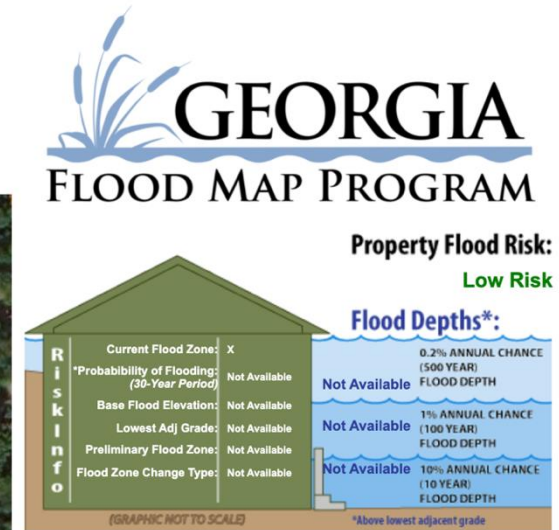
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Map 25: Georgia DFIRM Map – DeKalb County GA

DeKalb County, Georgia



Disclaimer: This data is not to be used to determine any base flood elevations or flood zone designations for NFIP (National Flood Insurance Program) purposes. For NFIP flood insurance and regulation purposes, please refer to the published effective FIRM (Flood Rate Insurance Map) for your area of concern. Values displayed for Current Flood Zone, Preliminary Flood Zone, Flood Zone Change Type, and Probability of Flooding over a 30-year period based on center of dot location, not extent of structure(s).



Location Information

Panel:	13089C0088J
Watershed:	Upper Ocmulgee
County:	DEKALB
Community ID:	13089C
Map Status:	EFFECTIVE

* Flood Depths shown on this report are derived from FEMA RiskMAP products and are rounded to the nearest tenth of a foot. These depths are calculated from HEC-RAS modeling and represent the best available data. Only areas within a RiskMAP studied watershed will have this data available. Please check back if your area is not currently available. For more information, please visit the FEMA Map Service Center at <https://msc.fema.gov/portal/resources/faq>

Nature Doesn't Read Flood Maps

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The chance that a major fire will occur during the same period is less than 10%!

FOR MORE INFORMATION VISIT, PLEASE VISIT:



Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>

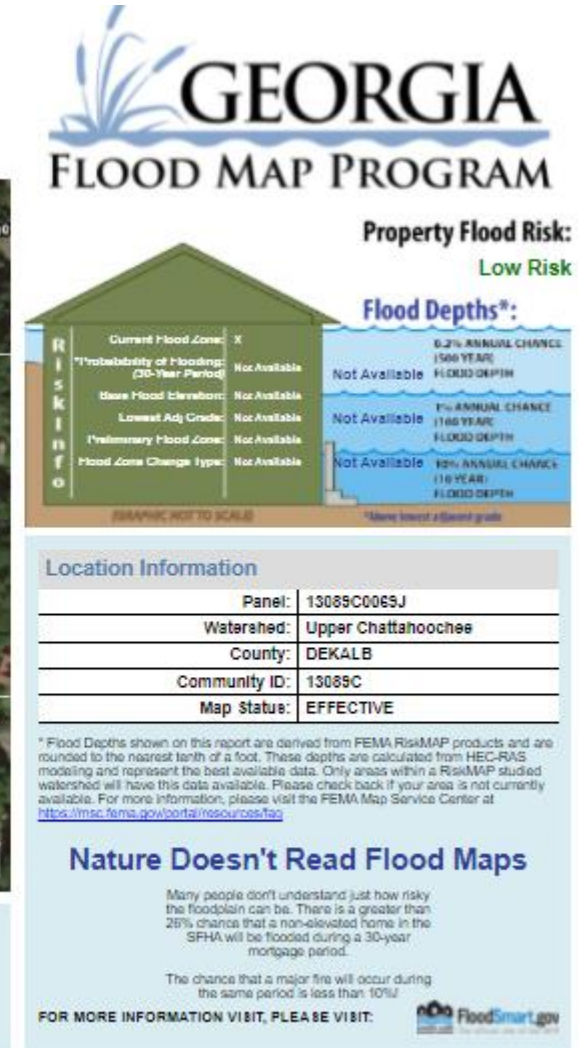
DeKalb County, GA – 2022 Countywide Hazard Mitigation Update



SECTION 4: RISK ASSESSMENT

Map 26: Georgia DFIRM Map – Avondale Estates, GA

Avondale Estates, Georgia



Disclaimer: This data is not to be used to determine any base flood elevations or flood zone designations for NFIP (National Flood Insurance Program) purposes. For NFIP flood insurance and regulation purposes, please refer to the published effective FIRI (Flood Rate Insurance Map) for your area of concern. Values displayed for Current Flood Zone, Preliminary Flood Zone, Flood Zone Change Type, and Probability of Flooding over a 30-year period based on center of lot location, not extent of structure(s).

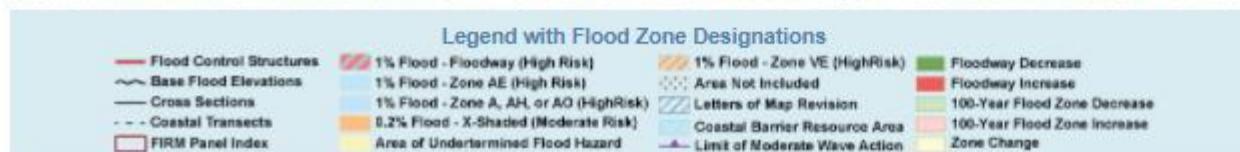
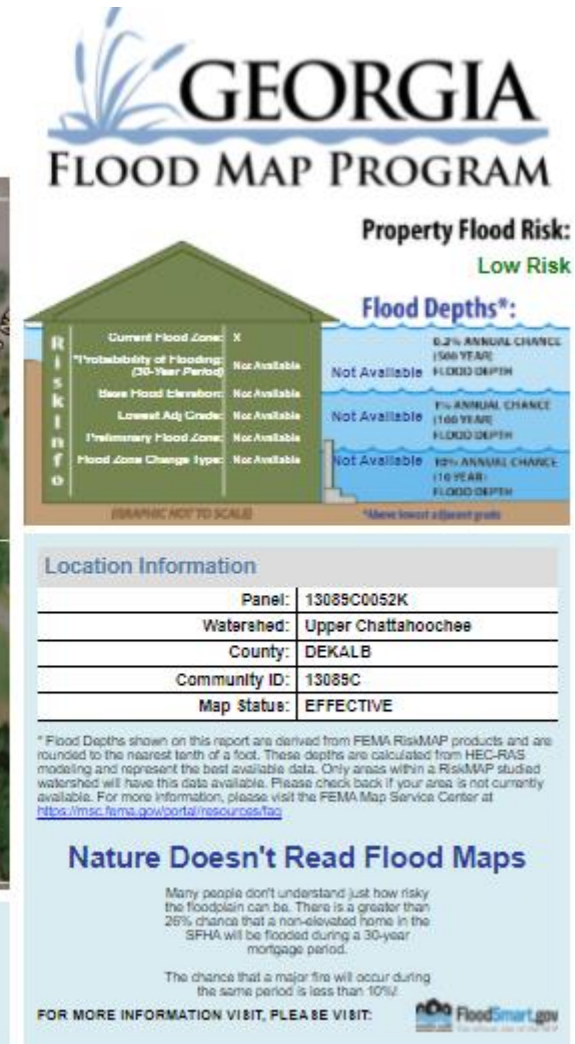
Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>



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Map 27: Georgia DFIRM Map –Brookhaven, GA

Brookhaven, Georgia



Disclaimer: This data is not to be used to determine any base flood elevations or flood zone designations for NFIP (National Flood Insurance Program) purposes. For NFIP flood insurance and regulation purposes, please refer to the published effective FIRI (Flood Rate Insurance Map) for your area of concern. Values displayed for Current Flood Zone, Preliminary Flood Zone, Flood Zone Change Type, and Probability of Flooding over a 30-year period based on center of dot location, not extent of structure(s).

Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>



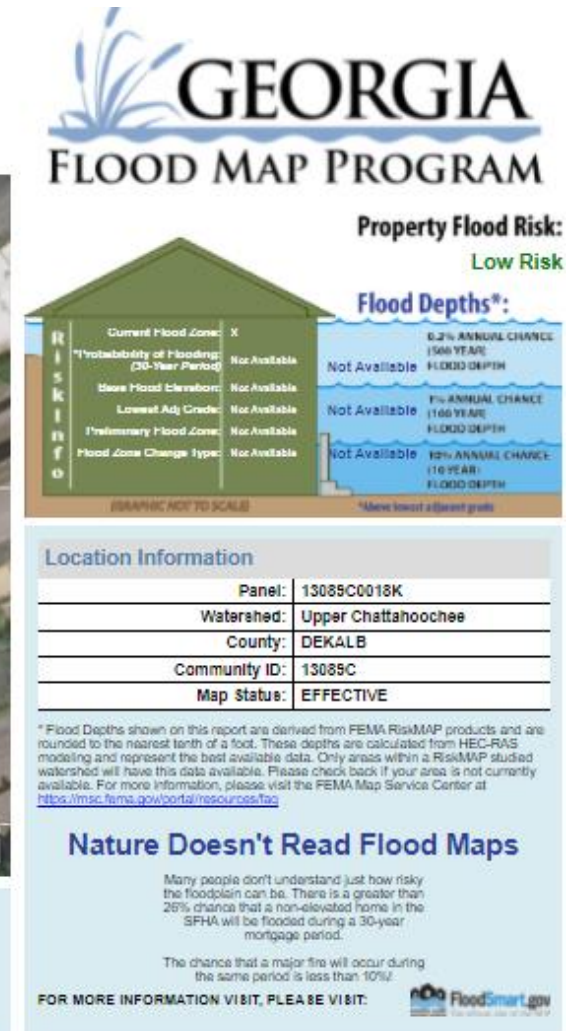
Map 28: Georgia DFIRM Map – Chamblee GA

Chamblee, Georgia



Disclaimer: This data is not to be used to determine any base flood elevations or flood zone designations for NFIP (National Flood Insurance Program) purposes. For NFIP flood insurance and regulation purposes, please refer to the published effective FIRI (Flood Rate Insurance Map) for your area of concern. Values displayed for Current Flood Zone, Preliminary Flood Zone, Flood Zone Change Type, and Probability of Flooding over a 30-year period based on center of dot location, not extent of structure(s).

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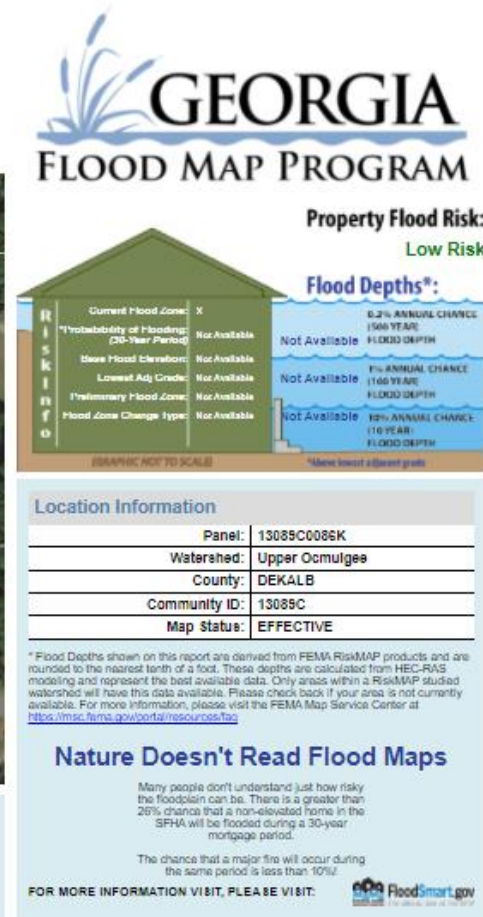
Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>



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Map 29: Georgia DFIRM Map – Clarkston GA

Clarkston, Georgia



Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>



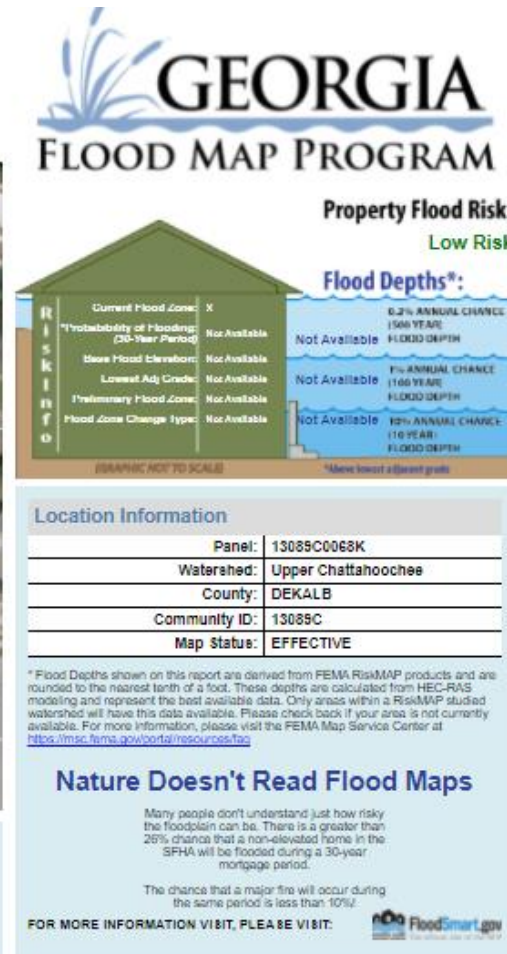
Map 30: Georgia DFIRM Map – Decatur, GA

Decatur, Georgia



Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>

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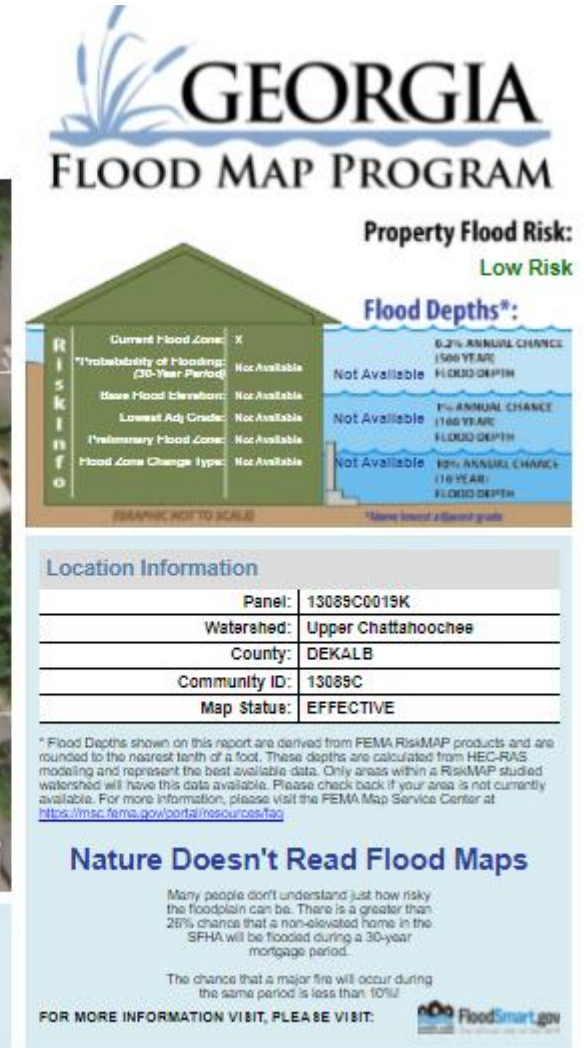




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Map 31: Georgia DFIRM Map – Doraville, GA

Doraville, Georgia



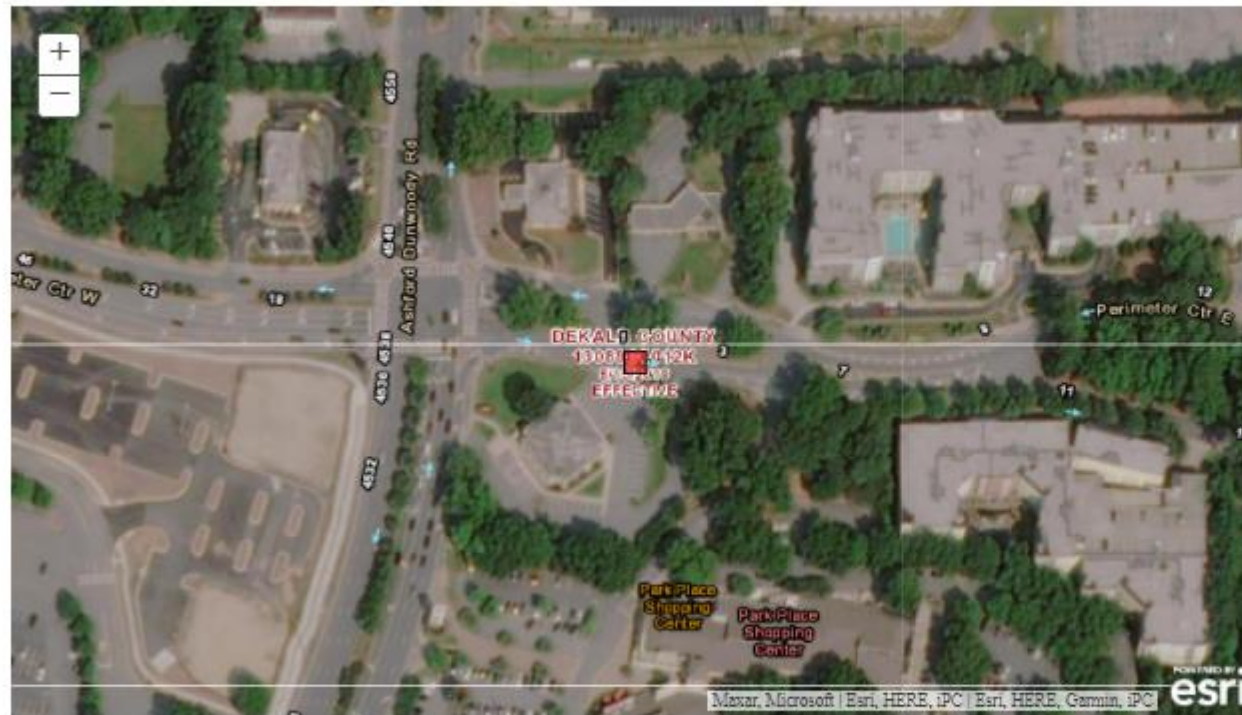
Disclaimer: This data is not to be used to determine any base flood elevations or flood zone designations for NFIP (National Flood Insurance Program) purposes. For NFIP flood insurance and regulation purposes, please refer to the published effective FIRI (Flood Rate Insurance Map) for your area of concern. Values displayed for Current Flood Zone, Preliminary Flood Zone, Flood Zone Change Type, and Probability of Flooding over a 30-year period based on center of lot location, not extent of structure(s).

Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>



Map 32: Georgia DFIRM Map – Dunwoody GA

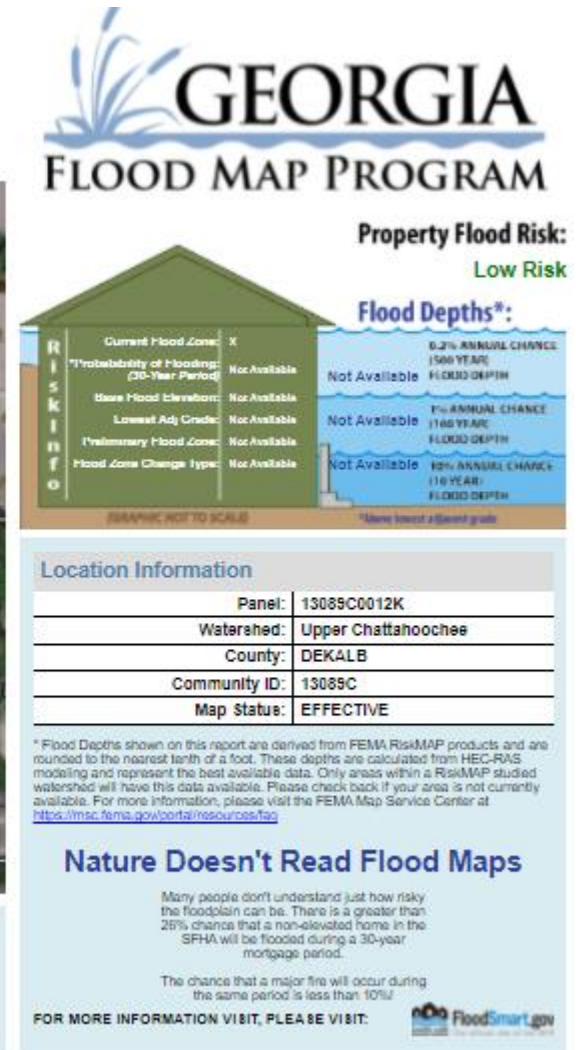
Dunwoody, Georgia



Disclaimer: This data is not to be used to determine any base flood elevations or flood zone designations for NFIP (National Flood Insurance Program) purposes. For NFIP flood insurance and regulation purposes, please refer to the published effective FIRI (Flood Rate Insurance Map) for your area of concern. Values displayed for Current Flood Zone, Preliminary Flood Zone, Flood Zone Change Type, and Probability of Flooding over a 30-year period based on center of lot location, not extent of structure(s).

Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>

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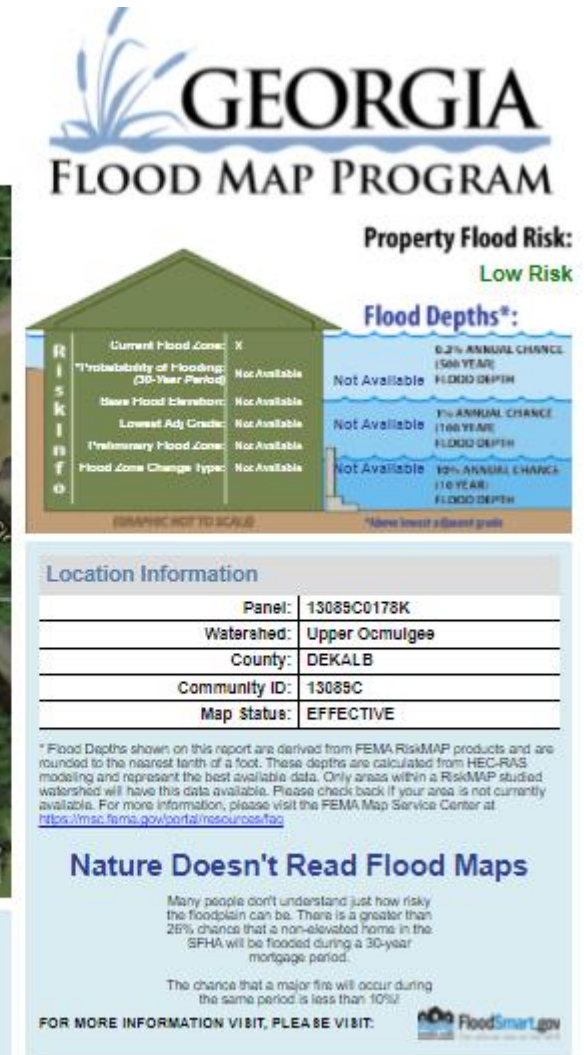
Map 33: Georgia DFIRM Map – Lithonia, GA

Lithonia, Georgia



Disclaimer: This data is not to be used to determine any base flood elevations or flood zone designations for NFIP (National Flood Insurance Program) purposes. For NFIP flood insurance and regulation purposes, please refer to the published effective FIRI (Flood Rate Insurance Map) for your area of concern. Values displayed for Current Flood Zone, Preliminary Flood Zone, Flood Zone Change Type, and Probability of Flooding over a 30-year period based on center of plot location, not extent of structure(s).

SECTION 4: RISK ASSESSMENT



Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>



Map 34: Georgia DFIRM Map – Pine Lake, GA

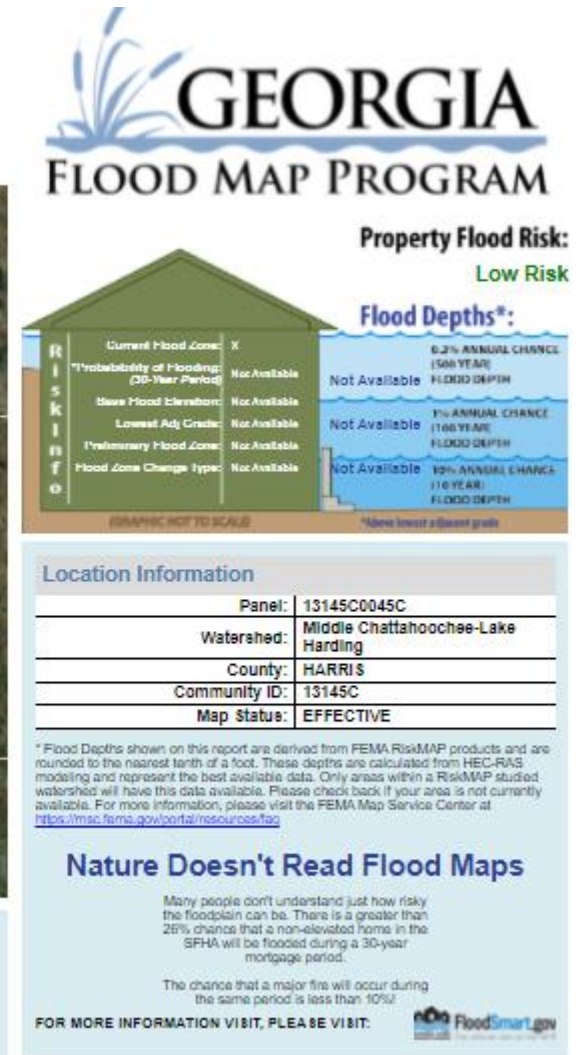
Pine Lake, Georgia



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Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>

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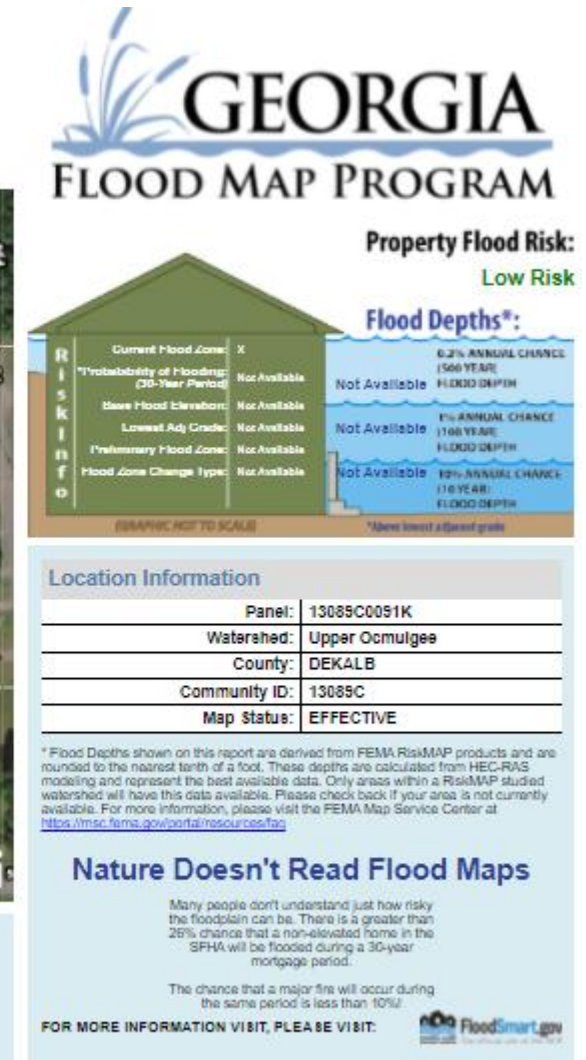




SECTION 4: RISK ASSESSMENT

Map 35: Georgia DFIRM Map – Stone Mountain, GA

Stone Mountain, Georgia

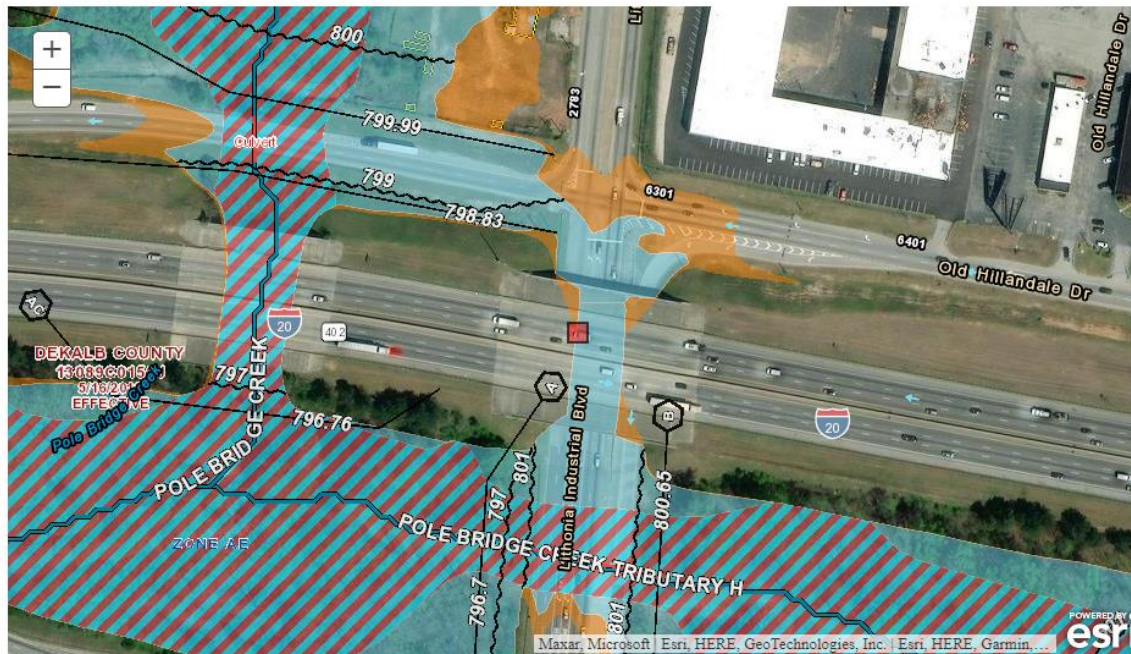


Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>



Map 36: Georgia DFIRM Map – Stonecrest, GA

I-20 W, Lithonia, Georgia, 30038



Disclaimer: This data is not to be used to determine any base flood elevations or flood zone designations for NFIP (National Flood Insurance Program) purposes. For NFIP flood insurance and regulation purposes, please refer to the published effective FIRM (Flood Rate Insurance Map) for your area of concern. Values displayed for Current Flood Zone, Preliminary Flood Zone, Flood Zone Change Type, and Probability of Flooding over a 30-year period based on center of dot location, not extent of structure(s).

Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>

SECTION 4: RISK ASSESSMENT

GEORGIA FLOOD MAP PROGRAM

Property Flood Risk:

Moderate Risk

Flood Depths*:

0.4 ft
0.2% ANNUAL CHANCE
(500 YEAR)
FLOOD DEPTH
1% ANNUAL CHANCE
(100 YEAR)
FLOOD DEPTH
10% ANNUAL CHANCE
(10 YEAR)
FLOOD DEPTH

Risk Info
Current Flood Zone: X-SHADED
*Probability of Flooding (30-Year Period): Not Available
Base Flood Elevation: Not Available
Lowest Adj. Grade: Not Available
Preliminary Flood Zone: Not Available
Flood Zone Change Type: Not Available

(GRAPHIC NOT TO SCALE)

*Above lowest adjacent grade

Location Information

Panel:	13089C0159J
Watershed:	Upper Ocmulgee
County:	DEKALB
Community ID:	13089C
Map Status:	EFFECTIVE

* Flood Depths shown on this report are derived from FEMA RiskMAP products and are rounded to the nearest tenth of a foot. These depths are calculated from HEC-RAS modeling and represent the best available data. Only areas within a RiskMAP studied watershed will have this data available. Please check back if your area is not currently available. For more information, please visit the FEMA Map Service Center at <https://msc.fema.gov/portal/resources/fag>

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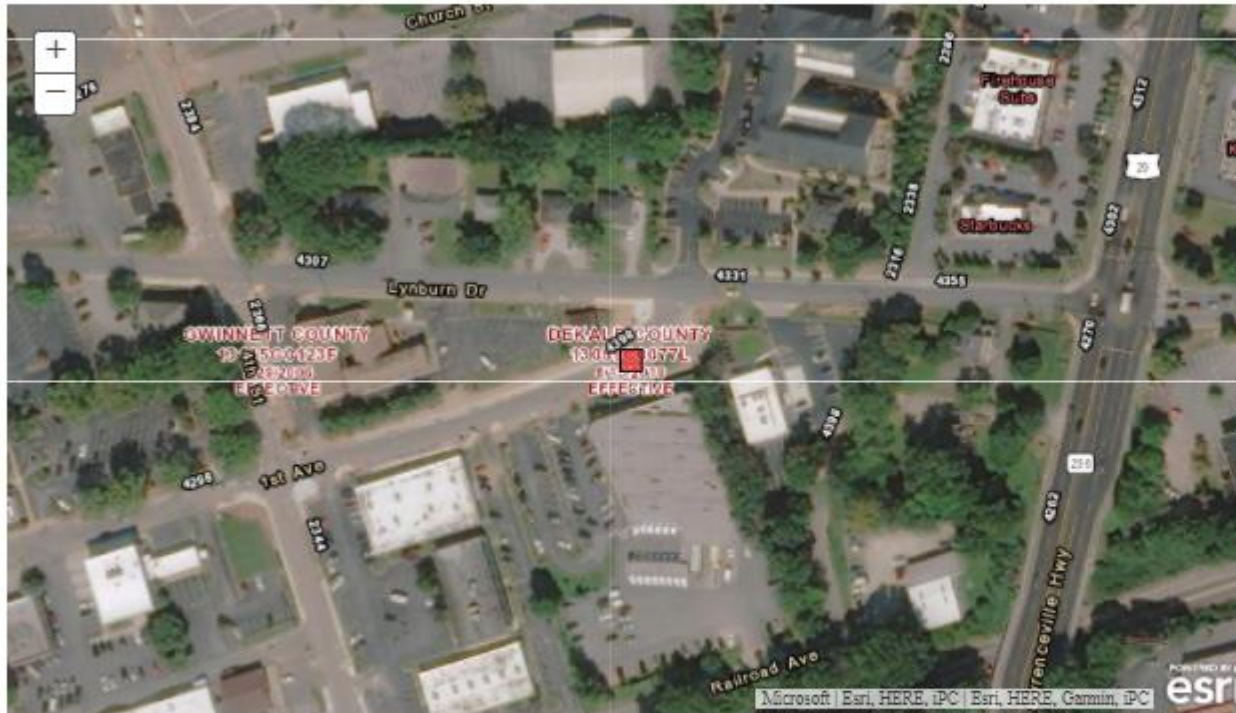




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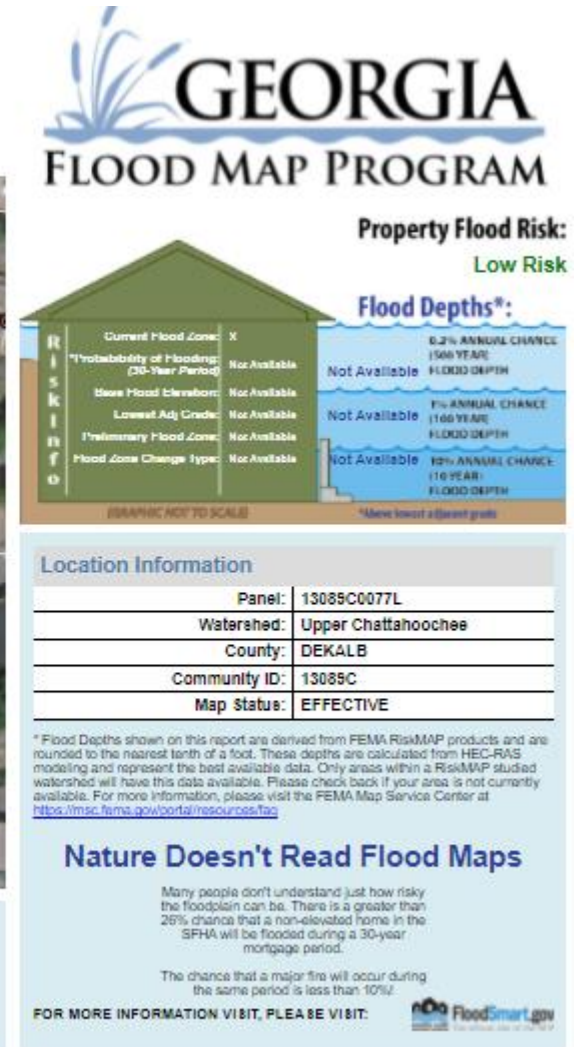
Map 37: Georgia DFIRM Map – Tucker, GA

Tucker, Georgia



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Map Source: Georgia Flood Map Program: <https://map.georgiadfirm.com/>

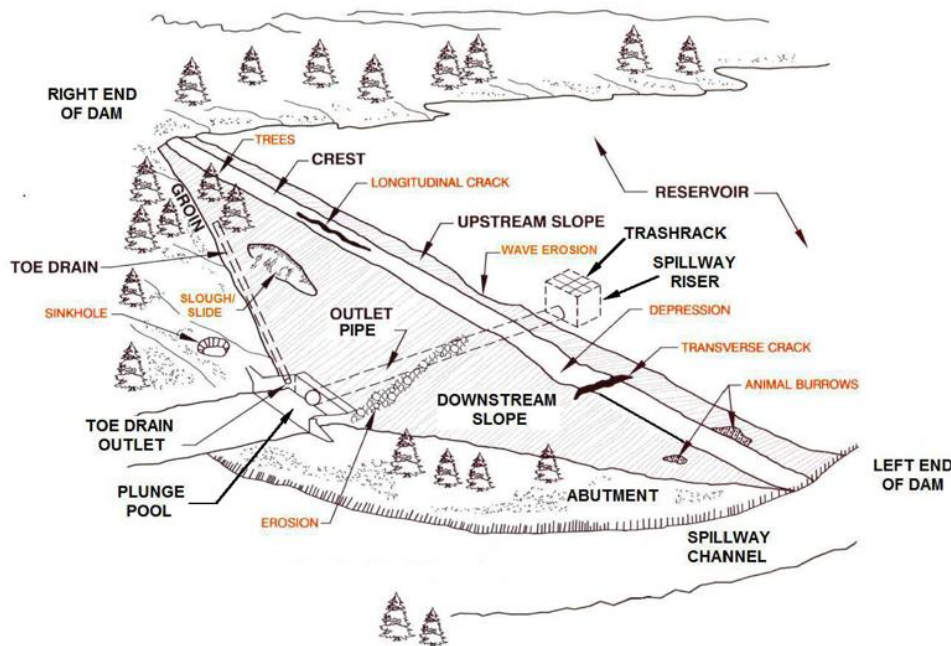




SECTION 4: RISK ASSESSMENT

Dam Failure

Across the State of Georgia, there are roughly 5,000 dams holding back natural and manmade bodies of water, including lakes, rivers, ponds, etc. The following drawing, obtained from the Georgia Safe Dams Program, shows the characteristics of a typical embankment dam. Common deficiencies are presented in orange.



The National Inventory of Dams (NID) indicates that there are 59 dams in DeKalb County. According to the Massachusetts Institute of Technology, the average lifespan of a dam is 50 years. At least 63% of dams in DeKalb County are over 50 years old. NID classifies 31% of the dams in DeKalb County to have a high-hazard potential. Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life. (<https://nid.usace.army.mil/>).

Given these numbers, the possibility of dam failure, and subsequently high-velocity flooding, clearly exists within the planning area. A dam failure within DeKalb County and its participating jurisdictions could result in significant loss of life and damage to structures, roads, utilities, crops, and livestock. Economic losses could also result from a lowered tax base, lack of utility profits, disruption of commerce and governmental services, and extraordinary public expenditures for food relief and protection. The potential severity of a dam failure depends on the following factors:

- the size of the dam
- the nature of the failure
- the velocity of the floodwater released,
- the density of the built environment and populations downstream
- the volume of water impounded by the dam

As dams continue to age, there is an increased potential of failure due to undesirable woody vegetation on the embankment, deteriorating concrete, and other structural factors that can cause issues over time. A

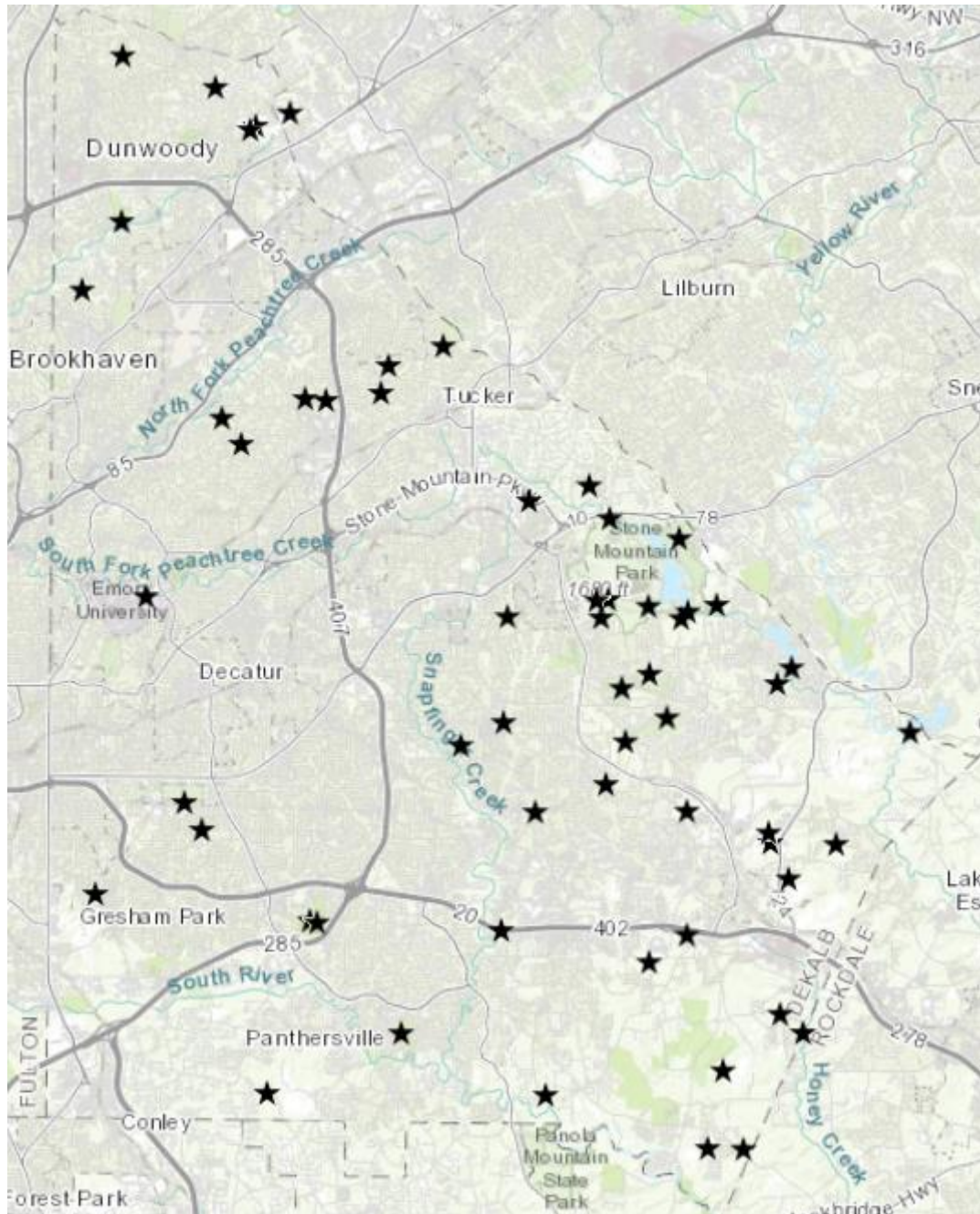


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failure could lead to widespread flooding, putting the entire planning area at risk, particularly those living near a dam.

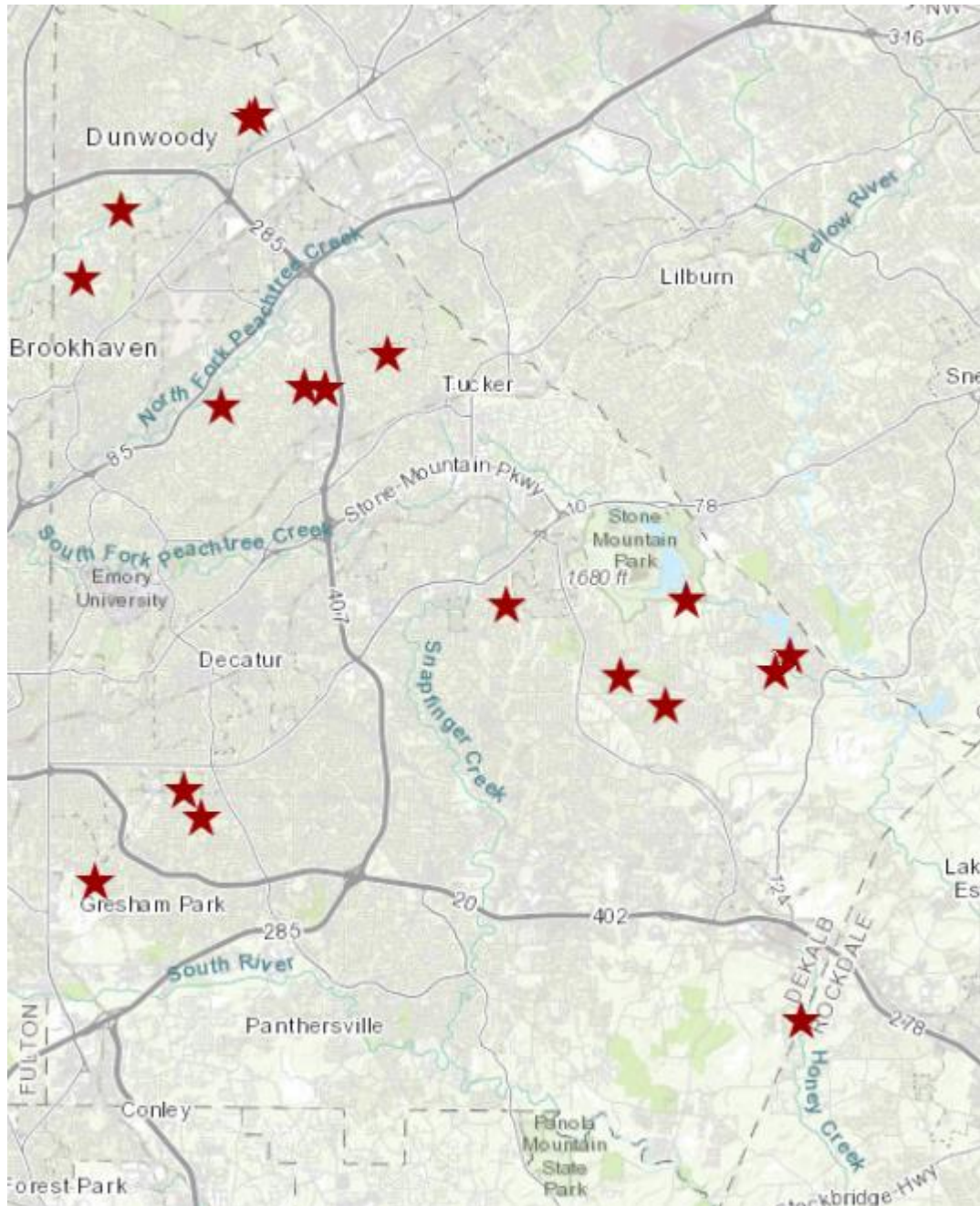
Currently, there is still not a standard scale to describe the extent of a dam failure based on the geographic location of the dam and the severity of a failure.

Map 38: DeKalb County Dams



Map Source: National Inventory of Dams

Map 39: DeKalb County High Hazard Dams



Georgia's Safe Dam Program, which is regulated by the Georgia Environmental Protection Division, is a part of the Georgia Safe Dams Act, O.C.G.A. Secs. 12-5-370 et seq (<https://epd.georgia.gov/watershed-protection-branch/safe-dams-program>). This program is responsible for developing and maintaining an inventory of dams, classifying dams, and ensuring the compliance of all regulated dams. A dam considered under this Act is a structure that must either be at least 25 feet tall (vertical height) or store at least 100 acre-feet (volume) at maximum storage.



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Table 28: Inventory of DeKalb County, GA Dams

Dam Name	Dam Hazard Classification	State ID
Browns Mill Lake Dam	II	044-055-00794
Buena Vista Lake Dam	I	044-023-00538
Chapel Hill Park Lake Dam	II	044-047-00865
Crooked Creek Lake Dam	I	044-100-04375
Davidson Mineral Properties	II	044-042-00706
Dunwoody Club Crossing Lake Dam	II	044-104-04510
East Lake Country Club Dam	I	044-006-00069
Echo Lake Dam	I	044-007-00172
Erin Lake Dam	I	044-004-00033
Exchange Park Lake Dam (Upper)	II	044-053-00792
Forest Lake Dam	II	044-040-01043
Glen Emerald Lake Dam	I	044-048-00865
Houseworth Lake Dam	II	044-110-04963
Howell Lake Dam	II	044-081-01106
Joels Lake Dam	II	044-031-00471
Kenilworth Lake Dam	I	044-005-00053
Key Lake Dam	II	044-060-00799
Kings Cliff Lake Dam	I	044-089-02710
Kingsley Lake Dam	II	044-018-00365
Kristina Lake Dam	II	044-091-00240
Mathis Lake Dam (Lower)	II	044-058-00797
Mcdaniel Lake Dam	II	044-084-01110
Murphey Candler Lake Dam	I	044-002-00005
Mystery Valley Lake Dam	I	044-038-00703
Norris Lake Shores Dam	II	044-022-00660
North Lake Dam	I	044-012-00171
O'neal Lake Dam	II	044-021-00360
Robert Nash Lake Dam	II	044-076-00899
Rockbridge Lake Dam	II	044-008-00065
Sandy Lake Dam	II	044-010-00143
Scott Candler Reservoir #2	I	044-108-05350
Scott Candler Reservoir Dam #1	I	044-024-00377
Silver Lake Dam	I	044-001-00004
Silver Ridge Lake Dam	II	044-097-04206
Simpson Lake Dam	II	044-056-00795
Southland Lake Dam	I	044-046-00782
Stn Mtn Pk Golf Course Lake Dam	II	044-083-01108
Stone Mountain Park Dam-North	II	044-080-01105



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Dam Name	Dam Hazard Classification	State ID
Stone Mountain Park Dam-South	II	044-082-01107
Stone Mountain Park Lake Dam	I	044-003-00037
Stoneleigh Lake Dam	II	044-050-01657
Timber Trace Lake Dam	II	044-103-04480
Turner Hill Lake Dam	I	044-107-04563
Walden Lake Dam	II	044-043-00707
Ward Lake Dam	II	044-041-00705
Water's Edge Lake Dam	I	044-101-04422
Browns Mill Lake Dam	II	044-055-00794
Buena Vista Lake Dam	I	044-023-00538
Chapel Hill Park Lake Dam	II	044-047-00865
Crooked Creek Lake Dam	I	044-100-04375
Davidson Mineral Properties	II	044-042-00706
Dunwoody Club Crossing Lake Dam	II	044-104-04510
East Lake Country Club Dam	I	044-006-00069
Echo Lake Dam	I	044-007-00172
Erin Lake Dam	I	044-004-00033
Exchange Park Lake Dam (Upper)	II	044-053-00792
Forest Lake Dam	II	044-040-01043
Glen Emerald Lake Dam	I	044-048-00865
Houseworth Lake Dam	II	044-110-04963
Howell Lake Dam	II	044-081-01106
Joels Lake Dam	II	044-031-00471
Kenilworth Lake Dam	I	044-005-00053
Key Lake Dam	II	044-060-00799
Kings Cliff Lake Dam	I	044-089-02710
Kingsley Lake Dam	II	044-018-00365
Kristina Lake Dam	II	044-091-00240
Mathis Lake Dam (Lower)	II	044-058-00797
Mcdaniel Lake Dam	II	044-084-01110
Murphey Candler Lake Dam	I	044-002-00005
Mystery Valley Lake Dam	I	044-038-00703
Norris Lake Shores Dam	II	044-022-00660
North Lake Dam	I	044-012-00171
O'neal Lake Dam	II	044-021-00360
Robert Nash Lake Dam	II	044-076-00899
Rockbridge Lake Dam	II	044-008-00065
Sandy Lake Dam	II	044-010-00143
Scott Candler Reservoir #2	I	044-108-05350



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Dam Name	Dam Hazard Classification	State ID
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Silver Lake Dam	I	044-001-00004
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Simpson Lake Dam	II	044-056-00795
Southland Lake Dam	I	044-046-00782
Stn Mtn Pk Golf Course Lake Dam	II	044-083-01108
Stone Mountain Park Dam-North	II	044-080-01105
Stone Mountain Park Dam-South	II	044-082-01107
Stone Mountain Park Lake Dam	I	044-003-00037
Stoneleigh Lake Dam	II	044-050-01657
Timber Trace Lake Dam	II	044-103-04480
Turner Hill Lake Dam	I	044-107-04563
Walden Lake Dam	II	044-043-00707
Ward Lake Dam	II	044-041-00705
Water's Edge Lake Dam	I	044-101-04422

Data Source: Georgia Safe Dams Program

4.4.3 – Previous Occurrences

Flood Events

The NOAA NCEI Storm Events Database provides reliable information on flood events in DeKalb County beginning in 1997. Between 1997 and 2019, flood events have impacted DeKalb County and the incorporated communities within its boundaries 47 times. These events caused no deaths, no injuries, and approximately \$17.135 million in property damage. Between January 1, 2016, and December 31, 2020, flood events have impacted DeKalb County and the incorporated communities within its boundaries 3 times. These events caused 0 death, 0 injuries, and approximately \$25,000 in damage.

Table 29: Flood Events (1997-2020)

Flood Events (1997-2020)					
Decade	No. of Events	Deaths	Injuries	Property Damage	Crop Damage
1990s	4	0	0	\$19K	\$0
2000s	24	0	0	\$16.826M	\$0
2010s	17	0	0	\$470K	\$0
2020	2	0	0	\$0	\$0
Total	47	0	0	\$17.135M	\$0

Data Source: NOAA/NCEI Storm Events Database



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Table 30: Flood Events (2016-2020)

Flood Events (2016-2020)					
Year	No. of Events	Deaths	Injuries	Property Damage	Crop Damage
2016	0	0	0	\$0	\$0
2017	1	0	0	\$25K	\$0
2018	0	0	0	\$0	\$0
2019	0	0	0	\$0	\$0
2020	2	0	0	\$0	\$0
Total	3	0	0	\$25K	\$0
Average	0.6	0	0	\$5K	\$0

Data Source: NOAA/NCEI Storm Events Database

March 8, 1998, Flash Flood Event: After over an inch-and-a-half of rain the preceding two days, showers and thunderstorms dumped another 2 or more inches in a six-hour period over the Atlanta metro area. Peachtree Creek as well as Nancy and Sope Creeks rose rapidly and came out of their banks. A foot of water was over some roads and basements of homes near the creeks were flooded. The event caused approximately \$10,000 in property damage.

September 9, 2000, Flash Flood Event: The Atlanta Journal and Constitution reported that 3 to 4 inches of rain in a 2-to-3-hour period resulted in significant flooding. Forty-eight families had to be evacuated from an apartment complex on Memorial Drive in Decatur when water from Sugar Creek spilled over its banks and into the apartments. Flash flooding was also reported in Decatur. Road closures were required on Commerce Drive at Clairmont Road and College Avenue at Candler Road. On Electric Avenue, an unoccupied car was found with flood waters clear up to the roof. At Agnes Scott College in Decatur, East College Avenue was flooded as well. The event caused approximately \$15,000 in property damage.

May 6, 2003, Flash Flood Event: Very heavy rain forced Peachtree Creek in North Atlanta to rise quickly to flood stage. The creek crested at 18.5 feet around 4 am EDT, 1.5 feet above the flood stage of 17.0 feet. Flooding of nearby roads, including Hanover West Drive, resulted. The lower levels of several apartments nearby were flooded as well as yards of homes near the creek. Nancy Creek, which flows into Peachtree Creek, was also in flood because of the heavy rain. The event cause approximately \$250,000 damage.

June 16-17, 2003, Flash Flood Event: Fox 5 News of Atlanta reported that extensive flooding was occurring in the Brookhaven area. Several hundred people in Brookhaven had to be rescued from their apartments. This flooding was attributed to the rapid rise of Peachtree Creek. In some places the water was 10 feet deep. Several other roads across the northern portion of the county were also flooded, including Clairmont Road and Buford Highway. One resident on Drew Valley Road in Decatur reported that her neighbor's play set washed into her yard over an 8-foot fence. The event caused \$500,000 in property damage.

September 16-17, 2004, Flash Flood Event: Numerous reports were received from the DeKalb County Emergency Manager, the media, and the public of extensive flooding across much of the Atlanta metropolitan area, especially the northern parts of the county. Widespread flooding of roads, streets, and



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highways was reported throughout the county, several of which had to be closed. Many homes, businesses, property, and vehicles across the county were flooded during this event. Major flooding was reported in many areas of the central and northern parts of the county, specifically between Interstates 20 and 285. Some of these areas experienced catastrophic and historical flooding, with some of the worst flooding observed in nearly 100 years. National Weather Service river gages showed that Peachtree Creek and Nancy Creek quickly rose to record flood levels during the late evening hours. Peachtree Creek rose above its flood stage of 17 feet at 545 pm EDT, then went into record flood stage at 845 pm EDT, then fell below flood stage between 5 and 6 am EDT September 17th. The river crested at 22.7 feet, which is 5.7 feet above flood stage and 1.5 feet above the record flood stage of 21.1 feet, previously reached in 1990. The river gage on Peachtree Creek was washed away during this event. Hundreds of residents along and near Peachtree Creek had to be evacuated, some by boat. Twenty-five to 50 homes and several apartment complexes, including the Peachtree Apartments, were impacted by the flood waters, many sustaining significant and extensive damage. Record flooding was also observed on Nancy Creek, which reached its 11-foot flood stage at 600 pm EDT, reached a record flood stage of 15 feet at 1130 pm EDT, then fell below flood stage around 4 am EDT September 17th. The impact in this area was like that near Peachtree Creek, with dozens of homes flooded and many residents having to be evacuated. In Decatur, one home was devastated when the waters of Peavine Creek rose over two feet in the basement of one home. Several sinkholes were left in the county after the flooding receded, the largest being a 65 by 25-foot sinkhole on Durret Way in Dunwoody. The event caused approximately \$5 million in property damage.

September 27-28, 2004, Flash Flood Event: The DeKalb County Emergency Management Director reported major flooding was once again observed along Peachtree and Nancy Creeks across the northern portion of Atlanta. This information was confirmed by National Weather Service river gages on these creeks. The creek was within two feet of the record stage reached just 10 days earlier during the remnants of Hurricane Ivan. Major flooding affected many roads and homes, many of which were the same ones affected just 10 days prior. The Peachtree Apartments were flooded. Several evacuations and rescues were required. All flooding was the result of heavy rain which persisted on the northwest side of the remnants of Hurricane Jeanne as it moved through East Central Georgia. This event caused \$1 million in property damage.

September 16-21, 2009, Flood/Flash Flood Event: A historical, record, and catastrophic flood event unfolded during this period, mostly in the west central Georgia area, including the western and northwestern suburbs of Atlanta. Major flooding was noted in many other areas of north and central Georgia, including the eastern suburbs of Atlanta, northwest Georgia, and parts of central Georgia. The culprit was a very stagnant upper atmospheric pattern featuring a weak upper low that developed in early September across south Texas and slowly migrated east-northeast through September 22nd, until a more significant upper trough dropping south into the southern plains finally moved the pesky upper low northeast of Georgia. In addition, an unusually deep tropical flow was noted throughout this period. Precipitable water values exceeded 2.0 inches across the area during much of this period, resulting in extremely efficient rain producing cells. Persistent heavy rain showers and thunderstorms began to plague the area on the 16th and persisted daily through the 21st across parts of north and central Georgia.

However, the catastrophic flooding unfolded when a sea breeze moving northwest merged with existing outflow boundaries and higher terrain across the western suburbs of Atlanta to result in persistent heavy thunderstorms for a period of at least 12 hours that trained across the same counties west of Atlanta, generally affecting Carroll, Douglas, Paulding, and Cobb counties. As the activity progressed across the state, significant flooding unfolded further east, including Fulton County, and the city of Atlanta, DeKalb, and Gwinnett counties. Incredible rainfall amounts of 15 to over 20 inches, were observed from northeast Carroll, through much of Douglas, into eastern Paulding and southern Cobb counties. Rainfall amounts of 10 to 15 inches were noted across parts of Fulton, DeKalb, and Gwinnett. Rainfall amounts of 8 to 12 inches were noted in other spottier areas of northwest, north central, and central Georgia during this period.



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The excessive rainfall on top of saturated ground resulted in some of the worst flooding ever reported in the Atlanta and north Georgia area. Eleven deaths were recorded during the event, mostly vehicle related deaths at night from washed out bridges and roads because of swollen creeks. Property damages are estimated to be at least \$0.5 Billion, with hundreds of homes and businesses destroyed by flood waters. Bridges on several state and local highways were washed out and some will take months to even a year to replace. Eighteen counties (Bartow, Carroll, Chattooga, Cherokee, Cobb, Coweta, DeKalb, Douglas, Fulton, Gwinnett, Heard, Newton, Paulding, Rockdale, Stephens, and Walker) received a presidential disaster declaration because of the historic floods. Twenty-one counties were declared eligible for public assistance, including several central Georgia counties that were affected by flash flooding earlier in the period.

Some of the worst flooding was observed along Sweetwater Creek near the Cobb, Fulton, Douglas County line. Hundreds of homes were flooded and destroyed as the waters of Sweetwater Creek rose more than 20 feet above flood level.

Many main stem and secondary creeks, streams, and rivers across north and central Georgia, particularly in northwest and west central Georgia, reached record flood levels. Many of these same creeks, streams, and rivers remained in flood for several days. In some cases, record flood levels were recorded. The following is a list of new record flood levels set on several creeks, streams, and rivers in north and west Georgia. Noonday Creek near Woodstock rose to 19.6 feet on the 21st at 530 pm EDT. The previous record was 16.30 feet set on July 11, 2005. Nickajack Creek at Mableton reached 19.30 feet on the 22nd at 215 am EDT. The previous record was 16.60 feet set on July 11, 2005. The North Fork of Peachtree Creek at Atlanta rose to 18.07 feet on the 21st at 715 pm EDT. The previous record was 17.70 feet set on September 16, 2004. Utoy Creek near Atlanta rose to 27.04 feet on the 22nd at 1000 am EDT. The previous record was 16.86 feet set on May 6, 2003. The Chattahoochee River at Whitesburg rose to 29.61 feet on the 21st at 745 pm EDT. The previous record was 29.11 feet on December 11, 1919. Suwanee Creek at Suwanee rose to 14.30 feet on the 21st at 645 pm EDT. The previous record was 12.04 feet set on October 5, 1996. The Yellow River at Lithonia rose to 25.50 feet on the 22nd at 515 am EDT. The previous record was 17.53 feet set on May 7, 2003. The Yellow River near Conyers below Milstead rose to 22.54 feet on the 22nd at 500 pm EDT. The previous record was 16.36 feet set on July 8, 2005. The Chattahoochee River at Franklin rose to 29.98 feet on the 22nd at 500 pm EDT. The previous record was 28.40 feet set on December 15, 1919. The Sweetwater Creek at Austell rose to 30.17 feet on the 22nd at 1000 pm EDT. The previous record was 21.81 feet on July 12, 2005.

The following rivers reached flood levels that were within the top five all time levels at these locations. Peachtree Creek in Atlanta rose to 23.89 feet on the 21st at 915 pm EDT. The record is 25.80 feet recorded on December 20th, 1919. Nancy Creek in Atlanta reached 14.69 feet on the 21st at 930 pm EDT. The record is 15.50 feet on December 1, 1973. The Chattahoochee River at Vinings reached 28.10 feet on the 22nd at 1200 am EDT. The record is 29.0 feet set on December 10, 1919. The South Fork of the Peachtree Creek reached 15.21 feet on the 22nd at 1200 am EDT. The record is 29.0 feet set on December 10, 1976. The Chattahoochee River at Campbellton reached 30.55 feet on the 22nd at 300 pm EDT. The record is 31.60 feet set on December 10, 1919.

Several USGS stream gages showed significant flooding commencing during this time frame across DeKalb County as thunderstorms with heavy rain, which had been west of the area most of the night, began to edge east-northeast and develop across Fulton, DeKalb, and Gwinnett counties. The South Fork of Peachtree Creek at Johnson Road reached its flood stage of 12.0 feet at 128 am EDT. The North Fork of Peachtree Creek at Buford Highway reached its flood stage of 12.0 feet at 201 am EDT. Many homes, apartments, and businesses began to experience significant flooding during this time frame, especially in the vicinity of the flooded creeks. Several roads also became flooded, impassable, and were closed.



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Record, and in some cases catastrophic, flooding continued to expand across the northern and western portions of the Atlanta metropolitan area as renewed rounds of showers and thunderstorms with very heavy rain tracked repeatedly over the same areas throughout the day. Portions of hundreds of roads in the county were closed from flooding and washed-out bridges and/or culverts. Hundreds of homes, apartments, and businesses sustained significant flood damage. Record flooding was occurring on Peachtree Creek, the North Fork of Peachtree Creek, and Nancy Creek in northeast Atlanta. The interchange of Interstate-285 and Interstate-85 in northeast DeKalb County, known as Spaghetti Junction was completely shut down for nearly an hour early on the 21st because of flooding. Major traffic backups occurred as a result. A mud slide blocked two westbound lanes of U.S. Highway 78 at Hugh Howell Road. Other mud slides were reported within the county. These are just some of the more significant examples of flood damage in the county.

DeKalb County Emergency Management personnel and USGS stream gages confirmed that major to record flooding continued to expand into all parts of the county. Hundreds of homes, apartments, businesses, and roads sustained damages from flooding. Several culverts and/or bridges were washed out and several roads were closed. Flood waters began to recede after 830 am EDT on the 22nd, however, many areas remained in major to record flood through 715 am EDT on the 23rd. This event was one of the most significant flooding events in DeKalb County history. It caused approximately \$10 million in property damage. Disaster Declaration DR-1858-GA was declared for this event.

May 3, 2010, Flash Flood Event: A deep upper-level trough was shifting slowly east from the central U.S. into the eastern U.S. A leading cold front was located from New York to Alabama. A summerlike subtropical ridge across the southeast U.S. was slowly shifting off the southeast U.S. coast. The highly meridional flow had allowed an unusually deep tropical air mass to spread far northward across the eastern half of the U.S. This weather system had been responsible for widespread catastrophic flooding in western and middle Tennessee during the previous three days. As the system moved toward Georgia, it began to weaken considerably, and the main dynamics lifted northeast more toward the mid-Atlantic. Nonetheless, the slow movement of the system brought several rounds of showers and thunderstorms to the area with two-day rainfall of 3-4 inches. Flash flooding was observed in several counties on the northwest and west side of Atlanta, some of the same counties that experienced catastrophic flooding during late September 2009. Flash flooding during this event was far less significant. Severe weather was isolated and confined to east central Georgia toward the end of the event on the 3rd.

Several creeks across DeKalb County reached and exceeded flood stage during this period. This was verified by USGS stream gages. On the South Fork of the Peachtree Creek at Johnson Road, the flood stage of 12.0 feet was reached at 640 am EDT. The creek continued to rise and crested at 14.1 feet at 815 am EDT. The North Fork of Peachtree Creek at Buford Highway reached its flood stage of 12.0 feet at 710 am EDT, then crested at 15.1 feet at 130 pm EDT. On Snapfinger Creek in the southern part of the county, the flood stage of 12.0 feet was reached at 740 am EDT. The creek continued to rise to 12.7 feet at 915 pm EDT. The DeKalb County Emergency Management Director reported that flood waters from the upper South Fork of Peachtree Creek flooded the crawl spaces of several apartments on Lansbury Village Drive. Forty-five people had to be evacuated until the buildings were inspected and cleared of structural problems related to the flood waters. The event caused approximately \$50,000 in property damage.

July 17, 2013, Flash Flood Event: An upper ridge remained over the Ohio Valley and Great Lakes area, with easterly flow dominating across the Southeast. An upper disturbance moving across in the easterly flow combined with the continued moist and unstable airmass allowed numerous showers and thunderstorms to develop during the afternoon and evening hours. Many of these became severe with damaging winds and even some reports of large hail. Isolated flash flooding was reported as well.

DeKalb County Emergency Management reported an apartment off Lansbury Village Drive was flooded with several inches of water by Peachtree Branch overflowing its banks. Also, the upper end of the North



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Fork Peachtree Creek in the Doraville area experienced minor flooding. The event cause approximately \$10,000 in property damage.

August 21, 2013, Flash Flood Event: A weak frontal boundary remained stalled over central Georgia on the 21st. A warm and moist airmass remained in place, and once again several showers and thunderstorms developed. A couple of these produced isolated flash flooding in north Georgia, and one briefly became severe with damaging winds.

DeKalb County Emergency Management reported the South Fork Peachtree Creek came out of its banks and caused minor flooding near Orion Drive and Lawrenceville Highway. The same creek also flooded portions of Medlock Park and athletic fields with up to 3 feet of water. Three homes on Scott Circle near the creek had flood waters enter their crawl spaces. A portion of Snapfinger Creek came out of its banks and flooded a home on Rowland Road with around one inch of water. The stage height at a USGS stream gage on Stone Mountain Creek at Silver Hill Road reached flood stage of 9 feet. The creek crest at 9.1 feet. Minor flooding occurred in the woodlands and residential yards along the creek. The event caused approximately \$15,000 in property damage.

August 9-10, 2014, Flash Flood Event: Slow moving thunderstorms with heavy rain of 3 to 4 inches in less than 3 hours produced isolated flash flooding in an eastern portion of the Atlanta metro area. The public reported minor flooding of residential yards along portions of Snapfinger, Cobb, Shoal, Intrinchment and Stone Mountain Creeks in portions of central and south DeKalb County. The overflow of water from Snapfinger Creek flooded several cars in the Redan Village Apartments complex off of Redan Road. The event caused approximately \$30,000 in property damage.

December 24, 2015, Flash Flood Event: Persistent, deep, and strong southwesterly upper-level flow across the eastern U.S. resulted in an extremely moist and moderately unstable atmosphere over North and Central Georgia. A stalled frontal boundary and a series of short waves in the southwesterly upper flow resulted in multiple rounds of heavy rain, and strong to severe thunderstorms, with widespread flash flooding, damaging thunderstorms winds, hail and an isolated tornado.

A USGS stream gauge on North Fork Peachtree Creek at Buford Highway or Georgia Highway 13 near Atlanta reached flood stage of 13 feet. The creek crest at 14.8 feet. Significant flooding occurred upstream and downstream from the gauge. Large portions of the backyards of residential homes on Victory Drive...Dunwoody Place and Converse Drive flooded with around two feet of water. A portion of the Sun Tan Center parking lot near the gauge flooded. A few roads and culverts in the area were damaged or washed out.

A USGS stream gauge on the South Fork Peachtree Creek at Johnson Road near Atlanta reached flood stage of 13 feet. The creek crest at 13.9 feet. Minor flooding occurred upstream and downstream from the gauge. Portions of backyards of residential homes on Noble Drive...Helen Drive and Kay Lane were flooded with around one foot of water. A few roads and culverts were damaged or washed out in the area. The event caused approximately \$300,000 in property damage.

June 20, 2017, Flash Flood Event: A stalled frontal boundary and anomalously moist air mass produced high rainfall amounts for several days, beginning June 19th. Multiple waves of precipitation including many training storms dropped high rainfall amounts over the metro Atlanta area and along the I-20 corridor. Rainfall amounts were generally 4-6 inches, with isolated amounts approaching 8 inches. Flash flooding resulted, especially within the Nancy Creek, North Fork Peachtree Creek and Yellow River basins.

Heavy rainfall resulted in flash flooding across northern DeKalb County, especially in areas along Nancy and Peachtree Creeks. Emergency Management reported residential water rescues occurred at locations on Warrenhall Lane along Nancy Creek. Flood waters also covered Bamby Lane along North Fork



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Peachtree Creek, and Cove Circle and Burch Circle in the Drew Valley Neighborhood. A smaller creek flowed out of its banks and inundated Dresden Road. A person was rescued near the intersection of Oakcliff Road and Pleasantdale Road after their vehicle stalled in approximately two feet of water. Portions of South Fork Peachtree Creek flooded, eroding the area around Plantation Park Apartments, resulting in a partial collapse of the foundation. No injuries were reported. Rainfall estimates indicate that widespread 3 to 6 inches of rain occurred over northern DeKalb County. The event caused approximately \$25,000 in property damage.

April 13, 2020, Flood Event: A powerful Spring storm system resulted in a Severe Weather / Tornado outbreak across much of the Southeast region, including north and central Georgia, beginning on Easter Sunday (April 12th) and lingering into the morning hours of April 13th. From the Storm Prediction Center (Day 1) convective outlook, just about the entire area was under an Enhanced Risk for severe weather with a Moderate Risk extending into western Georgia. In addition, enhanced rainfall occurred over far north Georgia and in portions of central Georgia, with rainfall amounts ranging from 3 to 8 inches through the event. Significant flooding was in portions of the area with numerous reports of washouts and several reports of rescues. DeKalb County Emergency Management reported flooding on the 600 block of Rockborough Drive. Rainfall amounts of 1 to 2 inches occurred in the area, causing the flooding. The event caused no property damage.

August 3, 2020, Flash Flood Event: Widespread thunderstorms along and ahead of a stationary front across north and central Georgia resulted in scattered severe thunderstorms with numerous reports of damaging thunderstorm winds and several reports of large hail. Localized flash flooding occurred in Fulton and DeKalb counties following a quick 3 to 5 inches of rain. The broadcast media reported flooding of both lanes of Peachtree Boulevard, near the intersection with Broad Street. The water reached halfway up the tires of cars driving by. Radar estimates indicate that 3 to 4 inches of rain occurred in the area. The event caused no property damage.



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Table 31: Repetitive Loss Properties, DeKalb County and All Participating Jurisdictions

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	SINGLE FMLY	NO	105333.56	29799.59	6	135133.15	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	17830.72	765	3	18595.72	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	56897.91	31565.12	5	88463.03	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	66479.81	27645.65	6	94125.46	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	196822.84	78978.37	9	275801.21	Y	Y	N	Y	N
DECATUR, CITY OF	135159	SINGLE FMLY	NO	72644.01	11673.09	5	84317.1	Y	Y	N	Y	N
CHAMBLEE, CITY OF	130066	SINGLE FMLY	YES	18012.92	0	5	18012.92	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	65298.67	1276.64	3	66575.31	Y	N	N	N	N



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Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
CHAMBLEE, CITY OF	130066	SINGLE FMLY	NO	13040.69	5500	3	18540.69	Y	N	N	N	N
BROOKHAVEN, CITY OF	135175	SINGLE FMLY	NO	31601.81	11323.06	3	42924.87	Y	N	N	N	N
DECATUR, CITY OF	135159	SINGLE FMLY	YES	4172.16	1136.8	2	5308.96	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	80180.33	10891.28	10	91071.61	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	6317.29	3365.2	2	9682.49	Y	N	N	N	N
BROOKHAVEN, CITY OF	135175	SINGLE FMLY	NO	43215.4	30889.65	7	74105.05	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	10013.14	14488.8	4	24501.94	Y	N	N	N	N
DECATUR, CITY OF	135159	SINGLE FMLY	YES	7647.15	3206.37	2	10853.52	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	5931.27	0	2	5931.27	Y	N	N	N	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	SINGLE FMLY	NO	65739.7	0	5	65739.7	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	378690.93	39034.29	7	417725.22	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	57060.36	20362.26	7	77422.62	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	4130.4	2281.1	3	6411.5	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	12172.14	5059	2	17231.14	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	21892.11	15924.2	5	37816.31	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	29222.3	7650	2	36872.3	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	105405.68	20499.05	4	125904.73	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	9074.37	2000	2	11074.37	Y	N	N	N	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	SINGLE FMLY	YES	149796.03	44581.1	5	194377.13	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	11264.62	2243.73	5	13508.35	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	4421.29	0	2	4421.29	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	9414.92	3170.79	3	12585.71	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	115072.5	0	3	115072.5	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	22969.31	5617.07	2	28586.38	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	53588.1	26661.65	5	80249.75	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	14060.05	0	3	14060.05	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	12034.82	0	5	12034.82	Y	N	N	N	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	SINGLE FMLY	NO	4900.79	0	2	4900.79	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	12098.78	1681.85	2	13780.63	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	21327.59	334.8	5	21662.39	Y	N	N	N	N
DECATUR, CITY OF	135159	2-4 FAMILY	NO	40192.29	3608.52	3	43800.81	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	128772.39	5884.76	6	134657.15	Y	Y	N	Y	N
TUCKER, CITY OF	130681	SINGLE FMLY	NO	111919.99	30771.81	5	142691.8	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	7694.86	0	2	7694.86	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	51877.5	25860.65	3	77738.15	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	47731.58	7706.32	4	55437.9	Y	N	N	N	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
PINE LAKE, CITY OF	130070	SINGLE FMLY	NO	100218.51	0	3	100218.51	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	34925.99	1400	5	36325.99	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	13007.11	0	2	13007.11	Y	N	N	N	N
DEKALB COUNTY *	130065	2-4 FAMILY	YES	66089.85	0	2	66089.85	Y	N	Y	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	29634.6	5300	3	34934.6	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	7619.77	0	2	7619.77	Y	N	N	N	N
DECATUR, CITY OF	135159	SINGLE FMLY	YES	32353.23	5000	4	37353.23	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	78083.14	25147.3	3	103230.44	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	53049.85	14814.02	2	67863.87	Y	N	N	N	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	SINGLE FMLY	YES	21720.92	13390.63	2	35111.55	Y	N	N	N	N
TUCKER, CITY OF	130681	SINGLE FMLY	NO	46173.34	1849.54	3	48022.88	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	47743.6	0	5	47743.6	Y	N	N	N	N
DECATUR, CITY OF	135159	SINGLE FMLY	YES	42630.76	2062.05	5	44692.81	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	5380.94	0	2	5380.94	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	227644.85	99595.08	3	327239.93	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	79342.36	6928.99	4	86271.35	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	18832.94	0	3	18832.94	Y	N	N	N	N
DECATUR, CITY OF	135159	SINGLE FMLY	YES	105227.57	23194.62	3	128422.19	Y	N	N	N	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	OTHER RESID	YES	460410.61	27328.65	2	487739.26	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	8031.6	585.34	2	8616.94	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	103742.84	16367.13	3	120109.97	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	143319.18	0	3	143319.18	Y	N	Y	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	218563.25	52798.84	4	271362.09	Y	Y	Y	Y	N
DECATUR, CITY OF	135159	SINGLE FMLY	NO	50179.42	17372.82	3	67552.24	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	173833.71	73831.85	5	247665.56	Y	N	N	N	N
DECATUR, CITY OF	135159	ASSMD CONDO	NO	62933.71	0	4	62933.71	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	102439.64	33844.24	3	136283.88	Y	N	N	N	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	SINGLE FMLY	YES	49026.17	10180.71	2	59206.88	Y	N	N	N	N
DEKALB COUNTY *	130065	OTHER RESID	YES	211171.13	0	2	211171.13	Y	N	N	N	N
DEKALB COUNTY *	130065	OTHER RESID	YES	392381.56	0	2	392381.56	Y	N	N	N	N
DEKALB COUNTY *	130065	ASSMD CONDO	YES	427631.99	32632.76	2	460264.75	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	9989.52	0	2	9989.52	Y	N	N	N	N
DECATUR, CITY OF	135159	SINGLE FMLY	NO	156550.98	14184.85	5	170735.83	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	80404.92	4032.8	3	84437.72	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	25149.12	0	2	25149.12	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	33251.61	1938.88	2	35190.49	Y	N	N	N	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	SINGLE FMLY	YES	41388.61	1926.01	3	43314.62	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	13453.87	0	2	13453.87	Y	N	N	N	N
DECATUR, CITY OF	135159	SINGLE FMLY	NO	21090.58	0	3	21090.58	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	27218.11	6284.25	3	33502.36	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	5608.35	0	2	5608.35	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	5891.3	0	2	5891.3	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	19931.81	0	2	19931.81	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	21025.82	0	2	21025.82	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	69478.04	2512.39	6	71990.43	Y	Y	N	Y	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	SINGLE FMLY	NO	26120.32	259.09	2	26379.41	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	93981.74	27632.95	2	121614.69	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	30799.17	0	2	30799.17	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	32235.56	0	2	32235.56	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	48449.02	0	3	48449.02	Y	N	N	N	N
STONE MOUNTAIN, CITY OF	130260	SINGLE FMLY	NO	162368.86	21160.2	3	183529.06	Y	N	N	N	N
STONE MOUNTAIN, CITY OF	130260	SINGLE FMLY	NO	10961.68	0	2	10961.68	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	75545.6	0	2	75545.6	Y	N	N	N	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	SINGLE FMLY	NO	54910.05	9491.4	3	64401.45	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	29339.54	163.51	3	29503.05	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	15305.31	0	2	15305.31	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	15402.4	0	2	15402.4	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	145366.03	17473.65	5	162839.68	Y	N	Y	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	72622.96	0	4	72622.96	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	0	3849.13	2	3849.13	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	12392.86	0	3	12392.86	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	13981.76	0	2	13981.76	Y	N	N	N	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	SINGLE FMLY	NO	26342.38	2523.68	3	28866.06	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	YES	20221.41	0	2	20221.41	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	5022.01	14666.2	3	19688.21	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	25469.14	1476	3	26945.14	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	16952.14	1055	4	18007.14	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	9614.44	0	2	9614.44	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	40685.23	0	3	40685.23	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	16490.95	0	2	16490.95	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	2411.89	20000	2	22411.89	Y	N	N	N	N



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Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	SINGLE FMLY	NO	45337.68	19470.45	2	64808.13	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	28328.98	2530.75	2	30859.73	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	98796.1	35312.62	3	134108.72	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	47474.26	12120.78	2	59595.04	Y	N	N	N	N
DECATUR, CITY OF	135159	SINGLE FMLY	NO	8172.37	411.28	2	8583.65	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	126629.14	21800	3	148429.14	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	122931.85	0	3	122931.85	Y	N	N	N	N
DECATUR, CITY OF	135159	2-4 FAMILY	NO	6932.51	0	2	6932.51	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	20279.37	1770.04	2	22049.41	Y	N	N	N	N



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Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	ASSMD CONDO	NO	274728.14	27168.63	2	301896.77	Y	N	N	N	N
STONE MOUNTAIN, CITY OF	130260	SINGLE FMLY	NO	71781.79	39616.36	2	111398.15	Y	N	N	N	N
DEKALB COUNTY *	130065	OTHER RESID	NO	61656.96	0	2	61656.96	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	45208.4	0	2	45208.4	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	26960.14	8132.11	2	35092.25	Y	N	N	N	N
DEKALB COUNTY *	130065	2-4 FAMILY	NO	37822.39	12900	2	50722.39	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	297724.87	75999.68	6	373724.55	Y	N	Y	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	106391.24	13881.17	3	120272.41	Y	N	N	N	N
CHAMBLEE, CITY OF	130066	SINGLE FMLY	NO	67432.25	20047.44	2	87479.69	Y	N	N	N	N



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Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	OTHR-NONRES	NO	126522.6	100000	2	226522.6	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	25385.25	0	2	25385.25	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	20339.97	483.46	2	20823.43	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	190607.25	36954.43	2	227561.68	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	8016.28	0	2	8016.28	Y	N	N	N	N
CHAMBLEE, CITY OF	130066	SINGLE FMLY	NO	83754.43	12470.56	6	96224.99	Y	Y	N	Y	N
DEKALB COUNTY *	130065	2-4 FAMILY	NO	0	6437.95	2	6437.95	Y	N	N	N	N
BROOKHAVEN, CITY OF	135175	SINGLE FMLY	NO	42090.22	7660.66	4	49750.88	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	22315.7	19966.05	6	42281.75	Y	N	N	N	N



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Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DECATUR, CITY OF	135159	SINGLE FMLY	YES	7679.32	745.31	2	8424.63	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	45460.85	0	2	45460.85	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	223922.72	64614.7	2	288537.42	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	15122.28	0	4	15122.28	Y	N	N	N	N
TUCKER, CITY OF	130681	SINGLE FMLY	NO	21260.8	0	2	21260.8	Y	N	N	N	N
TUCKER, CITY OF	130681	SINGLE FMLY	NO	33878.9	0	2	33878.9	Y	N	N	N	N
DEKALB COUNTY *	130065	OTHER RESID	NO	259760.54	0	2	259760.54	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	18282.65	0	2	18282.65	Y	N	N	N	N
DEKALB COUNTY *	130065	OTHER RESID	NO	235586.91	0	2	235586.91	Y	N	N	N	N



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Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	2-4 FAMILY	NO	101230.88	0	2	101230.88	Y	N	N	N	N
DEKALB COUNTY *	130065	OTHER RESID	NO	254215.41	0	2	254215.41	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	71434.02	0	2	71434.02	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	22514.46	6249.74	2	28764.2	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	18283.03	0	3	18283.03	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	20742.38	632.01	2	21374.39	Y	N	N	N	N
DEKALB COUNTY *	130065	BUSI-NONRES	NO	99584.8	87652.38	6	187237.18	Y	Y	N	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	5200.72	0	2	5200.72	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	10092.86	0	3	10092.86	Y	N	N	N	N



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Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
DEKALB COUNTY *	130065	SINGLE FMLY	NO	75879.33	0	2	75879.33	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	43194.54	0	3	43194.54	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	23942.62	0	2	23942.62	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	27031.58	6121.76	3	33153.34	Y	N	N	N	N
DEKALB COUNTY *	130065	BUSI-NONRES	NO	57389.39	0	3	57389.39	Y	N	N	N	N
BROOKHAVEN, CITY OF	135175	SINGLE FMLY	NO	22661.18	0	2	22661.18	Y	N	N	N	N
BROOKHAVEN, CITY OF	135175	SINGLE FMLY	NO	37839.05	0	2	37839.05	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	15741.24	0	2	15741.24	Y	N	N	N	N
BROOKHAVEN, CITY OF	135175	SINGLE FMLY	NO	58655.32	0	2	58655.32	Y	N	N	N	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
BROOKHAVEN, CITY OF	135175	SINGLE FMLY	NO	25635.48	0	3	25635.48	Y	N	N	N	N
DUNWOODY, CITY OF	130679	SINGLE FMLY	NO	14095.46	0	3	14095.46	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	42518.79	0	2	42518.79	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	3588.18	0	2	3588.18	Y	N	N	N	N
DECATUR, CITY OF	135159	OTHER RESID	NO	41171.6	0	2	41171.6	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	201120.17	57072.87	5	258193.04	Y	Y	Y	Y	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	128689.68	41901.41	3	170591.09	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	236563.03	41161.39	3	277724.42	Y	N	Y	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	9106.11	0	2	9106.11	Y	N	N	N	N



SECTION 4: RISK ASSESSMENT

Repetitive Loss Properties, DeKalb County												
Community Name	Community Number	Occupancy 1	Mitigate	Cumulative Building Payment	Cumulative Contents Payment	Total Losses	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
BROOKHAVEN, CITY OF	135175	SINGLE FMLY	NO	18089.02	2472.07	2	20561.09	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	6782.13	2699.75	2	9481.88	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	25124.75	0	2	25124.75	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	7485.7	6479.36	2	13965.06	Y	N	N	N	N
DUNWOODY, CITY OF	130679	SINGLE FMLY	NO	16791.17	0	2	16791.17	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	12727.21	0	2	12727.21	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	19097.9	0	2	19097.9	Y	N	N	N	N
DEKALB COUNTY *	130065	SINGLE FMLY	NO	29824.3	10512.12	2	40336.42	Y	N	N	N	N

Data Source: Georgia Emergency Management Agency (GEMA)



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4.4.3A – Probability of Future Events

Table 32: Probability of Future Events, Flood

Probability of Future Events, Flood	
Decade	Number of Events
1990s	4
2000s	24
2010s	17
2020	2
Total	47
Years	23
Average	2.04/year
Likelihood of a Flood Events Each Year = 204%	

Data Source: NOAA/NCEI Storm Events Database

According to the Association of State Dam Safety Officials, there have been no instances of dam failure in DeKalb County. There is no single, comprehensive source of open-source information about a dam failure in the State of Georgia. Though some private dams may have been breached, no records have been found to indicate an emergency response related to it. The probability of a dam failure event occurring within the planning area is reduced due to the continued monitoring and compliance of the Georgia Safe Dam Program.

Based on this data, it is **highly likely** a flooding event will occur every year in DeKalb County and the incorporated jurisdictions within its boundaries. Flooding events will most likely be caused by excessive rainfall. However, it is possible that a flooding event due to a dam failure could occur given the aging infrastructure of dams in the community.

4.4.4 – Vulnerability of Community Assets

Note: As part of the hazard analysis conducted by the University of Georgia's Carl Vinson Institute of Government, a hypothetical scenario involving flooding was run using Hazus-MH. The Hazus-MH simulation considered the likely impacts of the DeKalb County 1% riverine flooding event.

Vulnerability of People

If evacuation orders are not heeded, or floodwaters rise quickly enough, residents within the planning area can be swept away by floodwater currents, become trapped on rooftops or other points of high elevations, and even sustain injury or death. Depending upon the conditions, this will expose them to the elements and deprive them of basic needs and services.

Still water that is long-lasting and slow to drain will encourage the growth of mold and other bio-hazardous material, rendering a facility unusable. Extra care, assessment, and sanitization are required before residents can re-inhabit a facility, or they may face serious health concerns. Long-term care facilities housing vulnerable populations can take longer to evacuate.

Additionally, the potential presence of mold after a flood requires extra care to be taken before DeKalb County's population can re-inhabit a long-term care facility.



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One of the greatest risks to the jurisdiction's population is the inability to predict a dam failure due to it being uncontrollable by humans. DeKalb County and its participating jurisdictions have a total population of 749,323 that would be at risk for a dam failure in the planning area. It is important to note that no injuries or deaths have occurred in DeKalb County or its participating jurisdictions as a direct result of dam failure.

All of DeKalb County's population are susceptible to flood hazards. Low-income individuals are more vulnerable to flood hazards. Low-income individuals also experience greater difficulties in recovering from flood hazard impacts. According to U.S. Census Bureau data, 15.1% of DeKalb County's population live in poverty. This represents 113,148 people. The cities of Lithonia (38.9%), Clarkston (30.9%), and Doraville (22.8%) have the highest levels of poverty in DeKalb County. The DeKalb County 2021 Comprehensive Plan 5-Year Update notes that poverty rates have increased in certain sections of central and south DeKalb County (<https://www.dekalbcountyga.gov/planning-and-sustainability/2021-comprehensive-plan-5-year-update>).

Individuals with access and functional needs are more vulnerable to flood hazard impacts. This may include children, the elderly, they physically or mentally disabled, non-English speakers, the medically or chemically dependent, and the transportation disadvantaged (https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf). In DeKalb County, this includes the following:

- Individuals with a disability: 10.2% (75,923 people)
- Persons 65 years and over: 11.9% (89,507 people)
- Persons under 9 years: 13.5% (101,416 people)
- Speak English less than "very well" (age 5 years+): 8.7% (60,536 people)
- Households with no vehicles available: 8.6% (24,418 households)

The City of Stonecrest (11.4%) has the highest percentage of individuals with a disability. The City of Avondale Estates (23.4%) has the highest ratio of population aged 65 years or older. The City of Lithonia (22.3%), City of Clarkston (18.3%), and City of Decatur (18.2%) have the greatest percentage of people under 9 years. The City of Doraville (42.4%), City of Clarkston (40.9%), and City of Chamblee (28.7%) have the highest percentage of people who speak English less than "very well." The City of Lithonia (14.7%) and City of Clarkston (14.3%) have the highest ratio of households with no vehicle available.

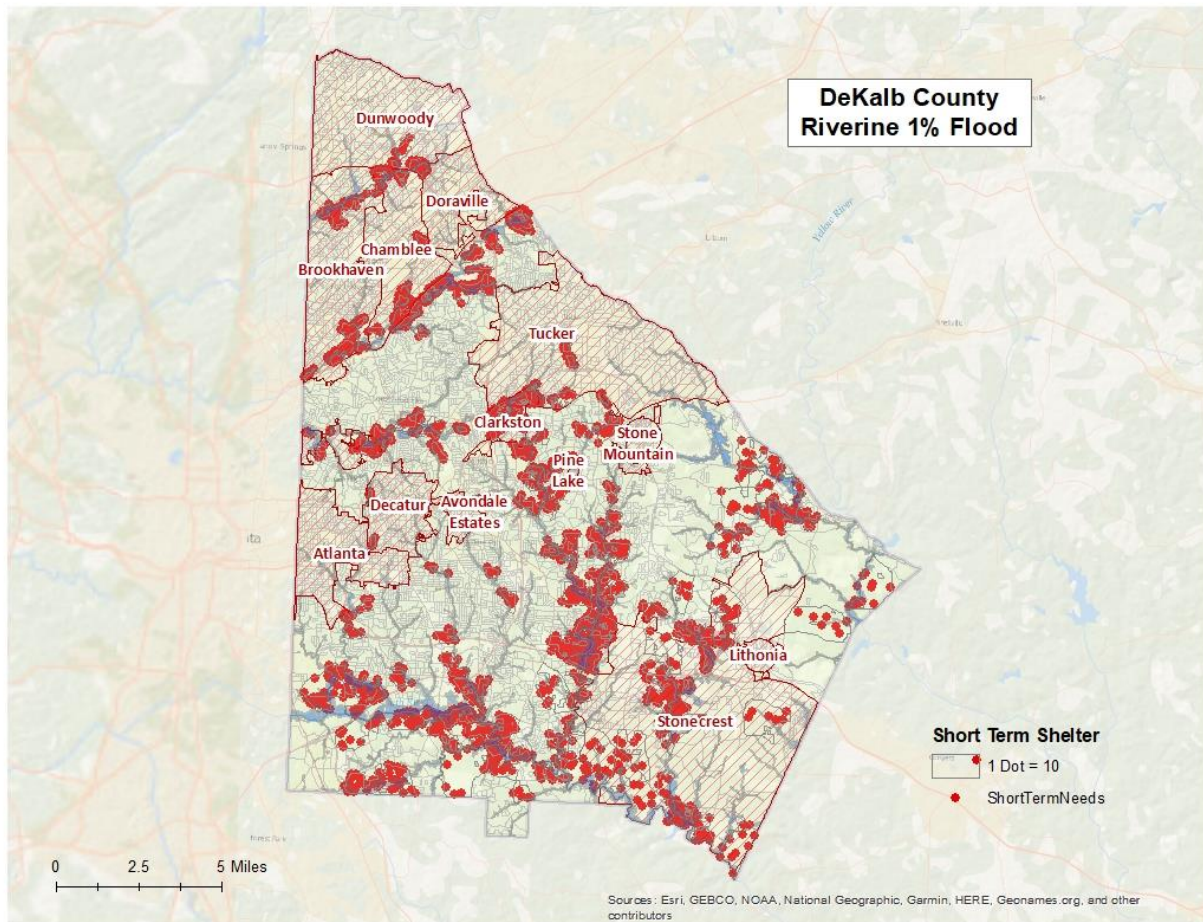
This data, retrieved from the American Community Survey and the DeKalb County 2021 Comprehensive Plan 5-Year Update, provides insight into certain characteristics of DeKalb County that are likely indicators of vulnerability. Based on this data, the greatest population vulnerabilities to flood hazards in DeKalb County are in the City of Clarkston, the City of Lithonia, and unincorporated areas of the county.

The Hazus-MH simulation considered the likely impacts of the DeKalb County 1% riverine flooding event. Hazus-MH estimated 13,994 households might be displaced due to the flood. Displacement includes households evacuated within or very near to the inundated area. Displaced households represent 41,982 individuals, of which 34,704 may require short term publicly provided shelter. The results are mapped below.



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Map 40: DeKalb County Flood Risk Map



Map Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan

Vulnerability of the Economy

Building losses are broken into two categories: direct building and business interruption. Direct building losses are the estimated costs to repair or replace damage to the building and its contents. Business interruption losses are losses associated with the inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The leading industries in DeKalb County are Healthcare and Social Services (14.9% jobs), Retail Trade (10.9% of jobs), Accommodations and Food Services (7.2% of jobs), and Administrative and Support and Waste Management and Remediation Services (7.2% of jobs). Educational Services is another important industry in DeKalb County as it provides the fifth largest percentage of jobs (6.6%) and the highest average weekly wages of all industries (\$2105). The private sector provides 85.6% of employment, while the Federal, State, and local governments provide 14.4% of DeKalb County employment (<https://explorer.gdol.ga.gov/vosnet/mis/Profiles/Counties/DeKalb.pdf>). The largest employers in DeKalb County are, (1) Centers for Disease Control and Prevention (CDC); (2) Veterans Affairs Medical Center Atlanta; (3) Emory University Hospital; (4) Emory DeKalb Medical; (5) Children's Healthcare of Atlanta; (6)



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AT&T Mobility LLC; (7) State Farm Insurance Company/Atlanta Perimeter; (8) InterContinental Hotels Group Inc; (9) AirWatch LLC; and (10) Georgia Regional Hospital Atlanta (<https://www.dekalbchamber.org/why-dekalb/>).

All sectors of DeKalb County's economy are susceptible to the impacts of flood hazards. The loss of any of DeKalb County's leading industries could severely disrupt the community and its ability to recover from a disaster. Given the significance of the Healthcare industry in DeKalb County, a flood-related disaster impacting one of the community's hospitals would severely stress the capabilities of the community to respond to the medical needs of the community. The CDC, located in DeKalb County, is a Federal agency under the United States Department of Health and Human Services which works to protect America from health, safety and security threats, both foreign and in the United States (<https://www.cdc.gov/about/organization/mission.htm>). Its loss would not only affect DeKalb County's economy but would affect the entire nation.

Vulnerability of the Built Environment

Buildings in DeKalb 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. The hypothetical 1% flooding event was simulated to impact DeKalb County and its participating jurisdictions using the Hazus-MH system. The simulated event generated damage to 4416 buildings in DeKalb County and its participating jurisdictions for a total of \$619,240,534 in damage.

The following tables provide a summary of the potential flood-related building damage in DeKalb County by jurisdiction that might be experienced from the 1% flood. The following maps shows the potential loss ratios of total building exposure to losses sustained to buildings from the 1% flood by 2010 census block and illustrates the relationship of building locations to the 1% flood inundation boundary.

Table 33: DeKalb 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
ATLANTA					
COMMERCIAL	291	9	\$268,698,650	\$1,791,840	0.67%
RELIGIOUS	33	1	\$26,063,010	\$47,676	0.18%
RESIDENTIAL	12,181	182	\$9,728,152,969	\$30,868,391	0.32%
AVONDALE ESTATES					
RESIDENTIAL	1,495	12	\$1,118,375,123	\$3,669,867	0.33%
COMMERCIAL	74	1	\$33,711,240	\$27,701	0.08%
BROOKHAVEN					
RESIDENTIAL	13,616	241	\$13,731,481,344	\$46,482,665	0.34%
COMMERCIAL	327	6	\$1,984,293,540	\$28,361,187	1.43%



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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
INDUSTRIAL	19	2	\$32,860,630	\$920,356	2.80%
CHAMBLEE					
COMMERCIAL	685	7	\$1,020,323,120	\$1,253,667	0.12%
INDUSTRIAL	149	1	\$168,908,930	\$181,776	0.11%
RESIDENTIAL	5,726	118	\$3,592,454,771	\$14,851,744	0.41%
CLARKSTON					
RESIDENTIAL	1,160	15	\$364,225,849	\$516,595	0.14%
DECATUR					
COMMERCIAL	288	1	\$550,474,460	\$95,611	0.02%
INDUSTRIAL	15	1	\$3,801,220	\$120,631	3.17%
RESIDENTIAL	7,362	207	\$8,584,234,852	\$33,093,188	0.39%
DORAVILLE					
RESIDENTIAL	2,292	57	\$1,145,344,710	\$7,160,796	0.63%
COMMERCIAL	447	4	\$577,378,570	\$1,438,878	0.25%
INDUSTRIAL	97	2	\$172,759,740	\$496,380	0.29%
DUNWOODY					
RESIDENTIAL	12,607	42	\$10,478,841,349	\$5,619,995	0.05%
COMMERCIAL	400	2	\$2,254,785,560	\$13,026	0.00%
PINE LAKE					
RESIDENTIAL	343	10	\$153,868,426	\$920,951	0.60%
STONE MOUNTAIN					
RESIDENTIAL	1,978	29	\$571,337,319	\$1,906,618	0.33%
STONECREST					
COMMERCIAL	453	8	\$877,969,346	\$4,508,706	0.51%
INDUSTRIAL	120	1	\$231,795,755	\$515,005	0.24%
RESIDENTIAL	16,683	377	\$6,635,461,086	\$38,526,782	0.58%
TUCKER					



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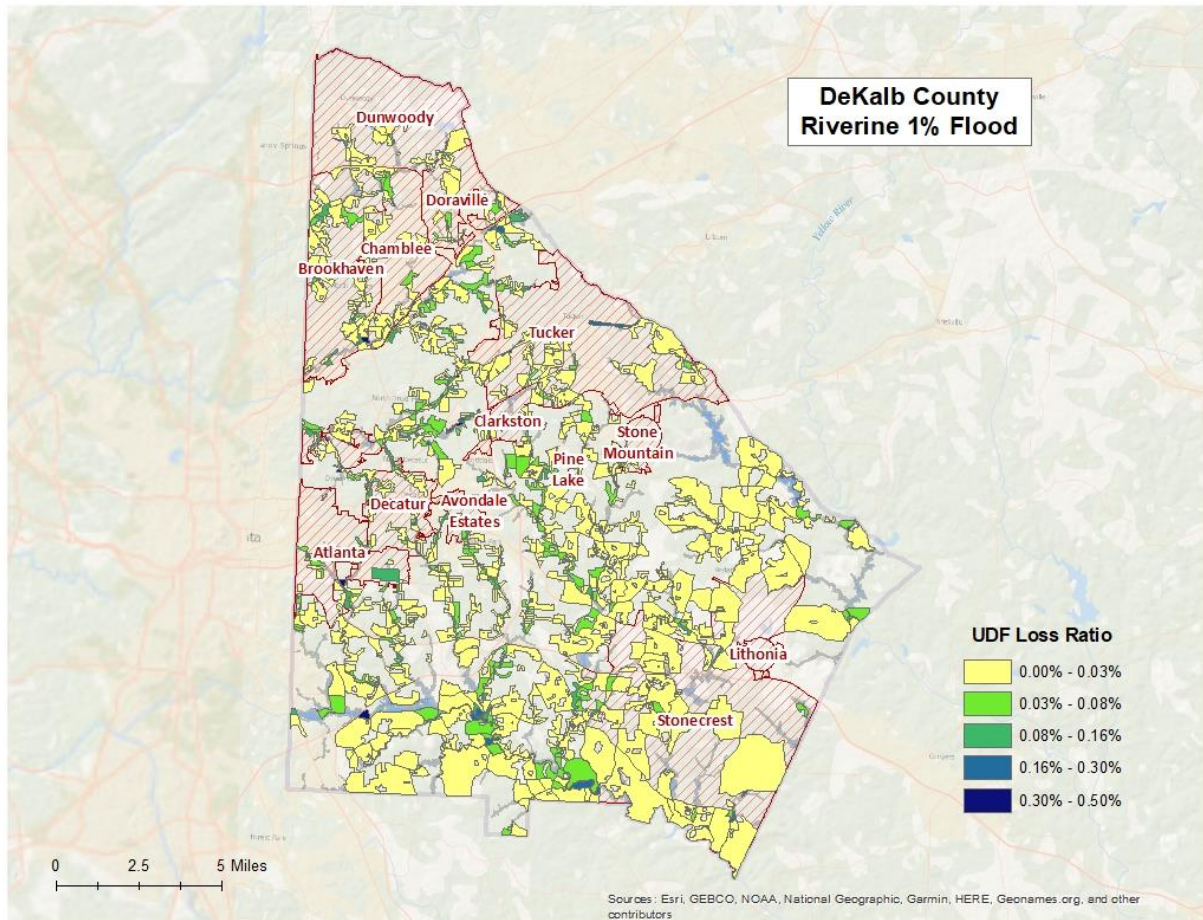
OCCUPANCY	TOTAL BUILDINGS IN THE JURISDICTION	TOTAL BUILDINGS DAMAGED IN THE JURISDICTION	TOTAL BUILDING EXPOSURE IN THE JURISDICTION	TOTAL LOSSES TO BUILDINGS IN THE JURISDICTION	LOSS RATIO OF EXPOSED BUILDINGS TO DAMAGED BUILDINGS IN THE JURISDICTION
INDUSTRIAL	216	3	\$523,171,040	\$269,764	0.05%
RESIDENTIAL	11,302	162	\$6,939,302,119	\$18,903,800	0.27%
COMMERCIAL	756	4	\$1,363,291,350	\$18,882,002	1.39%
UNINCORPORATED					
INDUSTRIAL	251	8	\$286,170,621	\$4,214,169	1.47%
RELIGIOUS	153	8	\$154,474,160	\$5,370,178	3.48%
COMMERCIAL	2,680	53	\$3,097,482,997	\$8,977,502	0.29%
RESIDENTIAL	126,579	2,842	\$61,044,179,900	\$339,233,087	0.56%
COUNTY TOTAL					
	220,778	4,416	\$137,697,673,756	\$619,240,534	

Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan



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Map 41: DeKalb County Potential Loss Ratio of Total Building Exposure to Losses Sustained to Buildings from the 1% Riverine Flood by 2010 Census Block

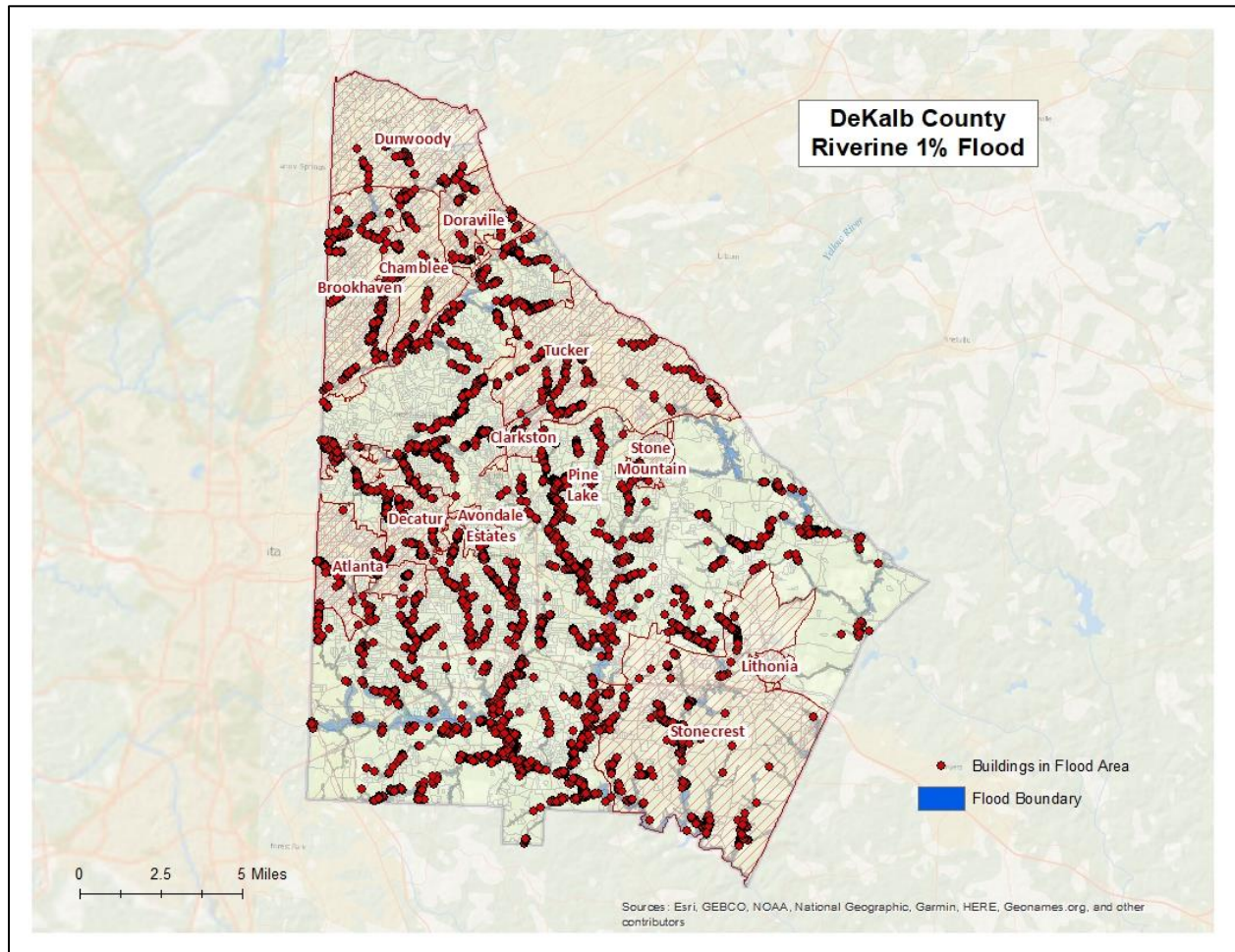


Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan



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Map 42: DeKalb County Damaged Buildings in Riverine Floodplain (1% Flood)



Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan

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 was subject to damage in the DeKalb County riverine 1% probability floodplain.

Table 34: Riverine 1% Flood Damaged Essential Facilities

Name	Category	City
Fire Station 24	Fire Station	Stone Mountain

Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan

Hazus-MH estimated the amount of debris that would be generated by the hypothetical flood event. The model broke debris into three general categories:

- Finishes (dry wall, insulation, etc.)



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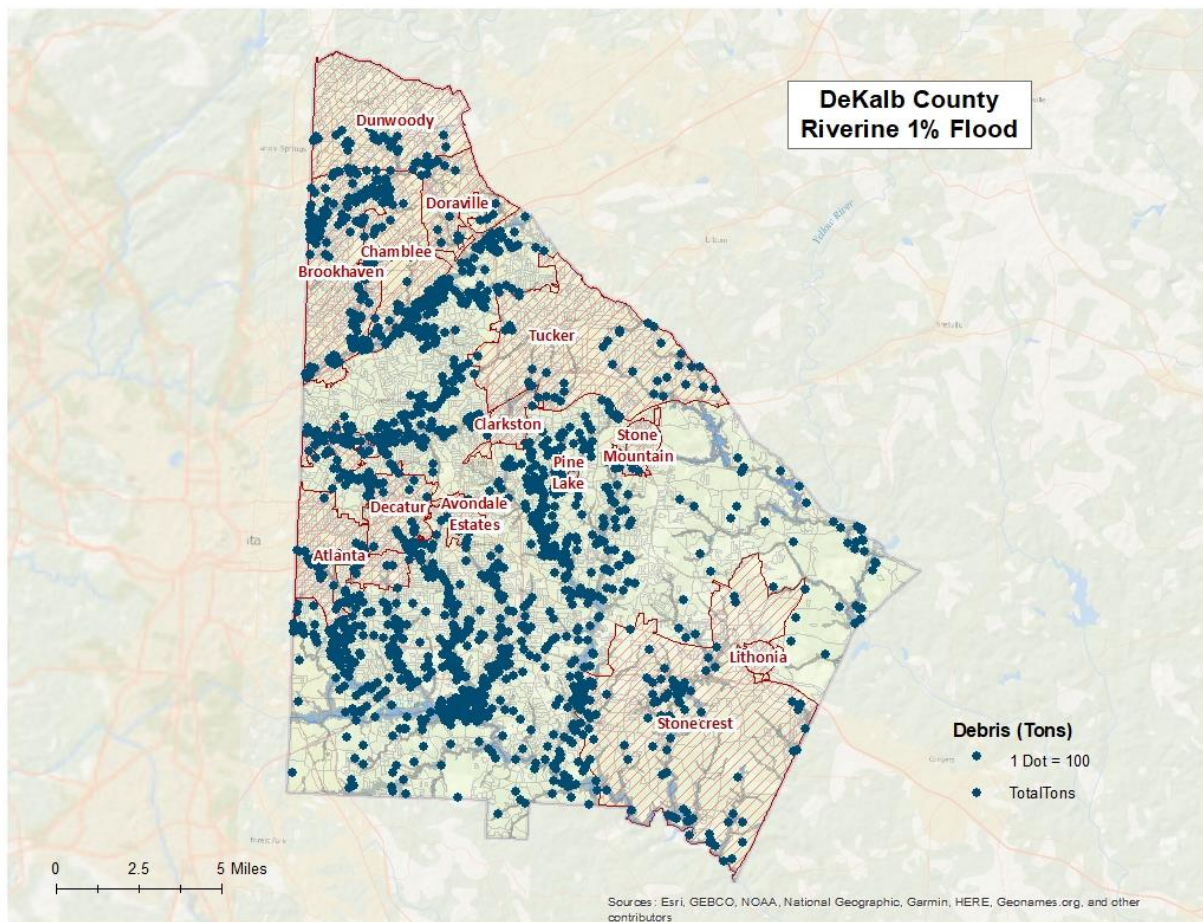
- Structural (wood, brick, etc.)
- Foundations (concrete slab, concrete block, rebar, etc.)

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 172,505 tons of debris might be generated:

1) Finishes- 58,632 tons; 2) Structural – 58,251 tons; and 3) Foundations- 55,622 tons. The results are mapped below.

Map 43: Riverine 1% Flood Debris Weight (Tons)

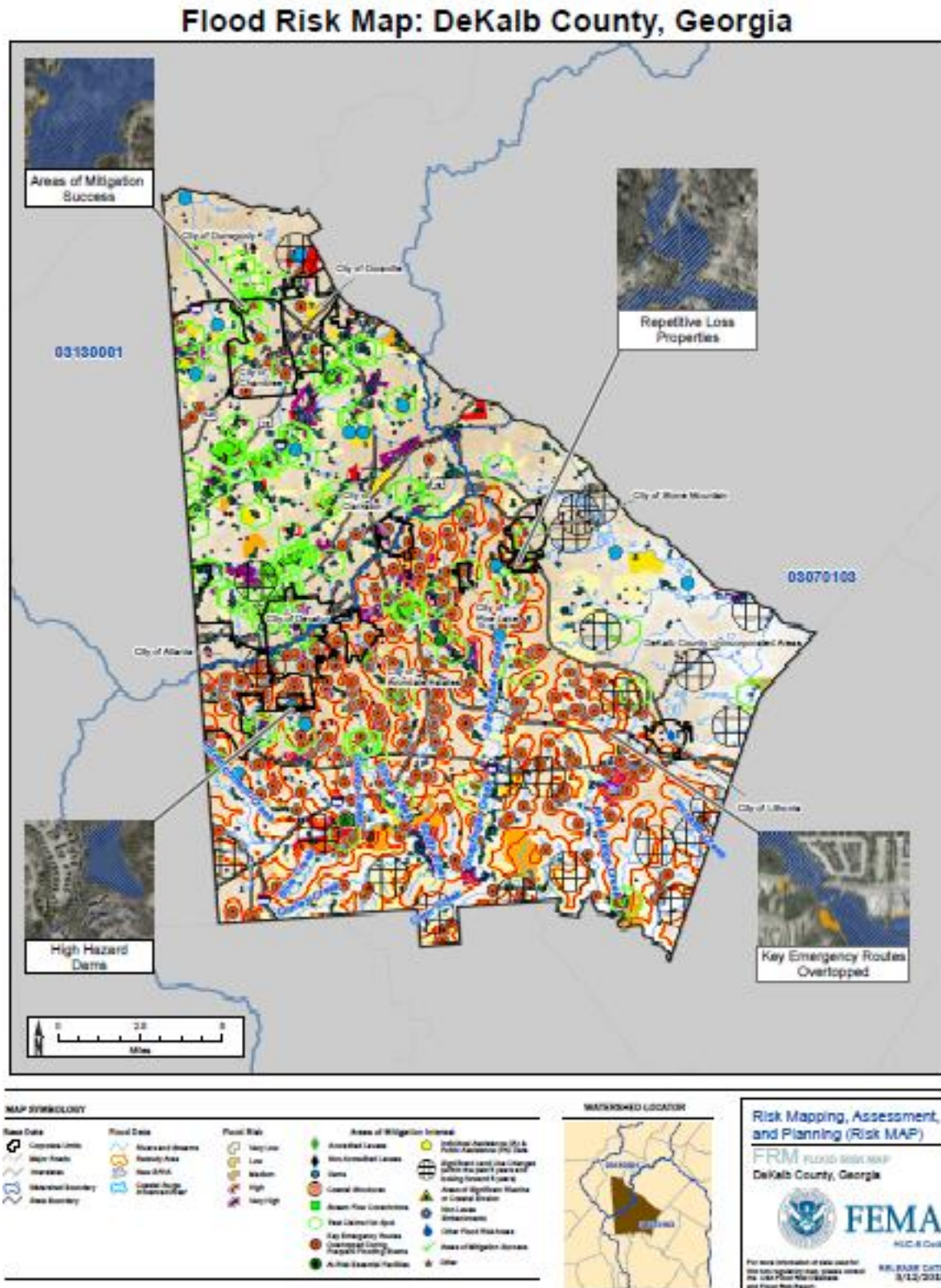


Source: Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan



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Map 44: DeKalb County Flood Risk Map



Map Source: FEMA Flood Risk Map Service Center

Map 45: DeKalb County Critical Infrastructure with Floodplains





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Map 46: DeKalb County, Riverine 100-yr Flood (has been requested)

Map Source: GEMA, Hazard Risk Analysis, Supplement to the DeKalb County Joint Hazard Mitigation plan

Map 47: DeKalb County Riverine 100-yr Flood Loss Ratio by 2010 Census Block (has been requested)

Map Source: GEMA, Hazard Risk Analysis, Supplement to the DeKalb County Joint Hazard Mitigation plan

Map 48: DeKalb County Riverine 100-yr Flood with Critical Facilities (has been requested)

Map Source: GEMA, Hazard Risk Analysis, Supplement to the DeKalb County Joint Hazard Mitigation plan

Map 49: DeKalb County Riverine 100-yr Flood, Short-Term Shelter Needs (has been requested)

Map Source: GEMA, Hazard Risk Analysis, Supplement to the DeKalb County Joint Hazard Mitigation plan

Map 50: DeKalb County Riverine 100-yr Flood, Debris Weight (Tons) (has been requested)

Map Source: GEMA, Hazard Risk Analysis, Supplement to the DeKalb County Joint Hazard Mitigation plan

Vulnerability of Natural Environment

The 2021 DeKalb County Comprehensive Plan – 5 Year Update lists two significant and unique geological features. Soapstone Ridge, located in the southwestern portion of the county, contains aboriginal steatite quarries which are of archeological and historic significance. Stone Mountain, located in the eastern area of the county, is the largest exposed granite outcropping in the world. The 2021 DeKalb County Comprehensive Plan – 5 Year Update also notes there are various Federally protected wetlands in the area, mostly in the flood prone areas of perennial creeks. These natural environmental resources are minimally vulnerable to flooding impacts.

4.4.5 – Risk Analysis

FEMA's NRI on provides estimates on riverine flooding risk, and not flash flooding. The NRI estimates that DeKalb County and the jurisdictions which lie within its boundaries have 24,440 people, \$188,645,903,590 worth of structures, and \$36,048 worth of agriculture exposed to riverine flood hazard impacts each year. The NRI projects annual losses of 0.54 people, \$926,049 worth of structures, and \$518 worth of agriculture to riverine flooding hazard impacts each year. HAZUS® estimates individuals would be displaced due to flooding and the potential for evacuation and may require short-term publicly provided shelter. This



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information is from the Hazard Risk Analysis provided by the University of Georgia, Carl Vinson Institute of Government.

Table 35: Risk Analysis of Community Lifeline Systems to Floods, DeKalb County

Risk Analysis of Community Lifeline Systems to Floods, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
Safety and Security	Law Enforcement /Security	High Risk. Impacts may: <ul style="list-style-type: none"> • injure personnel • damage facilities and equipment • disrupt responder communications • damage or block transportation routes • expend resources
	Fire Services	High Risk. Impacts may: <ul style="list-style-type: none"> • injure personnel • damage facilities and equipment • disrupt responder communications • damage or block transportation routes • expend resources
	Search and Rescue	High Risk. Impacts may: <ul style="list-style-type: none"> • injure personnel • damage facilities and equipment • disrupt responder communications • damage or block transportation routes • expend resources
	Government Services	High Risk. Impacts may: <ul style="list-style-type: none"> • damage critical facilities and historical sites • disrupt power and communications to emergency operations centers • disrupt essential government functions • cause short-term or long-term school cancellations.



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Risk Analysis of Community Lifeline Systems to Floods, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
	Community Safety	High Risk. Impacts may: <ul style="list-style-type: none"> • damage or overtop flood control systems • create secondary hazards
Food, Water, Shelter	Food	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • disrupt commercial food distribution and supply chains • affect commercial and home perishable food supplies
	Water	High Risk. Impacts may: <ul style="list-style-type: none"> • generate secondary hazards which can contaminate drinking water systems • damage wastewater systems
	Shelter	High Risk. Impacts may: <ul style="list-style-type: none"> • damage homes • damage shelters • damage lodging facilities
	Agriculture	High Risk. Impacts may: <ul style="list-style-type: none"> • injure livestock • damage crops • damage farm structures and equipment
Health and Medical	Medical Care	High Risk. Impacts may: <ul style="list-style-type: none"> • damage hospitals, pharmacies, long-term care facilities, and veterinary clinics • disrupt power and communications • contaminate water supply, affecting the provision of care • expend resources
	Patient Movement	High Risk. Impacts may: <ul style="list-style-type: none"> • injure personnel



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Risk Analysis of Community Lifeline Systems to Floods, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> • damage facilities and equipment • disrupt responder communications • damage or block transportation routes • expend resources
	Public Health	High Risk. Impacts may: <ul style="list-style-type: none"> • damage facilities • disrupt power and communications • expend resources
	Fatality Management	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • expend resources • damage facilities and equipment • disrupt power and communications
	Medical Supply Chain	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • expend resources (e.g., blood supply, pharmaceuticals, devices, medical gases, raw materials) • damage or block transportation routes
Energy	Power (Grid)	High Risk. Impacts may: <ul style="list-style-type: none"> • damage generation systems • damage transmission systems • damage distribution systems
	Fuel	High Risk. Impacts may: <ul style="list-style-type: none"> • damage fuel storage resources • damage pipelines • damage fuel distribution locations
Communications	Infrastructure	High Risk. Impacts may: <ul style="list-style-type: none"> • damage or cause wireless systems to become overburdened



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Risk Analysis of Community Lifeline Systems to Floods, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> • damage cable and wireline systems • damage or disrupt broadcast and satellite systems • damage or cause internet systems to become overburdened
	Alerts, Warnings, and Messages	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage physical warning systems • disrupt the delivery of emergency alerts and warnings
	911 and Dispatch	High Risk. Impacts may: <ul style="list-style-type: none"> • damage public safety answering points or dispatch centers • damage communication systems • overburden communication systems
	Responder Communications	High Risk. Impacts may: <ul style="list-style-type: none"> • damage communication systems • overburden communication systems
	Finance	High Risk. Impacts may: <ul style="list-style-type: none"> • damage banking facilities and equipment • disrupt communications
Transportation	Highway/Roadway	High Risk. Impacts may: <ul style="list-style-type: none"> • damage or block roads and bridges
	Mass Transit	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage buses or trains • damage or block transportation routes • delay routes
	Railway	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage freight or passenger trains • damage or block transportation routes



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Risk Analysis of Community Lifeline Systems to Floods, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> delay routes
	Aviation	Moderate Risk. Impacts may: <ul style="list-style-type: none"> damage airports damage aircraft delay routes
	Maritime	No Risk.
Hazardous Materials	Facilities	High Risk. Impacts may: <ul style="list-style-type: none"> generate oil/hazardous materials/toxic incidents from fixed facilities damage facilities disrupt power supply to facilities
	Hazmat, Pollutants, Contaminants	High Risk. Impacts may: <ul style="list-style-type: none"> generate oil/hazardous materials/toxic incidents from non-fixed facilities, rail, and roadways



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4.4.5A – Problem Statements

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
FL1	Flooding and people Low-income individuals, and individuals with functional and access needs (children, elderly, disability, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In DeKalb County and the jurisdictions that lie within its boundaries: <ul style="list-style-type: none"> • 14% of the population is ≤9 years old • 12% of the population is ≥65 years old • 10% of the population has a disability • 9% of the population speak English less than “very well” • 8.6% of households have no vehicle available 	Over 25% of the population in DeKalb County and the jurisdictions that lie within its boundaries are vulnerable to extreme heat impacts.
FL2	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Avondale Estates: <ul style="list-style-type: none"> • 11% of the population is ≤9 years old • 23% of the population is ≥65 years old • 9% of the population has a disability • 2% of the population speak English less than “very well” • 3% of households have no vehicle available 	Over 30% of the population in the City of Avondale Estates are vulnerable to extreme heat impacts.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
FL3	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Brookhaven: <ul style="list-style-type: none"> 15% of the population is ≤9 years old 10% of the population is ≥65 years old 6% of the population has a disability 17% of the population speak English less than very well 7% of households no vehicle available 	Over 25% of the population in the City of Brookhaven are vulnerable to extreme heat impacts.
FL4	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Chamblee: <ul style="list-style-type: none"> 15% of the population is ≤9 years old 8% of the population is ≥65 years old 7% of the population has a disability 29% of the population speak English less than "very well" 9% of households have no vehicle available 	Over 30% of the population in the City of Chamblee are vulnerable to extreme heat impacts.
FL5	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Clarkston: <ul style="list-style-type: none"> 18% of the population is ≤9 years old 4% of the population is ≥65 years old 8% of the population has a disability 41% of the population speak English less than "very well" 14% of households have no vehicle available 	Over 40% of the population in the City of Clarkston are vulnerable to extreme heat impacts.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
FL6	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Decatur: <ul style="list-style-type: none"> • 18% of the population is ≤9 years old • 12% of the population is ≥65 years old • 8% of the population has a disability • 3% of the population speak English less than “very well” • 13% of household have no vehicle available 	Over 30% of the population in the City of Decatur are vulnerable to extreme heat impacts.
FL7	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Doraville: <ul style="list-style-type: none"> • 15% of the population is ≤9 years old • 8% of the population is ≥65 years old • 5% of the population has a disability • 42% of the population speak English less than “very well” • 9% of households have no vehicle available 	Over 40% of the population in the City of Doraville are vulnerable to extreme heat impacts.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
FL8	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Dunwoody: <ul style="list-style-type: none"> • 16% of the population is ≤9 years old • 14% of the population is ≥65 years old • 7% of the population has a disability • 8% of the population speak English less than “very well” • 5% of households have no vehicle available 	Over 30% of the population in the City of Dunwoody are vulnerable to extreme heat impacts.
FL9	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Lithonia: <ul style="list-style-type: none"> • 22% of the population is ≤9 years old • 7% of the population is ≥65 years old • 9% of the population has a disability • 4% of the population speak English less than “very well” • 15% of households have no vehicle available 	Over 30% of the population in the City of Lithonia are vulnerable to extreme heat impacts.
FL10	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Pine Lake: <ul style="list-style-type: none"> • 17% of the population is ≥65 years old • 6% of the population has a disability • 1% of the population speak English less than “very well” • 2% of households have no vehicle available 	Over 15% of the population in the City of Pine Lake are vulnerable to extreme heat impacts.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
FL11	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Stone Mountain: <ul style="list-style-type: none"> 10% of the population is ≤9 years old 9% of the population is ≥65 years old 11% of the population has a disability 6% of the population speak English less than “very well” 10% of households have no vehicle available 	Over 20% of the population in the City of Stone Mountain are vulnerable to extreme heat impacts.
FL12	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Stonecrest: <ul style="list-style-type: none"> 15% of the population is ≤9 years old 8% of the population is ≥65 years old 11% of the population has a disability 1% of the population speak English less than “very well” 10% of households have no vehicle available 	Over 20% of the population in the City of Stonecrest are vulnerable to extreme heat impacts.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
FL13	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Tucker: <ul style="list-style-type: none"> • 12% of the population is ≤9 years old • 15% of the population is ≥65 years old • 10% of the population has a disability • 13% of the population speak English less than “very well” • 6% of the population have no vehicle available 	Over 25% of the population in the City of Tucker are vulnerable to extreme heat impacts.
FL14	Flooding and people/built environment Nancy Creek has experienced significant flooding six times since 1997.	Several people, structures, and transportation corridors are at risk for flooding impacts from Nancy Creek.	People and structures along Warrenhall Lane, Durret Way are regularly affected by flooding from Nancy Creek.
FL 15	Flooding and people/built environment Peachtree Creek has experienced significant flooding six times since 1997.	Several people, structures, and transportation corridors are at risk for flooding impacts from Peachtree Creek.	People and structures along Hanover West Drive, Clairmont Road, and Buford Road are regularly affected by flooding from Peachtree Creek.
FL16	Flooding and people/built environment North Fork Peachtree Creek has experienced significant flooding five times since 1997.	Several people, structures, and transportation corridors are at risk for flooding impacts from North Fork Peachtree Creek.	People and structures along Bamby Lane, Cove Circle, Victory Drive, Dunwoody Place, Converse Drive are regularly affected by flooding from North Fork Peachtree Creek.
FL17	Flooding and people/built environment South Fork Peachtree Creek has experienced significant flooding five times since 1997.	Several people, structures, and transportation corridors are at risk for flooding impacts from South Fork Peachtree Creek.	People and structures along Lansbury Village Drive, Orion Drive, Lawrenceville Highway, Noble Drive, Helen Drive, and Kay Lane are regularly affected by flooding from Peachtree Creek.



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Photo Source: istockphoto.com

4.5(SWW) – Severe Winter Weather

4.5.1 – Hazard Description

Severe winter weather includes ice storms, heavy or prolonged snow, sleet, and extreme temperatures. Severe winter weather can be increasingly hazardous in areas and regions that only experience it intermittently. This plan defines severe winter weather as a combination of the following events as defined by NOAA.

Cold Wave/Extreme Cold: A cold wave is a weather phenomenon that is distinguished by a cooling of the air. Specifically, as described by NWS, a cold wave is a rapid fall in temperature within a 24-hour period requiring substantially increased protection to agriculture, industry, commerce, and social activities. As evidenced by past events across the U.S., extreme cold can cause impact to human life and property.

Ice Storm: An ice storm is used to describe occasions when damaging accumulations of ice are expected during freezing rain situations. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and communication. These accumulations of ice make walking and driving extremely dangerous. Significant ice accumulations are usually accumulations of ¼" or greater.

Heavy Snow: This generally means snowfall accumulating to 4 inches or more in depth in 12 hours or less; or snowfall accumulating to 6 inches or more in depth in 24 hours or less. In forecasts, snowfall amounts are expressed as a range of values, e.g., "8 to 12 inches." However, in heavy snow situations where there is considerable uncertainty concerning the range of values, more appropriate phrases are used, such as "...up to 12 inches..." or alternatively "...8 inches or more." A blizzard, on the other hand, is a storm with "considerable falling or blowing snow" and winds in excess of 35 mph and visibilities of less than 1/4 mile for at least three hours.

Winter Storm: A winter storm comes in the form of heavy snow, heavy freezing rain, or heavy sleet. Such hazardous storms may also include extremely low temperatures and increased wind.

Interestingly, NWS refers to winter storms as "deceptive killers." People are at greater risk to dangerous injuries, including frostbite and hypothermia due to the wind and cold. Most deaths caused by winter storms



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are from vehicle accidents due to ice and snow. Heart attacks brought on by overexertion from shoveling or clearing snow also increase during and after storms.

Aside from the inherent dangers of severe winter weather, rising temperatures and the melting of ice and snow can cause fast surface water runoff and potentially flash flooding.

Fortunately, significant winter storms form well in advance and can, therefore, be anticipated by weather experts. However, like other large storm fronts, the severity of winter storms is not as easily predicted. Snow and ice accumulations, as well as wind speed, will inevitably vary by location.

4.5.2 – Location & Extent

Severe winter weather can occur anywhere in DeKalb County. While not as common as severe thunderstorms, snow and ice can impact the area given the right ingredients. First, cold air must be in place. This usually occurs a few times in the winter months when the polar jet stream moves southward into the eastern United States. Second, moisture is necessary for the formation of precipitation. When the subtropical jet stream moves across the southern portion of the United States, it allows disturbances to track across the area, which provides atmospheric lift. Given these ingredients, snow, sleet, and/or freezing rain can form (<https://weather.com/storms/winter/news/what-to-know-about-snow-and-ice-in-south>).

Dangerously cold temperatures can also occur in DeKalb County. In extreme cases, temperatures have dropped below 0°F in the area. These extreme cold weather events often occur in conjunction with snowfall.

Table 36: Record Low Temperatures, Atlanta Area

Record Low Temperatures, Atlanta Area	
Date	Temperature
February 13, 1899	-9°F
January 21, 1985	-8°F
January 20, 1985	-6°F
January 11, 1982	-5°F
January 30, 1966	-3°F
January 24, 1963	-3°F

Data Source: National Weather Service, Peachtree City, GA
(<https://www.weather.gov/wrh/Climate?wfo=ffc>)

NOAA's National Centers for Environmental Information (NCEI) is now producing the Regional Snowfall Index (RSI) for significant snowstorms that impact the eastern two thirds of the U.S. The RSI ranks snowstorm impacts on a scale from 1 to 5, like the Fujita scale for tornadoes or the Saffir-Simpson scale for hurricanes. The RSI differs from these other indices because it includes population. RSI is based on the spatial extent of the storm, the amount of snowfall, and the juxtaposition of these elements with population. The RSI is important because of the need to place snowstorms and their societal impacts into a historical perspective on a regional scale. For example, in February 1973, a major snowstorm hit the Southeast affecting areas not prone to snow. The storm stretched from the Louisiana and Mississippi Gulf coasts northeastward to the Carolinas. Over 11 million people received more than 5" of snow and three quarters of a million people in Georgia and South Carolina experienced over 15" of snow. This is currently the 10th highest ranked storm for the Southeast region. This storm would not even be ranked in NESIS. This example illustrates why it is important to discriminate impacts between regions. It is important to note that currently, the RSI does not consider the impacts of ice accumulations.



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Table 37: Regional Snowfall Index

Regional Snowfall Index		
Category	RSI Value	Description
1	1–3	Notable
2	3–6	Significant
3	6–10	Major
4	10–18	Crippling
5	18.0+	Extreme

Data Source: NOAA/NCEI (<https://www.ncdc.noaa.gov/snow-and-ice/rsi/>)

4.5.3 – Previous Occurrences

Severe Winter Weather Events

Between 1996 and 2020, severe winter weather events have impacted DeKalb County and the incorporated communities within its boundaries 47 times. This includes events labeled in the NCDC database as Cold/Wind Chill, Extreme Cold/Wind Chill, Frost/Freeze, Heavy Snow, Ice Storm, Sleet, Winter Storm, and Winter Weather. The NCDC lists no severe winter weather events in DeKalb County prior to 1996. Therefore, this plan will only evaluate the period between 1996-2020. These events caused no deaths, no injuries, and approximately \$1.533 million in property damage. Between January 1, 2016, and December 31, 2020, severe winter weather events have impacted DeKalb County and the incorporated communities within its boundaries six times. These events caused no death, no injuries, and no recorded property damage.

Table 38: Severe Winter Weather Events (1996-2020)

Severe Winter Weather Events (1996-2020)					
Decade	No. of Events	Deaths	Injuries	Property Damage	Crop Damage
1990s	4	0	0	\$0	\$0
2000s	27	0	0	\$1.533M	\$0
2010s	15	0	0	\$0	\$0
2020	1	0	0	\$0	\$0
Total	47	0	0	\$1.533M	\$0

Data Source: NOAA/NCEI Storm Events Database



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Table 39: Severe Winter Weather Events (2016-2020)

Severe Winter Weather Events (2016-2020)					
Year	No. of Events	Deaths	Injuries	Property Damage	Crop Damage
2016	2	0	0	\$0	\$0
2017	2	0	0	\$0	\$0
2018	1	0	0	\$0	\$0
2019	0	0	0	\$0	\$0
2020	1	0	0	\$0	\$0
Total	6	0	0	\$0	\$0
Average	1.2	0	0	\$0	\$0

Data Source: NOAA/NCEI Storm Events Database

January 22, 2000, Ice Storm (RSI 0.83). Wintry precipitation plagued the northern third of Georgia beginning Saturday and continued into Sunday. A shallow cold airmass with single-digit dewpoint temperatures was in place over north Georgia, with temperatures in the upper 20s to lower 30s over much of the area. An upper-level disturbance moved rapidly over the area in a fast zonal flow, bringing an increase in mid-tropospheric moisture. At the same time, lower-level moisture spread into the area from the Gulf of Mexico. Precipitation began falling into the colder layer of air near the surface by mid-morning on the 22nd. The mixture of light rain, snow and sleet had spread from northwest to northeast Georgia by early afternoon. By noon, reports began coming in of icy spots on bridges and some roadways. By late afternoon, the precipitation north of a line from Rome to Gainesville to Commerce became a mixture of freezing rain, sleet and snow. Up to 3 inches of snow fell in the mountains of northeast Georgia by the end of the event. Rain mixed with sleet fell over much of the rest of north Georgia into the late afternoon. As the event continued into Saturday night, freezing rain and sleet began falling further south in the Atlanta to Athens areas. Ice accumulated to around a half inch on tree limbs and power lines. There was ice and snow accumulation on roads as well, mainly north of an Atlanta to Athens line. Bridges and overpasses became treacherous for travelers and numerous accidents were reported. A ten-year-old Rockdale County girl was injured when an large ice-laden limb fell and hit her in the head, causing spinal damage. The major problem was power outages. Power lines snapped, and trees and limbs fell onto power lines breaking them. Trees and debris blocked roads in many areas. As many as 500,000 customers lost power across north Georgia. About 3,000 Georgia power workers worked around the clock to restore power, but 50,000 to 75,000 customers were still without electricity Tuesday morning. A few areas did not regain electric power until Wednesday. As many as 40,000 telephone customers also lost service due to lines downed by limbs and trees. Around 3,000 phones customers in the Atlanta metro area alone were without service Sunday. Trees heavy with ice fell on homes and cars causing other damage. Hartsfield International Airport was open Sunday, but many flights were cancelled or had long delays in the morning. Precipitation slowly diminished from west to east across north Georgia during the morning and early afternoon on Sunday January 23rd. Luckily the storm occurred on the weekend, but some school systems still were closed Monday. The governor of Georgia declared a state of emergency for 39 counties. A Federal Disaster Declaration covered 34 Georgia counties. Georgia Emergency Management estimated 48 million dollars in damage. The devastation from the storm was compared to Hurricane Opal in 1995 and the blizzard of 1993. This event caused no deaths or injuries, and approximately \$980,000 in property damage. It is the costliest severe winter weather event since 1996.



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January 28-30, 2000, Ice Storm (RSI 1.38): A series of short waves in the upper air pattern produced periods of mostly light to occasionally moderate precipitation over the north half of Georgia from Friday morning to Sunday afternoon. Patchy light snow began in west central and northwest Georgia around daybreak on the 28th. There was a light dusting on the ground by mid-morning from Troup to Carroll County, east to Fayette County. Due to the dry layer of air aloft, much of the precipitation evaporated before reaching the ground, so eastward progression of the area of snow was slow. By evening, a mixture of light snow, sleet and freezing rain became more widespread over west central and northwest Georgia. Although the precipitation remained light and temperatures hovered in the low to mid 30s, ice began to accumulate on roads, bridges and overpasses. There was a 47-car pile-up on I-20 in downtown Atlanta late Friday night that backed up traffic into early Saturday morning. By Saturday morning, the 29th, temperatures had slowly fallen to near or just below the freezing mark over the north half of Georgia with a mix of light freezing drizzle, freezing rain, and sleet, with light snow in the mountains. The last batch of significant precipitation moved from Alabama into west central Georgia and on into the Atlanta metro area on Sunday morning. There were even one or two claps of thunder in Spalding County. Overall, the event generally produced 1/4 to 1/2 inch of ice accumulation, with isolated areas getting 1/2 to 1 inch of ice. The main problems seemed to be traffic accidents due to icy roads and bridges. There were scattered areas of trees and power lines down, but damage from this storm was nowhere as much as that from the storm the previous weekend. This event cause approximately \$32,790 in property damage.

January 28-30, 2005, Winter Storm (RSI 0.00): A significant and prolonged winter storm/ice storm affected nearly all North and Central Georgia from the evening of Friday January 28th to late morning on Sunday January 30th. The winter storm was a result of a very strong and very cold Arctic surface high pressure system located across the Mid-Atlantic states and an upper-level disturbance moving across the region from the west. North of a line from La Grange to Thomaston, to Sandersville, the precipitation fell mostly as a mixture of sleet and freezing rain, with typical accumulations of one-half inch glaze ice and one to two inches of sleet. Some areas in North Central and Northeast Georgia experienced significant glaze ice accumulations of three-fourths to one inch. Further south, mainly south of a La Grange, to Thomaston, to Sandersville line, most of the frozen precipitation fell as freezing rain, with 1/4-to-1/2-inch accumulations of glaze ice common as far south as McRae, Abbeville, and Americus. In the southern areas, however, the ice accumulations were generally confined to trees, power lines, and other exposed objects with little or no accumulation of ice on the ground. Extensive damage to trees and power lines were reported throughout the area, especially in North Central, Northeast, and Central Georgia. Damage estimates were in the millions. Numerous vehicle accidents were also reported on the slick ice and sleet covered roads, especially in the Atlanta Metropolitan area. The summary below provides ice and sleet accumulations by county for this event as well as damage information received for that county. The ice and sleet accumulations were largely provided by the county 911 centers or respective Emergency Management Directors. The damage information was provided by the local county/city newspaper. In DeKalb County, 1/4 inch of glaze ice and 1.5 inches of sleet accumulated on the ground and infrastructure. Hundreds of trees fell on power lines and in roadways. Several thousand people were left without power for one to two days. This event caused no deaths or injuries, and approximately \$500,000 in property damage.

December 15, 2005, Ice Storm (RSI 0.00): A low pressure system moving out of the Gulf of Mexico and a strong upper-level trough pushed an area of rain across Georgia late on the 14th and early on the 15th. Meanwhile, a wedge of cold, dry air had slid down the east side of the Appalachians into north central and northeast Georgia. As the rain overspread the wedge of cold air, temperatures dropped to near or just below the freezing mark. Rainfall amounts across north and northeast Georgia averaged in the 0.50-to-0.80-inch range, resulting in substantial and damaging accumulations of ice. Ice accumulations on trees, power lines, and other elevated objects were mostly in the 0.25-to-0.33-inch range in an area bounded by Helen, Dahlonega, Ellijay, northeast Atlanta, Covington, and Athens. However, ice accumulations up to 0.50 inch were reported across Gwinnett, Hall, and White counties resulting in a number of downed trees and power lines. Only minor ice accumulations were reported immediately west and south of this area in the western and southern suburbs of Atlanta. Warm ground temperatures prevented significant ice



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accumulations on roads, although some minor ice accumulation was reported on the roads across Banks, Gwinnett, Hall, and White counties. Approximately 220,000 residents, mostly in northeast Georgia, were left without power during the morning hours. The power outages also left traffic signals out of service in many of these areas, resulting in several traffic backups. Nearly 100,000 were still without power in the late afternoon. Several roads were also blocked from downed trees, especially across Hall, White, and Gwinnett counties. In DeKalb County, 0.25 inches of ice accumulated on infrastructure causing numerous power outages. This event caused no deaths or injuries, and approximately \$10,000 in property damage.

March 1, 2009, Heavy Snow Event (RSI 3.423): A vigorous closed upper-level low, with very cold temperatures aloft, continued to intensify as it moved rapidly southeast from the Midwest into the southeast U.S. from the evening of February 28th into the afternoon of March 1st. At the same time, a polar air mass (marked by a 1040+ mb surface high) was spreading southeast from the central Canadian provinces into the eastern half of the U.S. The combination of these events brought a rare late season heavy snowstorm to parts of north and central Georgia. Rain early in the morning changed to moderate to heavy snow just before noon on the 1st and spread from west to east across west central, north central, central, east central, and northeast Georgia. Even some thunderstorms and cloud-to-ground lightning strikes were observed during the height of the storm from late morning through mid-afternoon across north central, west central, northeast, and central Georgia. Measurable snowfall was confined to an area generally south of a Buchanan, to Canton, to Gainesville line and north of a Lumpkin, to Americus, to Warner Robins, to Gibson line. Snowfall averaged two to three inches within most of the snow area, but pockets of five to six inches of snow were recorded across parts of west central Georgia from the north side of Columbus, through Pine Mountain and into Troup and Meriwether County. The heaviest snow fell in northeast and parts of east central Georgia where a deformation zone developed on the back side of the departing upper low during the early evening. Snowfall from Lawrenceville, to Athens, to Danielsville averaged six to seven inches. The water content of the snow was high, which resulted in extensive downed trees, power lines, and telephone cables in areas that saw three or more inches of snow. Widespread power outages to thousands of people were observed in the Clarke, Morgan, Oconee, Jackson, and Madison County areas of northeast Georgia. Many residents in this part of the state were left without power for two to three days. The maximum snowfall ranged from 1.5 inches in the northern part of the county to 2.5 inches in the southern part. Some trees and power lines were down from the weight of the heavy, wet snow. This event caused no deaths or injuries, and approximately \$5,000 in property damage.

January 21-22, 2016, Winter Weather Event (RSI 12.616): Very cold air was entrenched across the southeastern states as a deep surface low developed in the lower Mississippi Valley and swept northeast across the southern Appalachians. A wintry mix of some freezing rain and sleet, but mostly snow, covered north Georgia with snow flurries extending as far south as central Georgia. Strong pressure gradient winds associated with this low-pressure system produced northwest winds 20 to 25 MPH with gusts of 30 to 40 MPH across north and central Georgia during the day on the 23rd. A CoCoRaHS observer reported .8 inches of snow southeast of Decatur and a report of .5 inches of snow in North Decatur was received on social media. The COOP observer north northeast of Doraville reported .1 inches of snow and a National Weather Service employee in East Lake Highlands reported a trace of snow. This event caused no deaths, injuries, or property damage.

February 9-10, 2016, Winter Weather Event (RSI 0.00): A strong and deep upper-level trough remained anchored across the eastern half of the country resulting in an extended period of very cold temperatures and scattered light to occasionally moderate snow showers across northern Georgia from late in the evening on Monday, February 8th through early in the morning on Friday, February 12th. Most areas saw only trace amounts of snow accumulation, however 1 to 2 inches of snow accumulated across the higher elevations of the North Georgia mountains. A COOP observer northeast of Doraville reported a trace of snow. This event caused no deaths, injuries, or property damage.

January 6-7, 2017, Winter Storm (3.50): During the afternoon of January 6th through the morning of January 7th a fast moving but strong storm system swept across the southeastern U.S. A cold airmass



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across north and central Georgia combined with rich moisture drawn north from the Gulf of Mexico to produce a mixture of rain, sleet, freezing rain and snow across north and portions of central Georgia. Several reports of a quarter on an inch of freezing rain were received from the public in the Decatur, Northwoods, and Emory areas, including .24 inches from the ASOS at DeKalb-Peachtree Airport, KPDK. Several CoCoRaHS reports of a quarter of an inch or less of snow were received from the Tucker and Decatur areas. This event caused no deaths, injuries, or property damage.

December 8-9, 2017, Winter Storm (RSI 3.07): With cold air in place across the southeastern U.S., a deep upper-level trough and associated surface low brought an extended period of moderate to heavy snow across parts of north Georgia beginning the morning of December 8th and continuing through the early morning of December 9th. The snowfall spread south and east overnight on the 8th into the morning of the 9th bringing light to moderate snowfall amounts to the remainder of north Georgia and portions of central Georgia. From the Atlanta metropolitan area northward and westward, many roads became impassable for several hours to over 2 days. Numerous trees and power lines were damaged or downed by the weight of the heavy, wet snow with many customers without electricity for hours if not days. Between 1 and 6 inches of snow were estimated across the county. Reports from CoCoRaHS observers included 1.5 to 5.5 inches in Decatur and 3.5 to 5.5 inches in Tucker as well as 3.5 inches in Dunwoody and 4 inches along the Fulton County line in east Atlanta. This event resulted in no deaths, injuries, or property damage.

January 16-17, 2018, Winter Storm (RSI 0.00): A strong surface low and cold front associated with a large and deep upper-level trough, brought light to moderate snow to much of north and central Georgia from the afternoon of the January 16th through the morning of January 17th. With most of the precipitation post-frontal, temperatures were well below freezing (lower to mid-20s) as the snow occurred. This resulted in widespread icy and snow-packed roadways across the area, especially those that were not pre-treated by GDOT or Public Works. Reports were received from a National Weather Service employee, CoCoRaHS observers and over social media of one to two inches of snow accumulation across the area. This event caused no deaths, injuries, or damage.

February 8, 2020, Winter Weather Event (RSI 0.00): A fast-moving mid-level short wave swept through the region during the morning and early afternoon. With a cold airmass in place over north Georgia and ample mid-level moisture, moderate to heavy snow quickly accumulated across a large portion of north Georgia. CoCoRaHS observers reported .5 inches of snow 1 mile southeast of Decatur, 3 miles north-northeast of North Decatur and 1 mile north-northwest of Tucker. This event caused no deaths, injuries, or property damage.

4.5.3A – Probability of Future Events

Table 40: Probability of Future Events, Severe Winter Weather

Probability of Future Events, Severe Winter Weather	
Decade	Number of Events
1990s	4
2000s	27
2010s	15
2020	1
Total	47
Years	70
Average	0.67
Likelihood of a Severe Winter Weather Event Each Year = 67%	



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Data Source: NOAA/NCEI Storm Events Database

Based on this data, it is **highly likely** a severe winter weather event will occur every year in DeKalb County and the incorporated jurisdictions within its boundaries.

4.5.4 – Vulnerability of Community Assets

Vulnerability of People

All of DeKalb County's population are at risk for severe winter weather hazard impacts. Individuals with no access to a heating source are much more vulnerable to the dangers of extremely cold temperatures. According to the American Community Survey, 0.2% (584 people) of DeKalb County's population have no access to home heating fuel. The highest percentage of people experiencing this issue is in the City of Lithonia, where 1.4% (13 people) of the population have no access to home heating fuel. The highest number of people is in the City of Decatur, where 44 people have no access to home heating fuel. Another consideration is the loss of electricity as the source of home heating fuel. 37.5% (105,902 people) of DeKalb County's population use electricity as their source of for home heating fuel. A long-term power outage combined with extreme cold temperature could expose many individuals to extreme cold temperatures. In addition, carbon monoxide exposure and poisonings occur more often during the fall and winter when people are more likely to use gas furnaces and heaters. The CDC finds that approximately 480 U.S. residents die each year from non-fire-related carbon monoxide poisoning, and an estimated 15,200 people in the U.S. are treated each year for carbon monoxide poisoning or exposure.

Like other hazards, low-income individuals and individuals with functional and access needs are more vulnerable to severe winter weather hazard impacts. In DeKalb County, this includes the following:

- Individuals living in poverty: 15.1% (113,148 people)
- Individuals with a disability: 10.2% (75,923 people)
- Persons 65 years and over: 11.9% (89,507 people)
- Persons under 9 years: 13.5% (101,416 people)
- Speak English less than "very well" (age 5 years+): 8.7% (60,536 people)
- Households with no vehicles available: 8.6% (24,418 households)

The cities of Lithonia (38.9%), Clarkston (30.9%), and Doraville (22.8%) have the highest levels of poverty in DeKalb County. The DeKalb County 2021 Comprehensive Plan 5-Year Update notes that poverty rates have increased in certain sections of central and south DeKalb County). The City of Stonecrest (11.4%) has the highest percentage of individuals with a disability. The City of Avondale Estates (23.4%) has the highest ratio of population aged 65 years or older. The City of Lithonia (22.3%), City of Clarkston (18.3%), and City of Decatur (18.2%) have the greatest percentage of people under 9 years. The City of Doraville (42.4%), City of Clarkston (40.9%), and City of Chamblee (28.7%) have the highest percentage of people who speak English less than "very well." The City of Lithonia (14.7%) and City of Clarkston (14.3%) have the highest ratio of households with no vehicle available.

This data, retrieved from the American Community Survey and the DeKalb County 2021 Comprehensive Plan 5-Year Update, provides insight into certain characteristics of DeKalb County that are likely indicators of vulnerability. Based on this data, the greatest population vulnerabilities to severe winter weather hazards in DeKalb County are in the City of Clarkston, the City of Lithonia, and unincorporated areas of the county.



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Vulnerability of the Economy

All sectors of DeKalb County's economy are vulnerable to the impacts of severe winter weather hazards. The primary impact to the economy is the loss of work time and production due to power outages and disrupted transportation. Given the significance of the Healthcare industry in DeKalb County, these impacts could stress the capabilities of the community to respond to the medical needs of the community.

Vulnerability of the Built Environment

The built environment includes infrastructure systems, critical facilities, and cultural resources. Infrastructure systems are critical for life safety and economic viability and include transportation, power, communication, and water and wastewater systems. Critical facilities are structures and institutions which are necessary for the community's response to and recovery from emergencies. These critical facilities must continue to operate during and following disasters to reduce the severity of impacts and accelerate recovery. Appendix C of this plan lists the community's infrastructure and critical facilities. Appendix C of this plan lists the places in DeKalb County which are part of the National Register of Historic Places and are considered important cultural resources.

Considering the entire planning area is susceptible to severe winter weather impacts, increased development and population growth can reasonably translate to exposure. The DeKalb County 2021 Comprehensive Plan 5-Year Update visualizes the development of three types of Activity Centers: Neighborhood Centers, Town Centers, and Regional Centers. There are 46 Activity Centers countywide. In addition, the plan includes residential designations: Rural, Suburban, and Traditional. DeKalb County's Future Land Use Map can be accessed via <https://dekalbgis.maps.arcgis.com/apps/webappviewer/index.html?id=f241af753f414cdfa31c1fdef0924584>.

Vulnerability of Natural Environment

The 2021 DeKalb County Comprehensive Plan – 5 Year Update lists two significant and unique geological features. Soapstone Ridge, located in the southwestern portion of the county, contains aboriginal steatite quarries which are of archeological and historic significance. Stone Mountain, located in the eastern area of the county, is the largest exposed granite outcropping in the world. The 2021 DeKalb County Comprehensive Plan – 5 Year Update also notes there are various Federally protected wetlands in the area, mostly in the flood prone areas of perennial creeks. These natural environmental resources are minimally vulnerable to severe winter weather impacts.

4.5.5 – Risk Analysis

All community assets in DeKalb County and the jurisdictions within its boundaries are exposed to severe winter weather impacts. FEMA's National Risk Index (NRI) estimates that DeKalb County and the jurisdictions within its boundaries have \$84,788,355,420 worth of structures exposed to severe winter weather hazards each year. The NRI projects annual losses of 0.15 lives and \$88,756 worth of structures to winter weather hazard impacts each year. This includes impacts associated with cold waves, ice storms, and other winter weather events. According to the NRI, the most significant projected losses to population are from general winter weather events (0.13 deaths). The most significant projected losses to structures are from ice storms (\$74,587).

DeKalb County's most costly wind event in the past 24 years was the January 22, 2000, Ice Storm. The event caused ice accumulations of between 1/4" – 1". This ice storm generated approximately \$980,000 in damage. A similar event now would cost \$1,512,231.

A more significant ice storm would cause greater damage and potentially some deaths or injuries. An analog for a worst-case scenario is the January 2009 Kentucky Ice Storm (<https://www.wdrb.com/weather/wdrb->



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[weather-blog/10-years-later-remembering-the-2009-ice-storm/article_b825a46a-215c-11e9-b295-d3cb4d55a68c.html](https://www.weather-blog/10-years-later-remembering-the-2009-ice-storm/article_b825a46a-215c-11e9-b295-d3cb4d55a68c.html)). In this event, between 1" – 2" of ice accumulated in southwestern Kentucky (and other areas of the Midwest). At one point, over 609,000 homes and businesses were without power, which is Kentucky's largest outage on record. Many were without power for a week or more. Trees fell on homes, cars, power lines, and roads. There were at least 24 fatalities in Kentucky related to the storm. These fatalities were caused by a combination of traffic accidents, hypothermia, and carbon monoxide poisoning.

Table 41: Risk Analysis of Community Lifeline Systems to Severe Winter Weather, DeKalb County

Risk Analysis of Community Lifeline Systems to Severe Winter Weather, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
Safety and Security	Law Enforcement /Security	High Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources
	Fire Services	High Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources
	Search and Rescue	High Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources
	Government Services	High Risk. Impacts may: <ul style="list-style-type: none"> damage critical facilities disrupt power and communications to emergency operations centers



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Risk Analysis of Community Lifeline Systems to Severe Winter Weather, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> disrupt essential government functions cause short-term or long-term school cancellations.
	Community Safety	Low Risk. Impacts may: <ul style="list-style-type: none"> damage flood control systems create secondary hazards
Food, Water, Shelter	Food	High Risk. Impacts may: <ul style="list-style-type: none"> disrupt commercial food distribution and supply chains affect commercial and home perishable food supplies
	Water	High Risk. Impacts may: <ul style="list-style-type: none"> damage pipes generate secondary hazards which can contaminate drinking water systems damage wastewater systems
	Shelter	High Risk. Impacts may: <ul style="list-style-type: none"> damage homes damage shelters damage lodging facilities overburden shelter resources
	Agriculture	High Risk. Impacts may: <ul style="list-style-type: none"> injure livestock damage crops
Health and Medical	Medical Care	High Risk. Impacts may: <ul style="list-style-type: none"> damage hospitals, pharmacies, long-term care facilities, and veterinary clinics disrupt power and communications



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Risk Analysis of Community Lifeline Systems to Severe Winter Weather, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> contaminate water supply, affecting the provision of care expend resources make it difficult or impossible for staff to come to work
	Patient Movement	High Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources
	Public Health	Moderate Risk. Impacts may: <ul style="list-style-type: none"> damage facilities disrupt power and communications expend resources
	Fatality Management	Moderate Risk. Impacts may: <ul style="list-style-type: none"> expend resources damage facilities and equipment disrupt power and communications
	Medical Supply Chain	High Risk. Impacts may: <ul style="list-style-type: none"> expend resources (e.g., blood supply, pharmaceuticals, devices, medical gases, raw materials) damage or block transportation routes
Energy	Power (Grid)	High Risk. Impacts may: <ul style="list-style-type: none"> damage generation systems damage transmission systems damage distribution systems



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Risk Analysis of Community Lifeline Systems to Severe Winter Weather, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
	Fuel	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage fuel storage resources • damage fuel distribution locations
Communications	Infrastructure	High Risk. Impacts may: <ul style="list-style-type: none"> • damage or cause wireless systems to become overburdened • damage cable and wireline systems • damage or disrupt broadcast and satellite systems • damage or cause internet systems to become overburdened
	Alerts, Warnings, and Messages	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage physical warning systems • disrupt the delivery of emergency alerts and warnings
	911 and Dispatch	High Risk. Impacts may: <ul style="list-style-type: none"> • damage public safety answering points or dispatch centers • damage communication systems • overburden communication systems
	Responder Communications	High Risk. Impacts may: <ul style="list-style-type: none"> • damage communication systems • overburden communication systems
	Finance	Low Risk. Impacts may: <ul style="list-style-type: none"> • damage banking facilities and equipment • disrupt communications
Transportation	Highway/Roadway	High Risk. Impacts may: <ul style="list-style-type: none"> • damage or block roads and bridges • create hazardous driving conditions



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Risk Analysis of Community Lifeline Systems to Severe Winter Weather, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> expend resources
	Mass Transit	Moderate Risk. Impacts may: <ul style="list-style-type: none"> damage buses or trains damage or block transportation routes delay routes
	Railway	Low Risk. Impacts may: <ul style="list-style-type: none"> damage freight or passenger trains damage or block transportation routes delay routes
	Aviation	Moderate Risk. Impacts may: <ul style="list-style-type: none"> damage airports damage aircraft delay routes
	Maritime	No Risk.
Hazardous Materials	Facilities	Moderate Risk. Impacts may: <ul style="list-style-type: none"> generate oil/hazardous materials/toxic incidents from fixed facilities damage facilities disrupt power supply to facilities
	Hazmat, Pollutants, Contaminants	Moderate Risk. Impacts may: <ul style="list-style-type: none"> generate oil/hazardous materials/toxic incidents from non-fixed facilities, rail, and roadways

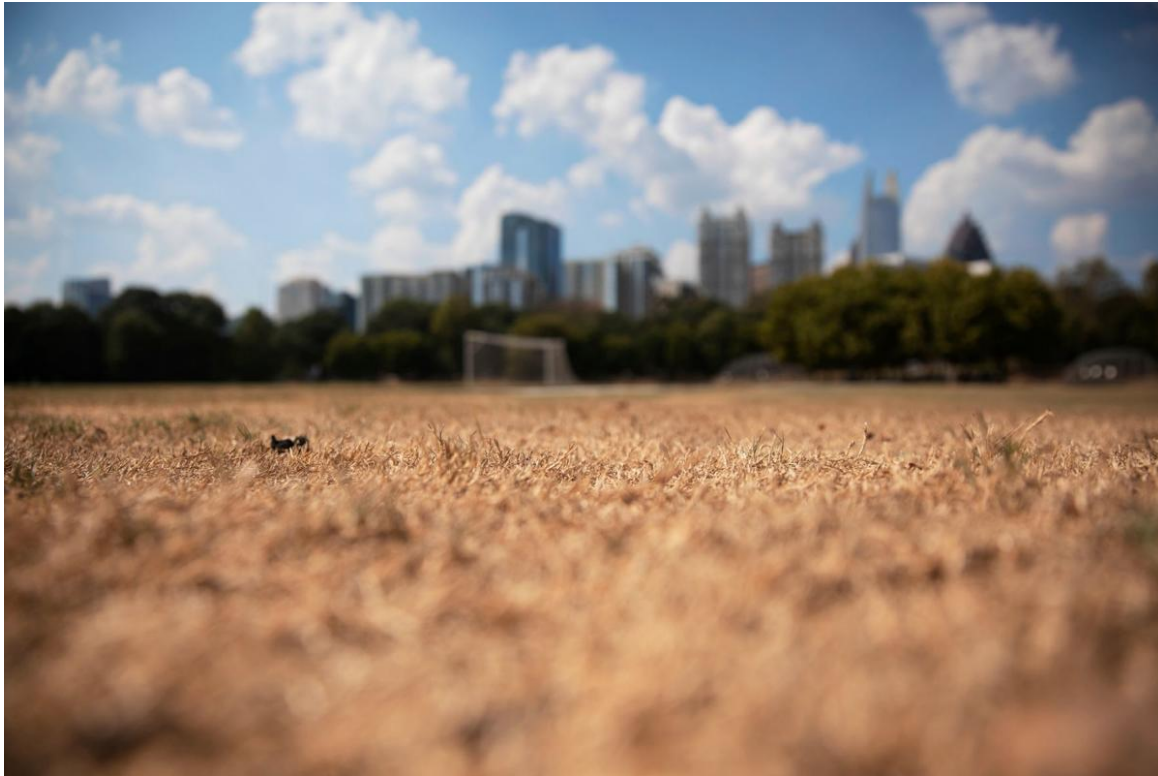


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4.5.5A – Problem Statements

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
WW1	Severe Winter Weather and People Severe winter weather events, especially ice storms, can cause extended power outages in DeKalb County.	According to the U.S. Census Bureau, 37.5% of residents in DeKalb County use electricity as their primary energy source for heating.	Ice and snowstorms often create extended power outages. Extended power outages in the winter creates dangers in the form of cold weather exposure and carbon monoxide exposure from the improper use of gas furnaces and heaters.
WW2	Severe Winter Weather and Economy Severe winter weather events often create hazardous travel conditions.	Between 80% - 90% of DeKalb County residents community to work via roadways.	Snow and ice events in DeKalb County often cause roads to become impassible. southeastern United States where motorist have less experience driving in the conditions and local governments are less equipped to deal with the impacts. Because of this, businesses often close which negatively affects economy.
WW3	Severe Winter Weather and the Built Environment Severe winter weather events, especially ice storms, can cause extended power outages in DeKalb County.	DeKalb County has identified critical facilities which are necessary for the community's response to emergencies and disasters.	Ice and snowstorms often create power outages in DeKalb County. If a power outage affects the community's critical facilities, the ability of governmental officials, first responders, emergency managers, healthcare workers, and other essential workers ability to respond effectively may be hindered.

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4.6(D) – Drought

Photo Source: [MDJonline.com](https://www.mojonline.com) – Most Georgia Counties, including Fulton in Severe

4.6.1 – Hazard Description

Drought is defined as an abnormally dry period lasting months or years when an area has a deficiency of water and precipitation in its surface and or underground water supply. It is, however, a normal, seasonal, and recurrent feature of climate that occurs in virtually all climate zones—typically in late spring through early fall. The duration of drought varies widely. There are cases when drought develops relatively quickly and lasts a very short period, exacerbated by extreme heat and/or wind. There are other cases when a drought spans multiple years, or even decades. The hydrological imbalance can be grouped into the following non-exclusive categories:

- **Agricultural:** When the amount of moisture in the soil no longer meets the needs of previously grown crops,
- **Hydrological:** When surface and subsurface water levels are significantly below their normal levels,
- **Meteorological:** When there is a significant departure from the normal levels of precipitation, and
- **Socio-Economic:** When the water deficiency begins to significantly affect the population.

When little or no rain falls, soil can dry out and plants can die. If unusually dry weather persists and water supply problems develop, the period is defined as a drought. Human activity such as over-farming, excessive irrigation, deforestation, and poor erosion controls can exacerbate a drought's effects. It can take weeks or months before the effects of below average precipitation on bodies of water are observed. Depending upon the region, droughts can happen more quickly, be noticed sooner, or have their effects naturally mitigated. The more humid and wet an area is, the faster the affects will be realized. A naturally dry region, which typically relies more on subsurface water will take more time to actualize its effects.



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FEMA Region IV notes that drought is a cascading hazard; when it occurs, it can make other hazards more dangerous. Dry fuel increases wildfire risk. Expansive soils can shrink during a drought, causing damage to foundations. Loss of ground water can increase sinkholes. Trees are more vulnerable to windstorms as hard, dry soils may not soak up rain, leading to an increased chance of flooding (FEMA Region IV Mitigation Planning Job Aid, Drought Risk Assessment).

4.6.2 – Location & Extent

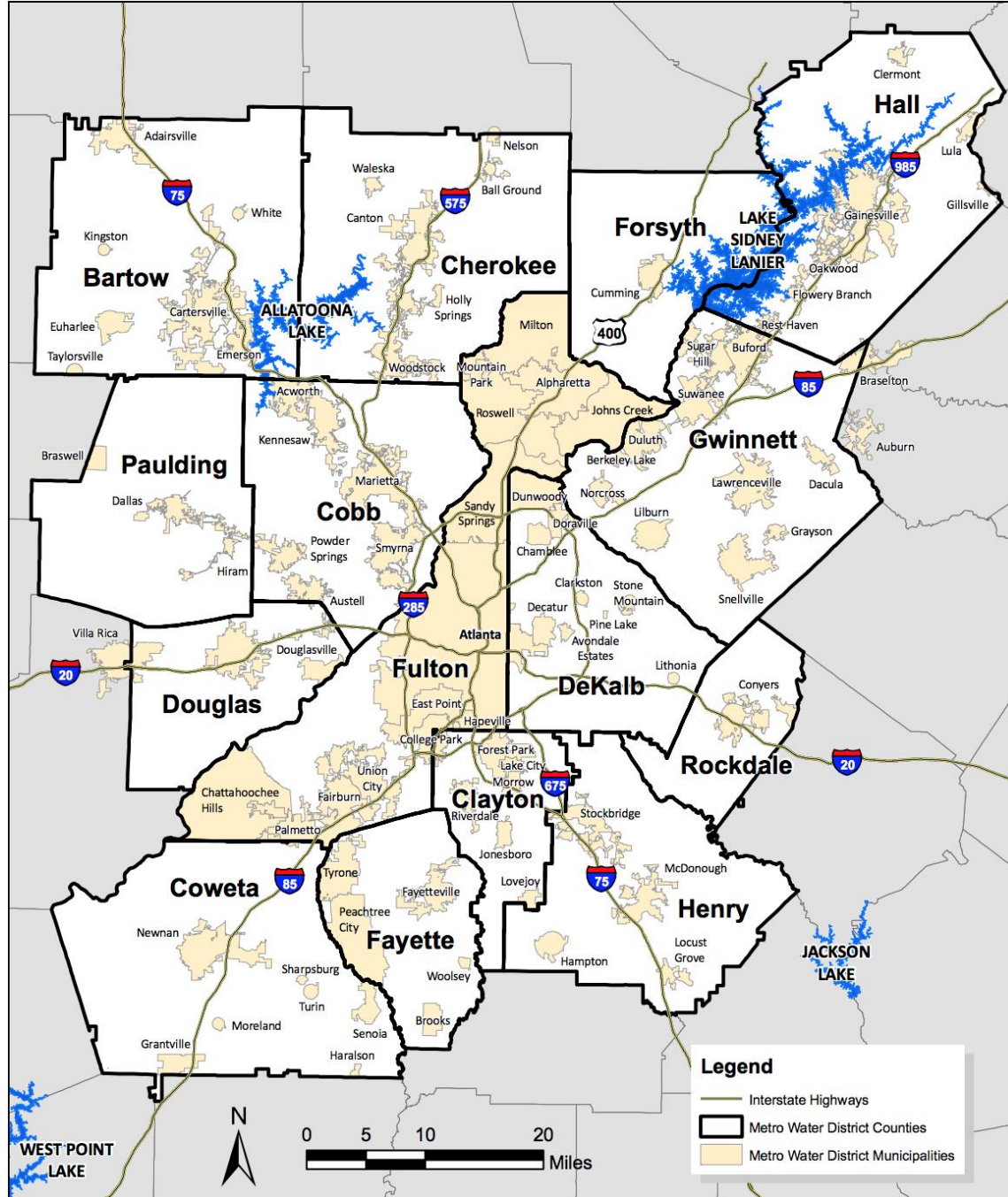
All of DeKalb County is susceptible to droughts. Droughts in Georgia can affect municipal and industrial water supplies, agriculture, stream water quality, recreation at major reservoirs, hydropower generation, navigation, and forest resources (<https://pubs.usgs.gov/of/2000/0380/pdf/ofr00-380.pdf>).

The DeKalb County Department of Watershed Management protects the public health, safety, and welfare through the provision of safe drinking water and quality wastewater treatment. DeKalb County is part of the Metropolitan North Georgia Water Planning District. The Metropolitan North Georgia Water Planning District implements a comprehensive regional water management plan. It is staffed by the Atlanta Regional Commission (ARC) and includes 15 counties and 95 cities. It is the only major metropolitan area in the country with more than 100 jurisdictions implementing a long-term comprehensive water management program that is required and enforced.



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Map 51: Metropolitan North Georgia Water Planning District, Water District Map



Map Source: Metropolitan North Georgia Water Planning District (<https://northgeorgiawater.org/what-is-the-metro-water-district/>)



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Map 52: Water Withdrawal, Metro Atlanta, GA Area



Map Source: <https://northgeorgiawater.org/>

The U.S. Drought Monitor provides a summary of drought conditions across the U.S. and Puerto Rico. The map is updated weekly by combining a variety of data-based drought indices and indicators, along with local expert input, into a single composite drought indicator.

The Palmer Drought Index (PDI), devised in 1965, was the first drought indicator to assess moisture status comprehensively. It uses temperature and precipitation data to circulate water supply and demand; incorporates soil moisture; and is considered most effective for unirrigated cropland. It primarily reflects long-term drought and has been used extensively to initiate drought relief.



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Table 42: Palmer Drought Severity Index

Palmer Drought Severity Index	
Category	Index
Extremely Wet	4.0 or more
Very Wet	3.0 to 3.99
Moderately Wet	2.0 to 2.99
Slightly Wet	1.0 to 1.99
Incipient Wet Spell	0.5 to 0.99
Near Normal	0.49 to -0.49
Incipient Dry Spell	-0.5 to -0.99
Mild Drought	-1.0 to -1.99
Moderate Drought	-2.0 to -2.99
Severe Drought	-3.0 to -3.99
Extreme Drought	-4.0 or less

The Standardized Precipitation Index (SPI) is an index to characterize meteorological drought on a range of timescales, ranging from 1 to 72 months. The SPI is the number of standard deviations that observed cumulative precipitation deviates from the climatological average. NOAA's National Centers for Environmental Information produce the 9-month SPI values below monthly, going back to 1895.

Table 43: Standard Precipitation Index

Standard Precipitation Index	
Category	Index
Extremely Wet	2.0+
Very Wet	1.5 to 1.99
Moderately Wet	1.0 to 1.49
Near Normal	-.99 to .99
Moderately Dry	-1.0 to -1.49
Severely Dry	-1.5 to -1.99
Extremely Dry	-2 and less

Drought is a persistent problem across the nation, as evidenced by its widespread presence in 2018. Early in the year (February 2018), the U.S. Drought Monitor reported that 38.4% of the continental U.S. was in drought. That was the highest percentage since the 40% recorded in May 2014. Additionally, consider there is technically no longer a “fire season” for the State of California, as it has become a tinderbox for drought-related wildfires year-round. Other states across the country are, unfortunately, following suit.

4.6.3 – Previous Occurrences

Drought events and periods are not as clearly defined as other hazard events. For this plan, the planning team used data from the National Centers for Environmental Information (NCEI), U.S. Drought Atlas, and National Drought Center – Drought Mitigation Report. The planning team used the Standard Precipitation Index (SPI) because it uses precipitation only and can characterize drought or abnormal wetness at different time scales which correspond with the time availability of different water resources. Drought events reaching at least SPI Drought Classification -1.0 (Moderately Dry) are recorded in this plan. The drought period ends with the index returns to zero. For example, if the SPI reached “-1.0” on January 1, 2020, a drought period would begin. The drought period would end when the SPI reach “0”. The planning team analyzed U.S.



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Drought Atlas data from the Atlanta Hartsfield International Airport (latitude 33.63, longitude -84.442). This is the nearest reporting station to DeKalb County.

Between 1950 and 2020, drought events have impacted DeKalb County and the incorporated communities within its boundaries for 1017 of the 3640 weeks. Between January 1, 2016, and December 31, 2020, droughts have impacted DeKalb County and the incorporated communities within its boundaries for 40 of the 260 weeks.

Table 44: Drought Weeks (1950-2020)

Drought Weeks (1950-2020)			
Decade	Moderately Dry Weeks	Severely Dry Weeks	Extremely Dry Weeks
1950s	68	51	60
1960s	45	54	24
1970s	69	19	55
1980s	54	40	65
1990s	73	25	28
2000s	51	43	72
2010s	61	25	35
2020	0	0	0
Total	421	257	339

Data Source: Drought Risk Atlas (<https://droughtatlas.unl.edu/Data/Climate.aspx>)

Table 45: Drought Weeks (2016-2020)

Drought Weeks (2016-2020)			
Year	Moderately Dry Weeks	Severely Dry Weeks	Extremely Dry Weeks
2016	2	4	24
2017	8	2	0
2018	0	0	0
2019	0	0	0
2020	0	0	0
Total	10	4	24

Data Source: NOAA/NCEI Storm Events Database

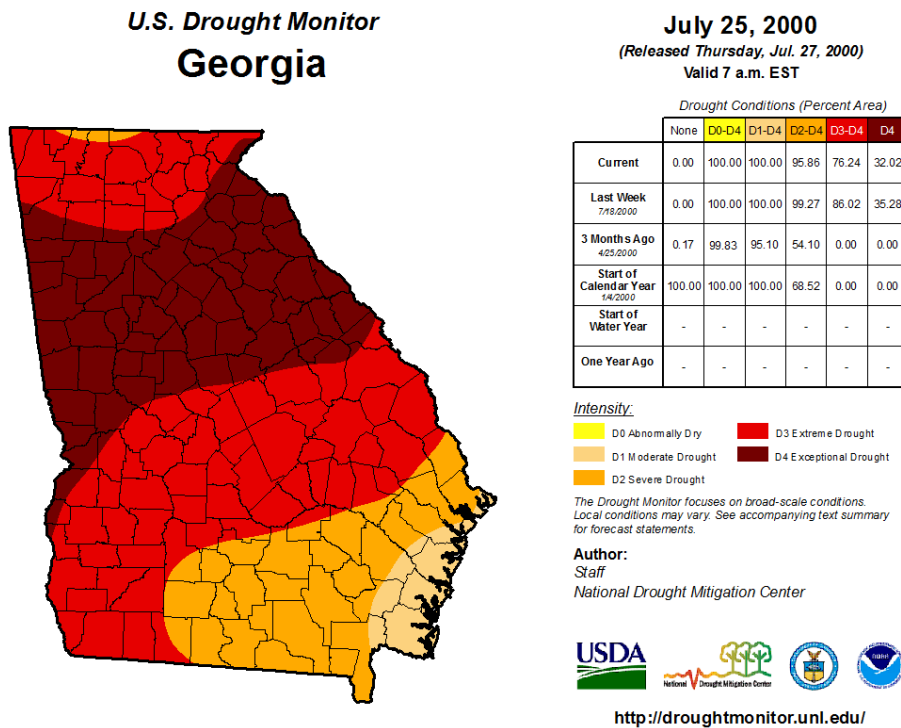
April 2000 – August 2000, Drought: The drought began in April 2000, as the area was experiencing a rainfall deficit of between 12 to 15 inches. At the height of the drought, the Center for Climate Prediction



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and the U.S. Department of Agriculture classified most of central Georgia in an exceptional drought. Water supplies continued to dwindle in most areas. Stream flows were at or below the lowest 10th percentile of the historical distribution for June at 90 percent of Georgia's observing sites. Twenty-nine percent of Georgia's cotton crop was rated in a poor to very poor condition. University of Georgia cumulative crop damage estimates for the whole state were placed at \$689 million dollars, plus another \$50 million dollars in increased irrigation costs, for a total estimate of \$739 million in losses statewide. Water shortages prompted the Georgia Department of Natural Resources to institute statewide restrictions on outdoor water use.

Map 53: U.S. Drought Monitor, Georgia, July 25, 2000



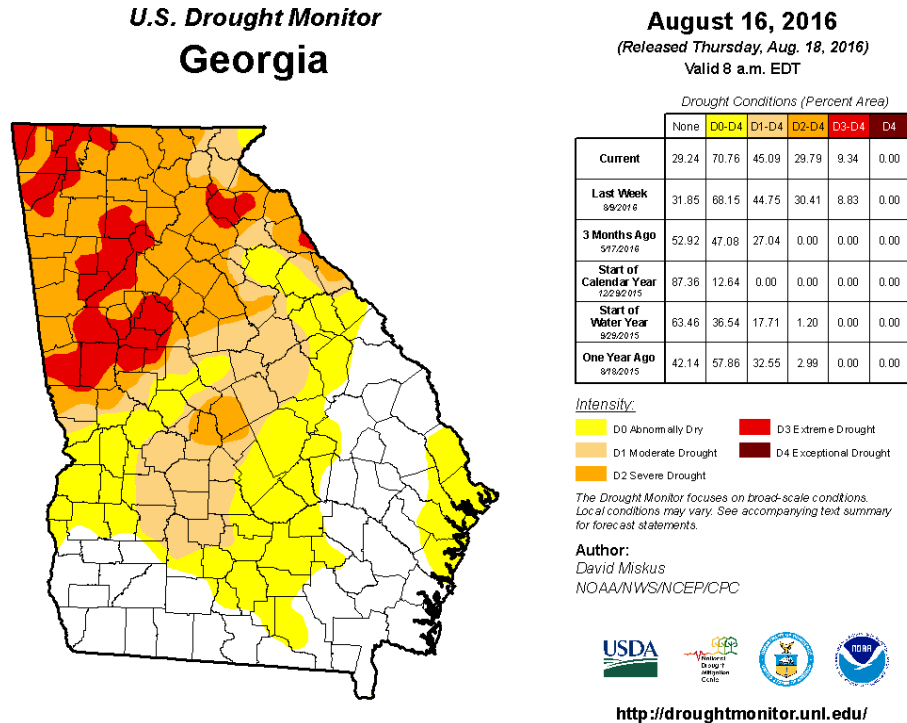
Source: U.S. Drought Monitor (<https://droughtmonitor.unl.edu/Maps/MapArchive.aspx>)

March 2016 – August 2016, Drought: The drought began in March and continued through the summer months of 2016. The drought severely affected corn and peanut crops across the area. Area farmers also suffered losses on the sale of hay. Pastureland across the region was so dry that farmers had to let cattle graze on land normally used to grow hay, and in some cases, had to feed their cattle hay. The DeKalb County Department of Watershed Management implemented water restrictions. The Georgia Forestry Commission also issued advisories for outdoor burning due to the elevated fire risk.



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Map 54: U.S. Drought Monitor, Georgia, August 16, 2016



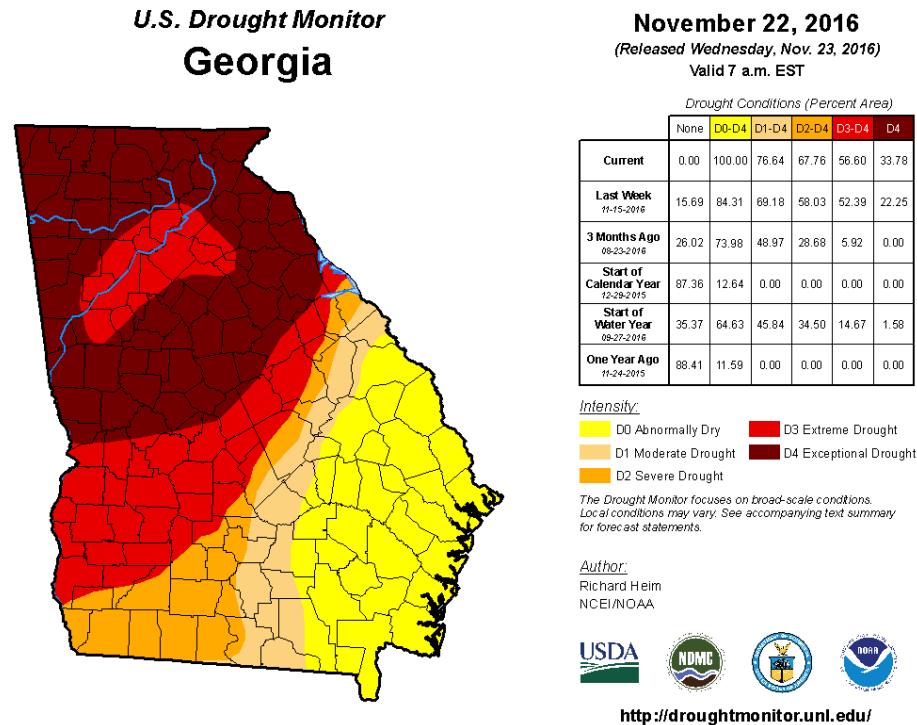
Source: U.S. Drought Monitor (<https://droughtmonitor.unl.edu/Maps/MapArchive.aspx>)

October 2016 – November 2016, Drought: After a brief break, the second drought of 2016 began on October 14th. Soil, streams and vegetation did not have enough time to recover from the previous 22 week-long drought, which made the situation worse. On November 17th, Georgia Governor Nathan Deal raised 52 counties from Level I to Level II Drought Response. This designation prohibited many outdoor water uses including washing hard surfaces such as streets and sidewalks, water for ornamental purposes, the use of fire hydrants except for firefighting and public safety, non-commercial washing of vehicles, non-commercial pressure washing, and fundraising car washes. (<https://www.walb.com/story/33736857/governor-raises-drought-designations-prompting-restrictions/>)



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Map 55: U.S. Drought Monitor, Georgia, November 22, 2016



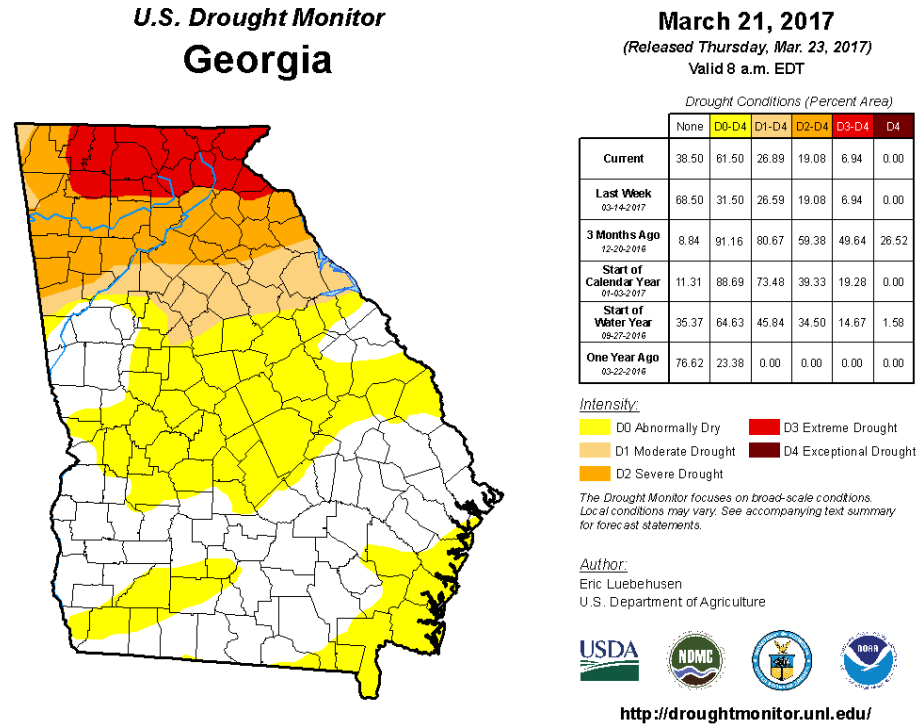
Source: U.S. Drought Monitor (<https://droughtmonitor.unl.edu/Maps/MapArchive.aspx>)

March 2017 – April 2017, Drought: Long-term drought conditions, experience since early 2016, were finally improving in early 2017 due to an active weather pattern. However, a short-term drought occurred in early spring. The active weather pattern quickly ended the short-term drought, and ultimately, the long-term drought.



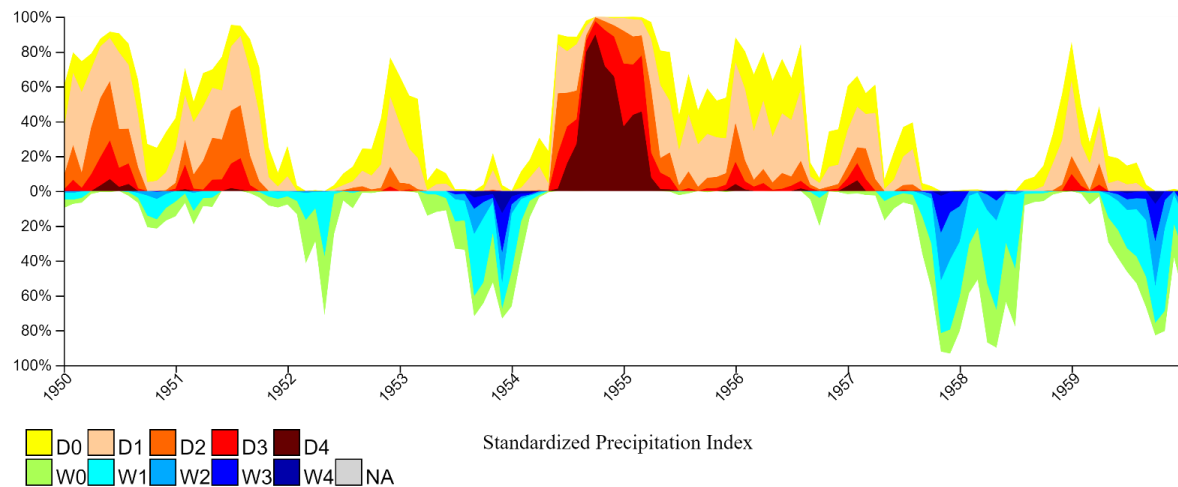
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Map 56: U.S. Drought Monitor, Georgia, March 21, 2017



Source: U.S. Drought Monitor (<https://droughtmonitor.unl.edu/Maps/MapArchive.aspx>)

Illustration 5: Georgia Drought Graph – 1950s

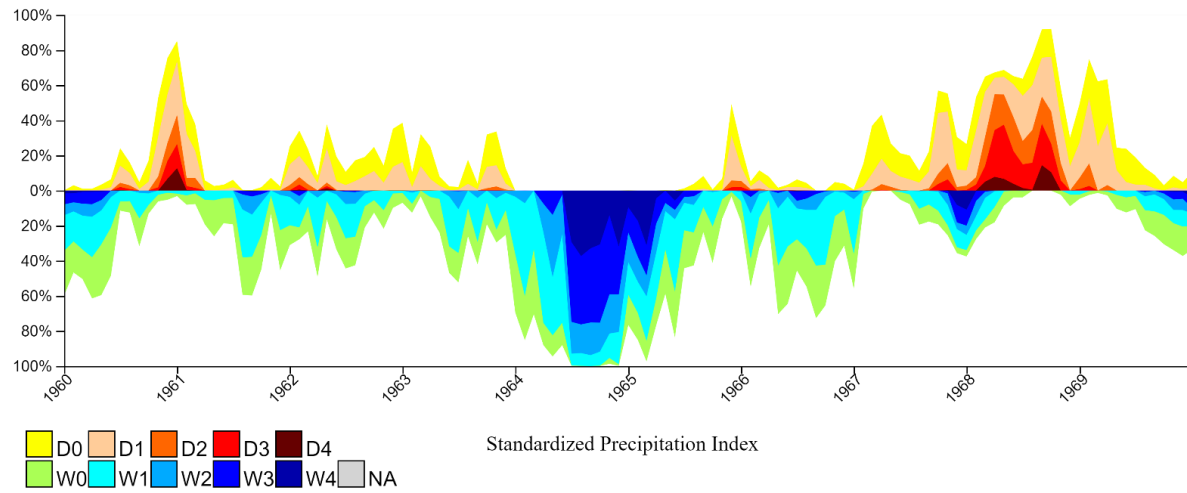


Source: NOAA NIDIS (<https://www.drought.gov/states/georgia/county/Dekalb>)



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Illustration 6: Georgia Drought Graph – 1960s

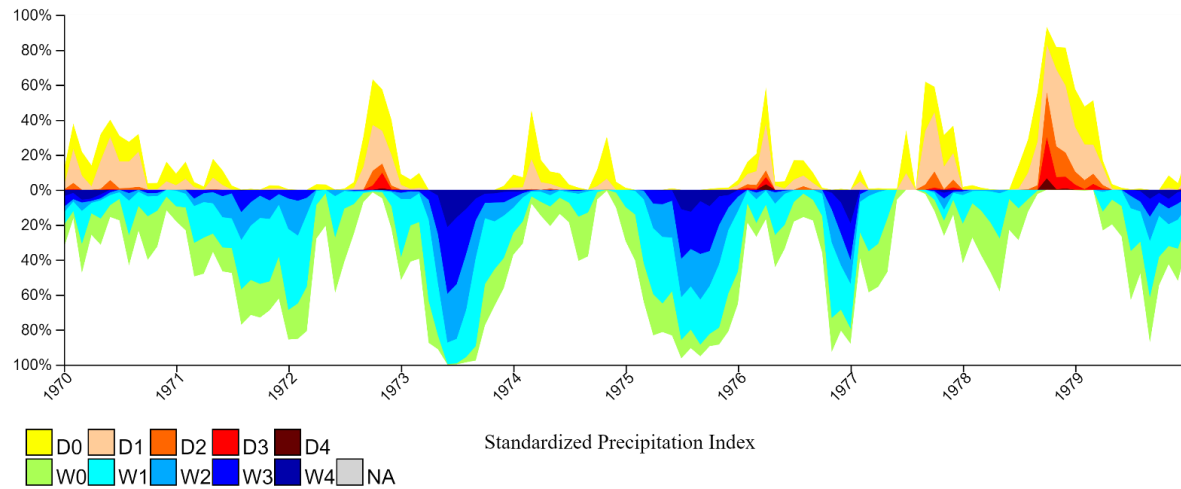


Source: NOAA NIDIS (<https://www.drought.gov/states/georgia/county/Dekalb>)



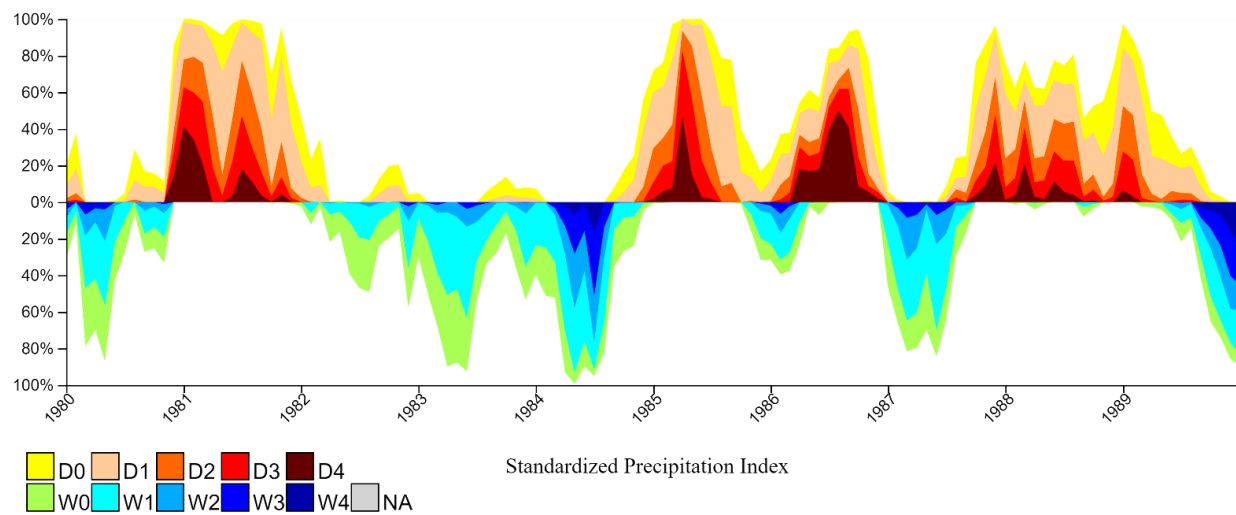
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Illustration 7: Georgia Drought Graph – 1970s



Source: NOAA NIDIS (<https://www.drought.gov/states/georgia/county/Dekalb>)

Illustration 8: Georgia Drought Graph – 1980s

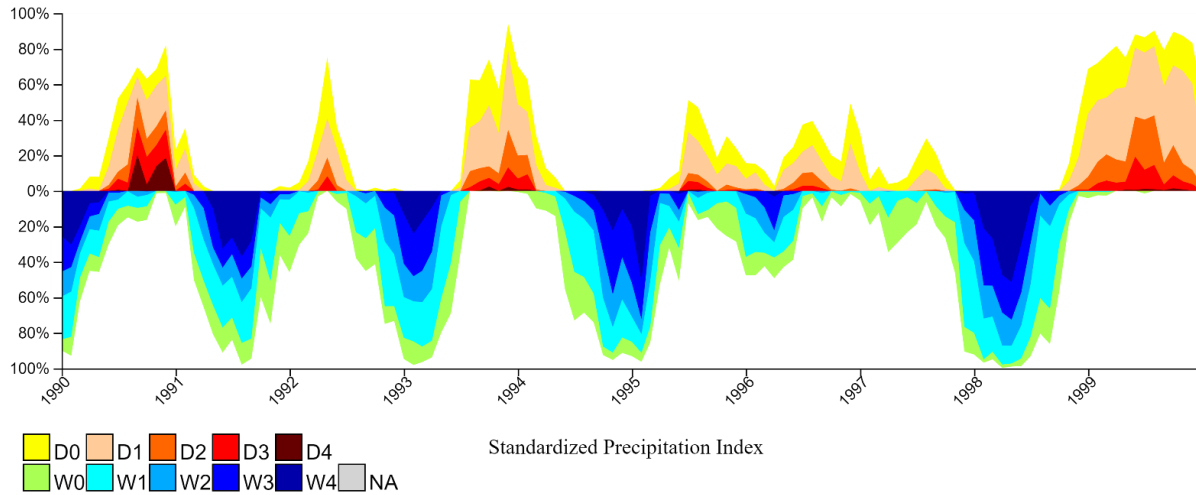


Source: NOAA NIDIS (<https://www.drought.gov/states/georgia/county/Dekalb>)



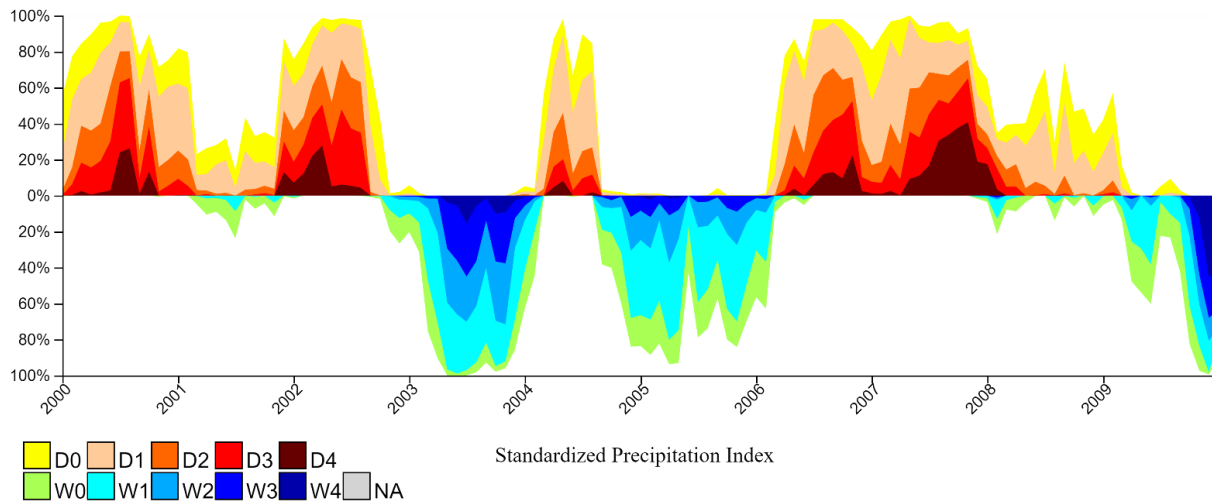
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Illustration 9: Georgia Drought Graph – 1990s



Source: NOAA NIDIS (<https://www.drought.gov/states/georgia/county/Dekalb>)

Illustration 10: Georgia Drought Graph – 2000s



Source: NOAA NIDIS (<https://www.drought.gov/states/georgia/county/Dekalb>)

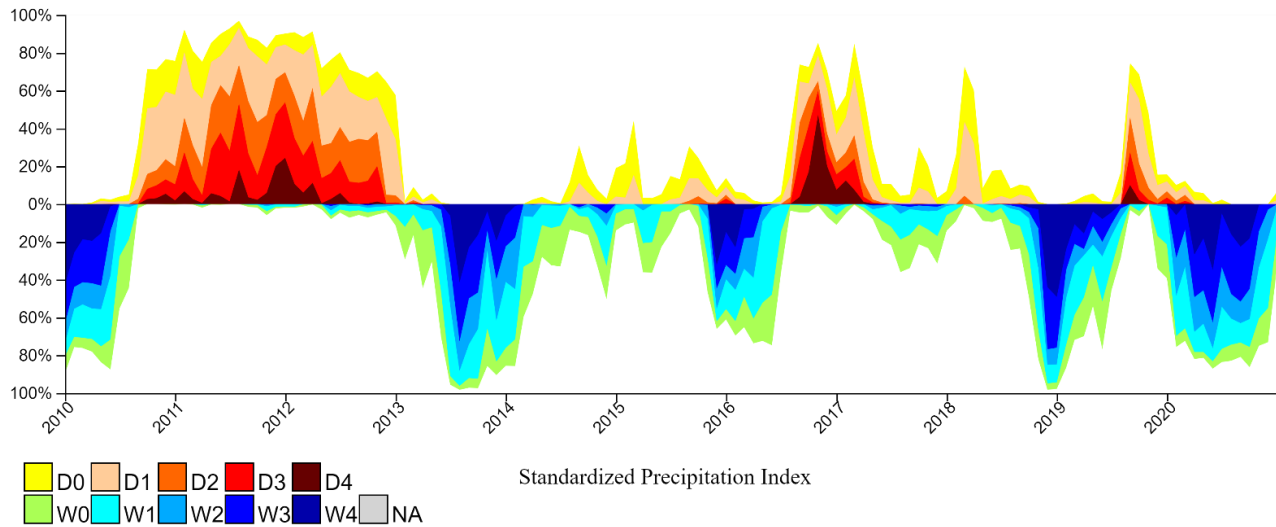
Illustration 11: Georgia Drought Graph – 2010s

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Source: NOAA NIDIS (<https://www.drought.gov/states/georgia/county/Dekalb>)

4.6.3A – Probability of Future Events

Table 47: Probability of Future Events, Drought

Probability of Future Events, Drought			
Decade	Moderately Dry Weeks	Severely Dry Weeks	Extremely Dry Weeks
1950s	68	51	60
1960s	45	54	24
1970s	69	19	55
1980s	54	40	65
1990s	73	25	28
2000s	51	43	72
2010s	61	25	35
2020	0	0	0
Total	421	257	339
Weeks	3640		
Probability Each Week	12%	7%	9%
Total Drought Weeks	1017		
Probability of a Drought Each Week (Total Drought Weeks/Total Weeks)	28%		

Data Source: NOAA/NCEI Storm Events Database



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Between 1950 – 2020, moderately dry weeks have occurred 421 of the 3640 weeks. Severely dry weeks have occurred 257 of the 3640 weeks. Extremely dry weeks have occurred 339 of the 3640 weeks. Wet and dry periods often occur over an extended period, based on the prevailing weather pattern. Based on this data, it is **likely** a drought of some magnitude will occur in DeKalb County during the next five-years.

4.6.4 – Vulnerability of Community Assets

Vulnerability of People

Severe drought can pose a significant risk to public health if water sources become scarce, or worse, contaminated. This is especially true for those who get their drinking water from private wells. Per the Centers for Disease Control (CDC), viruses, such as E. coli and salmonella, as well as protozoa and bacteria, can pollute both groundwater and surface water when rainfall decreases. Additionally, acute respiratory and gastrointestinal illnesses are more easily spread from person-to-person when hand washing is compromised by a perceived or real lack of available water.

Vulnerability of the Economy

DeKalb County and its participating jurisdictions have significant agricultural areas which are vulnerable to drought. According to the 2017 USDA Census of Agriculture DeKalb County contained 34 farms, covering 468 acres of land. Total commodity sales equal \$547,000 per year. This includes a total of \$388,000 in crop sales and \$158,000 in animal product sales. (https://www.nass.usda.gov/Quick_Stats/CDQT/chapter/2/table/1/state/GA/county/089/year/2017).

Vulnerability of the Built Environment

Drought typically does not have a direct impact on critical facilities or infrastructure. However, possible losses/impacts to them can include loss of critical functions due to low water supplies. Severe droughts can negatively affect drinking water supplies. Should a public water system be affected, the losses could total into the millions if water must be purchased and shipped from other locations.

Vulnerability of Natural Environment

Droughts can increase an area's vulnerability to wildfire due to dry vegetation. Dry, hot, and windy weather combined with dry vegetation and a spark, whether through human intent, accident, or lightning, can trigger a blaze. Such fires, as experienced in Georgia's Okefenokee National Wildlife Refuge in April 2017, can scorch hundreds of thousands of acres of land.

Droughts also decrease streamflow and groundwater supplies. During a drought period in November 2016, a United States Geological Survey (USGS) Groundwater Watch station, located at Latitude 33°55'17", Longitude 84°16'40" in DeKalb County recorded groundwater depth at 8.94 feet below the surface, which was the lowest since the station became operational in 1980. This type of groundwater depletion can impact water supplies and agricultural production.

Because the population of DeKalb County continues to grow and development projects are underway, people and facilities within the planning area are increasingly vulnerable to the short- and long-term effects of drought. Water conservation is a major need during drought events.

The DeKalb County Department of Watershed Management, Metropolitan North Georgia Water Planning District, and Georgia Environmental Protection Division encourages water conservation and water-saving habits within the planning area. Residents are encouraged to take steps to conserve water in their homes and places of business. Additionally, they are reminded to abide by the State of Georgia's permanent "Year-Round Outdoor Water Restrictions" which limit outdoor watering to before 10:00 AM and after 4:00 PM in order to avoid the hottest part of the day when more evaporation occurs. Both the DeKalb County Department of Watershed Management and the Metropolitan North Georgia Water Planning District



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encourages the community to conserve water during drought events and provides this information through its website (<https://www.dekalbcountyga.gov/watershed-management/dekalb-county-drought-restrictions>) and public outreach events within the communities they serve.

4.6.5 – Risk Analysis

DeKalb County's natural environment is most at risk to drought. Water resources are depleted by droughts. Wildfire risk also increases as vegetation becomes dry. These risks naturally have trickle-down effects on the people, built environment, and economy of DeKalb County. Low water supply creates water restrictions, which affect people. Droughts also can cause the water supply to be contaminated by biological agents. The operations of critical facilities, such as hospitals, may be affected by low or contaminated water supply. Farmers, who depend on rainfall for their agricultural production, are often most at risk of drought-related impacts.

FEMA's National Risk Index (NRI) estimates that DeKalb County and the jurisdictions within its boundaries have \$518,283 worth of agriculture are exposed to drought hazards impacts each year. The NRI projects annual losses of \$21,144 worth of agriculture to drought hazard impacts each year.

A long period of extreme or critical drought conditions, such as the 2016 drought, will expose farmers to lost revenue, estimated to be \$547,000 in the 2017 USDA Agricultural Census. It will cause the need for water restrictions, such as those placed by local and state entities in response to the 2016 drought. It will expose the land to wildfire dangers, such as occurred during the Okefenokee National Wildlife Refuge in April 2017.

Table 48: Risk Analysis of Community Lifeline Systems to Drought, DeKalb County

Risk Analysis of Community Lifeline Systems to Drought, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
Safety and Security	Law Enforcement /Security	No Risk.
	Fire Services	High Risk. Droughts may deplete firefighting water supplies. Droughts may also create extreme wildfire dangers.
	Search and Rescue	No Risk.
	Government Services	No Risk.
	Community Safety	No Risk.
Food, Water, Shelter	Food	Moderate Risk. Droughts may affect food production.
	Water	High Risk. Droughts may cause water supplies to become contaminated or limited.
	Shelter	No Risk.
	Agriculture	High Risk. Droughts may limit agricultural production.
Health and Medical	Medical Care	Low Risk. Droughts may cause water supplies to be contaminated or limited, affecting hospitals and other medical facilities.



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	Patient Movement	No Risk.
	Public Health	Low Risk. Droughts may cause water supplies to become contaminated, causing a public health emergency.
	Fatality Management	No Risk.
	Medical Supply Chain	No Risk.
Energy	Power (Grid)	Low Risk. Droughts may affect hydro-electrical generation.
	Fuel	No Risk.
Communications	Infrastructure	No Risk.
	Alerts, Warnings, and Messages	No Risk.
	911 and Dispatch	No Risk.
	Responder Communications	No Risk.
	Finance	No Risk.
Transportation	Highway/Roadway	Low Risk. Droughts increase the occurrences of sinkholes, which may impact roadways.
	Mass Transit	No Risk.
	Railway	No Risk.
	Aviation	No Risk.
	Maritime	No Risk.
Hazardous Materials	Facilities	Low Risk. Droughts may cause water supplies to hazardous materials facilities to become limited.
	Hazmat, Pollutants, Contaminants	No Risk.



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4.6.5A – Problem Statements

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
D1	Drought and Economy Some magnitude of drought is likely to occur in DeKalb County during the next five years.	Agricultural production generates over a half-million dollars of income for farmers in DeKalb County.	Agricultural production is at a high-risk during drought periods. This risk affects the economy and people of DeKalb County.
D2	Drought and Natural Environment Some magnitude of drought is likely to occur in DeKalb County during the next five years.	DeKalb County residents and critical facilities depend upon surface and groundwater reservoirs for the community's water supply.	Rivers, streams, and groundwater reservoirs are at a high-risk during drought periods. This risk affects the people, businesses, and critical facilities of DeKalb County.
D3	Drought and Natural Environment Some magnitude of drought is likely to occur in DeKalb County during the next five years.	DeKalb County's natural environment consists of woodland areas. Numerous people live in and around these wooded areas.	Woodlands are at high-risk of wildfire during long-term drought periods. This risk affects people living near the wooded areas.

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4.7(WF) – Wildfire

4.7.1 – Hazard Description

The National Weather Service (NWS) defines a wildfire as “any free-burning, uncontrollable wildland fire not prescribed for the area which consumes the natural fuels and spreads in response to its environment.” Wildfires can occur naturally from a lightning strike; by human accident from a non-fully extinguished campfire; and on rare occasions, by human actions, or arson. The threat of wildfire increases in areas prone to intermittent drought, or that are generally arid and dry. Regardless of how they begin, wildfires can consume large areas including infrastructure, property, and resources.

There are three general types of wildfires—ground, surface, and crown. Ground fires, often referred to as underground or subsurface fires, occur in deep accumulations of organic matter such as humus, peat and similar dead vegetation that are dry enough to burn. These fires move very slowly and become difficult to fully extinguish or suppress. Occasionally, during prolonged drought, ground fires can smolder all winter underground and then emerge at the surface again in the spring. Surface fires burn only surface litter and duff, including leaves and fallen branches, and are the easiest of all fires to extinguish. Crown fires, on the other hand, are the most intense and most difficult to maintain. They burn trees up their entire length, and usually occur where there are strong winds, steep slopes, and a heavy fuel load (e.g., densely wooded forests).

Wildfires are also notorious for spawning secondary hazards long after the original fire is extinguished. Such hazards include flash flooding, debris flows, and landslides. All result from fire consuming the vegetation that provides precipitation interception and infiltration as well as slope stability.



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Fire services can mitigate wildfires by regularly engaging in preventative burns and proactive land use measures. Homeowners and business owners can also do their part by taking precautionary efforts, such as following local fire-related ordinances; removing leaves, limbs, and other debris from property; and creating a defensible space around structures. Among those emphasizing the need for such preemptive actions is Firewise USA™, a national recognition program that provides instructional resources to inform people how to adapt to living with the risk of wildfire.

4.7.2 – Location & Extent

According to the 2019 Georgia Hazard Mitigation Strategy, all of Georgia is prone to wildfire due to the presence of wildland fuels associated with wildfires, which include coniferous, deciduous, and mixed forest; shrublands, grasslands and herbaceous, and woody/emergent wetlands.

With more people making their homes in wooded settings near forests and remote mountain sites, the threat of wildfire is steadily on the rise. This is because the demographic change is expanding the size of the area where structures and other human development meet or intermingle with undeveloped wildland, otherwise known as the wildland urban interface (WUI). The U.S. Fire Administration defines the WUI as the zone of transition between unoccupied land and human development. It is the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels (<https://www.usfa.fema.gov/wui/what-is-the-wui.html>). The WUI creates an environment in which fire can move readily between structure and vegetation fuels, often resulting in massive fires, or conflagrations, that may lead to widespread evacuations.

The WUI is composed of interface and intermix communities. Intermix WUI refers to areas where housing and wildland vegetation intermingle. Interface WUI refers to areas where housing is in the vicinity of a large area of dense wildland vegetation. Georgia has a large percentage of homes in the WUI. According to the USDA, 47.7% of homes in Georgia are in the WUI; 20.3% are in the interface and 27.4% are in the intermix. Also, 47.5% of the population reside in the WUI; 20.1% are in the interface and 20.1% are in the intermix (https://www.fs.fed.us/nrs/pubs/rmap/rmap_nrs8.pdf).

Table 49: Definition of WUI and non-WUI land-use classes

Definition of WUI and non-WUI land-use classes	
WUI	Definition
Intermix	Areas with ≥ 6.18 houses per square km and $\geq 50\%$ cover of wildland vegetation
Interface	Areas with ≥ 6.18 houses per square km and $\leq 50\%$ cover of vegetation located < 2.4 km of an area ≥ 5 square km in size that is $\geq 75\%$ vegetated
Non-WUI, Vegetated	Definition
No housing	Areas with ≥ 50 percent cover of wildland vegetation and no houses (e.g., protected areas, steep slopes, mountain tops)
Very low housing density	Areas with ≥ 50 percent cover of wildland vegetation and < 6.18 houses per km ² (e.g., dispersed rural housing outside neighborhoods)
Non-Vegetated or Agriculture	Definition
Low and very low housing density	Areas with < 50 percent cover of wildland vegetation and < 49.42 houses per square mile (e.g., agricultural lands and pasturelands)

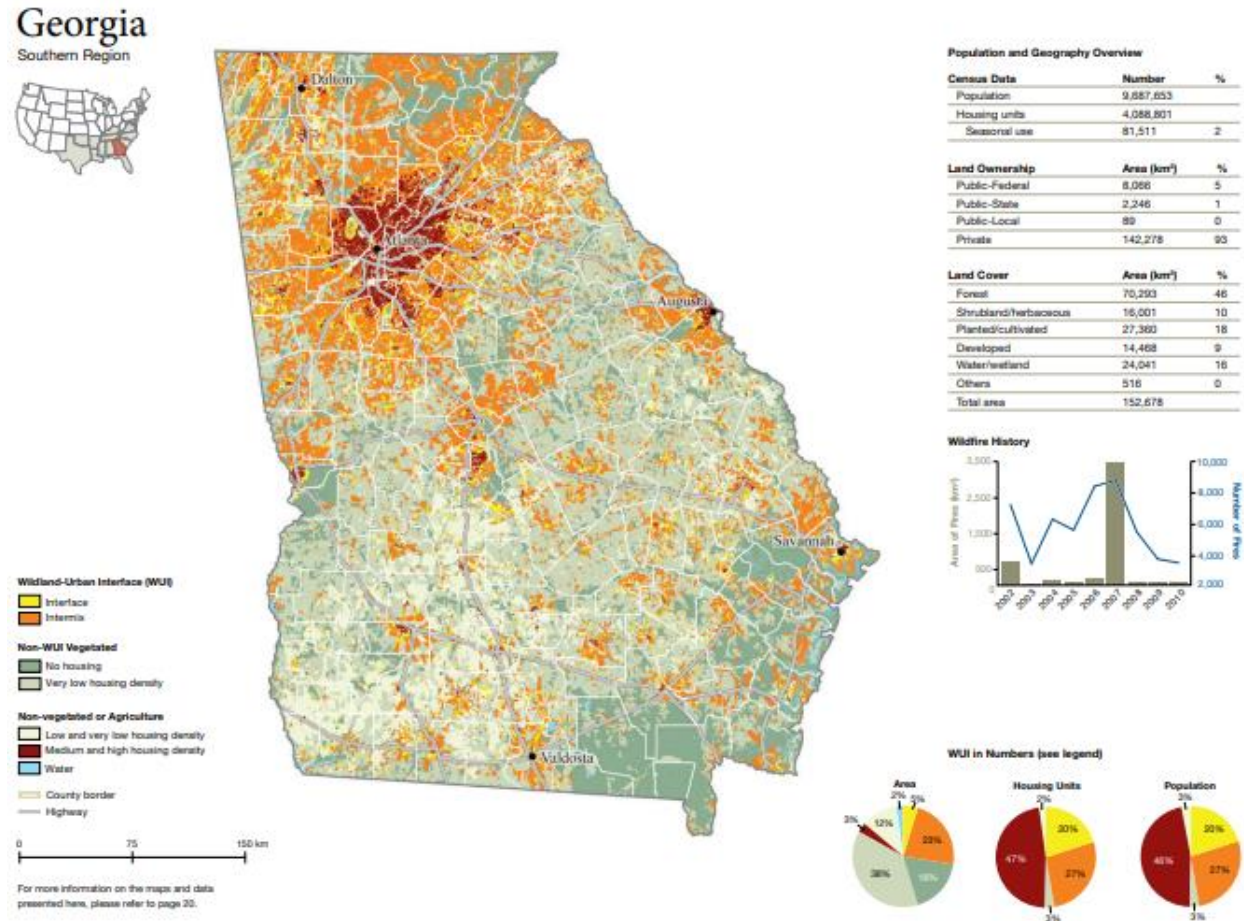


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Medium and high housing density	Areas with <50 percent cover of wildland vegetation and ≥ 49.42 houses density per square km (e.g., urban and suburban areas, which may have vegetation, but not dense vegetation)
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Data Source: USDA, The 2010 Wildland-Urban Interface of the Conterminous United States (https://www.fs.fed.us/nrs/pubs/rmap/rmap_nrs8.pdf)

Map 57: Georgia Wildland Urban Interface Map

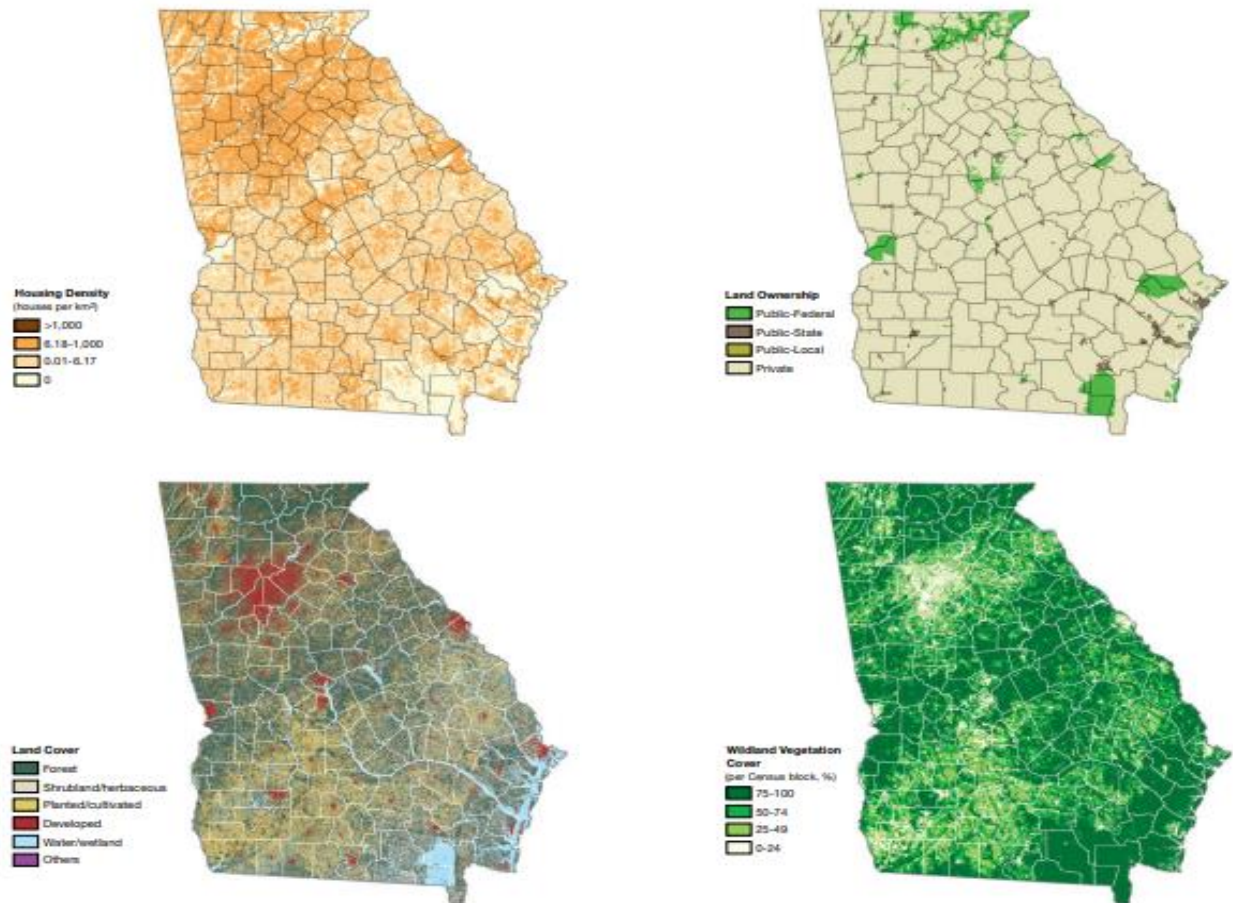


Data Source: USDA, The 2010 Wildland-Urban Interface of the Conterminous United States (https://www.fs.fed.us/nrs/pubs/rmap/rmap_nrs8.pdf)



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Map 58: Georgia WUI Auxiliary Maps



Data Source: USDA, *The 2010 Wildland-Urban Interface of the Conterminous United States*
https://www.fs.fed.us/nrs/pubs/rmap/rmap_nrs8.pdf

The WUI Risk Index is a rating of the potential impact of a wildfire on people and their homes. The key input, WUI, reflects housing density (houses per acre) consistent with Federal Register National standards. The location of people living in the WUI, and rural areas is key information for defining potential wildfire impacts to people and homes.

The WUI Risk Index is derived using a Response Function modeling approach. Response functions are a method of assigning a net change in the value to a resource or asset based on susceptibility to fire at different intensity levels, such as flame length. The WUI Risk Index range of values is from -1 to -9, with -1 representing the least negative impact and -9 representing the most negative impact. Areas with high housing density and higher flame lengths will be lower on the scale (i.e., -9) while areas with low housing density and high flame lengths will be rated higher (i.e., -1). To calculate the WUI Risk Index, the WUI housing density data was combined with Flame Length data and response functions were applied to represent potential negative impacts for all unique conditions of WUI housing density and flame length. The response functions were defined by a team of experts based. By combining flame length with the WUI housing density data, a community can determine where the greatest potential impact to homes and people is likely to occur.

Flame Length is used as a measure of fire intensity. With the WUI Risk Index the analysis incorporates penetration into urban fringe areas so that outputs better reflect real world conditions for fire spread and impact in urban interface areas. This allows houses in urban areas adjacent to wildland fuels to be incorporated into the WUI risk modeling. (<https://southernwildfirerisk.com/>)

DeKalb County Wildfire Hazard Risk Assessment
Wildland Urban Interface Risk Index

DeKalb County, GA – 2022 Countywide Hazard Mitigation Update

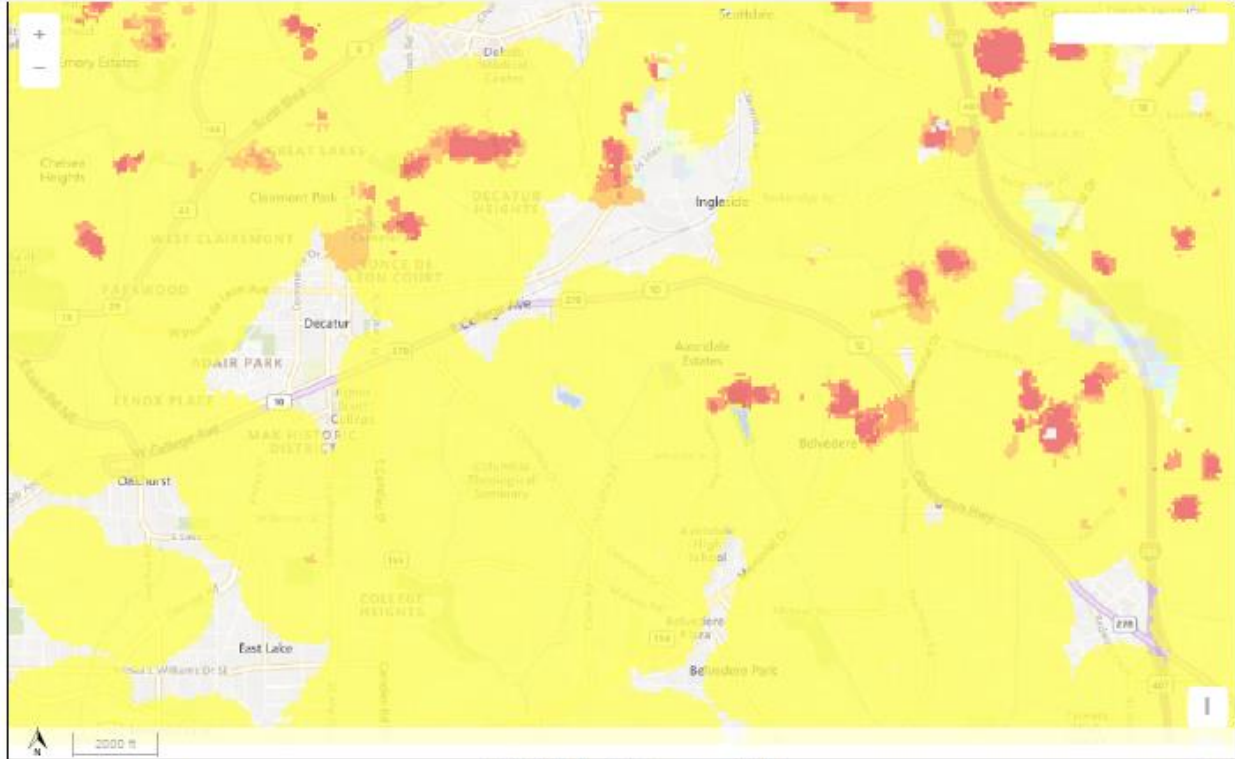


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Map 60: City of Avondale Estates WUI Risk Index

Avondale Estates Wildfire Risk Assessment

Wildland Urban Interface Risk Index



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(<https://southernwildfirerisk.com/>)

Peak Value: -8

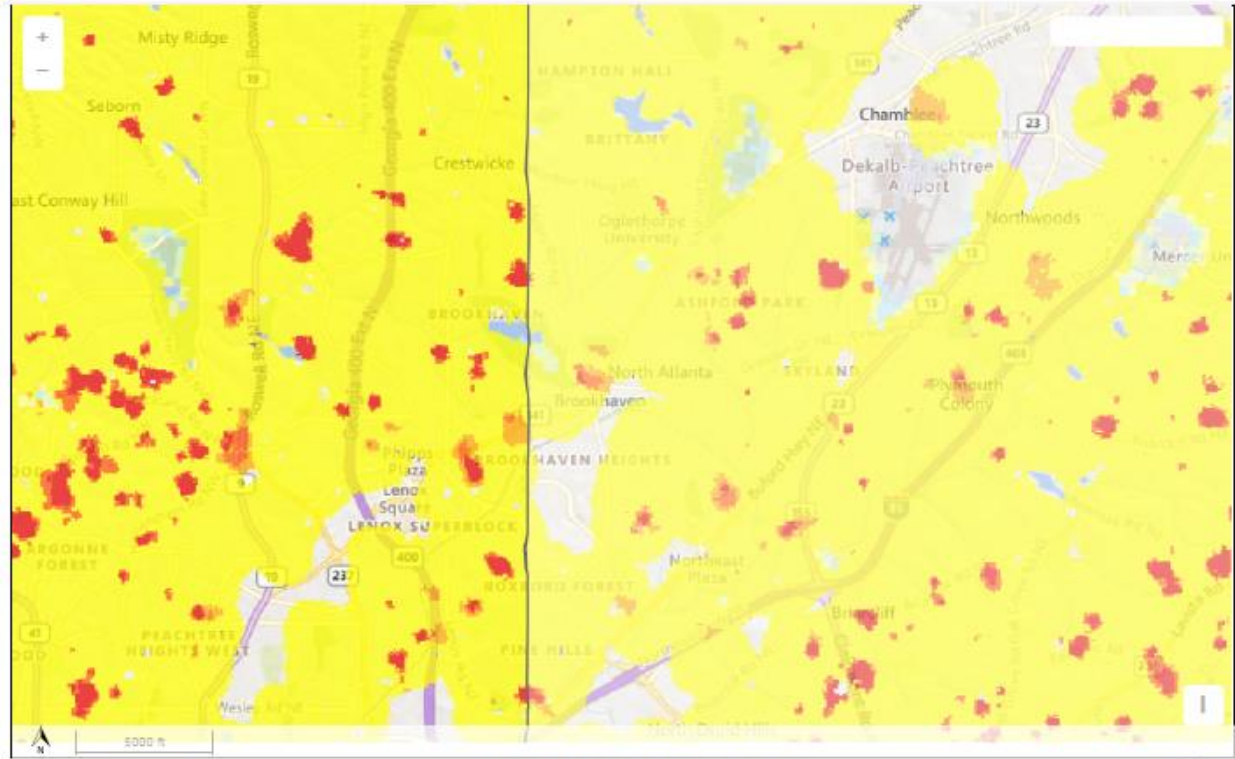


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Map 61: City of Brookhaven WUI Risk Index

Brookhaven Wildfire Hazard Risk Assessment

Wildland Urban Interface Risk Index



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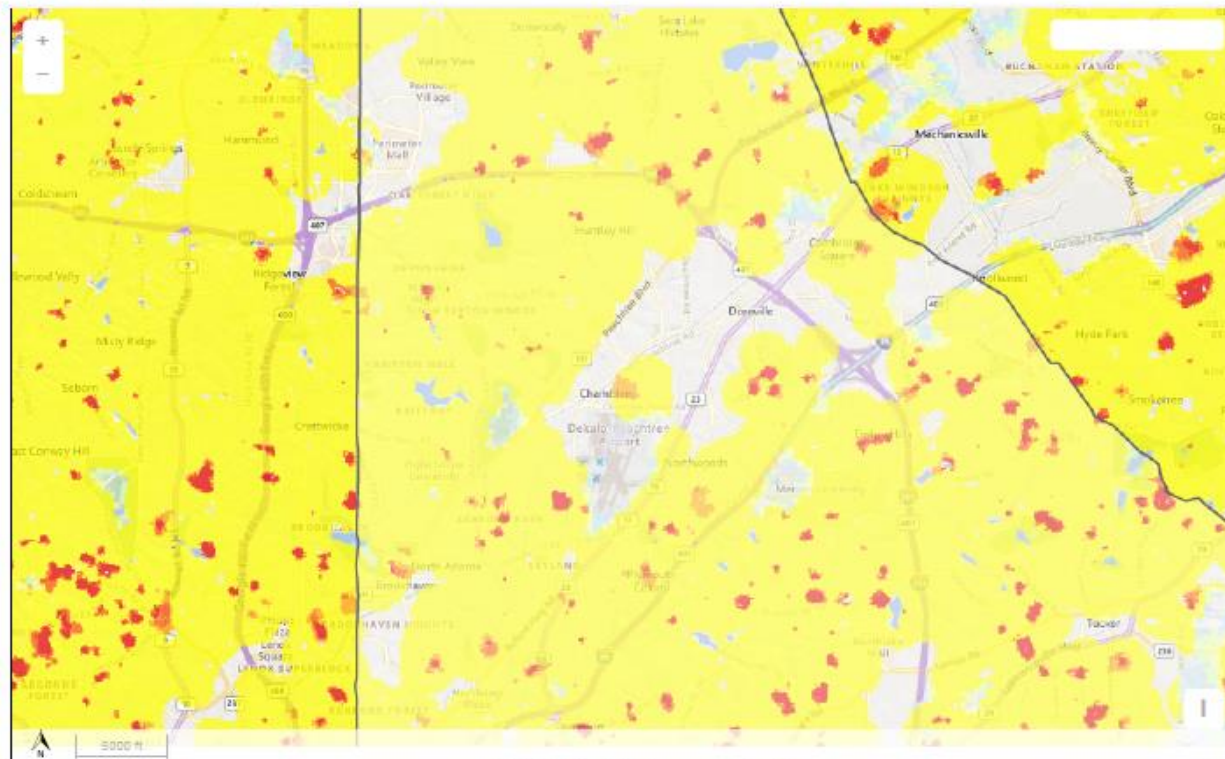


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Map 62: City of Chamblee WUI Risk Index

Chamblee Wildfire Risk Assessment

Wildland Urban Interface Risk Index



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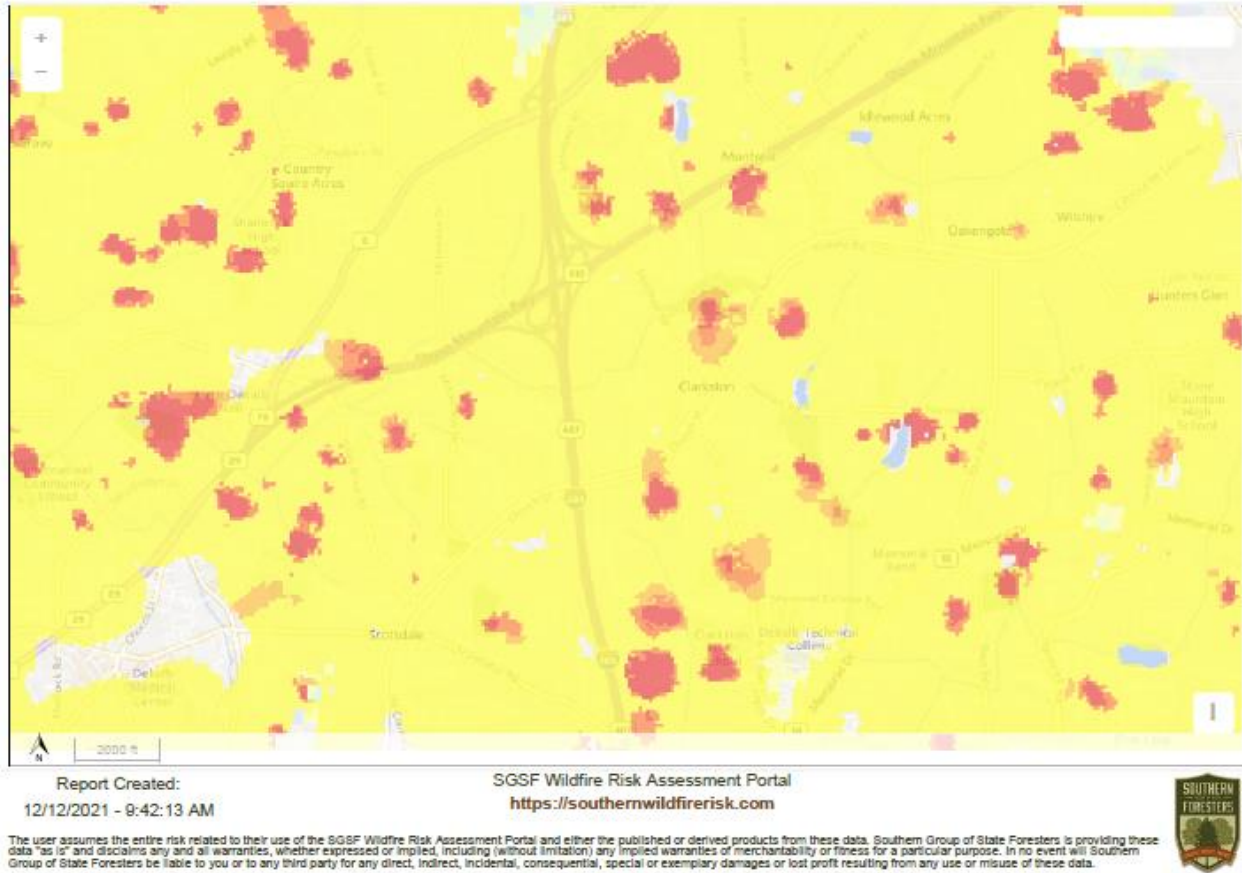
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Map 63: City of Clarkston WUI Risk Index

Clarkston Wildfire Risk Assessment Wildland Urban Interface Risk Index



Data Source: Southern Group of State Foresters Wildfire Risk Assessment Portal
(<https://southernwildfirerisk.com/>)

Peak Value: -8

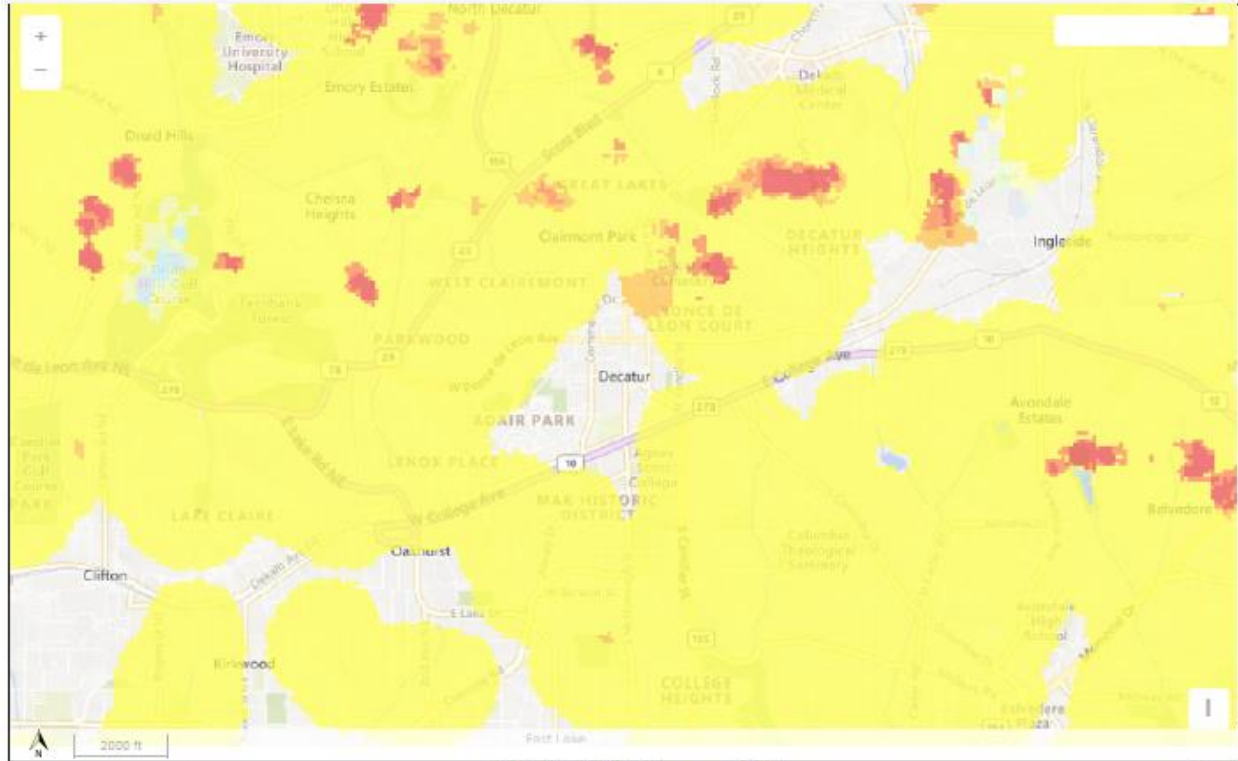


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Map 64: City of Decatur WUI Risk Index

Decatur Wildfire Risk Assessment

Wildland Urban Interface Risk Index



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Data Source: Southern Group of State Foresters Wildfire Risk Assessment Portal

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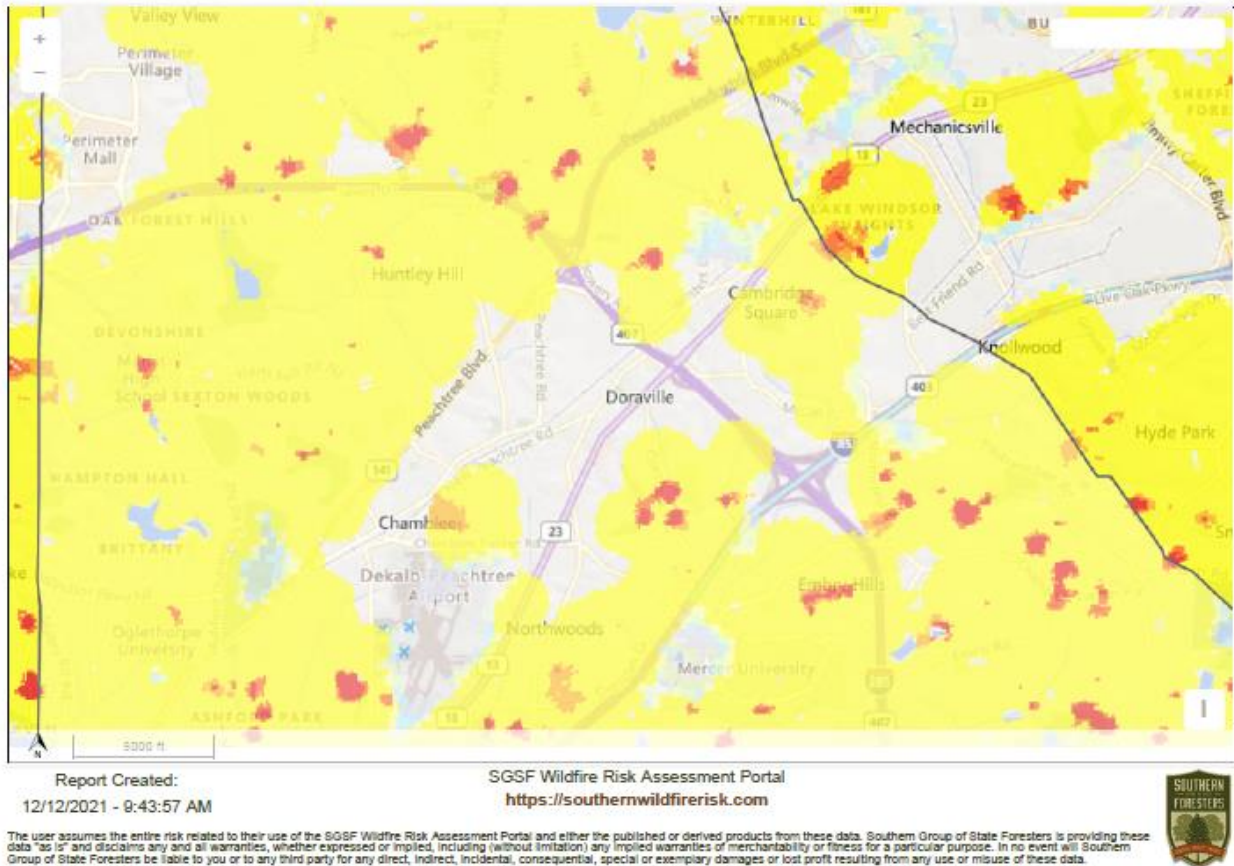


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Map 65: City of Doraville WUI Risk Index

Doraville Wildfire Risk Assessment

Wildland Urban Interface Risk Index



Data Source: Southern Group of State Foresters Wildfire Risk Assessment Portal
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Peak Value: -8

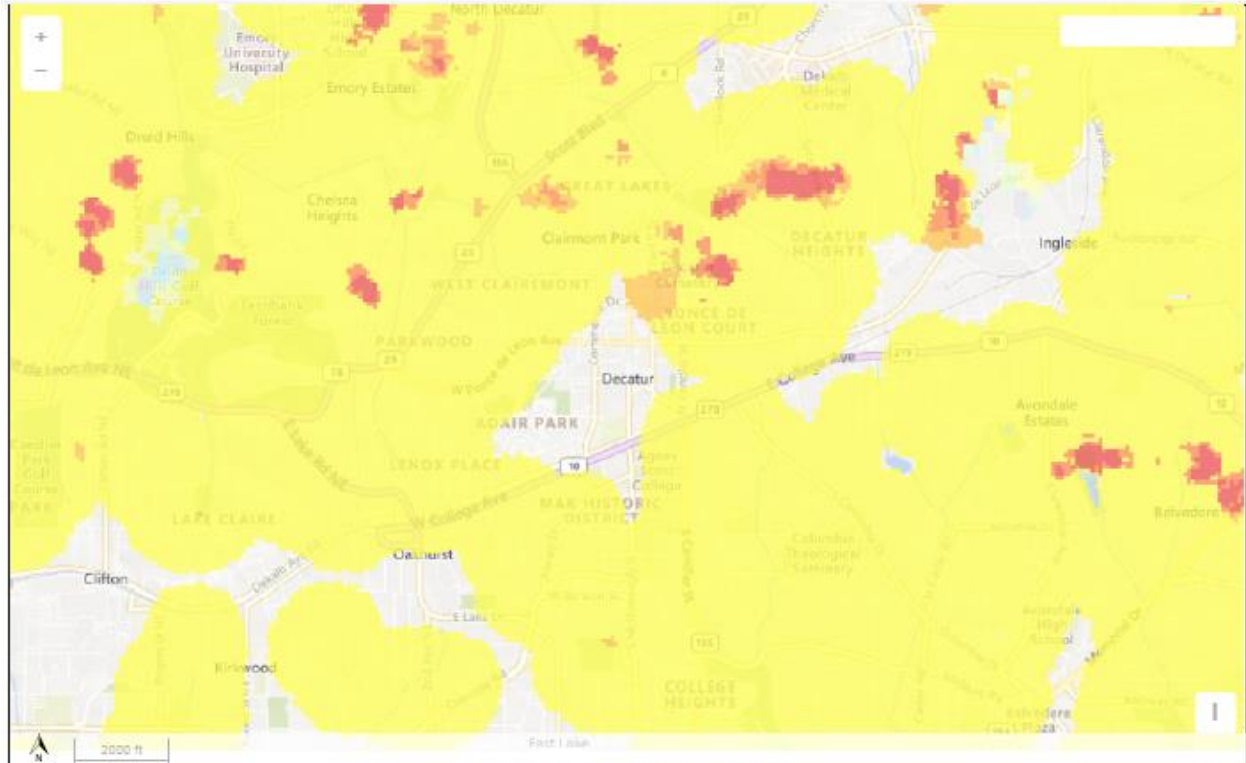


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Map 66: City of Decatur WUI Risk Index

Decatur Wildfire Risk Assessment

Wildland Urban Interface Risk Index



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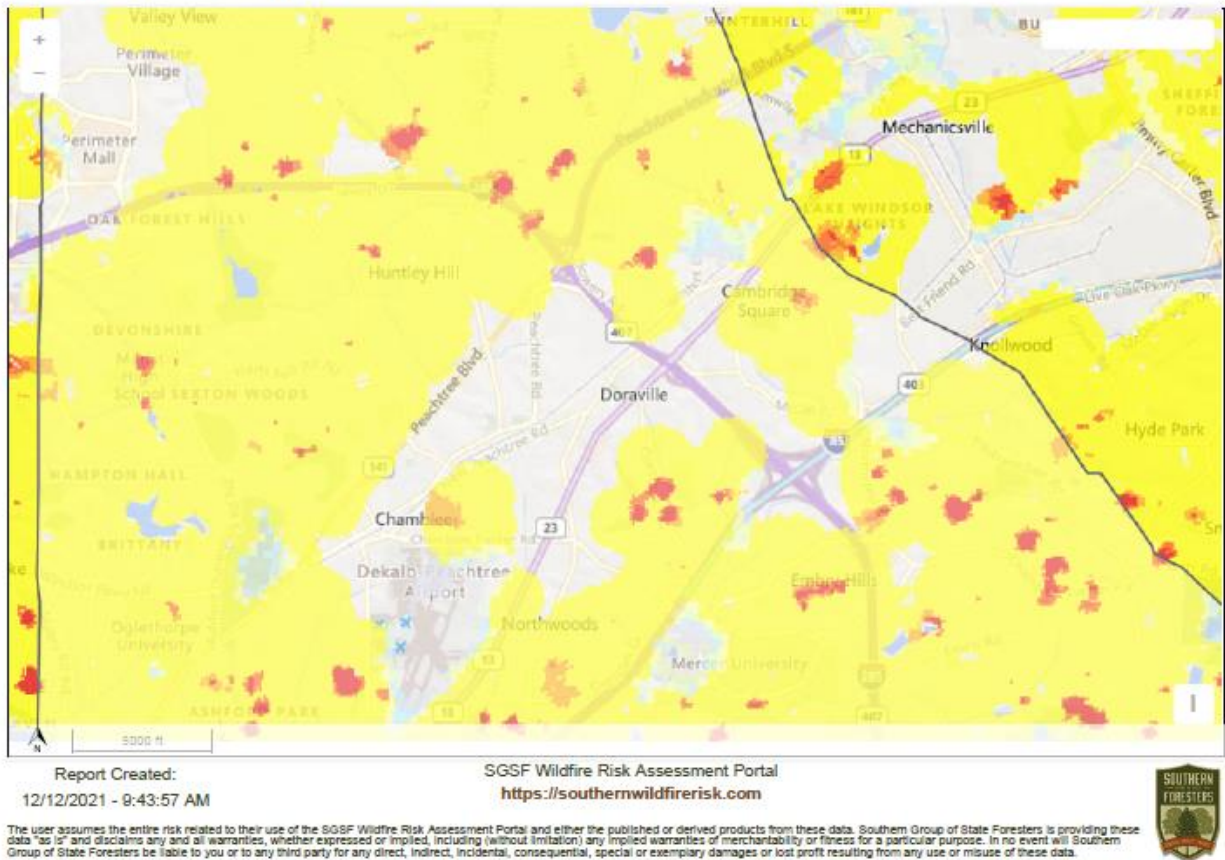
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Map 67: City of Doraville WUI Risk Index

Doraville Wildfire Risk Assessment Wildland Urban Interface Risk Index



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Peak Value: -8

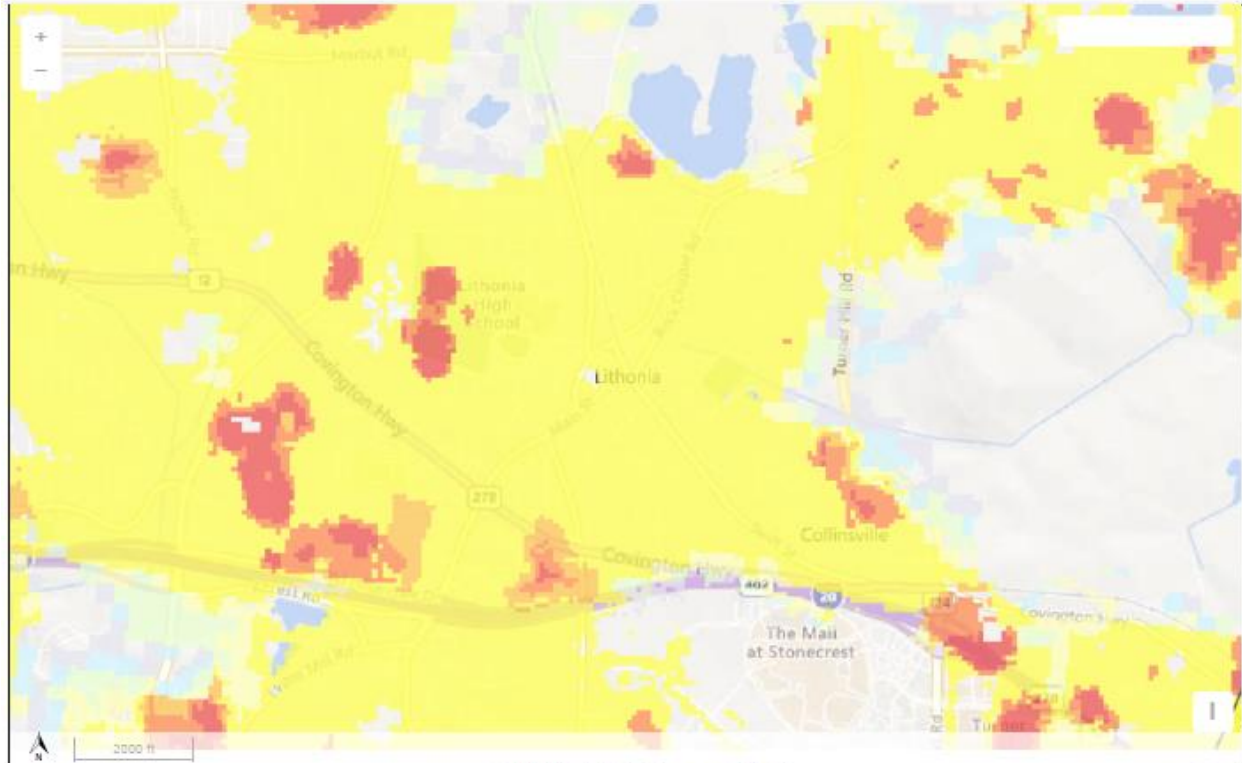


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Map 68: City of Lithonia WUI Risk Index

Lithonia Wildfire Risk Assessment

Wildland Urban Interface Risk Index



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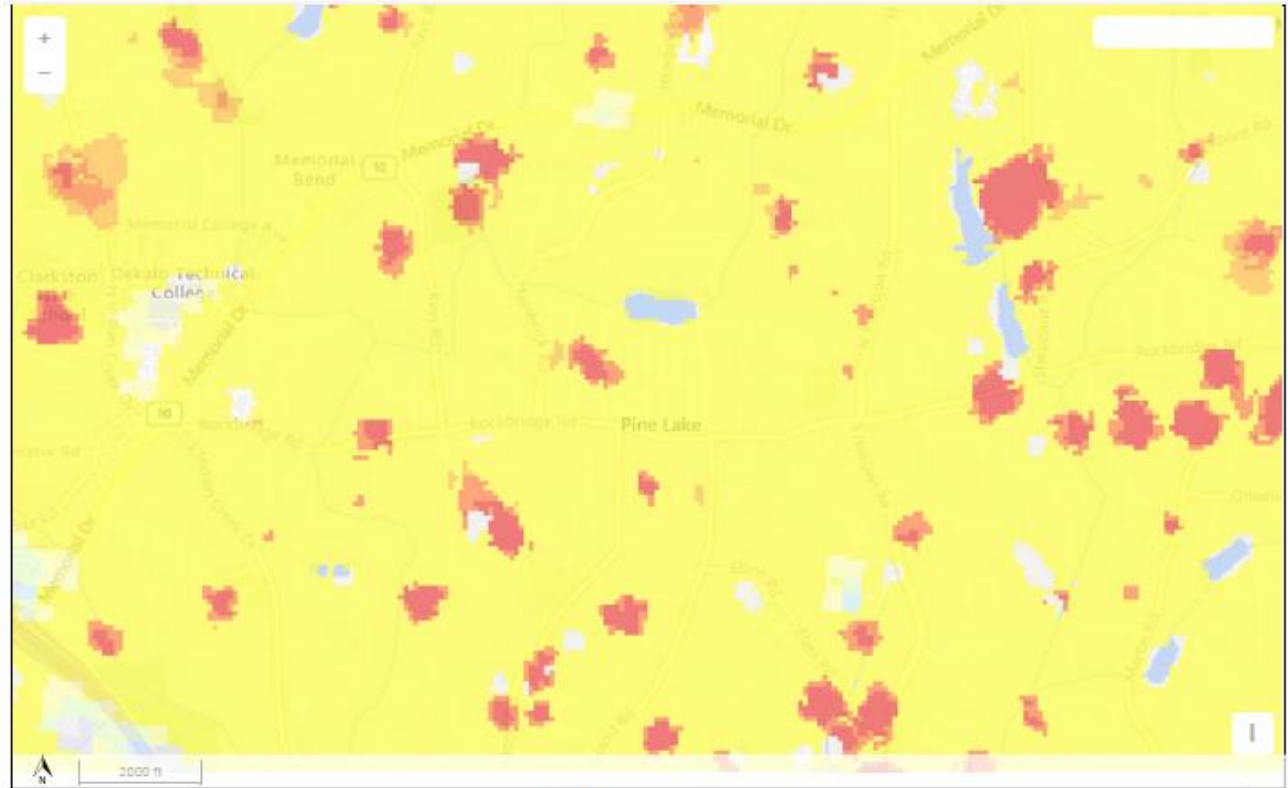


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Map 69: City of Pine Lake WUI Risk Index

Pine Lake Wildfire Hazard Risk Assessment

Wildland Urban Interface Risk Index



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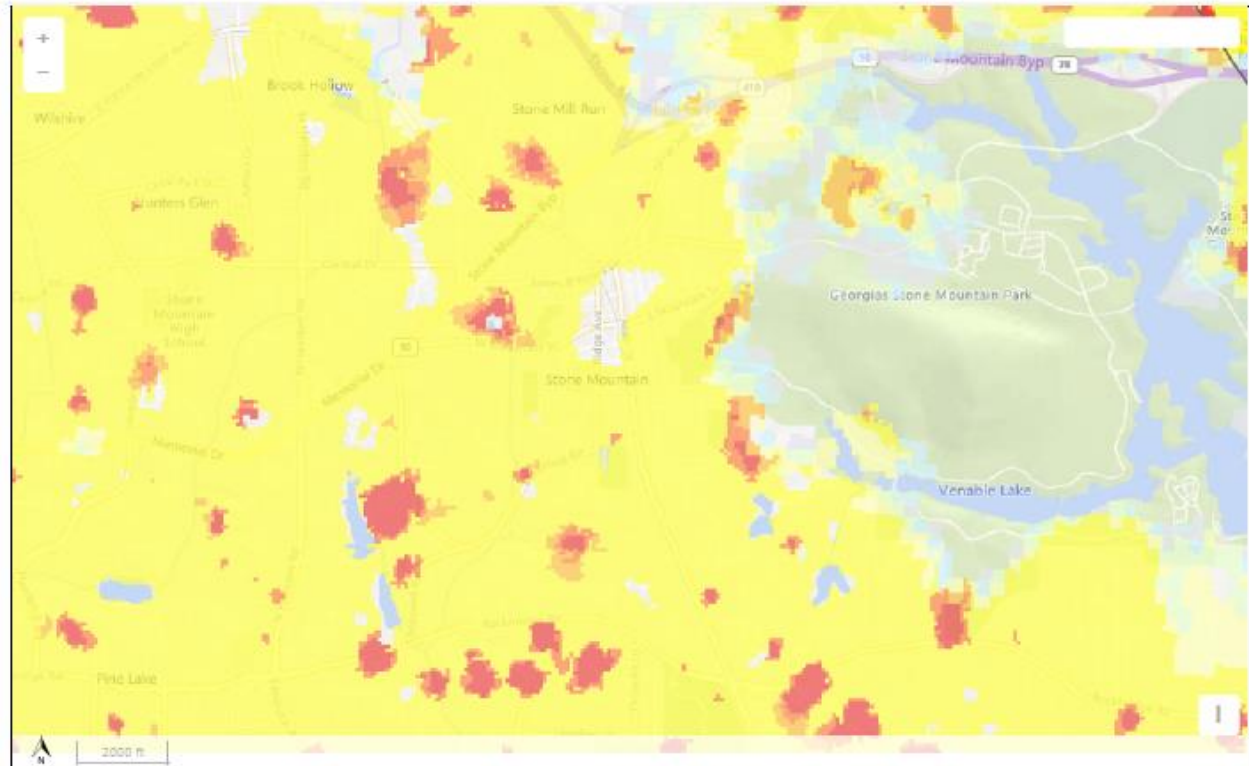


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Map 70: City of Stone Mountain WUI Risk Index

Stone Mountain Wildland Fire Risk Assessment

Wildland Urban Interface Risk Index



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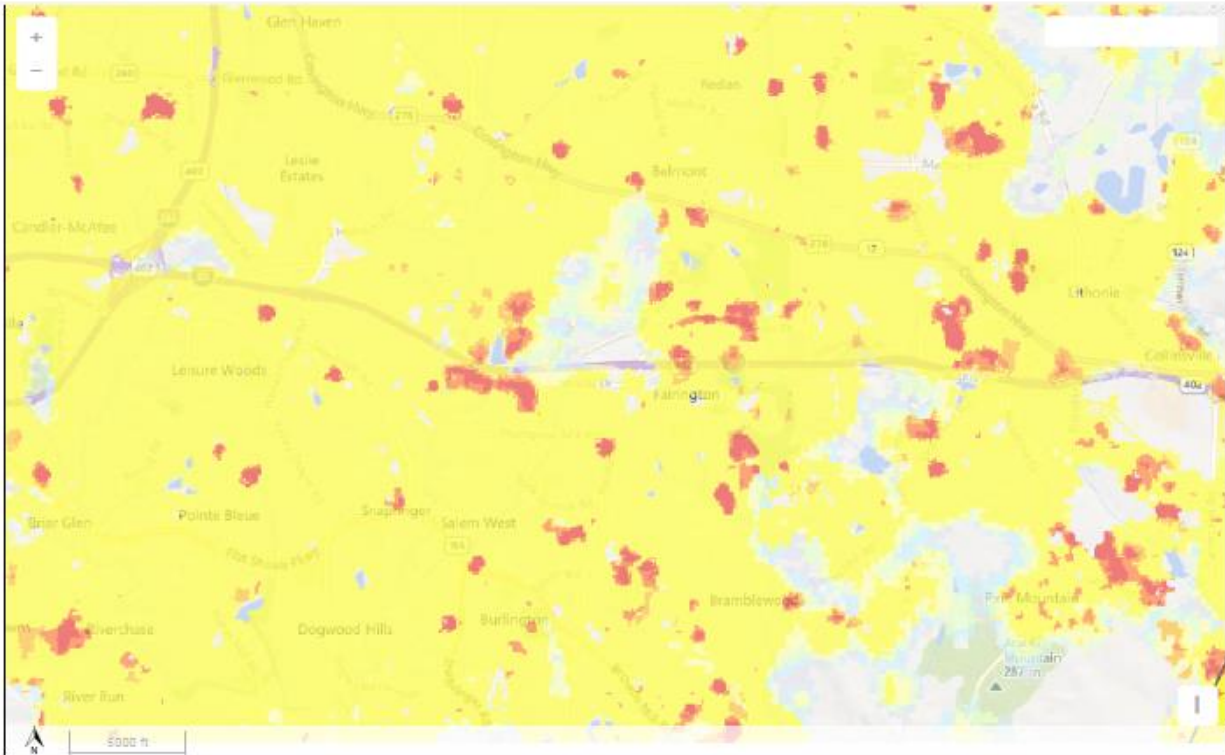


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Map 71: City of Stonecrest WUI Risk Index

Stonecrest Wildland Fire Risk Assessment

Wildland Urban Interface Risk Index



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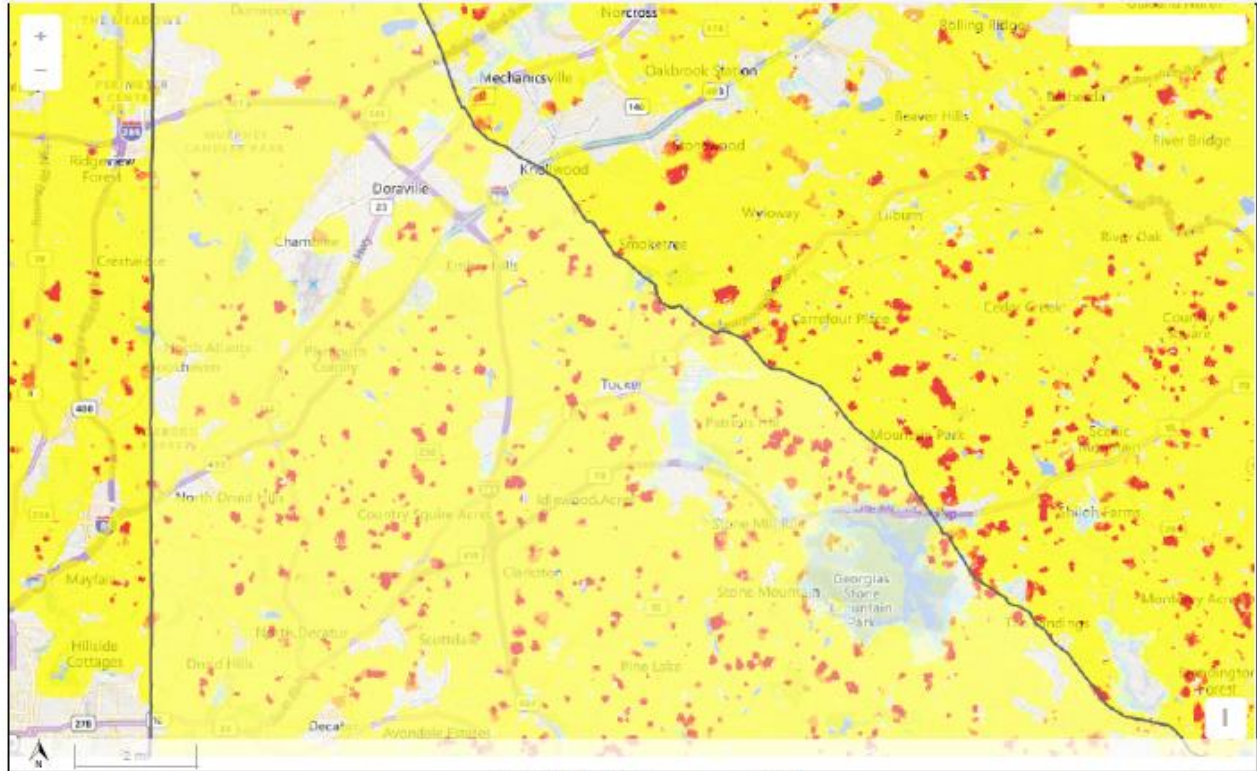


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Map 72: City of Tucker WUI Risk Index

Tucker Wildland Fire Risk Assessment

Wildland Urban Interface Risk Index



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Data Source: Southern Group of State Foresters Wildfire Risk Assessment Portal
[\(https://southernwildfirerisk.com/\)](https://southernwildfirerisk.com/)

Peak Value: -8



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Fire intensity is a measure of the rate of heat (energy) released by a fire. It is directly proportional to the fuel condition, amount, and rate of fuel consumed. Therefore, fuels, weather, and topography are important in determining the rate of heat released by a fire. (<https://ucanr.edu/sites/prepostwildfire/files/2670.pdf>).

The Fire Intensity Scale (FIS) specifically identifies where significant fuel hazards and associated dangerous fire behavior potential exist based on weighted average of four percentile weather categories. Like the Richter Scale for earthquakes, FIS provides a standard scale to measure potential wildfire intensity. FIS consists of five classes where the order of magnitude between classes is ten-fold. The minimum class, Class 1, represents very low wildfire intensities and the maximum class, Class 5, represents very high wildfire intensities. (<https://southernwildfirerisk.com/>)

Table 50: Fire Intensity Scale

Fire Intensity Scale		
Class Number	Category	Description
1	Very Low	Very small, discontinuous flames, usually less than 1 foot in length; very low rate of spread; no spotting. Fires are typically easy to suppress by firefighters with basic training and non-specialized equipment.
1.5		
2	Low	Small flames, usually less than two feet long; small amount of very short-range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.
2.5		
3	Moderate	Flames up to 8 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozer and plows are generally effective. Increasing potential for harm or damage to life and property.
3.5		
4	High	Large Flames, up to 30 feet in length; short-range spotting common; medium range spotting possible. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective. Significant potential for harm or damage to life and property.
4.5		
5	Very High	Very large flames up to 150 feet in length; profuse short-range spotting, frequent long-range spotting; strong fire-induced winds. Indirect attack marginally effective at the head of the fire. Great potential for harm or damage to life and property.

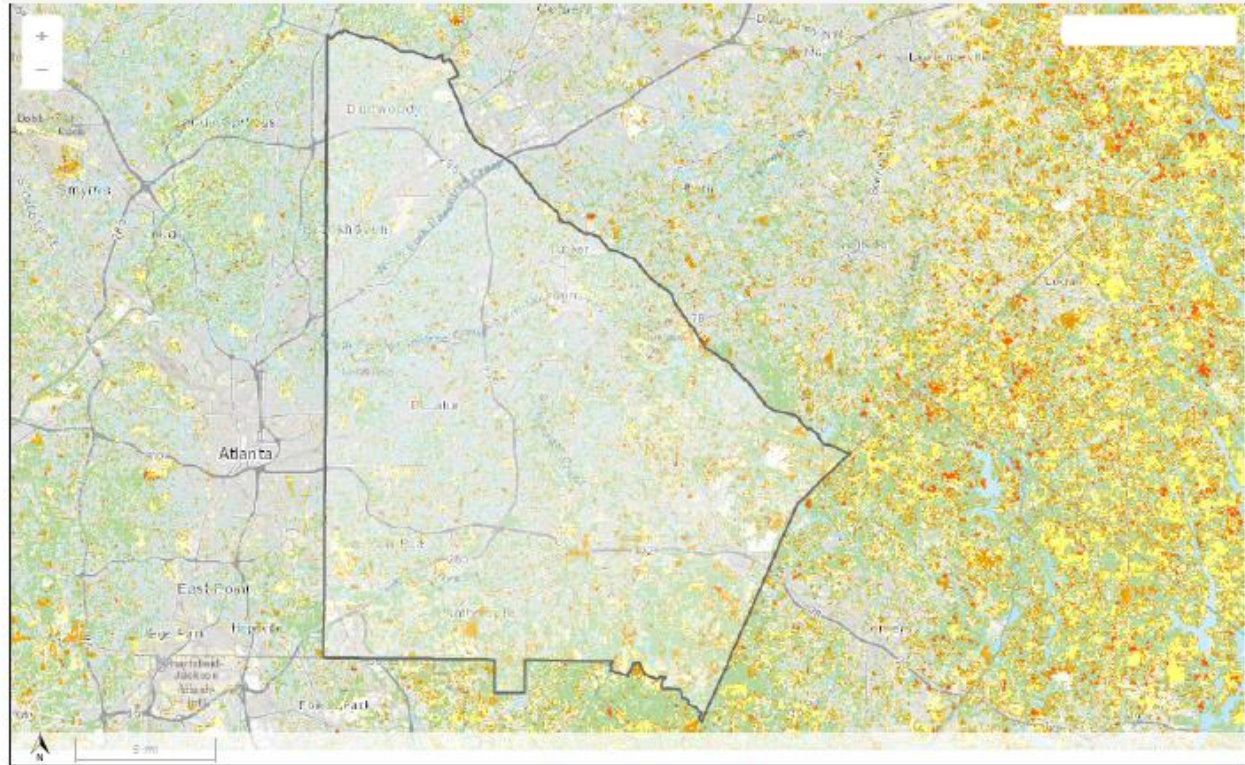
Data Source: Southern Group of State Foresters Wildfire Risk Assessment Portal (<https://southernwildfirerisk.com/>)



SECTION 4: RISK ASSESSMENT

Map 73: DeKalb County Fire Intensity Scale

DeKalb County Wildfire Hazard Risk Assessment Fire Intensity Scale



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SGSF Wildfire Risk Assessment Portal
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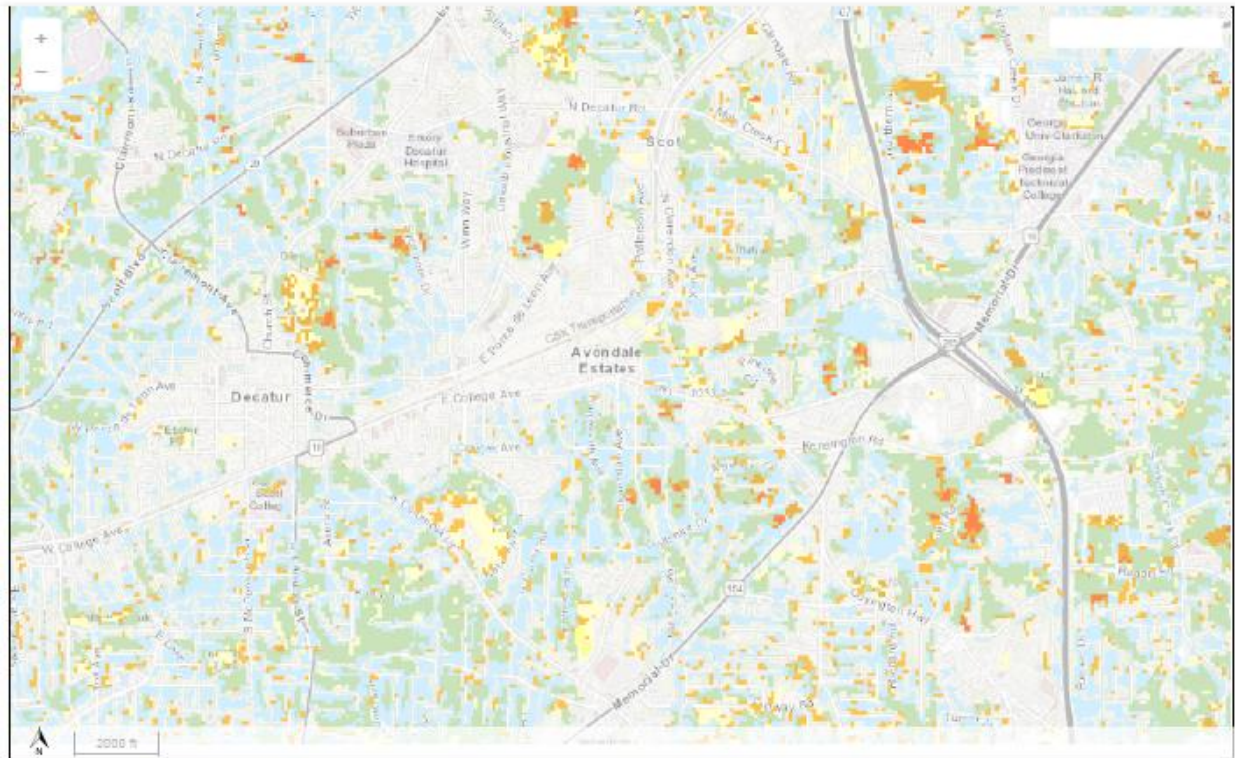


SECTION 4: RISK ASSESSMENT

Map 74: City of Avondale Estates Fire Intensity Scale

Avondale Estates Wildfire Risk Assessment

Fire Intensity Scale



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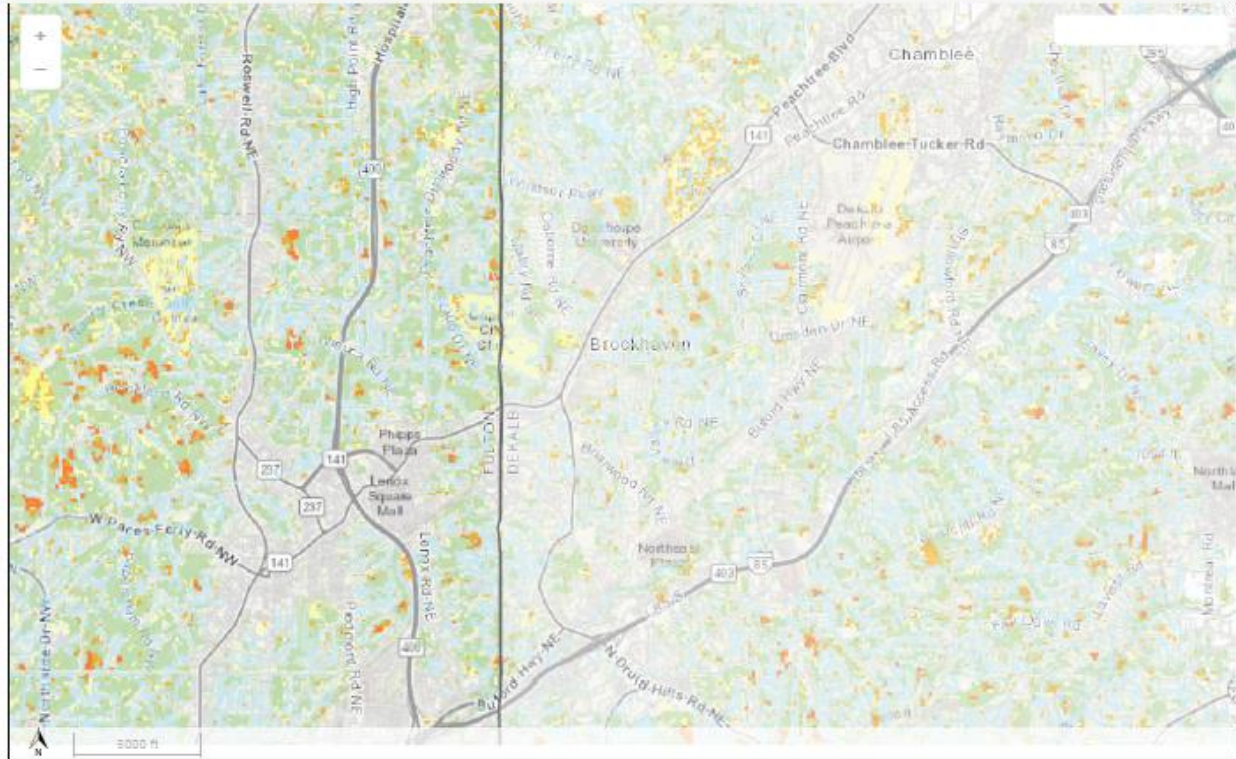


SECTION 4: RISK ASSESSMENT

Map 75: City of Brookhaven Fire Intensity Scale

Brookhaven Wildfire Risk Assessment

Fire Intensity Scale



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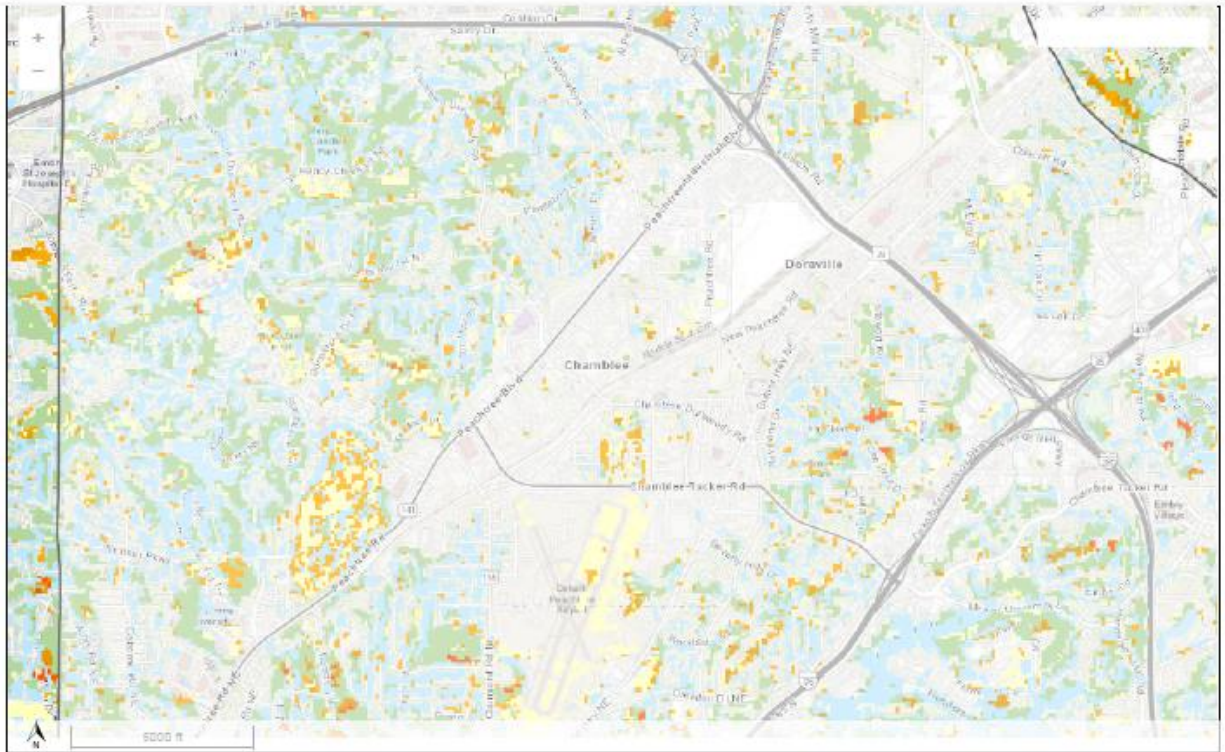


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Map 76: City of Chamblee Fire Intensity Scale

Chamblee Wildfire Risk Assessment

Fire Intensity Scale



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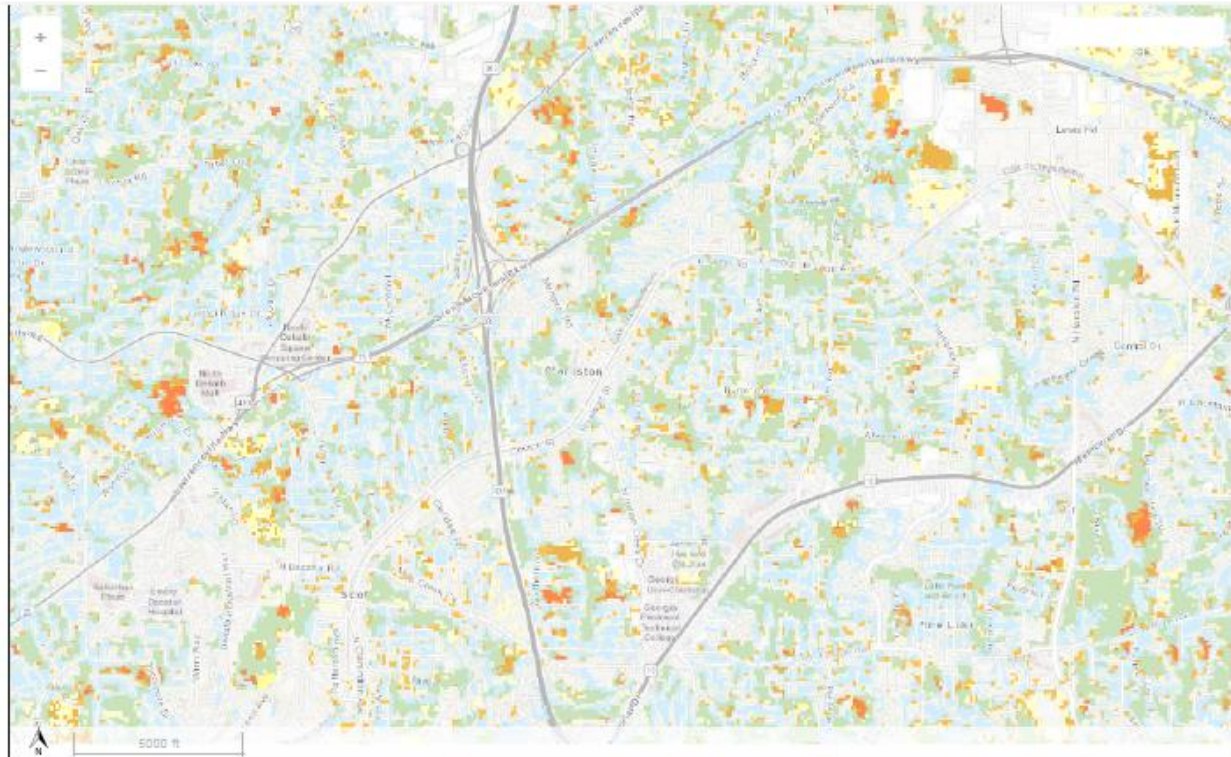


SECTION 4: RISK ASSESSMENT

Map 77: City of Clarkston Wildfire Fire Intensity Scale

Clarkston Wildfire Risk Assessment

Fire Intensity Scale



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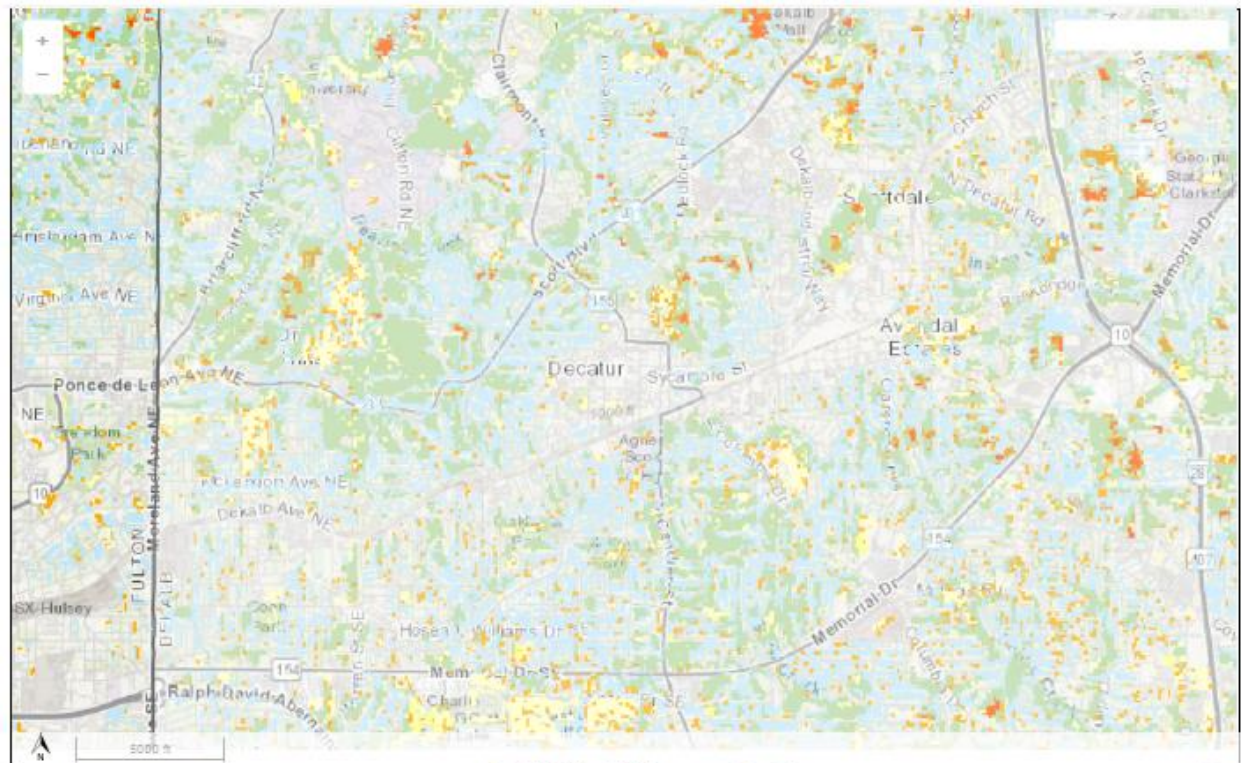


SECTION 4: RISK ASSESSMENT

Map 78: City of Decatur Fire Intensity Scale

Decatur Wildfire Risk Assessment

Fire Intensity Scale



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Map 79: City of Doraville Fire Intensity Scale

Doraville Wildfire Risk Assessment Fire Intensity Scale



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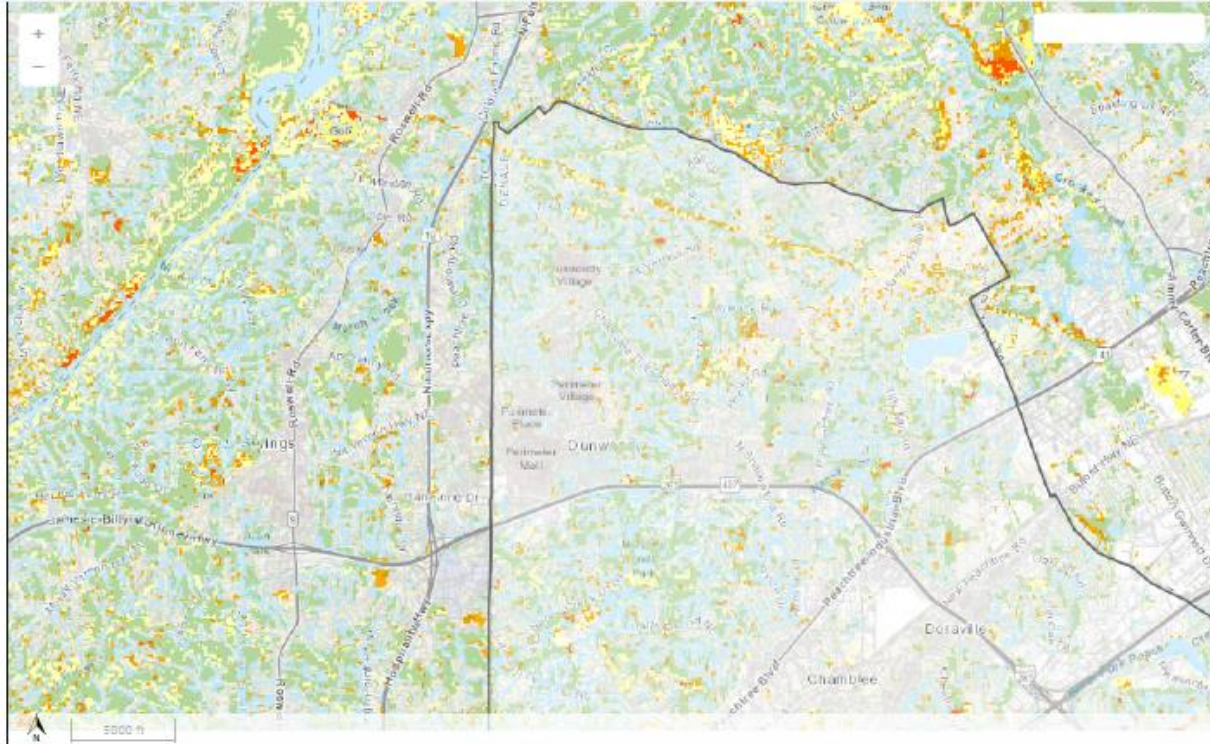


SECTION 4: RISK ASSESSMENT

Map 80: City of Dunwoody Fire Intensity Scale

Dunwoody Wildfire Risk Assessment

Fire Intensity Scale



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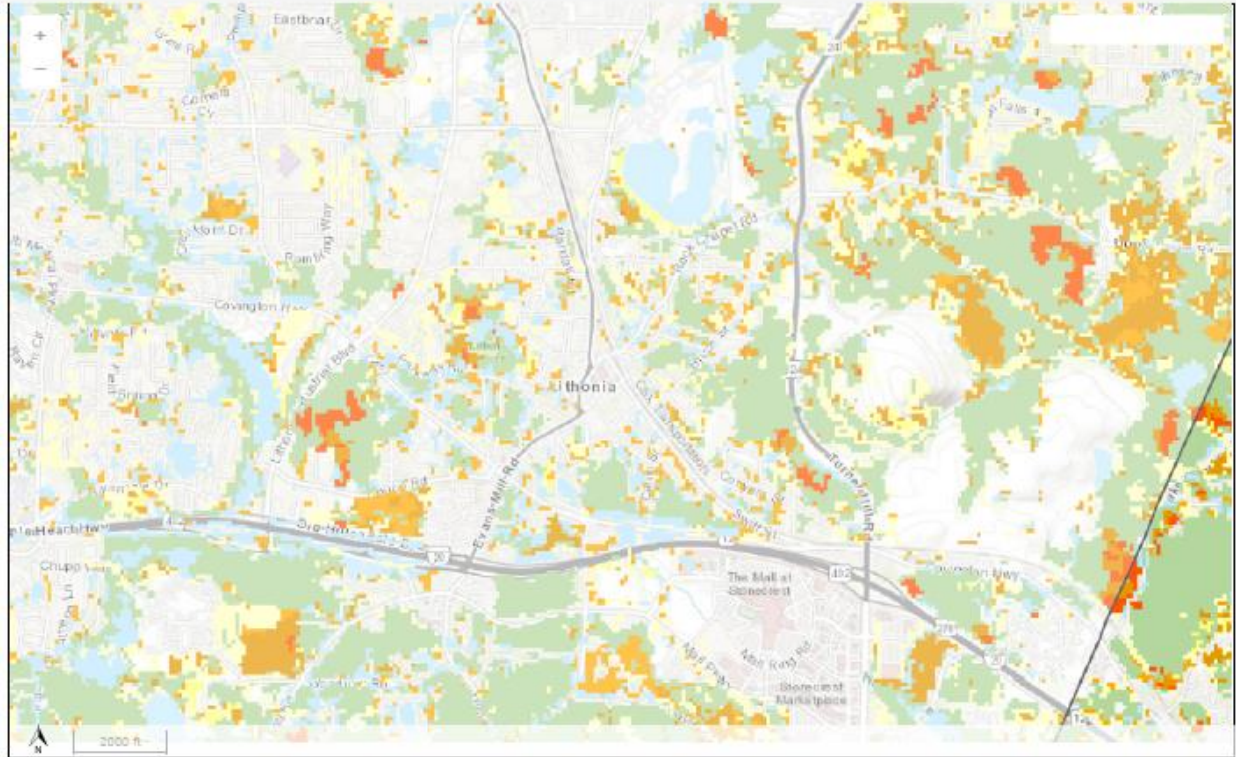


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Map 81: City of Lithonia Fire Intensity Scale

Lithonia Wildfire Risk Assessment

Fire Intensity Scale



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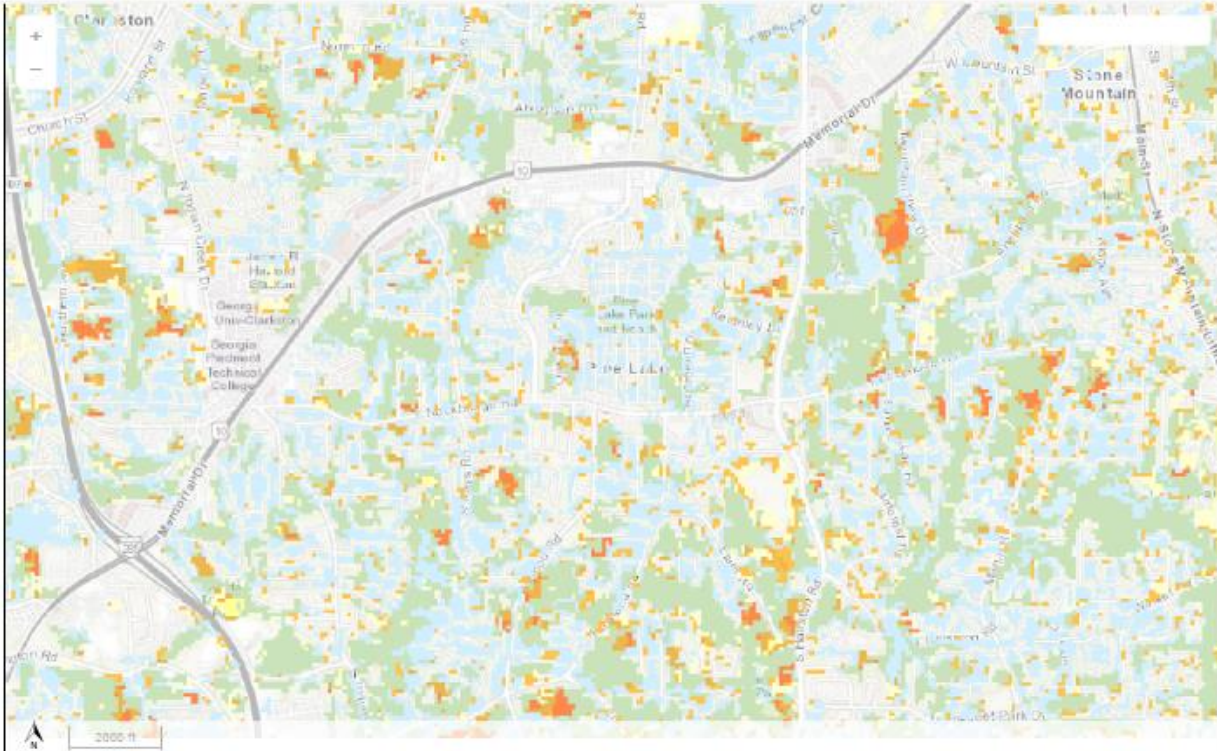


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Map 82: City of Pine Lake Fire Intensity Scale

Pine Lake Wildfire Risk Assessment

Fire Intensity Scale



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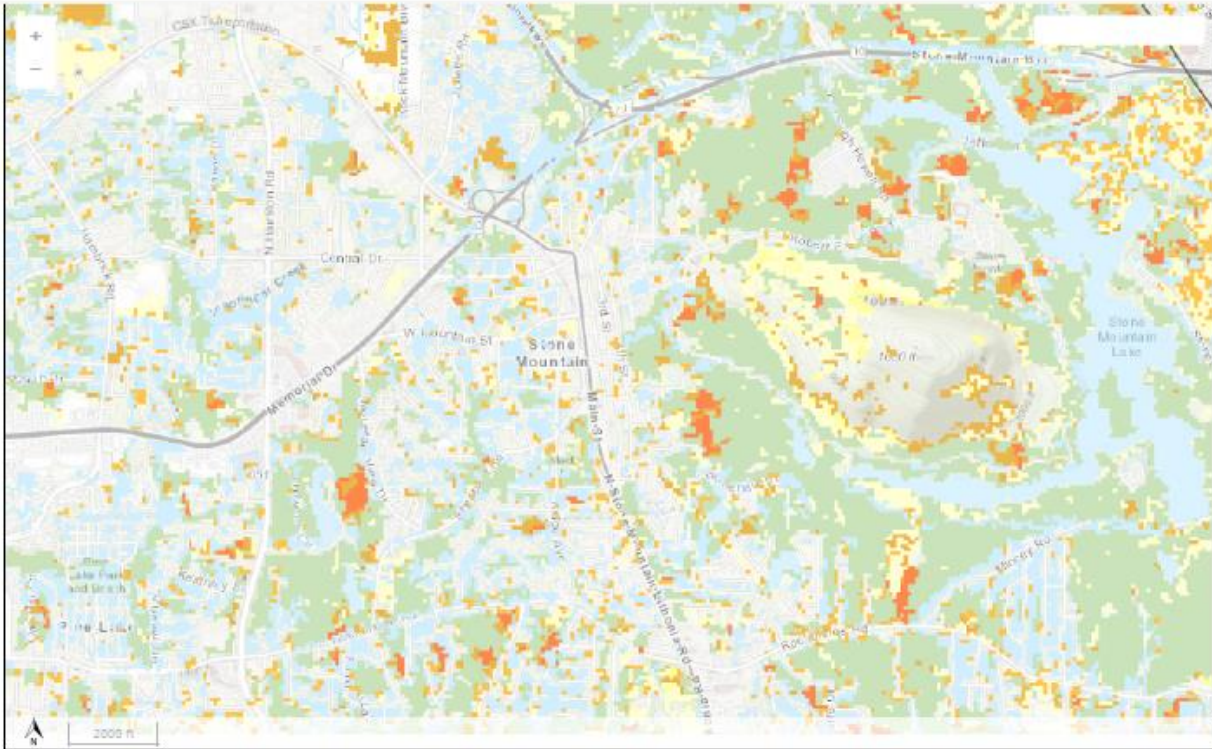


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Map 83: City of Stone Mountain Fire Intensity Scale

Stone Mountain Wildfire Risk Assessment

Fire Intensity Scale



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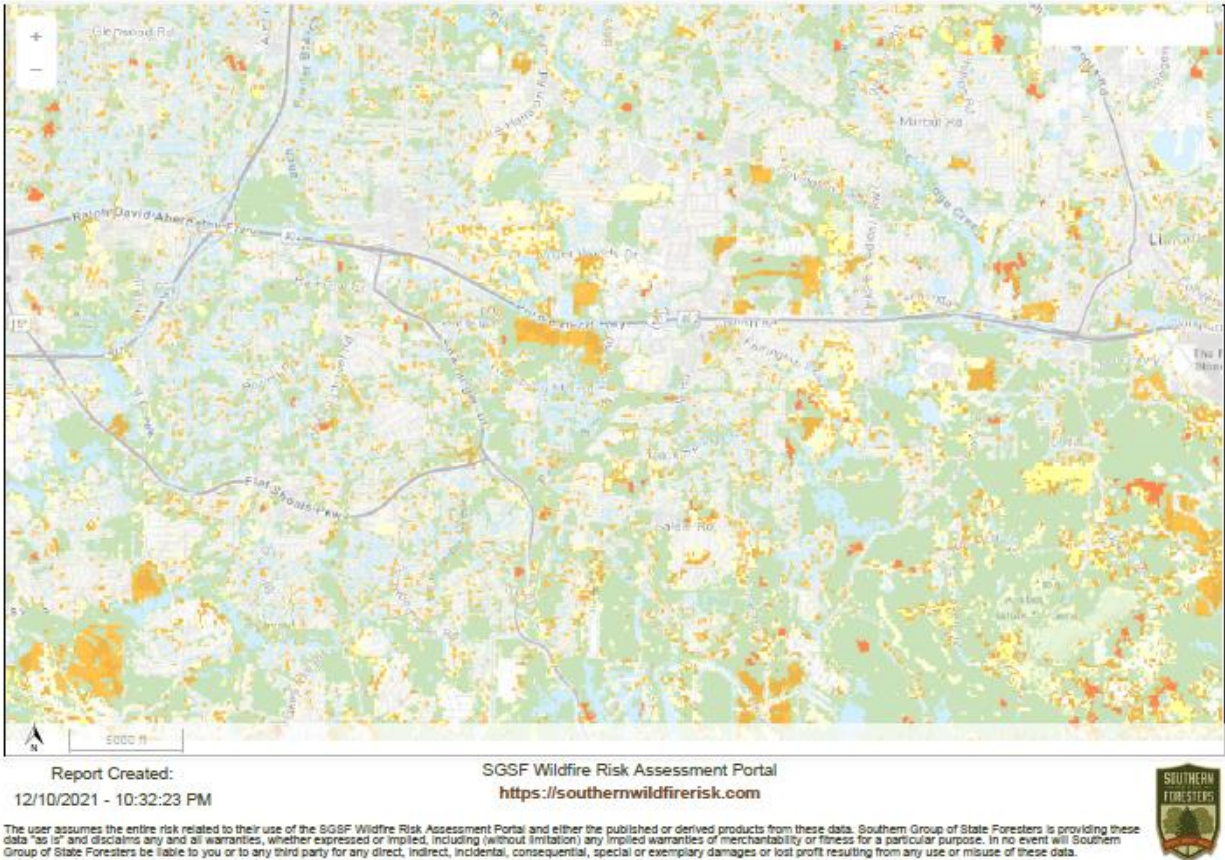
Data Source: Southern Group of State Foresters Wildfire Risk Assessment Portal
(<https://southernwildfirerisk.com/>)



SECTION 4: RISK ASSESSMENT

Map 84: City of Stonecrest Fire Intensity Scale

Stonecrest Wildfire Risk Assessment Fire Intensity Scale



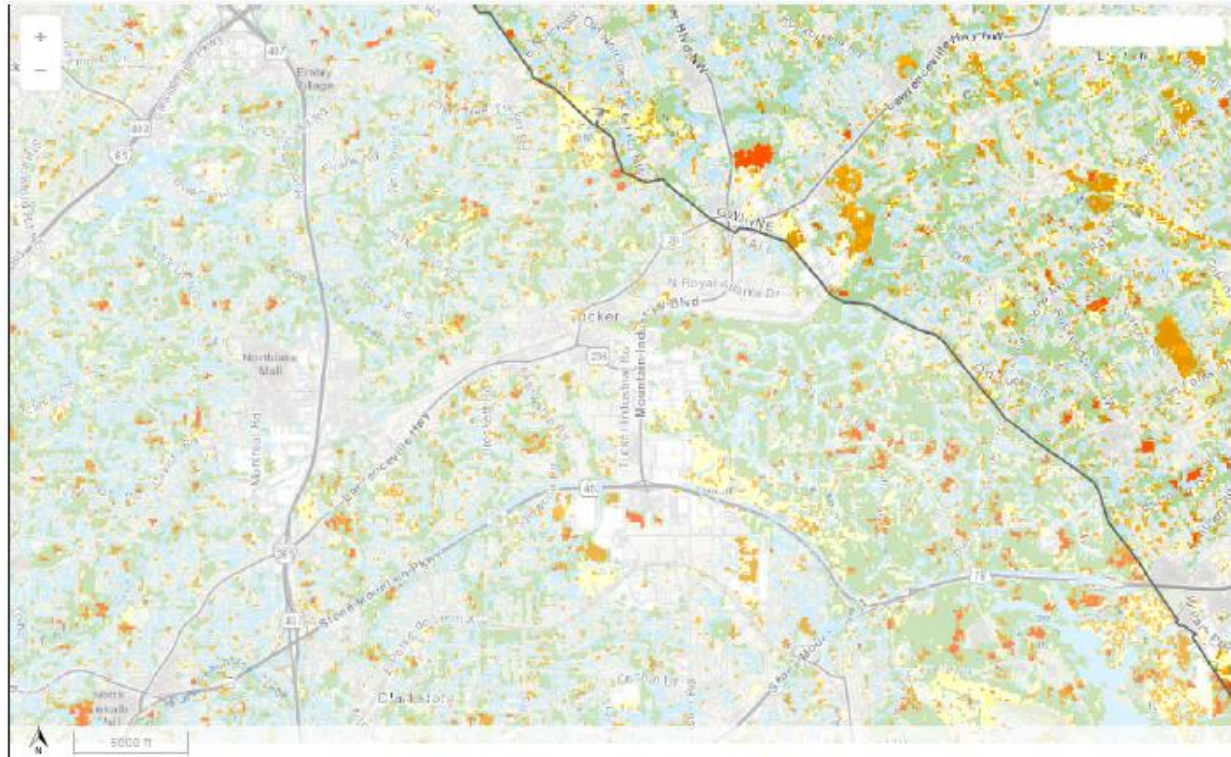
Data Source: Southern Group of State Foresters Wildfire Risk Assessment Portal
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Map 85: City of Tucker Fire Intensity Scale

Tucker Wildfire Risk Assessment Fire Intensity Scale



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Data Source: Southern Group of State Foresters Wildfire Risk Assessment Portal
(<https://southernwildfirerisk.com/>)

4.7.3 – Previous Occurrences

Wildfire Events

Table 51: Wildfire Response (2010-2020)

Wildfire Events (2016-2020)					
Date of Event	Number of Incidents	Acres Burned	Number of Responding Units	Number of Personnel Responded	Total Man Hours
2010-11	0	0	0	0	0
2012	26	60	67	184	345
2013-14	-	14	64	163	209
2015-17	0	0	0	0	0



SECTION 4: RISK ASSESSMENT

Wildfire Events (2016-2020)					
Date of Event	Number of Incidents	Acres Burned	Number of Responding Units	Number of Personnel Responded	Total Man Hours
2018	6	17.5	30	86	390.75
2019	31	46	120	486	31
2020	7	12.5	32	79	189
Total	70	150	313	998	1164.75

Data Source: DeKalb County Fire Rescue

4.7.3A – Probability of Future Events

Table 52: Probability of Future Events, Wildfire

Probability of Future Events, Wildfire	
Decade	Number of Events
2010s	63
2020	7
Total	70
Years	11
Average	6.36
Likelihood of a Wildfire Event Each Year = 636%	

Data Source: NOAA/NCEI Storm Events Database

Based on this data, it is **highly likely** a wildfire event will occur every year in DeKalb County and the incorporated jurisdictions within its boundaries. FEMA's National Risk Index (NRI) estimates that DeKalb County has a 0.003% chance of experiencing a wildfire event every year.

4.7.4 – Vulnerability of Community Assets

Vulnerability of People

Wildfires also generate dense smoke that can affect air quality and pose a serious health risk. This is especially true for the elderly or those, young and old, who have breathing conditions such as asthma or Chronic Obstructive Pulmonary Disorder (COPD). Experts agree that smoke inhalation is the number one cause of death related to fires.

Vulnerability of the Economy

Wildfires may have direct and indirect impacts on DeKalb County's economy. Major employers and industries located in the WUI are at an increased risk for exposure to wildfires. Their facilities and resources are subject to loss if impacted by a wildfire. Functional downtime and lost wages because of wildfire impacts to major employers can cause impact people and the tax base. Farms in the WUI may suffer crop, livestock, structure, and equipment losses.



SECTION 4: RISK ASSESSMENT

Vulnerability of the Built Environment

The “boundary” WUI is characterized by areas of development where critical facilities, homes, cultural resources, and infrastructure press against public and private wildlands, such as private or commercial forest land, or public forests or parks. There is a clearly defined boundary between the suburban fringe and the rural countryside. WUI areas deemed as “intermix” are places where improved property and/or structures are scattered and interspersed in wildland areas. These may be isolated rural homes or an area that is just starting to transition from rural to urban land use. “Island” WUI areas, also called occluded interface, are plots of undeveloped wildland, such as remnant forests and parks, within predominately urban or suburban locales.

Vulnerability of Natural Environment

The natural environment is highly vulnerable to wildland fire impacts. Wildland fires increase the potential for flooding, debris flows, and landslides. Smoke can cause significant air pollution. In the short-term, wildfires can destroy timber, forage, wildlife habitats, and watersheds. In the long-term, wildfires can reduce access to recreational areas, which can also impact the economy.

4.7.5 – Risk Analysis

FEMA’s National Risk Index (NRI) estimates that DeKalb County and the jurisdictions which lie within its boundaries have 467 people, \$57,902,948 worth of structures, and \$2,680 worth of agriculture are exposed to wildfire hazard impacts each year. The NRI projects annual losses of 0 people, \$1,164 worth of structures, and \$0 worth of agriculture to wildfire hazard impacts each year.

Table 53: Risk Analysis of Community Lifeline Systems to Wildfire, DeKalb County

Risk Analysis of Community Lifeline Systems to Wildfire, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
Safety and Security	Law Enforcement /Security	Moderate Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources
	Fire Services	High Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources
	Search and Rescue	Moderate Risk. Impacts may:



SECTION 4: RISK ASSESSMENT

Risk Analysis of Community Lifeline Systems to Wildfire, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources
	Government Services	Low Risk. Impacts may: <ul style="list-style-type: none"> damage critical facilities and historical sites disrupt communications to emergency operations centers disrupt essential government functions cause short-term or long-term school cancellations.
	Community Safety	High Risk. Impacts may: <ul style="list-style-type: none"> create secondary hazards (flooding, debris flows, landslides)
Food, Water, Shelter	Food	Low Risk. Impacts may: <ul style="list-style-type: none"> disrupt commercial food distribution and supply chains affect commercial and home perishable food supplies
	Water	Low Risk. Impacts may: <ul style="list-style-type: none"> generate secondary hazards which can contaminate drinking water systems damage wastewater systems
	Shelter	Moderate Risk. Impacts may: <ul style="list-style-type: none"> damage homes damage shelters damage lodging facilities
	Agriculture	High Risk. Impacts may:



SECTION 4: RISK ASSESSMENT

Risk Analysis of Community Lifeline Systems to Wildfire, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> injure livestock damage crops damage farm structures and equipment
Health and Medical	Medical Care	Low Risk. Impacts may: <ul style="list-style-type: none"> damage hospitals, pharmacies, long-term care facilities, and veterinary clinics disrupt communications contaminate water supply, affecting the provision of care expend resources
	Patient Movement	Moderate Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources
	Public Health	High Risk. Impacts may: <ul style="list-style-type: none"> create dangerous air quality damage facilities disrupt communications expend resources
	Fatality Management	Low Risk. Impacts may: <ul style="list-style-type: none"> expend resources damage facilities and equipment disrupt communications
	Medical Supply Chain	Moderate Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage facilities and equipment disrupt responder communications damage or block transportation routes expend resources



SECTION 4: RISK ASSESSMENT

Risk Analysis of Community Lifeline Systems to Wildfire, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> expend resources (e.g., blood supply, pharmaceuticals, devices, medical gases, raw materials) damage or block transportation routes
Energy	Power (Grid)	Moderate Risk. Impacts may: <ul style="list-style-type: none"> damage generation systems damage transmission systems damage distribution systems
	Fuel	Low Risk. Impacts may: <ul style="list-style-type: none"> damage fuel storage resources damage pipelines damage fuel distribution locations
Communications	Infrastructure	Low Risk. Impacts may: <ul style="list-style-type: none"> damage or cause wireless systems to become overburdened damage cable and wireline systems damage or disrupt broadcast and satellite systems damage or cause internet systems to become overburdened
	Alerts, Warnings, and Messages	Low Risk. Impacts may: <ul style="list-style-type: none"> damage physical warning systems disrupt the delivery of emergency alerts and warnings
	911 and Dispatch	Moderate Risk. Impacts may: <ul style="list-style-type: none"> damage public safety answering points or dispatch centers damage communication systems overburden communication systems



SECTION 4: RISK ASSESSMENT

Risk Analysis of Community Lifeline Systems to Wildfire, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
	Responder Communications	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage communication systems • overburden communication systems
	Finance	Low Risk. Impacts may: <ul style="list-style-type: none"> • damage banking facilities and equipment • disrupt communications
Transportation	Highway/Roadway	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage or block roads and bridges
	Mass Transit	Low Risk. Impacts may: <ul style="list-style-type: none"> • damage buses or trains • damage or block transportation routes • delay routes
	Railway	Low Risk. Impacts may: <ul style="list-style-type: none"> • damage freight or passenger trains • damage or block transportation routes • delay routes
	Aviation	Low Risk. Impacts may: <ul style="list-style-type: none"> • damage airports • damage aircraft • delay routes
	Maritime	No Risk.
Hazardous Materials	Facilities	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • generate oil/hazardous materials/toxic incidents from fixed facilities • damage facilities • disrupt power supply to facilities
	Hazmat, Pollutants, Contaminants	Low Risk. Impacts may:



SECTION 4: RISK ASSESSMENT

Risk Analysis of Community Lifeline Systems to Wildfire, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> generate oil/hazardous materials/toxic incidents from non-fixed facilities, rail, and roadways

4.7.5A – Problem Statements

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
WF1	Wildfire and people The Wildfire Urban Interface (WUI) Index is high in many areas of DeKalb County.	FEMA's National Risk Index (NRI) estimates that 467 people are exposed to hazard impacts each year.	Many people in DeKalb County live in areas where human development meets or intermingles with undeveloped wildland. This increases the wildfire risk for people living in DeKalb County and exposes them to dangers associated with wildfires. Wildfire smoke may also generate smoke that can affect air quality. This poses a serious health risk to the elderly, the young, and people with breathing conditions.
WF 2	Wildfire and people The Wildfire Urban Interface (WUI) Index is high in many areas of DeKalb County.	FEMA's National Risk Index (NRI) estimates that \$2,680 work of agriculture are exposed to wildfire hazard impacts each year.	Some businesses and farms are in areas where human development meets or intermingles with undeveloped wildland. This increases the risk to crop, livestock, structures, production, wages, and equipment losses.
WF3	Wildfire and built environment The Wildland Urban Interface (WUI) Index is high in many areas of DeKalb County.	FEMA's National Risk Index (NRI) estimates that \$57,902,948 worth of structures are exposed to wildfire hazard impacts each year.	Some critical facilities, homes, cultural resources, and infrastructure are in areas where human development meets or intermingles with undeveloped wildland. FEMA's National Risk Index (NRI) projects \$1,164 work of structure losses each year due to wildfire hazard impacts. A major wildfire may cause much more damage.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
WF4	Wildfire and natural environment The Wildland Urban Interface (WUI) Index is high in many areas of DeKalb County.	DeKalb County consists of numerous natural resources which may be exposed to wildfires.	A major wildfire may destroy parts of DeKalb County's natural environment and cause secondary hazards such as flooding, debris flows, and landslides. This may impact DeKalb County's people, economy, and build environment.



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4.8(E) – Earthquake

Photo Courtesy of CNN

According to the U.S. Geological Survey (USGS), it is estimated that there are 500,000 detectable earthquakes in the world each year; 100,000 of those can be felt, and 100 of them cause damage. Earthquakes are much less common in the eastern United States than in California, with most events imperceptible by the public. This leads to a dangerous complacency that may be unwarranted.

The first earthquakes reported felt in Georgia were the great New Madrid series of 1811-1812. Most Georgians are largely unaware of the last large event that struck Charleston, South Carolina, in 1886, killing almost 60 people and causing complete devastation to the city. Unfortunately, earthquakes in the eastern United States are very efficient at transmitting seismic energy over large distances, such that the damage area of a magnitude 6.0 here is comparable to a magnitude 7.0 in the western United States.

4.8.1 – Hazard Description

An earthquake is the vibration of the earth's surface following a release of energy in the earth's crust. This energy can be generated by a sudden dislocation of the crust or by a volcanic eruption. Most destructive quakes are caused by dislocations of the crust. The crust may first bend and then, when the stress exceeds the strength of the rocks, break and snap to a new position. In the process of breaking, vibrations called "seismic waves" are generated. These waves travel outward from the source of the earthquake at varying speeds. The movement of these tectonic plates creates stress that can be released as earthquakes. An earthquake's point of initial rupture is called its focus or hypocenter; and the point of ground directly above the hypocenter is called the epicenter.



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Earthquakes tend to reoccur along faults, which are zones of weakness in the crust. Even if a fault zone has recently experienced an earthquake, there is no guarantee that all the stress has been relieved. Another earthquake could still occur.

Faults are more likely to have earthquakes on them if they have more rapid rates of movement, have had recent earthquakes along them, experience greater total displacements, and are aligned so that movement can relieve accumulating tectonic stresses. A direct relationship exists between a fault's length and location and its ability to generate damaging ground motion at a given site. In some areas, smaller, local faults produce lower magnitude quakes, but ground shaking can be strong, and damage can be significant because of the fault's proximity to the area. In contrast, large regional faults can generate great magnitudes but, because of their distance and depth, may result in only moderate shaking in the area.

An earthquake's effect(s) can be compounded by the soil type underlying a community's buildings and infrastructure. If the soil is not composed of bedrock and consists of clays, silts, and other types of sand, the pressure generated by an earthquake can force brittle soil and water up toward the surface. These upward forced materials will then destabilize buildings and infrastructure, causing damage that can range from minor cracks to complete destruction. Smaller upward forced materials can destabilize slopes and building foundation further compounding the potential damage to a community.

Geologists classify faults by their relative hazards. Active faults, which represent the highest hazard, are those that have ruptured to the ground surface during the Holocene period (about the last 11,000 years). Potentially active faults are those that displaced layers of rock from the Quaternary period (the last 1,800,000 years). Determining if a fault is "active" or "potentially active" depends on geologic evidence, which may not be available for every fault. Although there are probably still some unrecognized active faults, nearly all the movement between the two plates, and therefore most of the seismic hazards, are on the well-known active faults. However, inactive faults, for which no displacements have been recorded, maintain the potential to reactivate or experience displacement along a branch sometime in the future.

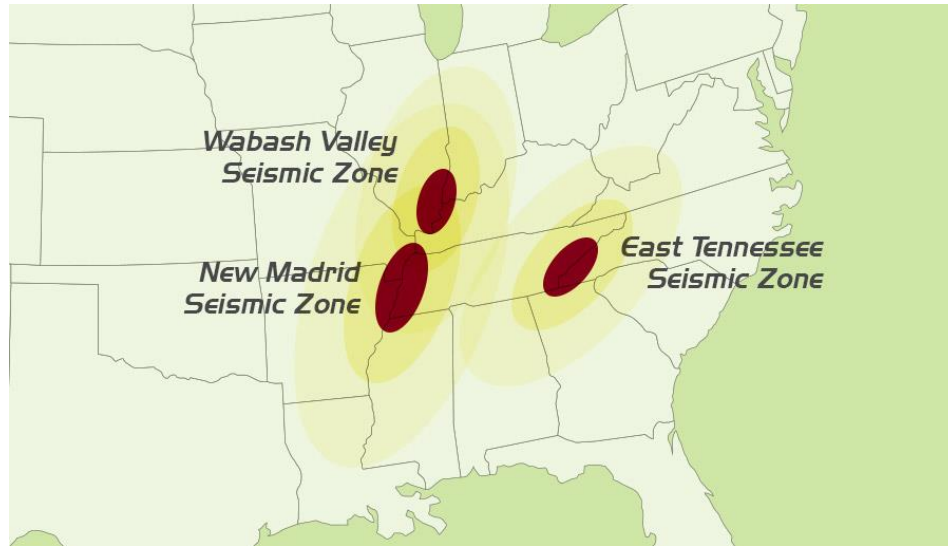
4.8.2 – Location & Extent

According to the Emergency Manager's Guide to Earthquakes in Georgia (1999), Georgia and the Southeastern United States are not typically known for seismic activity but documented incidents in the State of Georgia have shown minor to moderate earthquakes. Earthquakes in northwestern Georgia are clustered along a northeast trending line that represents the southwest extension of the Southeastern Tennessee Seismic Zone. Based on seismicity, the Southeastern Tennessee Seismic Zone is second only to the New Madrid Seismic Zone in the Eastern United States for its size and rate of earthquake production. In both seismic zones, the earthquake hypocenters are at mid-crustal depths (14 ± 10 km) and outline a 150-mile-long narrow active zone.



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Map 86: Seismic Zone of the Central United States



Map Source: Central United States Earthquake Consortium (<https://cusec.org/our-earthquake-risk/>)

These similarities and the existence of the great 1811-12 New Madrid earthquakes suggest that southeastern Tennessee, or Northwest Georgia, could also be the site of a similar great earthquake. This area currently experiences one magnitude 4.0 earthquake about every ten years. A magnitude 4.0 earthquake is generally perceived as a startling vibration that may rock objects off shelves and may cause some cracking of plaster.

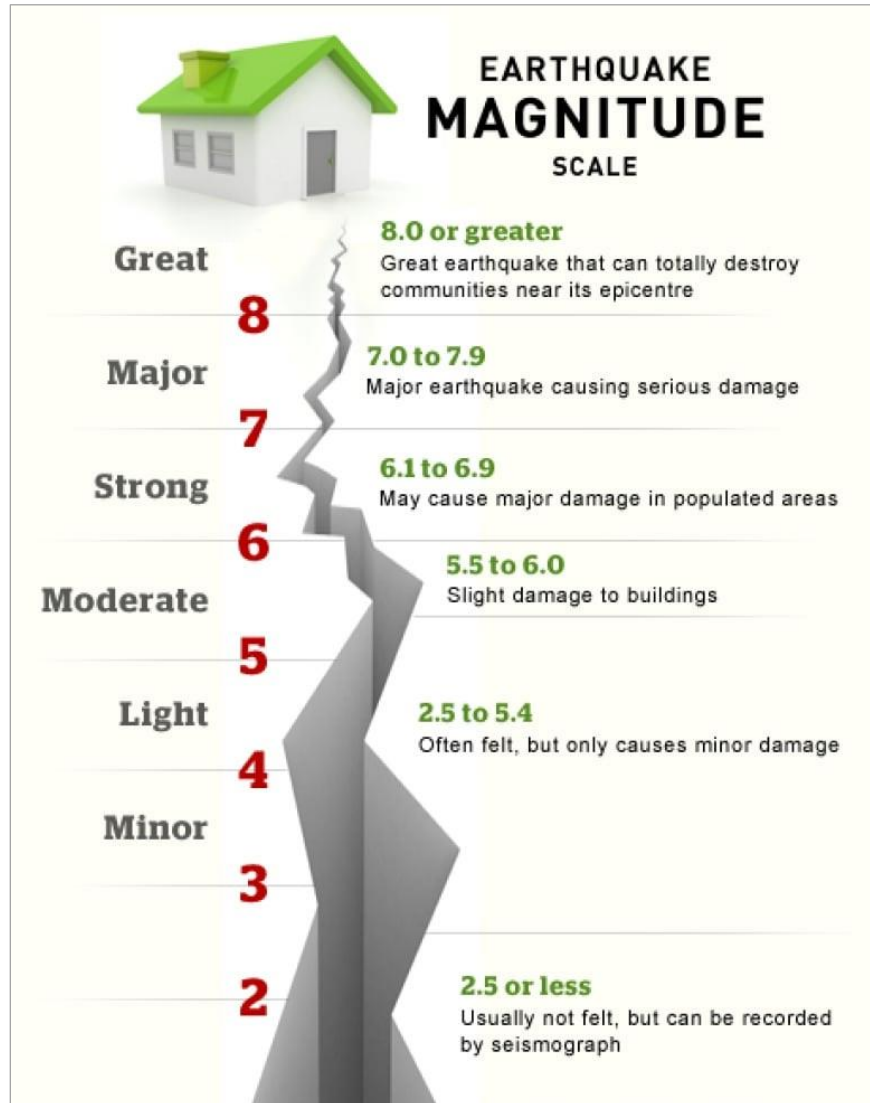
There are numerous characteristics measured when observing earthquake activity; however, four of them—force, depth, peak ground acceleration and the distance to the epicenter—are most influential in determining damage. Two scales are used when referring to earthquake activity: the Richter Scale, which estimates the total force of the earthquake; and the Modified Mercalli Intensity Scale, which categorizes the observed damage from the earthquake.

The Richter Scale is a scientific measurement based on the magnitude of the earthquake. It provides seismic experts greater accuracy in comparing the strength of earthquakes across time and at different locations in all areas of the world. The measurements of the Richter Scale are further explained in the diagram below:



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Illustration 5: Richter Scale



Data Source: UPSeis / Michigan Tech

The Modified Mercalli Intensity value assigned to a specific site after an earthquake has a more meaningful measure of severity to the nonscientist than the magnitude because intensity refers to the effects experienced at that place. The lower numbers of the intensity scale generally deal with the way the earthquake is felt by people. The higher numbers of the scale are based on observed structural damage. Structural engineers usually contribute information for assigning intensity values of VIII or above. The table below is an abbreviated description of the levels of Modified Mercalli intensity.



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Table 54: Modified Mercalli Intensity Scale

Modified Mercalli Intensity Scale		
Intensity	Shaking	Description / Damage
I	Not felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum in clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plates. Damage slight.
VII	Very Strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built, ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially designated structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage greater in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundation. Rails bent.

Data Source: *The Severity of an Earthquake (abridged)*, USGS General Interest Publication 1989-288-913

Earthquakes can last from a few seconds to over five minutes; they may also occur as a series of tremors over several days. The actual movement of the ground in an earthquake is seldom the direct cause of injury or death. Casualties generally result from falling objects and debris, because the shocks shake, damage, or demolish buildings and other structures. Disruption of communications, electrical power supplies and



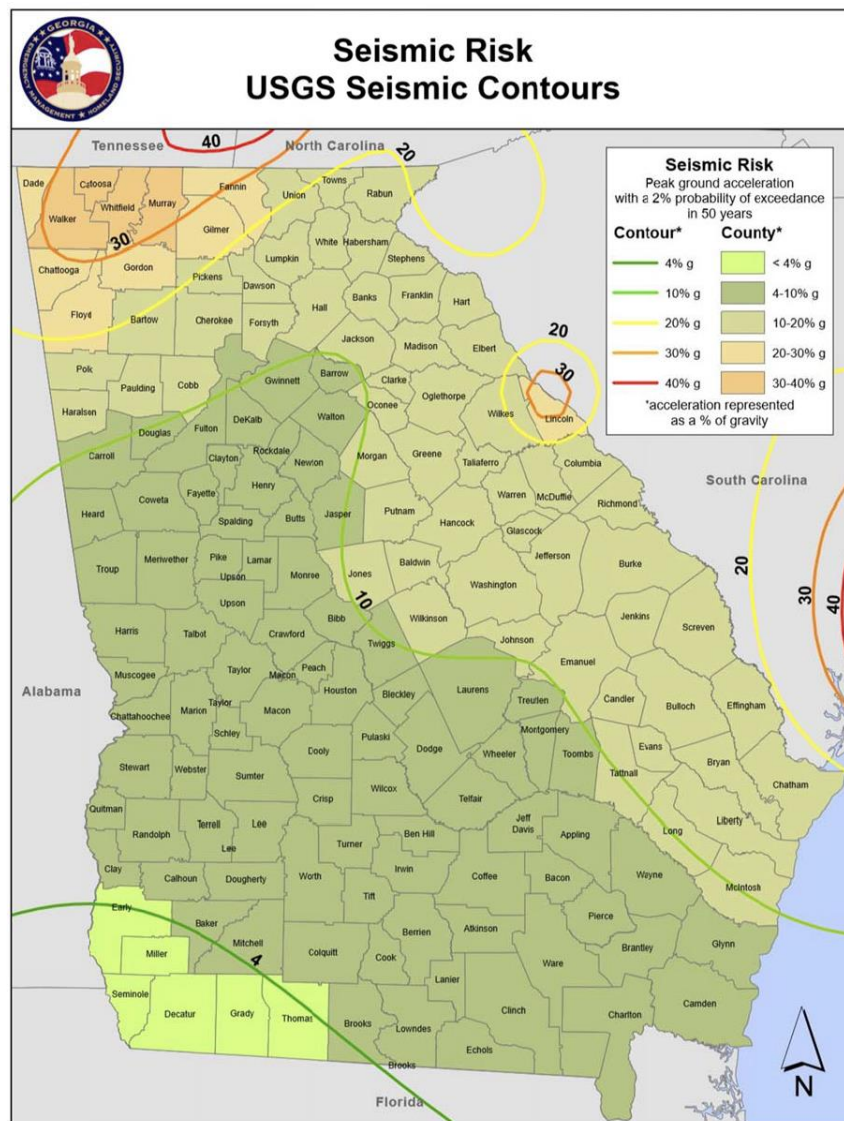
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gas, sewer and water lines should be expected. Earthquakes may trigger fires, dam failures, landslides, or releases of hazardous material, compounding their disastrous effects. Such secondary impacts could be magnified by the effects of climate change, though there are currently no models available to estimate them.

Earthquakes large enough to cause damage can be felt in most, if not all, of Georgia's counties. Earthquakes may be felt in any area of Georgia, but the northwestern Georgia counties of Bartow, Catoosa, Chattooga, Dade, Fannin, Floyd, Gilmer, Gordon, Murray, Pickens, Rabun, Towns, Union Walker, and Whitfield, have experienced earthquakes in the past. The Georgia Hazard Mitigation Strategy, Standard and Enhanced Plan (2019), states that Georgia has been seismically active, but no earthquakes were reported, nor seismic disasters declared, between 1952 and 2017.

The following map depicts the State of Georgia's seismic risk.

Map 87: Georgia Seismic Risk Map



Map Source: Georgia Hazard Mitigation Strategy, Standard and Enhanced Plan (2019-2024)
https://gema.georgia.gov/sites/gema.georgia.gov/files/related_files/document/2019%20Georgia%20Hazard%20Mitigation%20Strategy.pdf



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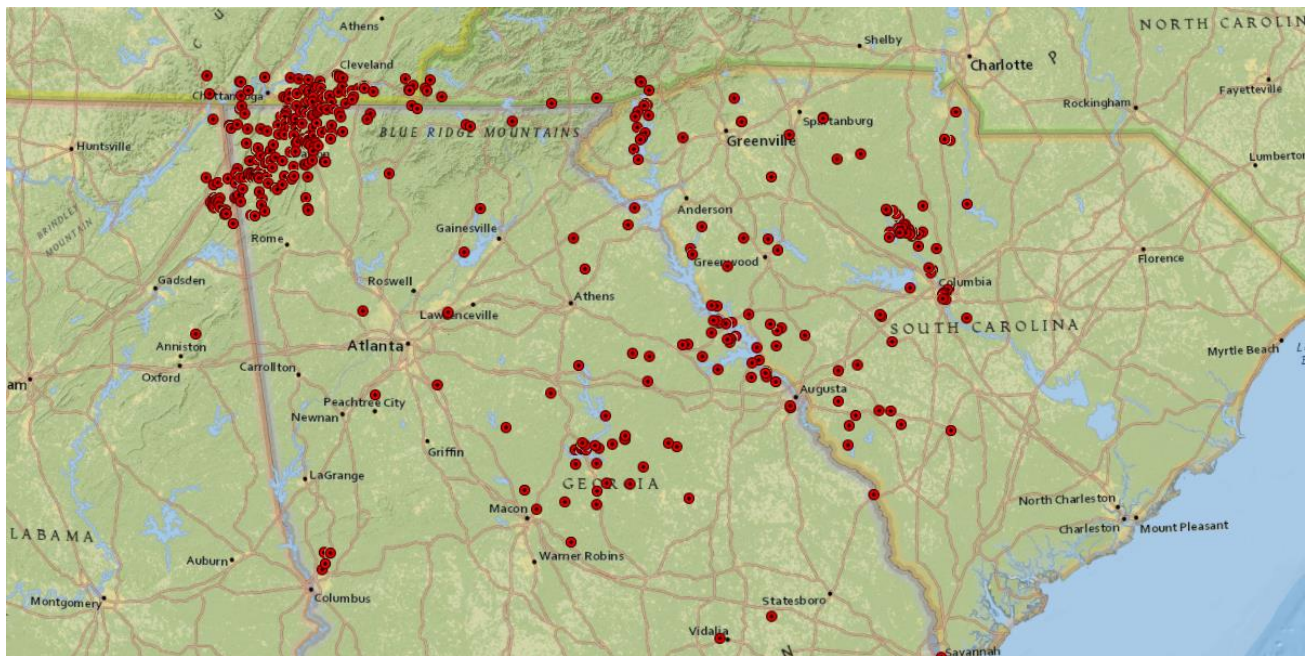
4.8.3 – Previous Occurrences

ABC Events

Between 1970 and 2020, earthquake events of 1.0M or greater have occurred within 250 miles of DeKalb County 357 times. Most of these were less than 4.0M and are considered minor. This data shows that the region is seismically active.

The strongest earthquake in the region was an estimated 5.5M in Union County, South Carolina on January 1, 1913. Shock waves moved out from the western portion of South Carolina into adjacent Georgia and North Carolina, and even up into parts of Virginia. Fortunately, damage was minimal, and no deaths resulted. This event is significant because it demonstrates that large, destructive earthquakes can strike the region. (<https://www.dnr.sc.gov/geology/earthquake-info.html>)

Map 88: Earthquakes 1900 - 2020, ≤250 miles

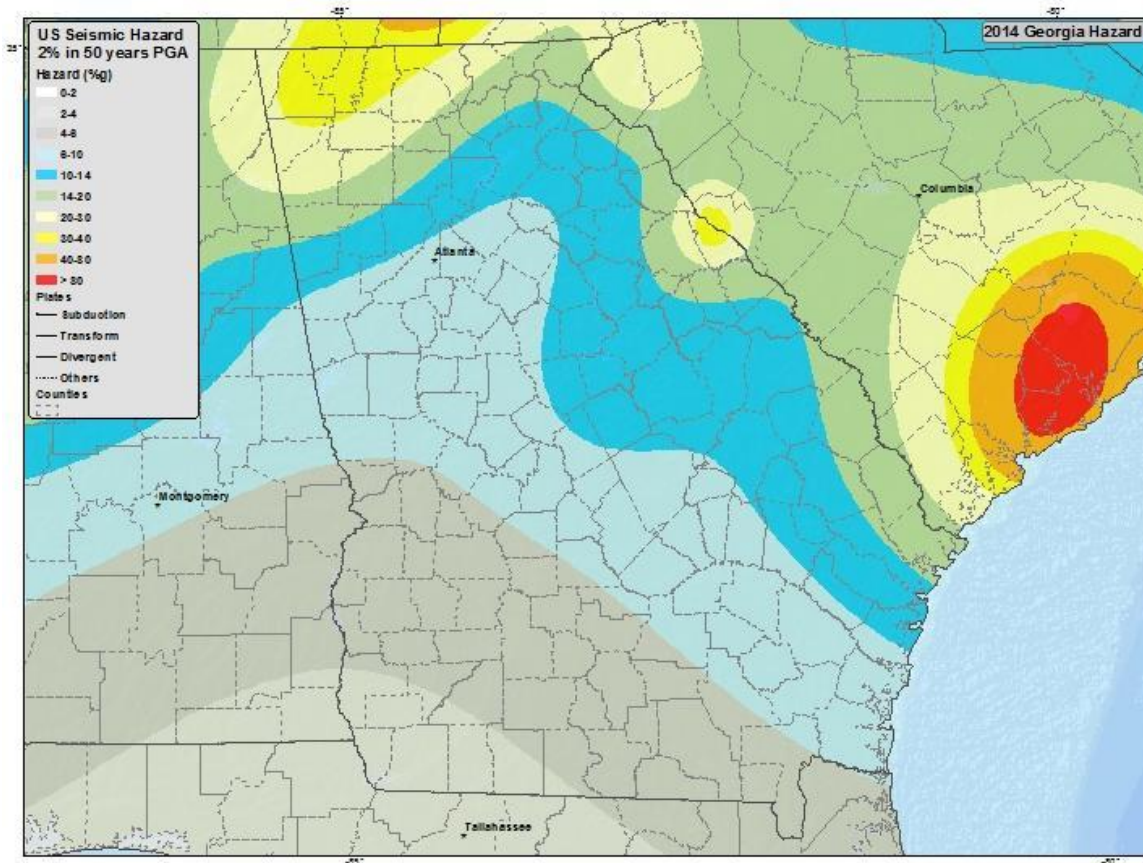


Map Source: U.S. Geological Survey



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Map 89: 2014 Seismic Hazard Map, State of Georgia



Map Source: United States Geologic Survey (<https://www.usgs.gov/media/images/2014-seismic-hazard-map-georgia>)

Table 55: Earthquake Events by Magnitude within 250 miles of DeKalb County (1970-2020)

Earthquake Events by Magnitude within 250 miles of DeKalb County (1970-2020)		
Decade	No. of Events	Percentage
4.0M+	8	2%
3.0M – 3.9M	31	9%
2.0M – 2.9M	204	57%
1.0M – 1.9M	114	32%
Total	357	100%

Data Source: U.S. Geological Survey

4.8.3A – Probability of Future Events

Based on this data, it is **likely** an earthquake event will occur within 250 miles of DeKalb County and the incorporated jurisdictions within its boundaries every year. However, it is most likely these earthquakes will be minor and cause no damage or injuries.



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4.8.4 – Vulnerability of Community Assets

Vulnerability of People

All of DeKalb County's population are susceptible to earthquakes. Low-income individuals are more vulnerable to earthquake impacts. Like extreme weather, it is likely that low-income people will be disproportionately affected by earthquakes due to shoddy housing construction and the age of affordable housing. Low-income individuals also experience greater difficulties in recovering from earthquake impacts. Housing is also an important factor in determining the vulnerability of people to earthquake impacts. There are indicators of increased vulnerability of some people in DeKalb County to earthquake impacts due to housing characteristics. Many older multi-family developments are suffering from physical deterioration and are often concentrated in areas with higher poverty rates.

According to U.S. Census Bureau data, 15.1% of DeKalb County's population live in poverty. This represents 113,148 people. The cities of Lithonia (38.9%), Clarkston (30.9%), and Doraville (22.8%) have the highest levels of poverty in DeKalb County. The DeKalb County 2021 Comprehensive Plan 5-Year Update notes that poverty rates have increased in certain sections of central and south DeKalb County (<https://www.dekalbcountyga.gov/planning-and-sustainability/2021-comprehensive-plan-5-year-update>).

Individuals with access and functional needs are more vulnerable to earthquake impacts. This may include children, the elderly, they physically or mentally disabled, non-English speakers, the medically or chemically dependent, and the transportation disadvantaged (https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf). In DeKalb County, this includes the following:

- Individuals with a disability: 10.2% (75,923 people)
- Persons 65 years and over: 11.9% (89,507 people)
- Persons under 9 years: 13.5% (101,416 people)
- Speak English less than "very well" (age 5 years+): 8.7% (60,536 people)
- Households with no vehicles available: 8.6% (24,418 households)

The City of Stonecrest (11.4%) has the highest percentage of individuals with a disability. The City of Avondale Estates (23.4%) has the highest ratio of population aged 65 years or older. The City of Lithonia (22.3%), City of Clarkston (18.3%), and City of Decatur (18.2%) have the greatest percentage of people under 9 years. The City of Doraville (42.4%), City of Clarkston (40.9%), and City of Chamblee (28.7%) have the highest percentage of people who speak English less than "very well." The City of Lithonia (14.7%) and City of Clarkston (14.3%) have the highest ratio of households with no vehicle available.

This data, retrieved from the American Community Survey and the DeKalb County 2021 Comprehensive Plan 5-Year Update, provides insight into certain characteristics of DeKalb County that are likely indicators of vulnerability. Based on this data, the greatest population vulnerabilities to earthquake hazards in DeKalb County are in the City of Clarkston, the City of Lithonia, and unincorporated areas of the county.

Vulnerability of the Economy

The leading industries in DeKalb County are Healthcare and Social Services (14.9% jobs), Retail Trade (10.9% of jobs), Accommodations and Food Services (7.2% of jobs), and Administrative and Support and Waste Management and Remediation Services (7.2% of jobs). Educational Services is another important industry in DeKalb County as it provides the fifth largest percentage of jobs (6.6%) and the highest average weekly wages of all industries (\$2105). The private sector provides 85.6% of employment, while the Federal, State, and local governments provide 14.4% of DeKalb County employment.



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(<https://explorer.gdol.ga.gov/vosnet/mis/Profiles/Counties/DeKalb.pdf>). The largest employers in DeKalb County are, (1) Centers for Disease Control and Prevention (CDC); (2) Veterans Affairs Medical Center Atlanta; (3) Emory University Hospital; (4) Emory DeKalb Medical; (5) Children's Healthcare of Atlanta; (6) AT&T Mobility LLC; (7) State Farm Insurance Company/Atlanta Perimeter; (8) InterContinental Hotels Group Inc; (9) AirWatch LLC; and (10) Georgia Regional Hospital Atlanta (<https://www.dekalbchamber.org/why-dekalb/>).

All sectors of DeKalb County's economy are susceptible to the impacts of earthquake hazards. The loss of any of DeKalb County's leading industries could severely disrupt the community and its ability to recover from a disaster. Given the significance of the Healthcare industry in DeKalb County, an earthquake-related disaster impacting one of the community's hospitals would severely stress the capabilities of the community to respond to the medical needs of the community. The CDC, located in DeKalb County, is a Federal agency under the United States Department of Health and Human Services which works to protect America from health, safety and security threats, both foreign and in the United States (<https://www.cdc.gov/about/organization/mission.htm>). Its loss would not only affect DeKalb County's economy but would affect the entire nation.

Vulnerability of the Built Environment

The built environment includes infrastructure systems, critical facilities, and cultural resources. DeKalb County and each of its participating jurisdictions have developed a list of infrastructure and critical facilities which are vital to the community. The National Park Service's National Register of Historic Places is the official list of the Nation's historic places worthy of preservation.

Infrastructure systems are critical for life safety and economic viability and include transportation, power, communication, and water and wastewater systems. Critical facilities are structures and institutions which are necessary for the community's response to and recovery from emergencies. These critical facilities must continue to operate during and following disasters to reduce the severity of impacts and accelerate recovery. Appendix C of this plan lists the community's infrastructure and critical facilities. Appendix C of this plan lists the places in DeKalb County which are part of the National Register of Historic Places and are considered important cultural resources.

Considering the entire planning area is susceptible to earthquakes, increased development and population growth can reasonably translate to exposure. The DeKalb County 2021 Comprehensive Plan 5-Year Update visualizes the development of three types of Activity Centers: Neighborhood Centers, Town Centers, and Regional Centers. There are 46 Activity Centers countywide. In addition, the plan includes residential designations: Rural, Suburban, and Traditional. DeKalb County's Future Land Use Map can be accessed via <https://dekalbgis.maps.arcgis.com/apps/webappviewer/index.html?id=f241af753f414cdfa31c1fdef0924584>.

Vulnerability of Natural Environment

The 2021 DeKalb County Comprehensive Plan – 5 Year Update lists two significant and unique geological features. Soapstone Ridge, located in the southwestern portion of the county, contains aboriginal steatite quarries which are of archeological and historic significance. Stone Mountain, located in the eastern area of the county, is the largest exposed granite outcropping in the world. The 2021 DeKalb County Comprehensive Plan – 5 Year Update also notes there are various Federally protected wetlands in the area, mostly in the flood prone areas of perennial creeks. These natural environmental resources are minimally vulnerable to earthquake impacts.



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4.8.5 – Risk Analysis

Like EF5 tornadoes and a “500-year flood,” a strong earthquake is a low probability, high consequence event for DeKalb County. Unlike tornadoes and flooding, there are few events which can realistically be used as analogs to project future losses.

For this plan, FEMA’s National Risk Index (NRI) will be used to identify risk project potential losses. The NRI estimates that DeKalb County and the jurisdictions which lie within its boundaries have 691,893 people and \$85,060,191,000 worth of structures exposed to earthquake hazard impacts each year. The NRI projects annual losses of 0.02 people and \$2,339,138 worth of structures to earthquake hazard impacts each year. It is important to reemphasize that due to the low probability and high consequences of an earthquake-related disaster in the planning area, these losses are unlikely to occur. However, if a large earthquake struck the planning area, the losses could be much greater than the NRI projects.

Table 56: Risk Analysis of Community Lifeline Systems to Earthquakes, DeKalb County

Risk Analysis of Community Lifeline Systems to Wind, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
Safety and Security	Law Enforcement /Security	High Risk. Impacts may: <ul style="list-style-type: none"> • injure personnel • damage facilities and equipment • disrupt responder communications • damage or block transportation routes • expend resources
	Fire Services	High Risk. Impacts may: <ul style="list-style-type: none"> • injure personnel • damage facilities and equipment • disrupt responder communications • damage or block transportation routes • expend resources
	Search and Rescue	High Risk. Impacts may: <ul style="list-style-type: none"> • injure personnel • damage facilities and equipment • disrupt responder communications • damage or block transportation routes • expend resources



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Risk Analysis of Community Lifeline Systems to Wind, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
	Government Services	High Risk. Impacts may: <ul style="list-style-type: none"> • damage critical facilities and historical sites • disrupt power and communications to emergency operations centers • disrupt essential government functions • cause short-term or long-term school cancellations.
	Community Safety	High Risk. Impacts may: <ul style="list-style-type: none"> • damage flood control systems • create secondary hazards such as fires, landslides, and liquefaction
Food, Water, Shelter	Food	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • disrupt commercial food distribution and supply chains • affect commercial and home perishable food supplies
	Water	High Risk. Impacts may: <ul style="list-style-type: none"> • generate secondary hazards which can contaminate drinking water systems • damage wastewater systems
	Shelter	High Risk. Impacts may: <ul style="list-style-type: none"> • damage homes • damage shelters • damage lodging facilities
	Agriculture	High Risk. Impacts may: <ul style="list-style-type: none"> • injure livestock • damage farm structures and equipment • destroy flood control systems • damage irrigation systems



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Risk Analysis of Community Lifeline Systems to Wind, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
Health and Medical	Medical Care	High Risk. Impacts may: <ul style="list-style-type: none"> • damage hospitals, pharmacies, long-term care facilities, and veterinary clinics • disrupt power and communications • contaminate water supply, affecting the provision of care • expend resources
	Patient Movement	High Risk. Impacts may: <ul style="list-style-type: none"> • injure personnel • damage facilities and equipment • disrupt responder communications • damage or block transportation routes • expend resources
	Public Health	High Risk. Impacts may: <ul style="list-style-type: none"> • damage facilities • disrupt power and communications • expend resources • increase susceptibility to diseases
	Fatality Management	High Risk. Impacts may: <ul style="list-style-type: none"> • expend resources • damage facilities and equipment • disrupt power and communications
	Medical Supply Chain	High Risk. Impacts may: <ul style="list-style-type: none"> • expend resources (e.g., blood supply, pharmaceuticals, devices, medical gases, raw materials) • damage or block transportation routes



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Risk Analysis of Community Lifeline Systems to Wind, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
Energy	Power (Grid)	High Risk. Impacts may: <ul style="list-style-type: none"> • damage generation systems • damage transmission systems • damage distribution systems
	Fuel	High Risk. Impacts may: <ul style="list-style-type: none"> • damage fuel storage resources • damage pipelines • damage fuel distribution locations
Communications	Infrastructure	High Risk. Impacts may: <ul style="list-style-type: none"> • damage or cause wireless systems to become overburdened • damage cable and wireline systems • damage or disrupt broadcast and satellite systems • damage or cause internet systems to become overburdened
	Alerts, Warnings, and Messages	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage physical warning systems • disrupt the delivery of emergency alerts and warnings
	911 and Dispatch	High Risk. Impacts may: <ul style="list-style-type: none"> • damage public safety answering points or dispatch centers • damage communication systems • overburden communication systems
	Responder Communications	High Risk. Impacts may: <ul style="list-style-type: none"> • damage communication systems • overburden communication systems
	Finance	High Risk. Impacts may: <ul style="list-style-type: none"> • damage communication systems • overburden communication systems



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Risk Analysis of Community Lifeline Systems to Wind, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> • damage banking facilities and equipment • disrupt communications
Transportation	Highway/Roadway	High Risk. Impacts may: <ul style="list-style-type: none"> • damage or block roads and bridges
	Mass Transit	High Risk. Impacts may: <ul style="list-style-type: none"> • damage buses or trains • damage or block transportation routes • delay routes
	Railway	High Risk. Impacts may: <ul style="list-style-type: none"> • damage freight or passenger trains • damage or block transportation routes • delay routes
	Aviation	High Risk. Impacts may: <ul style="list-style-type: none"> • damage airports • damage aircraft • delay routes
	Maritime	No Risk.
Hazardous Materials	Facilities	High Risk. Impacts may: <ul style="list-style-type: none"> • generate oil/hazardous materials/toxic incidents from fixed facilities • damage facilities • disrupt power supply to facilities
	Hazmat, Pollutants, Contaminants	High Risk. Impacts may: <ul style="list-style-type: none"> • generate oil/hazardous materials/toxic incidents from non-fixed facilities, rail, and roadways



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4.8.5A – Problem Statements

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
E1	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, over a quarter of DeKalb County residents either live below the poverty line and/or have access and functional needs.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 25% of residents in DeKalb County have low-income and/or functional and access needs and are at a greater risk for injury due to an earthquake and will likely require more assistance recovering from the event.
E2	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 23.4% of Avondale Estates residents are aged 65 or older.	Older individuals are more vulnerable to disasters. Nearly a quarter of the City of Avondale's residents are at a greater risk for injury due to an earthquake and may require greater assistance recovery from the event.
E3	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 22.4% of Brookhaven residents are children, of which 20% live below the poverty line.	Children and low-income individuals are more vulnerable to disasters. The City of Brookhaven has a large population of children, of which about 20% live below the poverty line and are at a greater risk for injury due to an earthquake and may require more assistance recovering from the event.
E4	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 28.7% of Chamblee residents speak English less than "very well".	Individuals who don't speak English well are more vulnerable to disasters. The City of Chamblee has a large population of residents that do not speak English well and are therefore at a greater risk of injury due an earthquake.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
E5	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, in Clarkston, 30.9% of residents live below the poverty line, 32.4% are children, 40.9% do not speak English “very well”, and 14.3% of households have no vehicle available.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 40% of residents in the City of Clarkston have low-income and/or functional and access needs, are at a greater risk for injury due to an earthquake and will likely require more assistance to recover from the event.
E6	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 32.2% of Decatur residents are children, of which 9.1% of live below the poverty line.	Children and low-income individuals are more vulnerable to disasters. The City of Decatur has a large population of children, of which 9.1% live below the poverty line and are at a greater risk for injury due to an earthquake and may require more assistance recovering from the event.
E7	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, in Doraville, 22.8% of residents live below the poverty line, and 42.4% speak English less than “very well”.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 40% of residents in the City of Doraville have low-income and/or functional and access needs, are at a greater risk for injury due to an earthquake and will likely require more assistance to recover from the event.
E8	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 21.9% of Dunwoody residents are children, of which 10.8% live below the poverty line.	Children and low-income individuals are more vulnerable to disasters. The City of Dunwoody has a large population of children, of which about 11% live below the poverty line and are at a greater risk for injury due to an earthquake and may require more assistance recovering from the event.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
E9	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, in Lithonia, 38.9% of residents live below the poverty line, 42.3% are children, and 14.7% have no access to a vehicle.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 38% of residents in the City of Lithonia have low-income and/or functional and access needs, are at a greater risk for injury due to an earthquake and will likely require more assistance to recover from the event.
E10	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 16.8% of Pine Lake's population is aged 65 or older.	Older individuals are more vulnerable to disasters. Nearly a 17% of the City of Pine Lake's residents are at a greater risk for injury due to an earthquake and may require greater assistance recovery from the event.
E11	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 10.9% of Stone Mountain's population have a physical or mental disability. 10.3% have no vehicle available, and 21.8% are children.	Individuals with functional and access needs are more vulnerable to disasters. Over 20% of residents in the City of Stone Mountain have functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.
E12	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, in Stonecrest, 11.4% of the population have a disability. Also, 26.7% of the population are children, of which 20.3% live in poverty.	Individuals with functional and access needs are more vulnerable to disasters. Over a quarter of residents in the City of Stonecrest have functional and access needs, are at a greater risk for injury due to an earthquake and will likely require more assistance to recover from the event.
E13	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, in Tucker, 9.5% of residents have a disability. Also, 21.8% of the population are children.	Individuals with functional and access needs are more vulnerable to disasters. Over a 20% of residents in the City of Stonecrest have functional and access needs, are at a greater risk for injury due to an earthquake and will likely require more assistance to recover from the event.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
E14	Earthquakes and built environment Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	Infrastructure systems and critical facilities are important for life safety, economic viability, disaster response operations, and disaster recovery operations.	Infrastructure systems and critical facilities are vulnerable to earthquake impacts. A strong earthquake near DeKalb County could damage or destroy key lifeline systems, hinder response operations, and prolong recovery operations.



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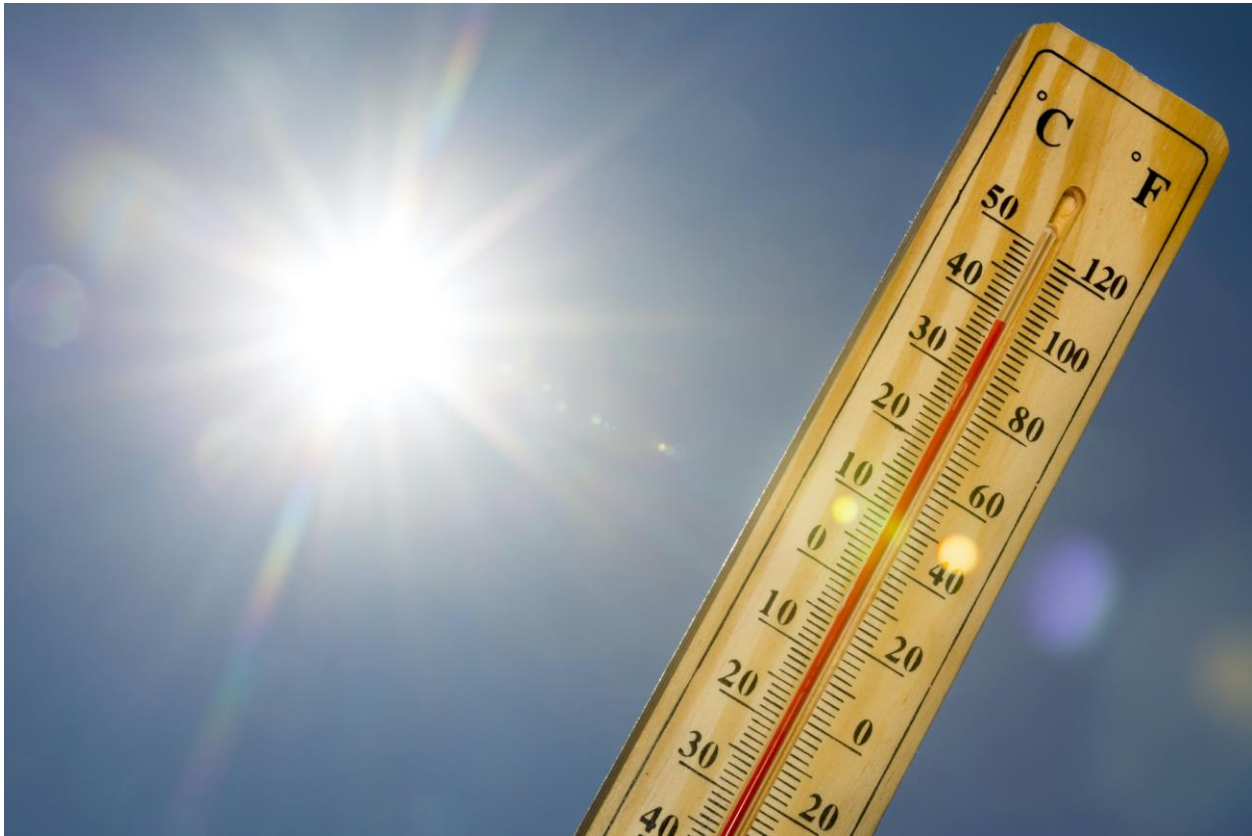


Photo Source: istockphoto.com

4.9(EH) – Extreme Heat

4.9.1 – Hazard Description

According to the National Weather Service, extreme heat, also known as heat waves, is a period of abnormally hot weather generally lasting more than two days. Heat waves can occur with or without high humidity. They have the potential to cover a large area, exposing a high number of people to hazardous heat (<https://www.weather.gov/safety/heat-during>).

Heat can be taxing on the body. During extremely hot weather, the body's ability to cool itself is challenged. According to the Centers for Disease Control and Prevention (CDC), an average of 702 heat-related deaths occurred annually in the United States between 2004-2018 (<https://www.cdc.gov/mmwr/volumes/69/wr/mm6924a1.htm>). The National Highway Traffic Safety Administration (NHTSA) reports that children dying from heatstroke in cars, either because they were left or became trapped, has increased in recent years. Since 1998, over 900 child hot car deaths have occurred in the United States (<https://www.nhtsa.gov/child-safety/you-can-help-prevent-hot-car-deaths>).

Heat cramps may be the first sign of heat-related illness and are characterized heavy sweating and by painful muscle cramps and spasms usually in the legs and abdomen. Heat exhaustion symptoms include heavy sweating, weakness, clammy skin, fast or weak pulse, muscle cramps, dizziness, nausea and vomiting, headache, and fainting. A heat stroke is the most dangerous heat-related illness. It is characterized by a throbbing headache, confusion, nausea, dizziness, body temperature greater than 103°F, fainting, and loss of consciousness.



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Climate change is having an impact on the frequency of extreme heat. According to the Climate Science Special Report, annual average temperature over the contiguous United States has increased by 1.2°F for the period 1986–2016 relative to 1901–1960 and by 1.8°F based on a linear regression for the period 1895–2016. Annual average temperature over the contiguous United States is projected to rise. Increases of about 2.5°F are projected for the period 2021–2050 relative to 1976–2005, implying recent record-setting years may be “common” in the next few decades. Much larger rises are projected by the late century (Vose, R.S., D.R. Easterling, K.E. Kunkel, A.N. LeGrande, and M.F. Wehner, 2017: Temperature changes in the United States. In: Climate Science Special Report: Fourth National Climate Assessment, Volume I [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 185-206, doi: 10.7930/J0N29V45).

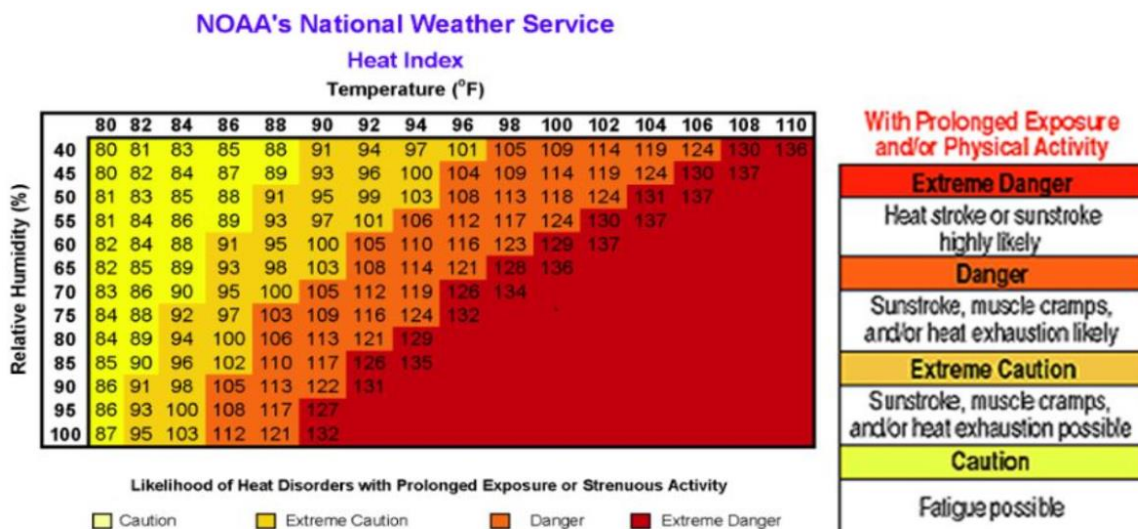
4.9.2 – Location & Extent

Extreme heat can occur anywhere in DeKalb County. Urban areas are more prone to extreme heat due to the heat island effect. According to the U.S. Environmental Protection Agency (EPA), heat islands are urbanized areas that experience higher temperatures due to structures such as buildings, roads, and other infrastructure absorbing and re-emitting the sun’s heat more than natural landscapes such as forests and water bodies (<https://www.epa.gov/heatislands>). Extreme heat is much more likely to occur in the summer.

The hottest temperature recorded in the area was 106°F on June 30, 2012. This broke the previous record of 105°F, which was set on July 17, 1980. Extreme heat often comes in waves that lasts over a period of days. Four of the hottest days on record in the area occurred over a six-day period in 1980. Three of the hottest days on record occurred over three consecutive days in 2012.

In order to measure the extent of Excessive Heat, the National Weather Service, uses the Heat Index (HI), a chart that accurately measures the apparent temperature of the air as it increases with the relative humidity. The Heat Index can be used to determine what effects the temperature and humidity can have on the population. To determine the Heat Index, you need the temperature and the relative humidity.

Illustration 6: Extreme Heat Extent by the National Weather Service



Source: NOAA's National Weather Service



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4.9.3 – Previous Occurrences

Table 57: Record High Temperatures, Atlanta Area

Record High Temperatures, Atlanta Area	
Date	Temperature
June 30, 2012	106°F
July 1, 2012	105°F
July 17, 1980	105°F
July 13, 1980	105°F
June 29, 2012	104°F
August 22, 2007	104°F
July 16, 1980	104°F
August 10, 2007	103°F
August 9, 2007	103°F
July 12, 1980	103°F
July 29, 1952	103°F
July 12, 1930	103°F

Data Source: National Weather Service, Peachtree City, GA
<https://www.weather.gov/wrh/Climate?wfo=ffc>

2012 Extreme Heat Event: A strong upper-level ridge responsible for record-breaking heat across the Plains and Midwest slid toward the Southeast on June 28, 2012. This was one of the hottest events in Georgia state history, with multiple all-time heat records tied or broken, including Athens (109 degrees on June 29th broke the previous record of 108 set on 7/12/1930), Macon (108 degrees on June 30th tied the record last set on 7/17/1980), Atlanta (106 degrees on June 30th broke the old record of 105 set on 7/17/1980), and Columbus (106 degrees on June 30th tied the record last set on 9/5/1925).

4.9.4 – Vulnerability of Community Assets

Vulnerability of People

The CDC identifies the following six groups as being especially vulnerable to extreme heat (<https://www.cdc.gov/disasters/extremeheat/specificgroups.html>):

- **Older Adults (aged 65+):** Older adults do not adjust as well as young people to sudden temperature change. They are more likely to have a chronic medical condition that changes normal body responses to heat. Older adults are more likely to take prescription medicines that affect the body's ability to control its temperature or sweat.
- **Infants and Children:** Infants and young children rely on others to keep them cool and hydrated when it's hot outside. The NHTSA reports that child hot car deaths have increased in recent years. In 2018 and 2019, a record 53 children died of vehicular heat strokes each year. Most hot car deaths – 53% - happen because someone forgets a child in a car. About 46% of the time



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when a child was forgotten, the caregiver meant to drop the child off at a daycare or preschool. Nearly 75% of children who are forgotten, and die are less than 2 years old.

- **Individuals with Chronic Conditions:** People with chronic conditions are less likely to sense and respond to changes in temperature. They may be taking medications that can make the effect of extreme heat worse. Conditions like heart disease, mental illness, poor blood circulation, and obesity are risk factors for heat-related illness.
- **Low-income Individuals:** People with limited income are less likely to have access to air conditioning. Individuals with low-income also are much more likely to be unable to afford their energy bills, especially during summer months when the cost is higher.
- **Athletes:** People who exercise in extreme heat are more likely to become dehydrated and get heat-related illness.
- **Outdoor workers:** People who work outdoors are more likely to become dehydrated and get heat-related illness.

Because the population of DeKalb County continues to grow and development projects are underway, people within the planning area are increasingly vulnerable to the short- and long-term effects of extreme heat. More development will expose more areas and more people to the heat island effect.

Vulnerability of the Economy

Extreme heat can have some effects on the economy, particularly agriculture. Heat stress can harm livestock. According to the USDA, farmers have lost over \$75 million in the midwestern cattle industry from 2007-2016 (<https://www.ars.usda.gov/plains-area/clay-center-ne/marc/docs/heat-stress/impactofheatstress/>). Extreme heat can also affect the development of row crops and many fruit crops. For example, soybeans exposed to heat stress during flowering can result in pollen sterility and reduced seed set (https://mrcc.purdue.edu/living_wx/heatwaves/index.html).

Vulnerability of the Built Environment

Extreme can have a negative impact on infrastructure systems, particularly transportation and utilities. Heat waves will generate a greater demand on local utility systems' ability to deliver water and power. Water resources are strained due to power generation. Extreme heat may also damage roads, bridges, and railroads. Higher temperatures can cause pavement to soften and expand. This can create rutting and potholes, particularly in high-traffic areas and can place stress on bridge joints. High temperatures cause rail tracks to expand and buckle. Periods of extreme heat can affect aircraft performance and may cause airplanes to face cargo restrictions, flight delays, and cancellations. During the 2021 Pacific Northwest Heatwave, pavement was observed to soften and expand in Portland, Oregon (<https://www.npr.org/2021/06/29/1011269025/photos-the-pacific-northwest-heatwave-is-melting-power-cables-and-buckling-roads>).

High heat can deteriorate and buckle pavement, warp, or buckle railway tracks, and exceed certain types of aircraft operational limits. Demands for electricity increase to keep homes, workspaces, and food storage areas cool. This demand can strain the electrical grid.

Because the population of DeKalb County continues to grow and development projects are underway, the built environment within the planning area will be increasingly vulnerable to the short- and long-term effects of extreme heat. Structures such as buildings, roads, and other infrastructure absorb and re-emit the sun's heat more than natural landscapes such as forests and water bodies.



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Vulnerability of Natural Environment

Excessive heat events often occur in tandem with droughts. In fact, droughts can make heat waves worse because the sun can heat dry ground more efficiently than wet ground. The two work together to impact the natural environment. Trees and plants can be damaged and die due to extreme heat and drought. Bodies of water can dry up. The heat and reduced water supply can cause harm to the region's wildlife, as well.

4.9.5 – Risk Analysis

All people, elements of the economy, built environment, and natural environment are exposed to extreme heat impacts. Young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts. The economy, particularly agriculture, are at risk of losses due to extreme heat impacts. Transportation and energy infrastructure can be negatively impacted by extreme heat events. Forests, water bodies, and wildlife are subject to damage from extreme heat exposure.

An analog for an extreme heat risk analysis is the 1980 heat wave. It was one of the worst in United States history. It's estimated that there were up to 10,000 fatalities directly or indirectly caused by the heat and drought, and approximately \$20 billion in crop damages in the United States (<https://www.hSDL.org/c/tl/1980-us-heat-wave/>). Georgia suffered approximately \$500 million in economic losses, mainly due to crop and livestock losses, increased energy demand, and highway damage (https://journals.ametsoc.org/view/journals/mwre/109/10/1520-0493_1981_109_2055_tshwad_2_0_co_2.xml?tab_body=pdf). In Alabama, the sustained period of extreme heat and high humidity took its toll on the state. In the month of July alone, there was an estimated 120 heat-related deaths along with the loss of more than 200,000 chickens and half the state's corn crop (https://www.weather.gov/bmx/climo_1980heatwave).

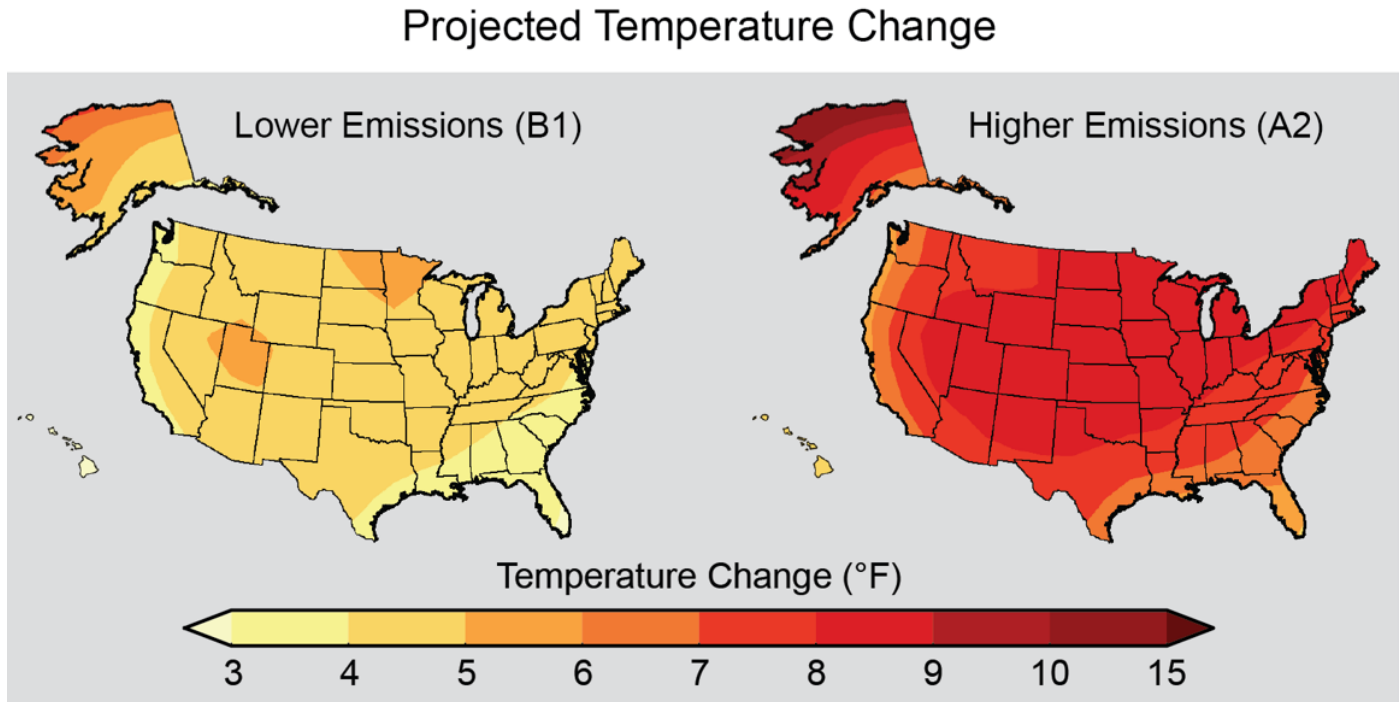
Less severe, but somewhat similar heat waves occurred in the 1950s and 2010s. So, it appears that about every 30 years, a severe extreme heat event occurs in Georgia. If an event like the 1980 heat wave occurred in Georgia, the event would cause approximately \$1.7 billion dollars in economic losses. It is likely it would cause heat-related illness and deaths, but probably not on the level the 1980 event caused. This is due to the increased usage of air conditioning in homes now compared to 1980.

The risk for extreme heat events is likely to be exacerbated by climate change. According to the Georgia Hazard Mitigation Strategy, climate change has generally increased the probability of heat waves, and prolonged extreme heat events have been unprecedented since the start of reliable instrumental records in 1895. The National Climate Assessment projects an increase in average temperature of 8°F - 9°F by the end of the century if carbon emissions increase.



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Illustration 7: Projected Temperature Change



Data Source: National Weather Service, Peachtree City, GA
<https://www.weather.gov/wrh/Climate?wfo=ffc>

Table 58: Risk Analysis of Community Lifeline Systems to Extreme Heat, DeKalb County

Risk Analysis of Community Lifeline Systems to Extreme Heat, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
Safety and Security	Law Enforcement /Security	Moderate Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage transportation routes
	Fire Services	High Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage transportation routes expend resources
	Search and Rescue	Moderate Risk. Impacts may: <ul style="list-style-type: none"> injure personnel damage transportation routes
	Government Services	Low Risk. Impacts may:



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Risk Analysis of Community Lifeline Systems to Extreme Heat, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
		<ul style="list-style-type: none"> cause short-term or long-term school cancellations.
	Community Safety	No Risk.
Food, Water, Shelter	Food	Low Risk. Impacts may: <ul style="list-style-type: none"> affect commercial and home perishable food supplies
	Water	No Risk.
	Shelter	No Risk.
	Agriculture	High Risk. Impacts may: <ul style="list-style-type: none"> injure livestock damage crops
Health and Medical	Medical Care	Low Risk. Impacts may: <ul style="list-style-type: none"> expend resources
	Patient Movement	Moderate Risk. Impacts may: <ul style="list-style-type: none"> injure personnel expend resources
	Public Health	Moderate Risk. Impacts may: <ul style="list-style-type: none"> expend resources
	Fatality Management	Low Risk. Impacts may: <ul style="list-style-type: none"> expend resources
	Medical Supply Chain	Low Risk. Impacts may: <ul style="list-style-type: none"> expend resources (e.g., blood supply, pharmaceuticals, devices, medical gases, raw materials) damage transportation routes
Energy	Power (Grid)	High Risk. Impacts may: <ul style="list-style-type: none"> overwhelm resources
	Fuel	No Risk.



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Risk Analysis of Community Lifeline Systems to Extreme Heat, DeKalb County		
Community Lifeline System	Lifeline Component	Risk
Communications	Infrastructure	No Risk.
	Alerts, Warnings, and Messages	No Risk.
	911 and Dispatch	Low Risk. Impacts may: <ul style="list-style-type: none"> • overburden communication systems
	Responder Communications	No Risk.
	Finance	No Risk.
Transportation	Highway/Roadway	Moderate Risk. Impacts may: <ul style="list-style-type: none"> • damage roads and bridges
	Mass Transit	Low Risk. Impacts may: <ul style="list-style-type: none"> • damage transportation routes
	Railway	No Risk.
	Aviation	No Risk.
	Maritime	No Risk.
Hazardous Materials	Facilities	No Risk.
	Hazmat, Pollutants, Contaminants	No Risk.

4.2.5A – Problem Statements

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
EH1	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In DeKalb County and the jurisdictions that lie within its boundaries: <ul style="list-style-type: none"> • 14% of the population is ≤9 years old • 12% of the population is ≥65 years old • 10% of the population has a disability 	Over 25% of the population in DeKalb County and the jurisdictions that lie within its boundaries are vulnerable to extreme heat impacts.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
EH2	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Avondale Estates: <ul style="list-style-type: none"> 11% of the population is ≤9 years old 23% of the population is ≥65 years old 9% of the population has a disability 	Over 30% of the population in the City of Avondale Estates are vulnerable to extreme heat impacts.
EH3	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Brookhaven: <ul style="list-style-type: none"> 15% of the population is ≤9 years old 10% of the population is ≥65 years old 6% of the population has a disability 	Over 25% of the population in the City of Brookhaven are vulnerable to extreme heat impacts.
EH4	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Chamblee: <ul style="list-style-type: none"> 15% of the population is ≤9 years old 8% of the population is ≥65 years old 7% of the population has a disability 	Over 20% of the population in the City of Chamblee are vulnerable to extreme heat impacts.
EH5	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Clarkston: <ul style="list-style-type: none"> 18% of the population is ≤9 years old 4% of the population is ≥65 years old 8% of the population has a disability 	Over 20% of the population in the City of Clarkston are vulnerable to extreme heat impacts.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
EH6	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Decatur: <ul style="list-style-type: none"> 18% of the population is ≤9 years old 12% of the population is ≥65 years old 8% of the population has a disability 	Over 30% of the population in the City of Decatur are vulnerable to extreme heat impacts.
EH7	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Doraville: <ul style="list-style-type: none"> 15% of the population is ≤9 years old 8% of the population is ≥65 years old 5% of the population has a disability 	Over 20% of the population in the City of Doraville are vulnerable to extreme heat impacts.
EH8	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Dunwoody: <ul style="list-style-type: none"> 16% of the population is ≤9 years old 14% of the population is ≥65 years old 7% of the population has a disability 	Over 30% of the population in the City of Dunwoody are vulnerable to extreme heat impacts.
EH9	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Lithonia: <ul style="list-style-type: none"> 22% of the population is ≤9 years old 7% of the population is ≥65 years old 9% of the population has a disability 	Over 30% of the population in the City of Lithonia are vulnerable to extreme heat impacts.
EH10	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Pine Lake: <ul style="list-style-type: none"> 17% of the population is ≥65 years old 6% of the population has a disability 	Over 15% of the population in the City of Pine Lake are vulnerable to extreme heat impacts.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
EH11	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Stone Mountain: <ul style="list-style-type: none"> 10% of the population is ≤9 years old 9% of the population is ≥65 years old 11% of the population has a disability 	Over 20% of the population in the City of Stone Mountain are vulnerable to extreme heat impacts.
EH12	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Stonecrest: <ul style="list-style-type: none"> 15% of the population is ≤9 years old 8% of the population is ≥65 years old 11% of the population has a disability 	Over 20% of the population in the City of Stonecrest are vulnerable to extreme heat impacts.
EH13	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Tucker: <ul style="list-style-type: none"> 12% of the population is ≤9 years old 15% of the population is ≥65 years old 10% of the population has a disability 	Over 25% of the population in the City of Tucker are vulnerable to extreme heat impacts.
EH14	Extreme Heat and economy Extreme heat event can have a devastating effect on the agricultural industry.	There are 34 farms in DeKalb County which generate approximately \$546,000 in revenue from crop and livestock sales each year.	An extreme heat event can have a devastating effect on DeKalb County's agricultural industry.

4.10 – Hazard Risk Summary

The table below outlines each participating jurisdictions' general risk to this plan's profiled hazards. The rankings are based on a composite evaluation of this plan's risk assessment, namely, a hazard's probability of occurring in the future, the vulnerability of a jurisdiction to a specific hazard, the intensity of past

Category	Range (Per Year)
Unlikely	0%
Occasional	1% - 10%
Likely	11% - 50%
Highly Likely	51% - 100%



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hazard impacts, and a joint evaluation of local experts and stakeholders. For reference, the probability categories/percentages previously indicated in Illustration are shown to the right.

Table 59: Hazard Risk Summary, DeKalb County

HAZARD RISK SUMMARY, DEKALB COUNTY							
Jurisdictions	Hazards						
	Drought	Earthquake	Extreme Heat	Flood	Severe Winter Weather	Wildfire	Wind
DeKalb County	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely
Avondale Estates	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely
Brookhaven	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely
Chamblee	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely
Clarkston	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely
Decatur	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely
Doraville	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely
Dunwoody	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely
Lithonia	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely
Pine Lake	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely
Stone Mountain	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely
Stonecrest	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely
Tucker	Likely	≤2.0 Likely ≥2.0 Occasional	Highly Likely	Highly Likely	Highly Likely	Highly Likely	Highly Likely



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4.10.1 – Problem Statement Summary

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
W1	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, over a quarter of DeKalb County residents either live below the poverty line and/or have access and functional needs.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 25% of residents in DeKalb County have low-income and/or functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance recovering from the event.
W2	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 23.4% of Avondale Estates residents are aged 65 or older.	Older individuals are more vulnerable to disasters. Nearly a quarter of the City of Avondale's residents are at a greater risk for injury due to a high wind event and may require greater assistance recovery from the event.
W3	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 22.4% of Brookhaven residents are children, of which 20% live below the poverty line.	Children and low-income individuals are more vulnerable to disasters. The City of Brookhaven has a large population of children, of which about 20% live below the poverty line and are at a greater risk for injury due to a high wind event and may require more assistance recovering from the event.
W4	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 28.7% of Chamblee residents speak English less than "very well".	Individuals who don't speak English well are more vulnerable to disasters. The City of Chamblee has a large population of residents that do not speak English well and are therefore at a greater risk of injury due to a high wind event.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
W5	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, in Clarkston, 30.9% of residents live below the poverty line, 32.4% are children, 40.9% do not speak English "very well", and 14.3% of households have no vehicle available.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 40% of residents in the City of Clarkston have low-income and/or functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.
W6	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 32.2% of Decatur residents are children, of which 9.1% live below the poverty line.	Children and low-income individuals are more vulnerable to disasters. The City of Decatur has a large population of children, of which 9.1% live below the poverty line and are at a greater risk for injury due to a high wind event and may require more assistance recovering from the event.
W7	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, in Doraville, 22.8% of residents live below the poverty line, and 42.4% speak English less than "very well".	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 40% of residents in the City of Doraville have low-income and/or functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.
W8	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 21.9% of Dunwoody residents are children, of which 10.8% live below the poverty line.	Children and low-income individuals are more vulnerable to disasters. The City of Dunwoody has a large population of children, of which about 11% live below the poverty line and are at a greater risk for injury due to a high wind event and may require more assistance recovering from the event.



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Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
W9	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, in Lithonia, 38.9% of residents live below the poverty line, 42.3% are children, and 14.7% have no access to a vehicle.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 38% of residents in the City of Lithonia have low-income and/or functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.
W10	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 16.8% of Pine Lake's population is aged 65 or older.	Older individuals are more vulnerable to disasters. Nearly a 17% of the City of Pine Lake's residents are at a greater risk for injury due to a high wind event and may require greater assistance recovery from the event.
W11	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, 10.9% of Stone Mountain's population have a physical or mental disability. 10.3% have no vehicle available, and 21.8% are children.	Individuals with functional and access needs are more vulnerable to disasters. Over 20% of residents in the City of Stone Mountain have functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.
W12	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, in Stonecrest, 11.4% of the population have a disability. Also, 26.7% of the population are children, of which 20.3% live in poverty.	Individuals with functional and access needs are more vulnerable to disasters. Over a quarter of residents in the City of Stonecrest have functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.
W13	Wind and People Low-income individuals, older individuals, and individuals with a functional or access need are especially vulnerable to and may require more assistance recovering from wind hazard impacts.	According to the U.S. Census Bureau, in Tucker, 9.5% of residents have a disability. Also, 21.8% of the population are children.	Individuals with functional and access needs are more vulnerable to disasters. Over a 20% of residents in the City of Stonecrest have functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
W14	Wind and built environment High wind events are highly likely to occur in DeKalb County each year.	Infrastructure systems and critical facilities are important for life safety, economic viability, disaster response operations, and disaster recovery operations.	Infrastructure systems and critical facilities are vulnerable to wind hazard impacts. A major wind-related disaster in DeKalb County could damage or destroy key lifeline systems, hinder response operations, and prolong recovery operations.
FL1	Flooding and people Low-income individuals, and individuals with functional and access needs (children, elderly, disability, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In DeKalb County and the jurisdictions that lie within its boundaries: <ul style="list-style-type: none"> • 14% of the population is ≤9 years old • 12% of the population is ≥65 years old • 10% of the population has a disability • 9% of the population speak English less than "very well" • 8.6% of households have no vehicle available 	Over 25% of the population in DeKalb County and the jurisdictions that lie within its boundaries are vulnerable to extreme heat impacts.
FL2	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Avondale Estates: <ul style="list-style-type: none"> • 11% of the population is ≤9 years old • 23% of the population is ≥65 years old • 9% of the population has a disability • 2% of the population speak English less than "very well" • 3% of households have no vehicle available 	Over 30% of the population in the City of Avondale Estates are vulnerable to extreme heat impacts.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
FL3	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Brookhaven: <ul style="list-style-type: none"> 15% of the population is ≤9 years old 10% of the population is ≥65 years old 6% of the population has a disability 17% of the population speak English less than very well 7% of households no vehicle available 	Over 25% of the population in the City of Brookhaven are vulnerable to extreme heat impacts.
FL4	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Chamblee: <ul style="list-style-type: none"> 15% of the population is ≤9 years old 8% of the population is ≥65 years old 7% of the population has a disability 29% of the population speak English less than "very well" 9% of households have no vehicle available 	Over 30% of the population in the City of Chamblee are vulnerable to extreme heat impacts.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
FL5	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Clarkston: <ul style="list-style-type: none"> • 18% of the population is ≤ 9 years old • 4% of the population is ≥ 65 years old • 8% of the population has a disability • 41% of the population speak English less than "very well" • 14% of households have no vehicle available 	Over 40% of the population in the City of Clarkston are vulnerable to extreme heat impacts.
FL6	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Decatur: <ul style="list-style-type: none"> • 18% of the population is ≤ 9 years old • 12% of the population is ≥ 65 years old • 8% of the population has a disability • 3% of the population speak English less than "very well" • 13% of household have no vehicle available 	Over 30% of the population in the City of Decatur are vulnerable to extreme heat impacts.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
FL7	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Doraville: <ul style="list-style-type: none"> • 15% of the population is ≤ 9 years old • 8% of the population is ≥ 65 years old • 5% of the population has a disability • 42% of the population speak English less than "very well" • 9% of households have no vehicle available 	Over 40% of the population in the City of Doraville are vulnerable to extreme heat impacts.
FL8	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Dunwoody: <ul style="list-style-type: none"> • 16% of the population is ≤ 9 years old • 14% of the population is ≥ 65 years old • 7% of the population has a disability • 8% of the population speak English less than "very well" • 5% of households have no vehicle available 	Over 30% of the population in the City of Dunwoody are vulnerable to extreme heat impacts.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
FL9	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Lithonia: <ul style="list-style-type: none"> • 22% of the population is ≤ 9 years old • 7% of the population is ≥ 65 years old • 9% of the population has a disability • 4% of the population speak English less than "very well" • 15% of households have no vehicle available 	Over 30% of the population in the City of Lithonia are vulnerable to extreme heat impacts.
FL10	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Pine Lake: <ul style="list-style-type: none"> • 17% of the population is ≥ 65 years old • 6% of the population has a disability • 1% of the population speak English less than "very well" • 2% of households have no vehicle available 	Over 15% of the population in the City of Pine Lake are vulnerable to extreme heat impacts.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
FL11	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Stone Mountain: <ul style="list-style-type: none"> • 10% of the population is ≤ 9 years old • 9% of the population is ≥ 65 years old • 11% of the population has a disability • 6% of the population speak English less than "very well" • 10% of households have no vehicle available 	Over 20% of the population in the City of Stone Mountain are vulnerable to extreme heat impacts.
FL12	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Stonecrest: <ul style="list-style-type: none"> • 15% of the population is ≤ 9 years old • 8% of the population is ≥ 65 years old • 11% of the population has a disability • 1% of the population speak English less than "very well" • 10% of households have no vehicle available 	Over 20% of the population in the City of Stonecrest are vulnerable to extreme heat impacts.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
FL13	Flooding and people Low-income individuals, and individuals with functional and access needs (disability, elderly, children, non-proficient English speakers, no vehicle) are more vulnerable to flood hazard impacts.	In the City of Tucker: <ul style="list-style-type: none"> • 12% of the population is ≤9 years old • 15% of the population is ≥65 years old • 10% of the population has a disability • 13% of the population speak English less than “very well” • 6% of the population have no vehicle available 	Over 25% of the population in the City of Tucker are vulnerable to extreme heat impacts.
FL14	Flooding and people/built environment Nancy Creek has experienced significant flooding six times since 1997.	Several people, structures, and transportation corridors are at risk for flooding impacts from Nancy Creek.	People and structures along Warrenhall Lane, Durret Way are regularly affected by flooding from Nancy Creek.
FL 15	Flooding and people/built environment Peachtree Creek has experienced significant flooding six times since 1997.	Several people, structures, and transportation corridors are at risk for flooding impacts from Peachtree Creek.	People and structures along Hanover West Drive, Clairmont Road, and Buford Road are regularly affected by flooding from Peachtree Creek.
FL16	Flooding and people/built environment North Fork Peachtree Creek has experienced significant flooding five times since 1997.	Several people, structures, and transportation corridors are at risk for flooding impacts from North Fork Peachtree Creek.	People and structures along Bamby Lane, Cove Circle, Victory Drive, Dunwoody Place, Converse Drive are regularly affected by flooding from North Fork Peachtree Creek.
FL17	Flooding and people/built environment South Fork Peachtree Creek has experienced significant flooding five times since 1997.	Several people, structures, and transportation corridors are at risk for flooding impacts from South Fork Peachtree Creek.	People and structures along Lansbury Village Drive, Orion Drive, Lawrenceville Highway, Noble Drive, Helen Drive, and Kay Lane are regularly affected by flooding from Peachtree Creek.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
WW1	Severe Winter Weather and People Severe winter weather events, especially ice storms, can cause extended power outages in DeKalb County.	According to the U.S. Census Bureau, 37.5% of residents in DeKalb County use electricity as their primary energy source for heating.	Ice and snowstorms often create extended power outages. Extended power outages in the winter creates dangers in the form of cold weather exposure and carbon monoxide exposure from the improper use of gas furnaces and heaters.
WW2	Severe Winter Weather and Economy Severe winter weather events often create hazardous travel conditions.	Between 80% - 90% of DeKalb County residents community to work via roadways.	Snow and ice events in DeKalb County often cause roads to become impassible. southeastern United States where motorist have less experience driving in the conditions and local governments are less equipped to deal with the impacts. Because of this, businesses often close which negatively affects economy.
WW3	Severe Winter Weather and the Built Environment Severe winter weather events, especially ice storms, can cause extended power outages in DeKalb County.	DeKalb County has identified critical facilities which are necessary for the community's response to emergencies and disasters.	Ice and snowstorms often create power outages in DeKalb County. If a power outage affects the community's critical facilities, the ability of governmental officials, first responders, emergency managers, healthcare workers, and other essential workers ability to respond effectively may be hindered.
D1	Drought and Economy Some magnitude of drought is likely to occur in DeKalb County during the next five years.	Agricultural production generates over a half-million dollars of income for farmers in DeKalb County.	Agricultural production is at a high-risk during drought periods. This risk affects the economy and people of DeKalb County.
D2	Drought and Natural Environment Some magnitude of drought is likely to occur in DeKalb County during the next five years.	DeKalb County residents and critical facilities depend upon surface and groundwater reservoirs for the community's water supply.	Rivers, streams, and groundwater reservoirs are at a high-risk during drought periods. This risk affects the people, businesses, and critical facilities of DeKalb County.
D3	Drought and Natural Environment Some magnitude of drought is likely to occur in DeKalb County during the next five years.	DeKalb County's natural environment consists of woodland areas. Numerous people live in and around these wooded areas.	Woodlands are at high-risk of wildfire during long-term drought periods. This risk affects people living near the wooded areas.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
WF1	Wildfire and people The Wildfire Urban Interface (WUI) Index is high in many areas of DeKalb County.	FEMA's National Risk Index (NRI) estimates that 467 people are exposed to hazard impacts each year.	Many people in DeKalb County live in areas where human development meets or intermingles with undeveloped wildland. This increases the wildfire risk for people living in DeKalb County and exposes them to dangers associated with wildfires. Wildfire smoke may also generate smoke that can affect air quality. This poses a serious health risk to the elderly, the young, and people with breathing conditions.
WF 2	Wildfire and people The Wildfire Urban Interface (WUI) Index is high in many areas of DeKalb County.	FEMA's National Risk Index (NRI) estimates that \$2,680 work of agriculture are exposed to wildfire hazard impacts each year.	Some businesses and farms are in areas where human development meets or intermingles with undeveloped wildland. This increases the risk to crop, livestock, structures, production, wages, and equipment losses.
WF3	Wildfire and built environment The Wildland Urban Interface (WUI) Index is high in many areas of DeKalb County.	FEMA's National Risk Index (NRI) estimates that \$57,902,948 worth of structures are exposed to wildfire hazard impacts each year.	Some critical facilities, homes, cultural resources, and infrastructure are in areas where human development meets or intermingles with undeveloped wildland. FEMA's National Risk Index (NRI) projects \$1,164 work of structure losses each year due to wildfire hazard impacts. A major wildfire may cause much more damage.
WF4	Wildfire and natural environment The Wildland Urban Interface (WUI) Index is high in many areas of DeKalb County.	DeKalb County consists of numerous natural resources which may be exposed to wildfires.	A major wildfire may destroy parts of DeKalb County's natural environment and cause secondary hazards such as flooding, debris flows, and landslides. This may impact DeKalb County's people, economy, and build environment.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
E1	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, over a quarter of DeKalb County residents either live below the poverty line and/or have access and functional needs.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 25% of residents in DeKalb County have low-income and/or functional and access needs and are at a greater risk for injury due to an earthquake and will likely require more assistance recovering from the event.
E2	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 23.4% of Avondale Estates residents are aged 65 or older.	Older individuals are more vulnerable to disasters. Nearly a quarter of the City of Avondale's residents are at a greater risk for injury due to an earthquake and may require greater assistance recovery from the event.
E3	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 22.4% of Brookhaven residents are children, of which 20% live below the poverty line.	Children and low-income individuals are more vulnerable to disasters. The City of Brookhaven has a large population of children, of which about 20% live below the poverty line and are at a greater risk for injury due to an earthquake and may require more assistance recovering from the event.
E4	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 28.7% of Chamblee residents speak English less than "very well".	Individuals who don't speak English well are more vulnerable to disasters. The City of Chamblee has a large population of residents that do not speak English well and are therefore at a greater risk of injury due an earthquake.
E5	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, in Clarkston, 30.9% of residents live below the poverty line, 32.4% are children, 40.9% do not speak English "very well", and 14.3% of households have no vehicle available.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 40% of residents in the City of Clarkston have low-income and/or functional and access needs, are at a greater risk for injury due to an earthquake and will likely require more assistance to recover from the event.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
E6	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 32.2% of Decatur residents are children, of which 9.1% of live below the poverty line.	Children and low-income individuals are more vulnerable to disasters. The City of Decatur has a large population of children, of which 9.1% live below the poverty line and are at a greater risk for injury due to an earthquake and may require more assistance recovering from the event.
E7	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, in Doraville, 22.8% of residents live below the poverty line, and 42.4% speak English less than "very well".	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 40% of residents in the City of Doraville have low-income and/or functional and access needs, are at a greater risk for injury due to an earthquake and will likely require more assistance to recover from the event.
E8	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 21.9% of Dunwoody residents are children, of which 10.8% live below the poverty line.	Children and low-income individuals are more vulnerable to disasters. The City of Dunwoody has a large population of children, of which about 11% live below the poverty line and are at a greater risk for injury due to an earthquake and may require more assistance recovering from the event.
E9	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, in Lithonia, 38.9% of residents live below the poverty line, 42.3% are children, and 14.7% have no access to a vehicle.	Low-income individuals and individuals with functional and access needs are more vulnerable to disasters. Over 38% of residents in the City of Lithonia have low-income and/or functional and access needs, are at a greater risk for injury due to an earthquake and will likely require more assistance to recover from the event.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
E10	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 16.8% of Pine Lake's population is aged 65 or older.	Older individuals are more vulnerable to disasters. Nearly a 17% of the City of Pine Lake's residents are at a greater risk for injury due to an earthquake and may require greater assistance recovery from the event.
E11	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, 10.9% of Stone Mountain's population have a physical or mental disability. 10.3% have no vehicle available, and 21.8% are children.	Individuals with functional and access needs are more vulnerable to disasters. Over 20% of residents in the City of Stone Mountain have functional and access needs, are at a greater risk for injury due to a high wind event and will likely require more assistance to recover from the event.
E12	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, in Stonecrest, 11.4% of the population have a disability. Also, 26.7% of the population are children, of which 20.3% live in poverty.	Individuals with functional and access needs are more vulnerable to disasters. Over a quarter of residents in the City of Stonecrest have functional and access needs, are at a greater risk for injury due to an earthquake and will likely require more assistance to recover from the event.
E13	Earthquakes and people Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	According to the U.S. Census Bureau, in Tucker, 9.5% of residents have a disability. Also, 21.8% of the population are children.	Individuals with functional and access needs are more vulnerable to disasters. Over a 20% of residents in the City of Stonecrest have functional and access needs, are at a greater risk for injury due to an earthquake and will likely require more assistance to recover from the event.
E14	Earthquakes and built environment Earthquakes are low-probability, high consequence events for DeKalb County and the jurisdictions that lie within its boundaries.	Infrastructure systems and critical facilities are important for life safety, economic viability, disaster response operations, and disaster recovery operations.	Infrastructure systems and critical facilities are vulnerable to earthquake impacts. A strong earthquake near DeKalb County could damage or destroy key lifeline systems, hinder response operations, and prolong recovery operations.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
EH1	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In DeKalb County and the jurisdictions that lie within its boundaries: <ul style="list-style-type: none"> 14% of the population is ≤ 9 years old 12% of the population is ≥ 65 years old 10% of the population has a disability 	Over 25% of the population in DeKalb County and the jurisdictions that lie within its boundaries are vulnerable to extreme heat impacts.
EH2	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Avondale Estates: <ul style="list-style-type: none"> 11% of the population is ≤ 9 years old 23% of the population is ≥ 65 years old 9% of the population has a disability 	Over 30% of the population in the City of Avondale Estates are vulnerable to extreme heat impacts.
EH3	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Brookhaven: <ul style="list-style-type: none"> 15% of the population is ≤ 9 years old 10% of the population is ≥ 65 years old 6% of the population has a disability 	Over 25% of the population in the City of Brookhaven are vulnerable to extreme heat impacts.
EH4	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Chamblee: <ul style="list-style-type: none"> 15% of the population is ≤ 9 years old 8% of the population is ≥ 65 years old 7% of the population has a disability 	Over 20% of the population in the City of Chamblee are vulnerable to extreme heat impacts.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
EH5	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Clarkston: <ul style="list-style-type: none"> • 18% of the population is ≤ 9 years old • 4% of the population is ≥ 65 years old • 8% of the population has a disability 	Over 20% of the population in the City of Clarkston are vulnerable to extreme heat impacts.
EH6	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Decatur: <ul style="list-style-type: none"> • 18% of the population is ≤ 9 years old • 12% of the population is ≥ 65 years old • 8% of the population has a disability 	Over 30% of the population in the City of Decatur are vulnerable to extreme heat impacts.
EH7	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Doraville: <ul style="list-style-type: none"> • 15% of the population is ≤ 9 years old • 8% of the population is ≥ 65 years old • 5% of the population has a disability 	Over 20% of the population in the City of Doraville are vulnerable to extreme heat impacts.
EH8	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Dunwoody: <ul style="list-style-type: none"> • 16% of the population is ≤ 9 years old • 14% of the population is ≥ 65 years old • 7% of the population has a disability 	Over 30% of the population in the City of Dunwoody are vulnerable to extreme heat impacts.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
EH9	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Lithonia: <ul style="list-style-type: none"> 22% of the population is ≤ 9 years old 7% of the population is ≥ 65 years old 9% of the population has a disability 	Over 30% of the population in the City of Lithonia are vulnerable to extreme heat impacts.
EH10	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Pine Lake: <ul style="list-style-type: none"> 17% of the population is ≥ 65 years old 6% of the population has a disability 	Over 15% of the population in the City of Pine Lake are vulnerable to extreme heat impacts.
EH11	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Stone Mountain: <ul style="list-style-type: none"> 10% of the population is ≤ 9 years old 9% of the population is ≥ 65 years old 11% of the population has a disability 	Over 20% of the population in the City of Stone Mountain are vulnerable to extreme heat impacts.
EH12	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Stonecrest: <ul style="list-style-type: none"> 15% of the population is ≤ 9 years old 8% of the population is ≥ 65 years old 11% of the population has a disability 	Over 20% of the population in the City of Stonecrest are vulnerable to extreme heat impacts.



SECTION 4: RISK ASSESSMENT

Problem Statements			
Number	Area of Focus	Community Characteristic	Problem Statement
EH13	Extreme Heat and people Extreme heat events are dangerous for young children, elderly people, and people with chronic medical conditions like heart disease, mental illness, poor blood circulation, and obesity are most vulnerable to extreme heat impacts.	In the City of Tucker: <ul style="list-style-type: none"> • 12% of the population is ≤9 years old • 15% of the population is ≥65 years old • 10% of the population has a disability 	Over 25% of the population in the City of Tucker are vulnerable to extreme heat impacts.
EH14	Extreme Heat and economy Extreme heat event can have a devastating effect on the agricultural industry.	There are 34 farms in DeKalb County which generate approximately \$546,000 in revenue from crop and livestock sales each year.	An extreme heat event can have a devastating effect on DeKalb County's agricultural industry.

4.11 – Excluded Hazards

Coastal Hazards

Coastal Hazards was excluded from DeKalb County's HMP because it is not a coastal county.

Geological Hazards

The Georgia Hazard Mitigation Strategy does not identify DeKalb County as being at risk from geological hazards, including landslides. The USGS's landslide risk database also corroborates this claim. Accordingly, the hazard has been excluded from this plan.

Note: Human-caused hazards, though identified in the State of Georgia Multi-Hazard Mitigation Plan and Statewide Hazard Assessment, are not included in DeKalb County's previous HMP (2016) nor this plan update. This includes: Communicable Disease.

Note: Related to Communicable Disease, as of March 2020, the United States is fighting the coronavirus (COVID-19) pandemic. COVID-19 is a respiratory illness that can spread from person to person. The virus that causes COVID-19 is a novel coronavirus, first identified during an investigation into an outbreak in Wuhan, China. The Georgia Department of Public Health (DPH), in consultation with the Centers for Disease Control and Prevention (CDC), is evaluating patient information received from healthcare providers about potential cases of coronavirus in Georgia. As of March 26, 2020, a State of Emergency that includes a "Shelter in Place" order was declared for DeKalb County. This declaration took effect Thursday, March 26, 2020, and ended on Thursday, April 30, 2020. More information about this pandemic can be found on DeKalb County's website at <https://www.dekalbcountyga.gov/Covid-19/Response>.



SECTION 4: RISK ASSESSMENT

4.12 – Special Consideration, Climate Change



Photo Source: Google

Climate change, as described by the National Aeronautics and Space Administration (NASA), is “a long-term change in the average weather patterns that have come to define Earth’s local, regional and global climates.”

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Further, NASA states, “Changes observed in Earth’s climate since the early 20th century are primarily driven by human activities, particularly fossil fuel burning, which increases heat-trapping greenhouse gas levels in Earth’s atmosphere, raising Earth’s average surface temperature. These human-produced temperature increases are commonly referred to as global warming. Global warming is the long-term heating of Earth’s climate system observed since the pre-industrial period (between 1850 and 1900) due to human activities, primarily fossil fuel burning, which increases heat-trapping greenhouse gas levels in Earth’s atmosphere.”

Scientific observations, coupled with climate data records, provide evidence of climate change “key indicators.” Among them are global land and ocean temperature increases; rising sea levels; ice loss at Earth’s poles and in mountain glaciers; frequency and severity changes in extreme weather such as hurricanes, heatwaves, wildfires, droughts, floods and precipitation; and cloud and vegetation cover changes, to name a few.

Many of the hazards identified within this update to DeKalb County’s HMP are, in one way or another, potentially affected by climate change. These include Drought, Flood (Inland), Severe Weather (including thunderstorm, hail, lightning, wind, and winter storms) and Tornadoes. Climate change can also have an effect on wildfires, as rising temperatures and drought can create fire tinderboxes.

Health Risks

Certain people are more vulnerable to emerging climate change impacts. Climate change raises health risks for people with existing physical or mental illness, children, and older adults, those who work outdoors, and those living in areas prone to flooding. Climate change can lead to weather events and conditions that are associated with health hazards such as 1) heat waves, which can cause heat-related illnesses, heat



SECTION 4: RISK ASSESSMENT

stroke, and other serious health problems, 2) extreme drought and flooding, 3) disruptions to agriculture, i.e., altered growing and storage conditions requiring changes in crop and livestock species or food production practices.

Given the potential for climate change to increase the frequency and magnitude of natural hazards, FEMA encourages states, regions, counties, and municipalities to consider climate change when mitigating hazards.



SECTION 5: MITIGATION STRATEGY

Section 5 – Mitigation Strategy

Each type of plan stakeholder provides a set of capabilities, in some cases broad and in some cases narrow, by which they can increase the planning area's resiliency.

County and Municipal Governments

The broadest form of mitigation capabilities come from county and municipal governments. Their inherent legal authority allows them to institute the greatest regulatory and developmental changes.

Planning Process

Local Procedures & Resources

Planning Area

Risk Assessment

Mitigation Strategy

Institutional Capability

DeKalb County is a whole community that can implement the mitigation strategies identified herein. In addition, the County can promote the mitigation process, further educating the public about the hazards prevalent to the area, as well as the mitigation process necessary to mitigate those hazards.

In an emergency, county/municipality response is an extraordinary extension of responsibility and action, coupled with normal day-to-day activity. Normal governmental duties will be maintained, with emergency operations carried out by those agencies assigned specific emergency functions under the DeKalb County Local Emergency Operations Plan, or LEOP.

Political Capability

During the process of developing this HMP update, opposition to mitigation measures was not evident from DeKalb County, the Cities of Avondale Estate, Brookhaven, Chamblee, Clarkston, Decatur, Doraville, Dunwoody, Lithonia, Pine Lake, Stone Mountain and Tucker, GA, and the many plan stakeholders. The primary limiting factor is funding, which is made more difficult by the current situation in the local, state, and national economy.

DeKalb County, through partnerships with the participating agencies, is well-organized and responsive to community needs. Leadership is informed and remains up to date on the hazards that threaten the area. Citizens who participated in the public meetings and presentations showed a genuine interest in doing things to promote a safer and more resilient community. All (the governing board, staff, and citizen population) appear willing to promote the economic efficiency and social utility of the mitigation measures contained in this plan, if appropriate funding can be identified.

Technical Capability

DeKalb County and its participating jurisdiction(s) have the basic technology needed to mitigate and respond to natural disasters. They are equipped with phone and fax lines and a functional Emergency Operations Center (EOC) in case of disaster. Most key persons are equipped with cell phones, which can act as a backup to landlines in case service is lost. The County is connected to the internet, which is a valuable source of information on approaching hazards and mitigation measures. The County sponsors a website where there is a link to the DeKalb County Emergency Management Agency. The County's GIS (mapping) services are limited, but until municipal governments fully implement GIS standard services, appropriate state agencies, like the Georgia Mitigation Information System supported by GEMA, will provide the necessary support.



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Fiscal Capability

The stakeholders of this mitigation plan are not unique in the issues felt by small governments to retain the staff and resources necessary to accomplish the strategies necessary to mitigate local hazards. However, they are aware of potential diverse funding sources available to communities for assisting in the fiscal needs required to implement local hazard mitigation plans, including both government and private programs.

While federal and state programs carry out the bulk of disaster relief programs that provide funds for mitigation, local governments can search for alternative funding sources to supplement the local hazard mitigation budget. The participants in the mitigation planning process are aware that before effective mitigation strategies can be applied, stable funding sources and effective incentives must be established on a per project basis to encourage participation by the private and public sectors.

Land Use Planning

Through land use regulatory powers granted by the state, local governments can control the location, density, type and timing of land use and development in the community. Provisions of the land use plans are implemented through regulatory tools that include zoning and subdivision ordinances, and taxation. All participating municipal governments have direct land use planning programs through ordinances, codes, and zoning policies.

Taxation

Taxation can be a powerful mitigation tool by providing local governments with a way to guide development. Tax abatements may be used to encourage landowners and developers to integrate mitigation measures into the process of building new developments and retrofitting existing properties in the floodplain. These tools can be especially effective in encouraging the mitigation of existing structures.

5.1 – Floodplain Programs

Floodplain management is the operation of a community program of measures for reducing flood damage. These measures take a variety of forms; and generally, include zoning, subdivision, or building requirements, and special-purpose floodplain ordinances. The National Flood Insurance Program is aimed at reducing impact of flooding on private and public structures. This is achieved by providing affordable insurance for property owners and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. Overall, the program reduces the socio-economic impact of disasters by promoting the purchase and retention of Risk Insurance in general, and National Flood Insurance in particular.

The County's Floodplain Administrator administers each NFIP participating community's floodplain program. NFIP Coordinators/Floodplain Administrators utilize by adoption, federally created flood hazard maps to administer their programs and to actuarially rate new construction for flood insurance or development restrictions.

Following is a brief description of the participating jurisdictions Building Code office information and procedures. (Has been requested)

City of Avondale Estates– (Has been requested)

City of Brookhaven – (Has been requested)

City of Chamblee – (Has been requested)

City of Clarkston – (Has been requested)



SECTION 5: MITIGATION STRATEGY

City of Decatur– (Has been requested)

City of Doraville– (Has been requested)

City of Dunwoody– (Has been requested)

City of Lithonia – (Has been requested)

City of Pine Lake– (Has been requested)

City of Stone Mountain – (Has been requested)

City of Tucker - (Has been requested)

Unincorporated DeKalb County enforces the local floodplain management ordinance that exceeds requirements set forth by NFIP. The DeKalb County Community Development Agency and the DeKalb County Water System also devote resources to enforce local floodplain management requirements. This ordinance exists as Section 58 of the Official Code of DeKalb County, and in Chapters 409 and 418 of the DeKalb County Development Standards. In DeKalb County, for residential development, 3 feet of freeboard is required between the lowest (habitable) finished floor elevation and the base flood elevation. DeKalb County also regulates new development out of the regulatory floodway; and dam breach zones.

DeKalb County has other floodplain management programs to:

- Determine Dam Breach Zones for high hazard Category 1 Dams
- Require stream buffers that far exceed minimum State requirements
- Acquire chronically flooded homes
- Acquire vacant floodplain land
- Assist Dam Owners financially, to make their high hazard dams safe through DeKalb County's Storage Volume Purchase Program.

In DeKalb County, new residential construction is prohibited within the floodplain and any other construction is restricted. This restriction is enforced through the building permit application process. When an individual or business applies for a construction permit, its location within or outside of an identified floodplain is noted and reviewed by DeKalb County's Stormwater Management Division.

The DeKalb County Stormwater Management Division reviews all plans requiring a land disturbance permit (LDP) for compliance with NFIP and local floodplain regulations. This includes construction adjacent to and within the floodplain. This process meets the minimum federal regulations set forth by the NFIP.

City/County Name	CID/Date
Avondale	130528C/ 05/07/01
Brookhaven	135175F 06/070
Chamblee	130066C/ 06/07/74
Clarkston	130067C/ 02/21/75
Decatur	135159C/ 06/16/70



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Doraville	130069C/ 06/07/74
Dunwoody	130679C/ 06/02/70
Lithonia	130472C/ 05/07/01
Pine Lake	130070#/ 06/15/81
Stonecrest	130268C/ 05/15/80
Stone Mountain	130260C/ 08/01/86
Tucker	130681C/ 05/15/80

5.2 – Mitigation Goals

Goals for Berrien County and its participating jurisdiction(s) were established based upon results from the local and state risk assessments, stakeholder meetings, and input from non-planning team local jurisdiction and state officials. These goals represent Berrien County and its participating jurisdiction(s)' long-term vision for the continued reduction of hazard risks and the enhancement of mitigation capabilities.

Goal 1: Reduce the risk from natural hazard events utilizing community cooperation and an all-hazards approach.

Goal 2: Pursue additional, complete, and accurate data in support of mitigation planning, disaster preparedness, disaster response, and disaster recovery operations.

Goal 3: Integrate the pre-disaster mitigation plan's findings into the planning, and decision- making processes for all current and future emergency management and preparedness related activities.

5.3 – Mitigation Projects

To support its mitigation goals, the DeKalb County Hazard Mitigation Planning Committee (HMPC) identified a comprehensive range of (62) possible mitigation projects and activities (see Table 62) in this plan update for details). The selected set carefully takes an all-hazards approach to mitigation while simultaneously addressing each of the plan's profiled hazards.

The 2012 DeKalb County Hazard Mitigation Plan (update) contained a risk assessment of identified hazards for the County and participating municipalities, and a mitigation strategy to address these hazards' risk and vulnerability. Accordingly, an open discussion took place with the HMPC during the planning phase to determine the current mitigation action/priorities to include in this plan update. Among them, and considered a key part of the planning process, DeKalb County Emergency Management solicited participation from the County's participating jurisdictions and stakeholders in order to help identify mitigation activities/goals/projects for plan inclusion. Typically, mitigation activities/goals/projects focus on strengthening infrastructure and facilities. DeKalb County's jurisdictions and stakeholder's participation in the activities related to the mitigation strategy allowed for EMA to learn more about each jurisdictions' needs, facilities, and infrastructure. A Mitigation Strategy Update Meeting facilitated by DeKalb County EMA and BOLDplanning, provided DeKalb County's jurisdictions with information on how to offer valuable insight related to the hazards within the County. The DeKalb County mitigation planning points of contact (POCs) learned how BOLDplanning would assist them in providing input to update the mitigation projects from the previous plan as well as how and when to offer any new/proposed projects to include in the current HMP update.



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Following this meeting, representatives from BOLDplanning worked with the DeKalb County EMA and the County's participating jurisdictions to provide updates relevant to previous mitigation projects (2012), including the current status (completed, deferred, or carryover). The HMPC was also tasked with identifying any new mitigation projects for this plan update and entering them into the BOLDplanning.com platform created specifically for DeKalb County, DekalbReady.com. During the planning process, DeKalb County was able to update the online system with its mitigation projects from the 2012 plan update along with the new/proposed projects for the next five-year plan cycle.

The list of mitigation projects and actions selected for this plan update is based upon the potential to reduce risk to life and property with an emphasis on new and existing infrastructure, ease of implementation, community and agency support, consistency with local jurisdictions' plans and capabilities, available funding, vulnerability, and total risk.

As with previous HMP updates (2012), the planning area will continue to take a multi-jurisdictional approach to mitigation planning with this update and subsequent ones. The goals and objectives for the County and its participating jurisdictions will continue to no longer differentiate from that of the County in order to facilitate a more thorough and standardized approach to mitigation planning. This plan update includes "carryover" projects from DeKalb County's previous HMP (2012), as they are still relevant, in progress, or ongoing. Also, the hazards, mitigation goals, objectives, and measures that were developed jointly between Berrien County and Cities of Atlanta, Avondale Estates, Brookhaven, Chamblee, Clarkston, Decatur, Doraville, Dunwoody, Lithonia, Pine Lake, Stonecrest, Stone Mountain, and Tucker, (in the previous plan - 2012) have been carried over to this plan update due to being deferred because of a lack of funding and/or resources to complete the mitigation projects/actions during the last five-year cycle. All priorities can be assessed using STAPLE+E for this plan update to ensure that the projects reflect current priorities. More details on these projects can be found in Section 5 – Mitigation Strategy.

For further information on evaluation criteria for the proposed and carry over mitigation projects/actions, please see Section 5.4 – Mitigation Project Evaluations & Prioritization. Mitigation Projects can be prioritized by STAPLE+E score for each mitigation project in all jurisdictions.

Note: Some projects and actions mitigate risk and vulnerability to multiple hazards. Some projects and actions list participating jurisdictions which are only at risk from one or more mitigated hazards. For instance, the project: "Provide public outreach, education and awareness programs related training materials to better educate the public as part of a public awareness campaign about natural hazards of All-Hazards mitigate against multiple hazards, including drought, hazardous materials, flooding (inland), severe weather, tornadoes, dam failure, wind, and terrorism"

5.4 – Mitigation Project Evaluations & Prioritization

5.4.1 – STAPLE+E

Berrien County and its participating jurisdiction(s)' primary hazard risks, and thus priorities are dam failure, droughts, flood (inland), earthquakes, geological hazards, heat wave, severe weather, severe winter weather, tornado, tropical systems, wildfire/urban interface fires, and wind.

A composite evaluation matrix was used to prioritize Berrien County and its participating jurisdiction(s)' mitigation projects and activities. The evaluation was conducted for each mitigation project and activity for each participating jurisdiction. All priorities were re-assessed using STAPLE+E for this plan update to ensure that the projects reflect current priorities. The composite evaluation matrix comprises the three factors detailed below.



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The first factor is the STAPLE+E evaluation which is best for measuring feasibility and ease of implementation. The tables in Section 5.4.1 provide the STAPLE+E evaluation criteria and the evaluation itself.

The second factor is the effectiveness of the mitigation project. How well does it mitigate the impact of a particular hazard? This is determined by its ability to protect citizens, property, and systems. For instance, wires installed to pin down trees and other objects will reduce their ability to become uprooted or take flight during hazards of high wind but are not as effective at reducing impacts from tornadoes or strong winds as are properly constructed and reinforced buildings. This factor is rated as: Low = 0.5, Medium = 1, and High = 1.5.

The third factor is a hazard risk-based evaluation. It draws on the hazard risk summary found in Section 4.3 of this plan. Each risk rating is assigned a value based on the assessment (None = 0, Low = 5, Medium = 10, and High = 15).

$$(HRT) = (HR1 + HR2 + HRn)$$

The total evaluation score is based on the hazard risk total multiplied by the effectiveness factor, added to the STAPLE+E score.

Hazard Risk Total (HRT): The sum of values (low through high) of each hazard the project is designed to mitigate.

Mitigation Project Effectiveness (MPE): A multiplier based on the project's effectiveness to mitigate against a chosen hazard.

STAPLE+E Evaluation: A raw score comprised of positive and negative feasibility.

$$(Priority) = (STAPLE+E) + (MPE * HRT)$$

Upon completing the evaluations, a composite score is calculated and prioritized based on their total score (Low = 0 – 25, Medium = 26 – 50, High = > 50)



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Table 60: STAPLE+E Criteria

STAPLE+E Criteria	
Evaluation Category	Sources of Information
Social	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the communities' social and cultural values.
Technical	Mitigation actions are technically most effective if they provide long-term reduction of losses and have minimal secondary adverse impacts.
Administrative	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
Political	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.
Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.
Economic	Budget constraints can significantly deter the implementation of mitigation actions. Hence, it is important to evaluate whether an action is cost-effective, as determined by a cost-benefit review, and possible to fund.
Environmental	Sustainable mitigation actions that do not have an adverse effect on the environment, that comply with Federal, State, and local environmental regulations, and that are consistent with the community's environmental goals, have mitigation benefits while being environmentally sound.



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Table 61: Previous Projects, not being carried over

Previous Project	Jurisdiction	Hazard Addressed	Project Status/Carried over
FLD #1: Cooperating technical Partner-Georgia Flood Map Modernization Program	Brookhaven	Flood	Completed/do not carry over
FLD #2: Stormwater System Inventory and Assessment	Brookhaven	Flood	Completed/do not carry over
FLD #3: South Bamby Lane watershed improvements	Brookhaven	Flood	Completed/do not carry over
FLD #4: Evaluation of Dresden Drive Culvert at North Fork Peachtree Creek tributary A	Brookhaven	Flood	Completed/do not carry over
FLD #1: Drainage improvements at Peachtree Industrial Blvd	Chamblee	Flood	Completed/do not carry over



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Table 62: Mitigation Projects for the New HMP Cycle

Project Name	Jurisdiction	Project Update	Hazard Addressed	Responsible Department	Cost Estimate	Timeline	Potential Funding Source	Comment
City's stormwater system require the installation of catch basins, inlets, curbing, downstream storm lines and other methods of diverting storm water at various locations	Avondale Estates	Deferred due to lack of funding	Flooding; Severe Weather; Tropical Systems	Avondale Estates	\$1,000,000 - \$50,000,000	2022-2027	Local funding	New contact: Kristen Moretz kmoretz@avondaleestates.PAUL Hanebuth/404)294-5400
Education and Awareness: ET-2 Increase Awareness of Extreme temperature risk and safety	Avondale Estates	New	All hazards	Avondale Estates	Staff time and resources	2022-2027	Local Funding	Educating citizens regarding the dangers of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur.
ET-3 Assist Vulnerable Populations, Measures should be taken to ensure vulnerable populations are adequately protected from the impacts of extreme	Avondale Estates	New	All Hazards	Avondale Estates	Staff time and resources	2022-2027	Local Funding	Requiring minimum temperatures in housing/landlord codes. Encouraging utility companies to offer special arrangements for paying heating bills, if not already required by state law.



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temperatures								
GEN #1: City Facility Feasibility Study and Development of Permanent Facilities	Brookhaven	In Progress	All Hazards	City Manager, Council, and City Departments	\$150,000 - \$300,000	2022-2027	Local Funding	
Adopt County Hazard Mitigation Plan	Brookhaven	New	All Hazards	County EMA	Staff resources	2022-2027	Local Funding	
FLD #2: Floodplain Property Acquisitions	Chamblee	Deferred	Flood	City Administrator or Floodplain Manager	\$150,000 - \$300,000	2022-2027	Local Funding	Chamblee would like to coordinate with the county to incorporate some properties within the City of Chamblee into the County's existing property acquisition program.
FLD #3: Map of Storm Drain System	Chamblee	In Progress	Flood	Chamblee Public Works	Staff resources	2022-2027	Local Funding	Conduct a survey of the storm drains in the city. Mark locations with GPS and input into a GIS database. Map the remaining portions of the system including pipes and pipe sizes, flow direction, etc. Work with the county to resolve any boundary discrepancies, as the City of Chamblee has locations of both inflow and outflow that are shared with the County



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GEN #1: Ongoing Program for Transporting Seniors during Extreme Weather	Chamblee	In Progress	All Hazards	Chamblee Parks and Recreation	\$150,000 - \$300,000	2022-2027	Local Funding	The City of Chamblee already has a program in place, operated by Parks and Recreation, which heats the Civic Center during ice storms, and picks up the senior citizens from their homes and delivers them to the Civic Center. The City will continue to operate this program into the future. The City will also expand this program to operate during extreme heat events, in the event that there is a power outage, or for senior citizens who do not have air conditioning.
Gen #2: Identify Overnight Shelters	Chamblee	Ongoing	All Hazards	Chamblee Parks and Recreation	Staff resources	2022-2027	Local Funding	The City of Chamblee will attempt to identify other possible locations for sheltering needs. If none are found, Chamblee will attempt to find other solutions to the overnight sheltering needs of its citizens, including possible resources for bringing cots or beds to the Civic Center.
WIN #1: Extension of County's Tornado	Chamblee	Deferred	Wind	Chamblee Parks and Recreation	Staff resources	2022-2027	Local Funding	Coordinate with the County to bring a warning siren into or near the borders of



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Warning Siren Project								Chamblee so that all the hearing residents of the City are aware of approaching tornadoes.
WIN #2: Civic Center Roof Retrofit	Chamblee	Deferred	Wind	Chamblee Parks and Recreation	\$1,000,000 - \$10,000,000	2022-2027	Local Funding	Retrofit the roof on the Civic Center in order to withstand more serious/stronger wind events.
FLD #1: Stormwater System Infrastructure Improvements	Decatur	In Progress	Flood	Public Works - Jennings Bell, Project Civil Engineer	\$1,700,000 in Stormwater Utility -capital outlay budget	2022-2027	Annually in Stormwater Utility Fund Budget	We have applied for a FEMA grant for a flood prone property with a repetitive flood loss history at 475 Landover Drive. We are waiting to hear if we receive the grant. We do have the matching funds in our budget.
FLD #2: Flood-Prone Property Acquisition	Decatur	In Progress - FEMA Application	Flood	Public Works - David Junger, Assistant City Manager	Approximately \$800,000	2022-2027	Pending FEMA Approval FY22/23 Budget	
ICE/WIND #1: City Tree Maintenance	Decatur	On Going	Wind	Public Works - Kay Evanovich, City Arborist	Approximately \$75,000 annually for tree removal and tree maintenance	2022-2027	Annually General Fund Budget	We are also working to implement the capital improvement program outlined in the Stormwater Master Plan.
Extreme Temperatures ET-1: Urban Heat Island	Decatur	On Going	Extreme Temperature	Public Works - Kay Evanovich, City Arborist	\$5,000-\$10,000	2022-2027	Annually General Fund Budget	



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Effect								
Extreme Temperatures ET-2: Increase Awareness of Extreme Temperature Risks and Safety	Decatur	On Going	Extreme Temperature	Public Works - Kay Evanovich, City Arborist David Nifong, Energy and Sustainability Manager	\$10,000 FY21/22 \$20,000 FY22/23 Heat Study and data review	2022-2027	FY21/22 for purchase of heat sensors to better understand heat island effects throughout the city	An item not listed but I am not sure if it should be added somewhere is our work to install solar/battery backup systems for our critical city facilities to insure backup power during power outages related to events describe in the mitigation plan. We are actively working on two projects: 1) Public Works, 2) Decatur Recreation Center.
SW-4 Protect Power Lines and Infrastructure: Installing redundancies, Power Resiliency	Decatur	Solar and Battery Power Resiliency projects: Police Department 2023-2024, Recreation Center 2023, Public Works facility 2022	Severe Wind	Public Works - David Nifong, Energy and Sustainability Manager	\$1,250,000 Capital Improvement Fund	2022-2027	Projects underway for FY21/22, FY22/23, FY23/24	Replace culverts and downstream storm lines with a system that provides adequate capacity to provide relief for minor localized flooding.
FLD #2: Stormwater System Infrastructure	Dunwoody	In Progress	All Hazards	Dunwoody Public Works	\$1,000-000 - \$50,000,000	2022-2027	Local Funds	Replace culverts and downstream storm lines with a system that provides adequate



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Improvements								capacity to provide relief for minor localized flooding.
FLD #3: Floodplain Mapping	Dunwoody	In Progress	All Hazards	Dunwoody Public Works	Staff time and resources	2022-2027	Local Funds	Update the floodplain maps in conjunction with FEMA using the most current data and calculation techniques. Additionally, expanding the data to include the "Future" floodplain based on a comprehensive plan.
FLD #4: Flood-Prone Property Acquisition	Dunwoody	In Progress	All Hazards	Community Development Department and Public Works	\$1,000-000 - \$50,000,000	2022-2027	Local Funds	Remove structures from floodplain and return area to its natural state
FLD #1: Map of Storm Drain System	Doraville	In Progress	Flood	Doraville Maintenance/Inspection	Staff time and resources	2022-2027	Local Funds	Conduct a survey of, at a minimum, the storm drains in the city. Mark locations with pinpoints on the city map. With additional funds, map the remaining portions of the system including pipes and pipe sizes, flow direction, etc.
FLD #2: Storm Drain Infrastructure	Doraville	In Progress	Flood	Engineering Consultant/Contracting w/ DeKalb County	\$1,000-000 - \$50,000,000	2022-2027	Local Funds	Implement a priority list of outdated or faulty storm drain infrastructure and start replacing outdated or faulty storm drain infrastructure.



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LIT #1: Surge Protection	Doraville	In Progress	Flood	Doraville Maintenance	\$1,000-000 - \$50,000,000	2022-2027	Local Funds	Determine which facilities in the City are at risk for such a lightning strike, and which would most seriously be impacted by such an event. Implement a program to install surge protection where it is needed most.
ICE/WIN #1: Tree Trimming Program	Doraville	In Progress	Flood	Doraville Maintenance/P ower Companies	\$150,000 - \$300,000	2022-2027	Local Funds	Implement a tree-trimming program. Work with power companies to identify those branches that are threatening power lines. Perform some outreach to the community so residents know to call and report limbs that may threaten roads and other infrastructure
Adopt County hazard mitigation plan	Tucker	New	All Hazards	EMA	Staff resources	2022-2027	Local Funding	
Continue to participate in the NFIP	Tucker	New	All Hazards	EMA	Staff resources	2022-2027	Local Funding	
Educational Outreach for preparedness events for the jurisdiction	Tucker	New	All Hazards	EMA	Staff resources	2022-2027	Local Funding	
FLD #1:	Stone	On Going	Flood	Stone	\$1,000,000 -	2022-2027	Local Funding	P.O.Contact, Jeff



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Increase Capacity of Stormwater Infrastructure	Mountain			Mountain Public Works	\$50,000,000			Mueller, PE
FLD #2: Repair Existing Stormwater Infrastructure	Stone Mountain	On Going	Flood	Stone Mountain Public Works	\$1,000,000 - \$50,000,000	2022-2027	Local Funding	P.O.Contact, Jeff Mueller, PE
WIN/ICE #2: Tree Pruning Program	Stone Mountain	On Going	Wind	Stone Mountain Public Works	\$150,000 - \$300,000	2022-2027	Local Funding	P.O.Contact, Jeff Mueller, PE
ICE #1: Maintain treatment Capability	Stone Mountain	On Going	Winter	Stone Mountain Public Works	Staff resources	2022-2027	Local Funding	P.O.Contact, Jeff Mueller, PE
FLD #1: Construct flood control structures which address the flooding problem at Max Cleland Blvd and the Railroad Tracks	Lithonia	Deferred	Flood	Lithonia Maintenance	\$150,000 - \$300,000	2022-2027	Local Funding	The City will assemble a sub-committee to explore the use of Hazard Mitigation Funds in conjunction with other grants to fund the project. Once funds are secured it will be the Maintenance department who oversees the construction and completion of the project. The actual construction will be completed by an entity other than the City.
WND #1: Retrofit Critical Facilities to protect first	Lithonia	Deferred	Wind	Outside Contractor	\$1,000,000 - \$50,000,000	2022-2027	Local Funding	Installation of storm shutters, replacement of doors amongst other structural improvements.



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responders in a wind event								
ICE #1: Improve drainage to prevent icing of roads during winter events	Lithonia	Deferred	Winter Storm	Lithonia Maintenance	\$1,000,000 - \$50,000,000	2022-2027	Local Funding	In conjunction with Action 1, coordinate to prevent icing of roadway under the railroad bridge. Also, identify other areas and address them as necessary
FLD #1: Hydrology and Hydraulic	Pine Lake	In Progress	Flood	Pine Lake Public Works	\$1,000,000 - \$50,000,000	2022-2027	Local Funding	Hire a consultant to analyze Snapfinger Creek and its watershed. Determine peak flows, and determine location of 100-year floodplain along the creek. Create some informal maps showing where this is expected to be. Possibly analyze other recurrence intervals in addition to the 100-year event.
FLD #2: Stream Restoration	Pine Lake	In Progress	Flood	Pine Lake Public Works	\$1,000,000 - \$50,000,000	2022-2027	Local Funding	The process of restoring the stream is an ongoing project, already being performed by the City of Pine Lake.
FLD #3: Land Acquisition for Detention	Pine Lake	In Progress	Flood	Pine Lake Public Works	\$1,000,000 - \$50,000,000	2022-2027	Local Funding	Implement best solution proposed in H&H study (see previous Action # FLD 1)
Commission a study to determine the	City of Clarkston	In Progress	Flood	Clarkston Public Works	\$150,000 - \$300,000	2022-2027	Local Funding	



SECTION 5: MITIGATION STRATEGY

cause of the flooding and after affected pooling areas and recommend solutions to the problem.								
Commission a study with a structural engineer to survey the buildings to make recommendations on the structural integrity of the buildings for upgrades and expansions.	City of Clarkston	In Progress	Extreme Heat, Flooding, Hurricanes, Tornados, Winter Storms, Windstorms	Clarkston Public Works	\$150,000 - \$300,000	2022-2027	Local Funding	
FLD #1: Norman Road Drainage Study	City of Clarkston	In Progress	Flood	Clarkston Public Works	\$150,000 - \$300,000	2022-2027	Local Funding	Commission a study for determining the cause of flooding in the Norman Road neighborhood. The study will recommend possible solutions to the problem. Eventually one of the solutions will be implemented to solve the problem.
FLD #2: Flooding South of Montreal Road	City of Clarkston	In Progress	Flood	Clarkston Public Works	\$150,000 - \$300,000	2022-2027	Local Funding	Study the flooding source and the surrounding drainage system to determine the likely cause of flooding



SECTION 5: MITIGATION STRATEGY

								and to determine some possible solutions to the problem. Determine the best solution and implement it.
FLD #3: Acquisition of Property on Hill Street	City of Clarkston	Deferred	Flood	Director of Public Works: Mike Shipman	\$1,000,000 - \$50,000,000	2022-2027	Local Funding	Acquire the property at 3489 Hill Street and permanently turn the property into open space.
FLD #4: Purchase Clark Lake	City of Clarkston	In Progress	Flood	Clarkston Public Works	\$1,000,000 - \$50,000,000	2022-2027	Local Funding	Purchase the lake from the homeowner's association and maintain it (dredge first, then prevent further siltation) to keep the lake from flooding.
GEN #2: Right-of-Way Determination and Possible Acquisition	City of Clarkston	In Progress	All Hazards	Clarkston Public Works/Planning, also Administration Department	\$1,000,000 - \$50,000,000	2022-2027	Local Funding	A survey should be taken to determine precisely where the cities right-of-way currently lies. Next, those areas that would most benefit from an expanded right-of-way should be identified, and steps should be taken to acquire those pieces of land.
THD #2: Retrofit of Police Station to Protect Against Wind Damage	City of Clarkston	Deferred	Wind	Clarkston Public Works	\$1,000,000 - \$50,000,000	2022-2027	Local Funding	Hire a structural engineer to survey the building and make recommendations. Secure funds for the retrofit.



SECTION 5: MITIGATION STRATEGY

Continue to enforce building and sign ordinances with contractors and require them to build at minimum safe wind speeds	City of Clarkston	New	Windstorms, Tornadoes	City of Clarkston	Staff resources	2022-2027	Local Funding	
Outreach coordination with residents and property owners in loss area and flood zones for compliance updates with Digital Flood Insurance Rate Maps (DFIRM)	City of Clarkston	New	Flooding, Winter storms	City of Clarkston	Staff resources	2022-2027	Local Funding	Update Floodplain maps when required
Continue to coordinate with building officials to enforce building codes and flood management regulations to maximize property and safety of residents for flood insurance programs	City of Clarkston	New	Flooding, Thunderstorms	City of Clarkston	Staff resources	2022-2027	Local Funding	Floodplain management regulations
Update the	City of	New	Flooding,	City of	Staff	2022-2027	Local funds	Update Stormwater



SECTION 5: MITIGATION STRATEGY

stormwater mitigation plan to ensure consistency with Digital Flood Insurance Rate Maps (DFIRM)	Clarkston		Thunderstorms	Clarkston	resources			Mitigation Plan
Perform an analysis of additional back up or alternative power resources for the city	City of Clarkston	New	Winter Weather, Thunderstorms, Tornado	City of Clarkston	Staff resources	2022-2027	Local funds	Backup Power
Develop services to monitor, update map and utilize GIS systems that will coordinate with citywide subscriptions of notifications to make city aware of actions for services of weather events.	City of Clarkston	New	Winter Weather, Thunderstorms, Tornado	City of Clarkston	Staff resources	2022-2027	Local funds	Mapping/ Notification Services
Create a survey to determine plan of actions for business owners for natural disaster emergencies	City of Clarkston	New	All Hazards	City of Clarkston	Staff resources	2022-2027	Local Funding	Encourage business owners to create emergency plans
Create a tool to	City of	New	Flooding,	City of	Staff	2022-2027	Local Funding	Update Stormwater



SECTION 5: MITIGATION STRATEGY

monitor and protect city facilities that are prone to flooding	Clarkston		Winter Weather, Thunderstorms, Tornado, Fire	Clarkston	resources			Mitigation Plan
Adopt County hazard mitigation plan	Stonecrest	New	All Hazards	EMA	Staff resources	2022-2027	Local Funding	Adopt County hazard mitigation plan
Continue to participate in the NFIP	Stonecrest	New	All Hazards	EMA	Staff resources	2022-2027	Local Funding	Continue to participate in the NFIP
Educational Outreach for preparedness events for the jurisdiction	Stonecrest	New	All Hazards	EMA	Staff resources	2022-2027	Local Funding	Educational Outreach for preparedness events for the jurisdiction
Lightning protection devices and methods, such as lightning rods and grounding on communications infrastructure	DeKalb; all jurisdictions	New	Lightning	DeKalb County 911	\$150,000 - \$300,000	2022-2027	Local Funding	
Increase Awareness of Flood risk and	DeKalb; all jurisdictions	New	Flood	DeKalb EMA	Staff resources	2022-2027	Local Funding	Educating citizens about safety during flood conditions, including the



SECTION 5: MITIGATION STRATEGY

Safety								dangers of driving on flooded roads.
Encouraging homeowners to install carbon monoxide monitors and alarms.	Dekalb; all jurisdictions	New	Winter Weather	DeKalb EMA	Staff resources	2022-2027	Local Funding	Using outreach programs to advise homeowners of risks to life, health, and safety
Informing the public about severe winter weather impacts	Dekalb; all jurisdictions	New	Winter Weather	DeKalb EMA	Staff resources	2022-2027	Local Funding	
Lightning protection devices and methods, such as lightning rods to be used to warn visitors in order to seek refuge	Dekalb; all jurisdictions	New	Flood	DeKalb Parks and Recreation	\$150,000 - \$300,000	2022-2027	Local Funding	
Generators to serve as backup power for DeKalb County Parks and Rec.Parks and recreation centers throughout the county	Dekalb; all jurisdictions	New	Winter Weather, Thunderstorms, Tornado	DeKalb Parks and Recreation	\$150,000 - \$300,000	2022-2027	Local Funding	



SECTION 5: MITIGATION STRATEGY



SECTION 5: MITIGATION STRATEGY

5.5 – Planning Integration

Mitigation does not end at plan approval. Plan approval is only the beginning. The successful implementation of any number of mitigation activities and projects requires the coordination and collaboration of a number of local agencies, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

DeKalb County intends to incorporate this DeKalb County Hazard Mitigation Plan (update) into other planning documents the County and participating jurisdiction(s) utilizes. Where applicable, portions of the previous HMP were considered for incorporation into other local plans and programs. This includes some form of incorporation into the [DeKalb County, GA Comprehensive Plan Update](#) (December 2018). The DeKalb County, GA Comprehensive Plan, which focuses on land use and community development, is required of all local governments by the Georgia Department of Community Affairs (DCA). The DeKalb County Hazard Mitigation Plan Update (2022) will be included in the DeKalb County, GA, and the Cities of Avondale Estate, Brookhaven, Chamblee, Clarkston, Decatur, Doraville, Dunwoody, Lithonia, Pine Lake, Stone Mountain, and Tucker, GA Comprehensive Plans.

Portions of this HMP (update) may also be integrated into the DeKalb County Local Emergency Operations Plan (LEOP), emergency plans for the Cities of Avondale Estate, Brookhaven, Chamblee, Clarkston, Decatur, Doraville, Dunwoody, Lithonia, Pine Lake, Stone Mountain, and Tucker, GA, and other existing or future public safety-related plans. This plan is not only useful for implementing mitigation activities and projects but also critical in creating development plans and capital improvement projects. The risk assessment in this plan can prevent unmanaged and dangerous development in identified hazard areas or other portions of the planning area that decrease a community's overall resiliency.

Democratic Governments and Boards

These organizations rely on agenda proposals, deliberation, and discussion, and voting to solidify their decision-making. This type of decision-making makes up the majority of DeKalb County's participating jurisdiction(s)' and stakeholders.

This plan should be integrated into proposed agendas and cross-referenced during deliberation and discussion of the proposed activity. By using this plan's risk assessment, development and capital improvement projects can be appropriately implemented taking into consideration a community's resiliency.

This DeKalb County Multi-Jurisdictional Hazard Mitigation Plan (update) will be incorporated into existing planning mechanisms in varying processes. These processes will be tailored to the unique characteristics of the planning mechanism and the governing structure of DeKalb County and its participating jurisdiction(s).

Budget Reviews

DeKalb County's budget cycle begins October 1 and runs through September 30th. The annual budget review period for the County begins in February and is adopted in July for the upcoming year. During this period, each adopting jurisdiction will review this and future multi-jurisdictional mitigation plans and conduct a feasibility and resiliency review of the suggested mitigation actions and projects.

DEMA will assist in the process as needed or requested by the jurisdiction(s), providing grant or other funding opportunities, technical assistance, and other relevant support.



SECTION 5: MITIGATION STRATEGY

Emergency Management Planning

DeKalb County and all municipalities work together as a team during all four phases (Mitigation, Planning, Response and Recovery) of emergency management. Other governing bodies and partners such as the Insert organization, insert organization, insert organization, and Georgia Power, and insert organization are also included in emergency planning and response. Public input is always accepted and appreciated.

Mitigation Projects & Actions Implementation

Upon adoption of an HMP plan or other emergency management-related plans, DEMA will notify all participating jurisdictions when the next mitigation planning committee (MPC) meeting topic will be reviewing mitigation project and action selections. Each jurisdiction then approves a list of mitigation actions and projects they want to pursue according to the mechanism listed in the table on the following page. During the MPC meeting, DEMA will assist the jurisdictions in determining which grant program and path will be appropriate for the project. After selection, the jurisdictions return to DEMA for assistance on funding and managing the project. If additional funding is necessary, the jurisdictions will have to return to their community and pass a resolution to secure the funding. The resolution is subject to the process listed in table on the following page.

DEMA may provide technical assistance in every facet from project inception to completion as well as working with other external organizations for tasks such as grant writing, project monitoring, and project management where appropriate.



APPENDIX A: DATA RESOURCES & REFERENCES

DeKalb County Comprehensive Plan, DeKalb County 2050 Unified Plan

City of Avondale Estates Comprehensive Plan Update (2021)

City of Brookhaven Comprehensive Plan Update (2019)

City of Chamblee Comprehensive Plan 2034

City of Clarkston Comprehensive Plan 2040

City of Decatur Comprehensive Plan

City of Dunwoody Comprehensive Plan

City of Lithonia 2020 Comprehensive Plan Update

City of Pine Lake Comprehensive Plan

City of Stonecrest Comprehensive Plan

City of Tucker - Comprehensive Plan

City of Stone Mountain Comprehensive Plan 2021

APPENDIX B: PUBLIC PARTICIPATION

Throughout the planning process, stakeholders, including the public, were encouraged to take part in various meetings and surveys. Following is information pertaining to these activities:

Hazard Mitigation Plan Update Kick-Off and Public Information Meeting, October 7, 2021 – Hosted by BOLDplanning and conducted remotely using Zoom® web conferencing due to ongoing COVID-19 concerns, this meeting was open to DEMA, the MPC, and the public. Prior to the meeting, a public announcement ran for two weeks on DEMA's Next Door social media page and DeKalb County's Facebook page. During the meeting, everyone was encouraged to ask questions, voice concerns, and provide input to the mitigation plan update. Of the 48 people in attendance, one (1) was from the public. BOLDplanning worked with the MPC to collect contact information, hazard history, facility information, and other pertinent jurisdictional information.

Following is the invitation to the October 7, 2021, meeting.



APPENDIX



480 Duke Drive, Suite 130
Franklin, TN 37067-2700
(615) 469-5558
www.BOLDplanning.com

DeKalb County, GA Hazard Mitigation Plan Kick Off Meeting

Hazard Mitigation planning is an initiative to lessen the impact of natural hazards that the County and its jurisdiction face. This is done by completing an assessment of the hazards and how vulnerable the County is to those hazards. The next step is to develop mitigation projects for each hazard that affects the County and its jurisdictions. Best of all, by completing an approved Hazard Mitigation Plan it will open a stream of funds for the County.

This is where each one of you comes in!

Due to your intimate knowledge of the region, we will need your input into the plan. By participating in the planning meeting, you will be able to share ideas and experiences with other community members and add valuable input to the planning process.

To learn more, please join us at the meeting.

The kick-off meeting will be held virtually on Wednesday, September 15, 2021, via Zoom and will last from **1:00 pm – 2:30 pm EST**.

Please Register in Advance [here](https://us02web.zoom.us/j/84486477089) or copy and paste the following link into your browser: (<https://us02web.zoom.us/j/84486477089>).



An email confirmation will follow your registration with information about attending the kick-off meeting.

If you wish to invite someone who was not on the invited list, please reach out to Emily Long from BOLDplanning for approval.

For any questions related to the upcoming DeKalb County, GA HMP Kick-Off Meeting, please contact the contractor Emily Long whose email is Emily_c@boldplanning.com.

In attendance of the October 7, 2021 meeting were the following individuals.



SIGN IN SHEET

EVENT: _DeKalb County, GA HMP Stakeholder Kickoff Meeting_ DATE / TIME: _October 6, 2021 / 1:00PM -2:00PM EST

Zoom Meeting ID: 84486477089	DeKalb County, GA Hazard Mitigation Plan Update Kick-off Meeting	10/06/2021 11:35:53 AM	10/06/2021 12:55:59 PM
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Number	Participant Name	Organization	Title	User Email	Total Duration on Kickoff Call (Minutes)
1	Emily Long (BOLDplanning Meeting Room 6)	BOLDplanning, Inc.	Project Manager/Mitigation Project Lead	meeting6@boldplanning.com	149
2	Will Minkoff	BOLDplanning, Inc.	Regional Director	will@boldplanning.com	11
3	James Wouffe	BOLDplanning, Inc.	Manger, Global Solutions	meeting6@boldplanning.com	149
4	Michael Amberson	BOLDplanning, Inc.	Project Support	Michael.amberson_c@boldplanning.com	61
5	Yolanda Harkley	DeKalb County, GA Emergency Management Agency	Emergency Management Specialist	yaharkley@dekalbcountyga.gov	74
6	DC Ward	DeKalb County, GA Emergency Management Agency	Deputy Director	dward@dekalbcountyga.gov	108
7	Chief J.K. Cox	DeKalb County, GA Emergency Management Agency	Director	jcox@dekalbcountyga.gov	38
8	Lucy Herring	Georgia Emergency Management Agency (GEMA)	Hazard Mitigation Planning Specialist	lucy.herring@gema.ga.gov	42



SIGN IN SHEET

9	Akin Akinsola	DeKalb Roads and Drainage	Floodplain Management Supervisor	aaakinsola@dekalbcountyga.gov	41
10	Alesia Guest	DeKalb County E-911 Communication Center	E-911 Deputy Director	ahguest@dekalbcountyga.gov	44
11	Robin Pits	Member of the Public	Concerned Citizen	ypavo@dekalbcountyga.gov	43
12	Kristopher Mattson	Children's Healthcare of Atlanta	Emergency Manager	kristopher.mattson@choa.org	44
13	Jim Popovitch	Member of the Public	Concerned Citizen	jim@k4vqc.com	43
14	ChaQuias Miller-Thornton	City of Stone Mountain	City Manager	cthorton@stonemountaincity.org	42
15	Matthew Murray	Brookhaven Police Department	EMA Team Lead	matthew.murray@brookhavenga.gov	85
16	Gerald Selby	Member of the Public	Concerned Citizen	g_selby@bellsouth.net	42
17	Courtney Frisch	City of Chamblee	Assistant Director of Public Works	ttaylor@chikamingtownship.org	40
18	Philemon Harrington	DeKalb County Police Department	Detective	pdharrington@dekalbcountyga.gov	39
19	Toni Washington	City of Decatur	Fire Chief/Emergency Manager	toni.washington@decaturga.com	38
20	William Voorhies	DeKalb County Fire Rescue	Deputy Chief of Planning and Risk Reduction	wlvorhies@dekalbcountyga.gov	38
21	Paul Hanebuth	City of Avondale Estates	Assistant City Manager	phanebuth@avondaleestates.org	38
22	LaThaydra Sands	City of Lithonia	City Administrator	lathaydra.sands@lithoniacity.org	38
23	J Walker	DeKalb County Police Department	Sergeant	jwalker@dekalbcountyga.gov	38
24	Carl Thomas	City of Dunwoody	Stormwater Utility Manager	carl.thomas@dunwoodyga.gov	38
25	Joseph Wheelchel	DeKalb Police	Police Department	jbwheelchel@dekalbcountyga.gov	34
26	Patrick Bailey	DeKalb County Medical Examiner	Director-Medical Examiner	plbailey@dekalbcountyga.gov	26



SIGN IN SHEET

27	Adam Wade	DeKalb County Police Department	Detective	cawade@dekalbcountyga.gov	26
28	Jim Tavenner	City of Stone Mountain Public Works Department	Director	publicworks@stonemountaincity.org	22
29	Donovan Cushnie	DeKalb County Government, Department of Planning and Sustainability	Floodplain Coordinator	dcushnie@dekalbcountyga.gov	18


DeKalb County, GA HMP Kickoff Meeting by Participants by Phone

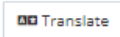
Number	Phone Number	Total Duration on Kickoff Call (Minutes)
1	1-770-498-8984	42

Hazard Mitigation Plan Update, Public Review Period, TBD – Prior to the Public Review Period, a public announcement ran for **x weeks in XXX** and for x weeks in the **XXX**. DeKalb County also utilized social media by posting the public announcement on the county's Facebook page for **x** days. Additionally, DEMA publicized the Public Review Period on their website for the duration of the period (14 days). Due to the COVID-19 pandemic and DeKalb County government reopening with operations modified for COVID-19 Safe Practices, MPC members and the public were asked to review a draft copy of the updated plan online (available on DEMA's website) before asking questions or expressing concerns. The MPC, plan stakeholders, and the public provided feedback for the plan draft using an online survey tool, i.e., Public Input.



(insert notice when available)





DeKalb County - HMP Sandbox Survey

Overview: his survey is to give stakeholders the ability to give input to the hazard mitigation project that is going on for DeKalb County, Georgia. The jurisdictions include DeKalb County, Georgia, and the Cities of Avondale Estates, Georgia, Brookhaven, Georgia, Chamblee, Georgia, Clarkston, Georgia, Decatur, Georgia, Doraville, Georgia, Dunwoody, Georgia, Lithonia, Georgia, Pine Lake, Georgia, and Stone Mountain, Georgia.

Instructions: To complete the survey below, input your answers to each question and click the "Submit Your HMP Survey Now" button at the end to submit your answers. Please complete this survey by November 18, 2021.

If you have any questions about the survey or issues using the survey, please contact Kiana Freeman at (720) 490-4582 or email HELP@boldplanning.com.

Thank you so much for your participation; BOLDplanning and DeKalbCounty, Georgia Emergency Management Agency greatly appreciate it!

What is your occupation?

Closed to responses

What is your city of residence?

Example: Decatur, GA

Closed to responses

Where do you live?

Drag the circle to roughly the area where you live. You can also search for your address in the box above. This helps us understand where specific hazards have the most concern.

This question is closed to responses.



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* Which Hazards is your area MOST at risk for?

Mark all that apply.

Dam Failure	Drought
Earthquake	Extreme Heat
Flood	Hurricane
Severe Storms (including Lightning, Thunderstorms, Hail, and Wind)	Severe Winter Storms
Tornadoes	Wildfire

Closed to responses

* Which Hazards is your area Least at risk for?

Mark all that apply.

Dam Failure	Drought
Earthquake	Extreme Heat
Flood	Hurricane
Severe Storms (including Lightning, Thunderstorms, Hail, and Wind)	Severe Winter Storms
Tornadoes	Wildfire

Closed to responses

Tell us about your concerns about the following hazards:

	No Concern	Some Concern	Moderate Concern	Significant Concern
Dam Failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Droughts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Earthquakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extreme Heat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hurricane	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Severe Storm (including Lightning, Thunderstorms, Hails, and Wind)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Severe Winter Storms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tornadoes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildfires	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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* List historical instances when a weather event caused a disruption to your area.

List Date, event, and short description.

Closed for Comments

* List areas in your community you are aware of that constantly face issues with bad weather. (Example: flooding, power outages, closed roads, etc).

Closed for Comments

Do you have suggestions for projects that can be done in your area so that weather-related disruptions do not happen? (Example: culverts or safe rooms)

Closed for Comments

Are there any hazards that were not listed, that you think should be included in the plan?

Closed to responses

For updates on specific concerns in your area, and the opportunity to continue assisting with the planning process, please enter your email below. We will not share this information, but it will ensure that the County can contact you.

Name

kiana.freeman@agilityrecovery.com

Email

Email Address

Hazard Mitigation Plan Update, Final Review Meeting, Date TBD – The updated DeKalb County mitigation plan was reviewed by the MPC and other stakeholders, as requested, prior to its submission to the Georgia Emergency Management Agency (GEMA). However, due to the ongoing COVID-19 pandemic, the Final Review Meeting was not conducted in person. Rather, DEMA emailed the MPC and plan stakeholders, requesting final plan review and final comments via email reply.

Hazard Mitigation Plan Update, Plan Adoption Signing, Date TBD – Upon plan approval, adoption letters pertaining to the 2022 Countywide Hazard Mitigation Update were disseminated and signed by the 13 plan participants: Unincorporated DeKalb County, Georgia, and the municipalities of Avondale Estates (City), Brookhaven (City), Chamblee (City), Clarkston (City), Decatur (City), Doraville (City), Dunwoody (City), Lithonia (City), Pine Lake (City), Stonecrest (City), Stone Mountain (City), and Tucker (City). The signing of these resolution letters codifies the plan update's adoption.

Additional planning efforts included meetings with representation from other jurisdictions and the public at large. Planning events also included conference calls



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APPENDIX C: CRITICAL FACILITIES – DEKALB COUNTY

Name	Address	Type
Police Headquarters HQ/North/Central/911/EOC	<u>1960 West Exchange Place, Tucker, Georgia 30084</u>	Police
Police Tucker Precinct	<u>4451 Lawrenceville Highway, Tucker, Georgia 30084</u>	Police
Police East Precinct	<u>2484 Bruce Street, Lithonia, Georgia 30058</u>	Police
Police South Precinct	<u>2842 H.F. Shepherd Drive, Decatur, Georgia 30034</u>	Police
Police Special Operations	<u>3630 Camp Circle, Decatur, Georgia 30032</u>	Police
Police Outdoor Range	<u>3905 N Goddard Rd, Lithonia, Georgia 30038</u>	Police
South DeKalb Police Precinct Candler Road	<u>1816 Candler Road, Decatur, GA 30032</u>	Police
North DeKalb Police Precinct	<u>1358 Dresden Drive, Atlanta, GA 30319</u>	Police
East DeKalb Police Precinct	<u>2484 Bruce Street, Lithonia, Georgia 30058</u>	Police
Bruce Street Gym	<u>2484 Bruce Street, Lithonia, Georgia 30058</u>	Police
Bruce Street Library	<u>2484 Bruce Street, Lithonia, Georgia 30058</u>	Police
Bruce Street Police Academy	<u>2484 Bruce Street, Lithonia, Georgia 30058</u>	Police Training Facility
Bruce Street Community Center	<u>2484 Bruce Street, Lithonia, Georgia 30058</u>	Police
Sheriff's Office/ Jail	<u>4415 Memorial Drive, Decatur, Georgia 30032</u>	Police/Sheriff/Jail
Fire Station 1	<u>1670 Clifton Road, Decatur, Georgia 30030</u>	Fire Rescue
Fire Station 2	<u>1316 Dresden Drive, Atlanta, Georgia 30319</u>	Fire Rescue
Fire Station 3	<u>24 North Claredon Avenue, Avondale Estates, Georgia 30002</u>	Fire Rescue
Fire Station 4	<u>4540 Flakes Mill Road, Ellenwood, Georgia 30294</u>	Fire Rescue
Fire Station 5	<u>4013 Lawrenceville Highway, Tucker, Georgia 30084</u>	Fire Rescue
Fire Station 6	<u>2342 Flat Shoals Road, Atlanta, Georgia 30349</u>	Fire Rescue
Fire Station 7	<u>1776 Derrill Crive, Decatur, Georgia 30032</u>	Fire Rescue
Fire Station 8	<u>2711 Clarimont Road, Atlanta, Georgia 30329</u>	Fire Rescue
Fire Station 9	<u>3858 North Druid Hills Road, Decatur, Georgia 30033</u>	Fire Rescue
Fire Station 10	<u>1686 Constitution Road, Atlanta, Georgia 30316</u>	Fire Rescue
Fire Station 11	<u>6715 Memorial Drive, Stone Mountain, Georgia 30083</u>	Fire Rescue
Fire Station 12	<u>5323 Roberts Drive, Dunwoody, Georgia 30338</u>	Fire Rescue



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Name	Address	Type
Fire Station 13	<u>5619 Redan Road, Stone Mountain, Georgia 30088</u>	Fire Rescue
Fire Station 14	<u>7207 Covington Highway, Lithonia, Georgia 30058</u>	Fire Rescue
Fire Station 15	<u>2017 Flightway Drive, Chamblee, Georgia 30341</u>	Fire Rescue
Fire Station 16	<u>2770 Pleasantwood Drive, Decatur, Georgia 30034</u>	Fire Rescue
Fire Station 17	<u>3900 Evans Mill Road, Lithonia, Georgia 30038</u>	Fire Rescue
Fire Station 18	<u>4588 Barclay Drive, Chamblee, Georgia 30338</u>	Fire Rescue
Fire Station 19	<u>3253 Mercer University Drive, Chamblee, Georgia 30341</u>	Fire Rescue
Fire Station 20	<u>2919 Warren Road, Decatur, Georgia 30034</u>	Fire Rescue
Fire Station 21	<u>1020 Crown Point Parkway, Atlanta, Georgia</u>	Fire Rescue
Fire Station 22	<u>1859 Montreal Road, Tucker, Georgia 30084</u>	Fire Rescue
Fire Station 23	<u>1265 Brockett Road, Clarkston, Georgia 30021</u>	Fire Rescue
Fire Station 24	<u>4154 Redan Road, Stone Mountain, Georgia 30083</u>	Fire Rescue
Fire Station 25	<u>7136 Rockbridge Road, Stone Mountain, Georgia 30087</u>	Fire Rescue
Fire Station 26	<u>2522 McAfee Road, Decatur, Georgia 30032</u>	Fire Rescue
Fire Rescue Headquarters	<u>1950 West Excnage Place, Tucker, Georgia 30084</u>	Fire Rescue
John A. Walker Raw Water Pump Station	<u>4350 Holcomb Bridge Rd, Norcross, Georgia 30071</u>	Water Supply/Treatment Facility
Scott Candler Water Treatment Plant	<u>4830 Winters Chapel Rd, Doraville, Georgia 30360</u>	Water Supply/Treatment Facility
Snapfinger Creek Advanced Wastewater Treatment Plant	<u>4124 Flakes Mill Rd, Decatur, Georgia 30034</u>	Water Supply/Treatment Facility
Pole Bridge Advanced Wastewater Treatment Plant	<u>4664 Flat Bridge Rd, Lithonia, Georgia 30038</u>	Water Supply/Treatment Facility
Columbia GST/RPS	<u>1742 Columbia Dr, Decatur, Georgia 30032</u>	Water Supply/Treatment Facility
Dunwoody GST/RPS	<u>5363 Roberts Rd, Dunwoody, Georgia 30032</u>	Water Supply/Treatment Facility
Lithonia GST/RPS	<u>6670 Parkway Dr, Lithonia, Georgia 30058</u>	Water Supply/Treatment Facility
Redan-Panola GST/RPS	<u>5621 Panola Rd, Stone Mountain, Georgia 30088</u>	Water Supply/Treatment Facility
Tucker GST/RPS	<u>4226 Lawrenceville Hwy, Tucker, Georgia 30084</u>	Water Supply/Treatment Facility
Wesley Chapel GST/RPS	<u>3537 Wesley Chapel Rd, Decatur, Georgia 30032</u>	Water Supply/Treatment Facility
Whites Mill GST/RPS	<u>2463 Jenay Ct, Decatur, Georgia 30032</u>	Water Supply/Treatment Facility
Avondale ET	<u>3250 Covington Hwy, Decatur, Georgia 30032</u>	Water Supply/Treatment Facility
Clairmont ET	<u>1901 Mason Mill Rd, Decatur, Georgia 30329</u>	Water Supply/Treatment Facility



APPENDIX

Name	Address	Type
Decatur ET	<u>1127 West Howard Ave, Decatur GA 30030</u>	Water Supply/Treatment Facility
Dunwoody ET	<u>4339 Ashford-Dunwoody Rd, Dunwoody, Georgia 30338</u>	Water Supply/Treatment Facility
McAfee ET	<u>2532 McAfee Rd, Decatur, Georgia 30032</u>	Water Supply/Treatment Facility
Tucker ET	<u>1750 Stone Ridge Dr, Stone Mountain, Georgia 30083</u>	Water Supply/Treatment Facility
Honey creek Water & Sewer	7501 Rockland Rd. Lithonia, GA 30058	Water Supply/Treatment Facility
State/ Superior Court House (Decatur)	<u>556 North McDonough Street, Decatur, Georgia 30030</u>	Court house
Recorders Court	<u>3630 Camp Circle, Decatur, Georgia 30032</u>	Court house
Juvenile Court	<u>4309 Memorial Drive, Decatur, Georgia 30032</u>	Court house
Jail Annex	3631 Camp Circle, Decatur, GA 30032	Court house
Juvenile Court	3631 Camp Circle, Decatur, GA 30032	Court house
Clark Harrison Building (Decatur)	<u>330 West Park Place, Decatur, Georgia 30030</u>	Government
Callaway Building (Decatur) (Scheduled to close)	<u>120 West Trinity Place, Decatur, Georgia 30030</u>	Government
Mexico Consulate Atlanta	<u>1700 Chantilly Drive Northeast, Atlanta, Georgia 30324</u>	Government
Guatemala Consulate Atlanta	<u>2750 Buford Highway Northeast, Atlanta, Georgia 30324</u>	Government
Peru Consulate Atlanta	<u>4360 Chamblee Dunwoody Road, Atlanta, Georgia 30341</u>	Government/Military
US Navy Recruiting Station	<u>9316 Lawrenceville HWY, Ste 120, Tucker Georgia 30084</u>	Government/Military
US Army Recruiting Station	<u>3983 LaVista Rd, Ste 180-A, B, & C, Tucker Georgia 30084</u>	Government/Military
US Air Force Recruiting Station	<u>3983 LaVista Rd, Ste 180-A, B, & C, Tucker Georgia 30084</u>	Government/Military
US Marine Corps Recruiting Station	<u>3983 LaVista Rd, Ste 180-A, B, & C, Tucker Georgia 30084</u>	Government/Military
GA Army National Guard 170th Military Police BN	<u>3736 Durham Park Rd, Decatur Georgia 30032</u>	Government/Military
US Army Reserve Center	<u>1650 Corey BLVD, Decatur Georgia 30032</u>	Government/Military
US Navy Recruiting Station	<u>2801 Candler Rd, Ste 92, Decatur Georgia 30034</u>	Government/Military
GA Army National Guard Recruiting Station	<u>2389 Wesley Chapel Rd, Decatur Georgia 30035</u>	Government/Military
US Army Recruiting Station	<u>6746 Covington HWY, Ste 105, Lithonia Georgia 30058</u>	Government/Military
Manuel J. Maloof Center (Dec.)/BOC/Legal/HR/Econ/Dev/Finance/CEO	<u>1300 Commerce Drive, Decatur, Georgia 30030</u>	Government
Communication Tower 1/Repeater Tower	<u>Three Ravinia Drive, Ravinia Dr NE, Dunwoody, Georgia 30346</u>	Communication
Communication Tower 2/Repeater Tower	<u>3253 Mercer University Drive, Chamblee, Georgia 30341</u>	Communication



APPENDIX

Name	Address	Type
Communication Tower 3/Repeater Tower	<u>1800 Briarcliff Rd NE, Atlanta, GA 30329</u>	Communication
Communication Tower 4/Repeater Tower	<u>2055 Robert E Lee Blvd, Stone Mountain, Georgia 30083</u>	Communication
Communication Tower 5/Repeater Tower	<u>701 Camp Rd, Decatur, Georgia 30032</u>	Communication
Communication Tower 6/Repeater Tower	<u>2484 Bruce Street, Lithonia, Georgia 30058</u>	Communication
Communication Tower 7/Repeater Tower	<u>3905 N Goddard Rd, Lithonia, Georgia 30038</u>	Communication
Communication Tower 8/Repeater Tower	<u>1678 Fairlake Dr, Decatur, Georgia 30034</u>	Communication
Communication Tower 9/Repeater Tower	<u>1686 Constitution Road, Atlanta, Georgia 30316</u>	Communication
Communication Tower 10/Microwave	<u>556 North McDonough Street, Decatur, Georgia 30030</u>	Communication
Communication Tower 11/Microwave	<u>6094 Shadow Rock Dr, Lithonia, Georgia 30058</u>	Communication
Communication Tower 12/Dispatch	<u>1960 West Exchange Place, Tucker, Georgia 30084</u>	Communication
Communication Tower 13/Dispatch	<u>3630 Camp Circle, Decatur, Georgia 30032</u>	Communication
Oglethorpe Power Corporation	<u>2100 East Exchange Place, Tucker, Georgia 30084</u>	Power/Energy
Snapping Shoals EMC	<u>190 Fairview Road, Ellenwood, Georgia 30294</u>	Power/Energy
CDC Main	<u>1600 Clifton Road N.E., Atlanta, Georgia 30333</u>	Lab
CDC Corporate Boulevard	<u>8 Corporate Boulevard, Atlanta, Georgia 30329</u>	Admin/Mail
CDC PDK	<u>4770 Buford Highway N.E., Atlanta, Georgia, 30341</u>	Admin
Georgia Public Health Laboratory	<u>1749 Clairmont Road, Decatur, Georgia 30033</u>	Health/Lab
Yerkes National Primate Research Center (YNPRC)	<u>954 Gatewood Road N.E., Atlanta, Georgia 30329</u>	Health/Lab
Stone Mountain Park	<u>1000 Robert E. Lee Boulevard, Stone Mountain, Georgia 30083</u>	Park
Fernbank Museum of Natural History	<u>767 Clifton Road N.E., Atlanta, Georgia 30307</u>	Other/Museum
Perimeter Mall	<u>4400 Ashford Dunwoody Road, Atlanta, Georgia 30346</u>	Other/Shopping
North DeKalb Mall	<u>2050 Lawrenceville Highway, Decatur, Georgia 30033</u>	Other/Shopping
Gallery at South DeKalb (South DeKalb Mall)	<u>2801 Candler Road, Decatur, Georgia 30034</u>	Other/Shopping
Stonecrest Mall	<u>2929 Turner Hill Road, Lithonia, Georgia 30038</u>	Other/Shopping
Northlake Mall	<u>4800 Briarcliff Road Northeast, Atlanta, Georgia 30345</u>	Other/Shopping
Atlanta Veterans Medical Center	<u>1670 Clairmont Road, Decatur, Georgia 30033</u>	Hospital
DeKalb Medical Center	<u>2701 North Decatur Road, Decatur, Georgia 30033</u>	Hospital
DeKalb Medical Center Hillandale	<u>2801 DeKalb Medical Parkway, Lithonia, Georgia 30058</u>	Hospital



APPENDIX

Name	Address	Type
Children's Healthcare of Atlanta at Egleston	<u>1405 Clifton Road N.E., Atlanta, Georgia 30322</u>	Children's Hospital
Emory University Hospital	<u>1405 Clifton Road N.E., Atlanta, Georgia 30322</u>	Hospital
Sanitation South Lot, Exchange Park	1755 Fairlake Drive, Decatur, GA 30034	County Government Facility
Sanitation East Lot	1750 Rogers Lake Road, Lithonia, GA 30058	County Government Facility
Sanitation Headquarters	3643 Camp Drive, Decatur, GA 30032	County Government Facility
Traffic Engineering Sign Shop	Camp Way, Decatur, GA 30032	County Government Facility
Sanitation North Lot, Carrol Avenue	2315 Chamblee-Tucker Road, Doraville, GA 30341	County Government Facility
Snapfinger Main Shop W&S	4124 Flakes Mill Road, Decatur, GA 30034	County Government Facility
Snapfinger Plant, Water & Sewer	4124 Flakes Mill Road, Decatur, GA 30034	County Government Facility
Sanitation Welding Shop	Rear of 3700 Camp Circle, Decatur, GA 30032	County Government Facility
RPCA Southern Service Center	1749 Flakes Mill Drive, Decatur, GA 30034	County Government Facility
Sanitation Pulverizer, Buford Highway	4600 Buford Highway, Doraville, GA 30341	County Government Facility
Sanitation Pulverizer, Exchange Park	1755 Fairlake Drive, Decatur, GA 30034	County Government Facility
Sanitation Pulverizer, Site - E	4203 Clevemont Road, Ellenwood, GA 30034	County Government Facility
Sanitation Seminole Road Landfill	4203 Clevemont Road, Ellenwood, GA 30034	County Government Facility
Sanitation Site - E, Seminole Scale House	4203 Clevemont Road, Ellenwood, GA 30034	County Government Facility
Sanitation Transfer Station, Incinerator	3700 Camp Circle, Decatur, GA 30032	County Government Facility
Sheriff's Training Trailer	800 Camp Way, Decatur, GA 30032	County Government Facility
Surplus Shed, Camp Road	Camp Road, Decatur, GA 30032	County Government Facility
Scottdale Tobie Grand	644 Parkdale Drive, Scottdale, GA 3009	County Government Facility
DeKalb County Tax Comm.	1358 Dresden Drive, Atlanta, GA 30319	County Government Facility
DeKalb Co. Tax Comm.	2389 Wesley Chapel Road Suite 101A, Decatur, GA 30035	County Government Facility
DeKalb Co. Tax Comm.	4380 Memorial Drive Suite 100, Decatur, GA 30032	County Government Facility
Porter Sanford Center for Performing Arts	3181 Rainbow Drive, Decatur, GA 30034	County Government Facility
Administration Building	1300 Commerce Dr, Decatur, GA 30030	County Government Facility
Administration Building Annex	1300 Commerce Dr, Decatur, GA 30030	County Government Facility
Animal Control Center	845 Camp Road, Decatur, GA 30030	County Government Facility
Medical Examiner's Forensic Science Center	3550 Kensington Road, Decatur, GA 30032	County Government Facility
Roads & Drainage Field Office	729 Camp Road, Decatur, GA 30032	County Government Facility



APPENDIX

Name	Address	Type
Emory University	201 Dowman Drive, Atlanta, Georgia 30322	Education
Mercer University	3100 Mercer University Drive, Atlanta, Georgia 30341	Education
Agnes Scott College	141 East College Avenue, Decatur, Georgia 30030	Education
Oglethorpe University	4484 Peachtree Road, Atlanta, Georgia 30319	Education
Cox Communications	<u>1400 Lake Hearn Drive Northeast, Atlanta, Georgia 30319</u>	Other
WAGA (Fox 5)	<u>1551 Briarcliff Road N.E., Atlanta, Georgia 30306</u>	Other
Doraville Fuel Terminal (Fuel Farm)	<u>6293 New Peachtree Road, Doraville, Georgia 30340</u>	Other
Decatur Library	215 Sycamore Street, Decatur, GA	Library
Briarcliff Library	2775 Briarcliff Road, Atlanta, GA	Library
BrookHaven	1242 N. Druid Hills Road, Atlanta, GA	Library
CHAMBLEE Library	4115 Clairmont Road, Chamblee, GA	Library
Clarkston Library	951 N. Indian Creek, Clarkston, GA	Library
Covington Library	3500 Covington Hwy, Decatur, Ga	Library
Doraville Library	3748 Central Ave. Doraville, GA	Library
Dunwoody Library	5339 Chamblee-Dunwoody Rd, Dunwoody, GA	Library
Embry Hills Library	3733 Chamblee-Tucker Rd, Chamblee, GA	Library
Flat Shoals Library	4022 Flat Shoals Parkway, Decatur, GA	Library
Gresham Library	2418 Gresham Road, Atlanta, GA	Library
Hairston Crossing Library	4911 Redan Road, Stone Mountain, GA	Library
Lithonia-Davidson Library	6821 Church Street, Lithonia, GA	Library
Northlake-Barbara Loar Library	3772 LaVista Road, Tucker, GA	Library
Redan Trotti Library	1569 Wellborn Road, Lithonia, GA	Library
Salem-Panola Library	5137 Salem Road, Lithonia, GA	Library
Scott Chandler Library	2544 McAfee Road, Decatur, GA	Library
Toco Hill-Avis G. Williams Library	1282 McConnel Drive	Library
DeKalb County Tax Comm.	1358 Dresden Drive	Government
DeKalb Co. Tax Comm.	2389 Wesley Chapel Road Suite 101A	Government
DeKalb Co. Tax Comm.	4380 Memorial Drive Suite 100	Government
Porter Sanford Center for Performing Arts	3181 Rainbow Drive	Government



APPENDIX

Name	Address	Type
PeachTree DeKalb Airport		
Post Office	4700 Longmire Ext, Atlanta, GA 30340	Government
Post Office	520 W Ponce de leon Ave Decatur GA 30030	Government
Post Office	1920 Dresden Dr NE, Brookhaven, GA 30319	Government
Post Office	3212 Northlake Pkwy NE, Atlanta, GA 30345	Government
Post Office	3104 Briarcliff Rd NE, Atlanta, GA 30345	Government
Post Office	1785 E Park Pl Blvd Ste 201, Stone Mountain, GA 30087	Government
Post Office	977 Montreal Rd, Clarkston, GA 30021	Government
Post Office	3328 E Ponce de Leon Ave, Scottdale, GA 30079	Government
Post Office	2853 Candler Rd Side, Decatur, GA 30034	Government
Post Office	3035 Stone Mountain St, Lithonia, GA 30058	Government
Post Office	1333 Cedar Grove Rd, Conley, GA 30288	Government
Post Office	3545 Broad St Atlanta, GA 30341 - 2259	Government
Post Office	1799 Briarcliff Rd NE FRNT Atlanta, GA 30333	Government
Post Office	1551 Dunwoody Village Pkwy Atlanta, GA 30338	Government
Post Office	1926 Hosea L Williams Dr. NE Atlanta, GA 30317	Government
Post Office	3631 Chamblee Tucker Rd STE C Atlanta, GA 30341	Government
Post Office	4707 Ashford Dunwoody Rd Atlanta, GA 30338	Government
Post Office	15 Franklin St Avondale Estates, GA 30002	Government
Post Office	2724 Wesley Chapel Rd Decatur, GA 30034	Government
Post Office	5465 Highway 42 Ellenwood, GA 30294	Government
Post Office	1544 Wellborn Rd STE 4 Lithonia, GA 30058	Government
Post Office	4567 Rockbridge Rd Pine Lake, GA 30072	Government
Post Office	5152 Memorial Dr. STE 101 Stone Mountain, GA 30083	Government
Post Office	5181 W Mountain St Stone Mountain, GA 30083	Government
Post Office	4325 1st Ave., Tucker, GA 30084	Government
Clairemont Elementary	155 Erie Ave, Decatur, GA 30030	Elementary
College Heights Early Childhood Learning	917 S. McDonough St. Decatur, GA 30030	Elementary
Fifth Ave Upper Elementary	101 5th Ave, Decatur, GA 30030	Elementary



APPENDIX

Name	Address	Type
Glenwood Elementary	440 E. Ponce de Leon Ave, Decatur, GA 30030	Elementary
Oakhurst Elementary	175 Mead Road, Decatur, GA 30030	Elementary
Talley Street Upper Elementary School	2617 Talley Street, Decatur, GA 30030	Elementary
Westchester Elementary	758 Scott Blvd, Decatur, GA 30030	Elementary
Winnona Park Elementary	510 Avery Street, Decatur, GA 30030	Elementary
Decatur High School	310 N. McDonough Street, Decatur, GA 30030	Elementary
Barack H. Obama Elementary Magnet School	3132 Clifton Church Road, SE ATL, GA 30316	Elementary
John Robert Lewis Elementary School	2630 Skyland Drive, NE Atlanta, GA 30319	Elementary
Peachcrest Elementary School	1530 Joy Lane, Decatur, GA 30032	Elementary
Renfroe Middle School	220 W. College Ave, Decatur, GA 30030	Elementary
Allgood (PK-5)	<u>659 Allgood Road, Stone Mountain, GA 30083</u>	School
Arabia Mountain High (9-12)	<u>6610 Browns Mill Road, Lithonia, GA 30058</u>	School
Ashford Park (PK-6)	<u>2968 Cravenridge Drive, NE, Atlanta, GA 30319</u>	School
Austin (PK-3)	<u>5435 Roberts Drive, Dunwoody, GA 30038</u>	School
Avondale (PK-5)	<u>10 Lakeshore Drive, Avondale Estates, GA 30002</u>	School
Bethune Middle (584) (6-8)	<u>5200 Convington Highway, Decatur, GA 30035</u>	School
Bob Mathis(PK-5)	<u>3505 Boring Road, Decatur, GA 30034</u>	School
Briar Vista (PK-5)	<u>1131 Briar Vista Terrace, Atlanta, GA 30324</u>	School
Briarlake (PK-5)	<u>3590 LaVista Road, Decatur, GA 30033</u>	School
Brockett (PK-5)	<u>1855 Brockett Road, Tucker, GA 30084</u>	School
Browns Mill (PK-5)	<u>4863 Browns Mill Road, Lithonia, GA 30058</u>	School
Canby Lane (PK-5)	<u>4150 Green Hawk Trail, Decatur, GA 30035</u>	School
Cary Reynolds (PK-5)	<u>3498 Pine Street, Doraville, GA 30340</u>	School
Cedar Grove (PK-5)	<u>2330 River Road, Ellenwood, GA 30049</u>	School
Cedar Grove High (9-12)	<u>2360 River Road, Ellenwood, GA 30049</u>	School
Cedar Grove Middle (6-8)	<u>2300 Wildcat Road, Decatur, GA 30034</u>	School
Chamblee High (9-12)	<u>3688 Chamblee Dunwoody Road, Atlanta, GA 30341</u>	School
Chamblee Middle (6-8)	<u>3601 Sexton Woods Drive, Chamblee, GA 30341</u>	School
Champion Theme Middle (6-8)	<u>5265 Mimosa Drive, Stone Mountain, GA 30083</u>	School



APPENDIX

Name	Address	Type
Chapel Hill (PK-5)	<u>3536 Radcliffe Boulevard, Decatur, GA 30034</u>	School
Chapel Hill Middle (6-8)	<u>3535 Dogwood Farm Road, Decatur, GA 30034</u>	School
Chesnut (PK-5)	<u>4576 North Peachtree Road, Dunwoody, GA 30338</u>	School
Clarkston High (9-12)	<u>618 N. Indian Creek Road, Clarkston, GA 30021</u>	School
Clifton Elementary Computer Magnet (PK-5)	<u>3132 Clifton Church Road, Atlanta, GA 30316</u>	School
Columbia (PK-5)	<u>3230 Columbia Woods Drive, Decatur, GA 30032</u>	School
Columbia High (9-12)	<u>2106 Columbia Drive, Decatur, GA 30032</u>	School
Columbia Middle (6-8)	<u>3001 Columbia Drive, Decatur, GA 30035</u>	School
Coralwood Center (3yrs/PK/K)	<u>2477 Coralwood Drive, Decatur, GA 30033</u>	School
Cross Keys High (9-12)	<u>1626 North Druid Hills Road, NE, Atlanta, GA 30319</u>	School
DeKalb Academy of Technology and The Environment (D.A.T.E.) (K-8)	<u>1492 Kelton Drive, Stone Mountain, GA 30083</u>	School
DeKalb Alternative	<u>5855 Memorial Drive, Stone Mountain, GA 30083</u>	School
DeKalb Early College Academy (9-12)	<u>1701 Mountain Industrial Blvd, Stone Mountain, GA 30083</u>	School
DeKalb Elementary School of the Arts (PK-7)	<u>797 Fayetteville Road, Atlanta, GA 30316</u>	School
DeKalb High School Tech South	<u>3303 Panthersville Road, Decatur, GA 30030</u>	School
DeKalb Online Academy (DOLA) (9-12)	<u>1804 Bouldercrest Road, SE, Atlanta, GA 30316</u>	School
DeKalb PATH Academy (5-8)	<u>3007 Hermance Drive, Atlanta, GA 30319</u>	School
DeKalb Preparatory Academy (K-4)	<u>1402 Austin Drive, Decatur, GA 30032</u>	School
DeKalb School of the Arts	<u>1192 Clarendon Road, Avondale Estates, GA 30002</u>	School
DeKalb School Public Safety	<u>5857 Memorial Drive, Stone Mountain, GA 30083</u>	School
Destiny Achievers Academy of Excellence Charter School (9-12)	<u>3595 Linecrest Road, Ellenwood, GA 30294</u>	School
Dresden (PK-5)	<u>2449 Dresden Drive, Chamblee, GA 30341</u>	School
Druid Hills High (9-12)	<u>1798 Haygood Drive, NE, Atlanta, GA 30307</u>	School
Druid Hills Middle (6-8)	<u>3100 Mt. Olive Drive, Decatur, GA 30033</u>	School
Dunaire (PK-5)	<u>651 S. Indian Creek Drive, Stone Mountain, GA 30383</u>	School
Dunwoody (4-5)	<u>1923 Womack Road, Dunwoody, GA 30338</u>	School
Dunwoody High (9-12)	<u>5035 Vermack Road, Dunwoody, GA 30338</u>	School
E. L. Miller (PK-5)	<u>919 Martin Road, Stone Mountain, GA 30088</u>	School



APPENDIX

Name	Address	Type
Eagle Woods Academy	<u>5931 Shadow Rock Drive, Lithonia, GA 30058</u>	School
Edward L. Bouie (PK-5)	<u>5100 Rock Springs Road, Lithonia, GA 30038</u>	School
Elizabeth Andrews High	<u>1701 Mountain Industrial Blvd, Stone Mountain, GA 30083</u>	School
Evansdale(PK-5)	<u>2914 Evans Woods Drive, Doraville, GA 30340</u>	School
Fairington (PK-5)	<u>5505 Philip Bradley Drive, Lithonia, GA 30038</u>	School
Fernbank (PK-5)	<u>157 Heaton Park Drive, NE, Atlanta, GA 30307</u>	School
Fernbank Science Center	<u>156 Heaton Park Drive, NE, Atlanta, GA 30307</u>	School
Flat Rock (PK-5)	<u>4603 Evans Mill Road, Lithonia, GA 30038</u>	School
Flat Shoals (PK-5)	<u>3226 Flat Shoals Road, Decatur, GA 30034</u>	School
Freedom Middle (6-8)	<u>505 S. Hairston Road, Stone Mountain, GA 30088</u>	School
Gateway to College Academy (10-12)	<u>555 N. Indian Creek Drive, Clarkston, GA 30021</u>	School
Globe Academy (K-3)	<u>2225 Heritage Drive, Atlanta, GA 30345</u>	School
Hambrick (PK-5)	<u>1101 Hambrick Road, Stone Mountain, GA 30083</u>	School
Hawthorne (PK-5)	<u>2535 Caladium Drive, NE, Atlanta, GA 30345</u>	School
Henderson Middle (6-8)	<u>2830 Henderson Mill Road, Chamblee, GA 30341</u>	School
Henderson Mill (PK-5)	<u>2408 Henderson Mill Road, NE, Atlanta, GA 30345</u>	School
Hightower (PK-5)	<u>4236 Tilly Mill Road, Doraville, GA 30360</u>	School
Huntley Hills (PK-5)	<u>2112 Seaman Circle, Chamblee, GA 30341</u>	School
	<u>1484 Idlewood Road, Tucker, GA 30084</u>	School
Idlewood (PK-5)	<u>724 N. Indian Creek Drive, Clarkston, GA 30021</u>	School
Indian Creek (PK-5)	<u>2418 Wood Trail Lane, Decatur, GA 30033</u>	School
International Student Center	<u>2383 North Druid Hills Road, NE, Atlanta, GA 30329</u>	School
Jolly (PK-5)	<u>1070 Otello Avenue, Clarkston, GA 30021</u>	School
Kelley Lake (PK-5)	<u>2590 Kelly Lake Road, Decatur, GA 30032</u>	School
Kingsley (PK-5)	<u>2051 Brendon Drive, Dunwoody, GA 30338</u>	School
Kittredge (PK-6)	<u>1663 E. Nancy Creek Drive, NE, Atlanta, GA 30319</u>	School
Knollwood (PK-5)	<u>3039 Santa Monica Drive, Decatur, GA 30032</u>	School
Lakeside High (9-12)	<u>3801 Briarcliff Road, NE, Atlanta, GA 30345</u>	School
Laurel Ridge (PK-5)	<u>1215 Balsam Drive, Decatur, GA 30033</u>	School



APPENDIX

Name	Address	Type
Leadership Preparatory Academy (K-5)	<u>6400 Woodrow Road, Lithonia, GA 30038</u>	School
Lithonia High (9-12)	<u>2440 Phillips Road, Lithonia, GA 30058</u>	School
Lithonia Middle (6-8)	<u>2451 Randall Avenue, Lithonia, GA 30058</u>	School
Livsey (PK-5)	<u>4137 Livsey Road, Tucker, GA 30084</u>	School
Marbut (PK-5)	<u>5776 Marbut Road, Lithonia, GA 30058</u>	School
Margaret Harris	<u>1634 Knob Hill Drive, NE, Atlanta, GA 30329</u>	School
McLendon (PK-5)	<u>3169 Hollywood Drive, Decatur, GA 30033</u>	School
McNair Elementary Discovery Learning Academy (PK-5)	<u>2162 Second Avenue, Decatur, GA 30032</u>	School
McNair High (9-12)	<u>1804 Bouldercrest Road, SE, Atlanta, GA 30316</u>	School
McNair Middle (6-8)	<u>2190 Wallingford Drive, Decatur, GA 30032</u>	School
Meadowview (PK-5)	<u>1879 Wee Kirk Road, Atlanta, GA 30316</u>	School
Midvale (PK-5)	<u>3836 Midvale Road, Tucker, GA 30084</u>	School
Midway (PK-3)	<u>3318 Midway Road, Decatur, GA 30032</u>	School
Miller Grove High (9-12)	<u>2645 DeKalb Medical Parkway, Lithonia, GA 30058</u>	School
Miller Grove Middle (6-8)	<u>2215 Miller Road, Decatur, GA 30035</u>	School
MLK, Jr. High (9-12)	<u>3991 Snapfinger Road, Lithonia, GA 30038</u>	School
Montclair (PK-5)	<u>1680 Clairmont Place NE, Atlanta, GA 30329</u>	School
Montgomery (PK-6)	<u>3995 Ashford-Dunwoody Road, Atlanta, GA 30319</u>	School
Murphey Candler (PK-5)	<u>6775 South Goddard Road, Lithonia, GA 30038</u>	School
Narvie J. Harris (PK-5)	<u>3981 McGill Drive, Decatur, GA 30034</u>	School
Oak Grove (PK-5)	<u>1857 Oak Grove Road, NE, Atlanta, GA 30329</u>	School
Oak View (PK-5)	<u>3574 Oakvale Road, Decatur, GA 30034</u>	School
Oakcliff (PK-5)	<u>3150 Willow Oak Way, Doraville, GA 30340</u>	School
Panola Way (PK-5)	<u>2170 Panola Way Court, Lithonia, GA 30058</u>	School
Peachtree Middle (6-8)	<u>4664 North Peachtree Road, Atlanta, GA 30338</u>	School
Pine Ridge (PK-5)	<u>750 Pine Ridge Drive, Stone Mountain, GA 30087</u>	School
Pleasantdale (PK-5)	<u>3695 North Lake Drive, Doraville, GA 30340</u>	School
Princeton (PK-5)	<u>1321 South Deshon Road, Lithonia, GA 30058</u>	School



APPENDIX

Name	Address	Type
Rainbow (PK-5)	<u>2801 Kelley Chapel Road, Decatur, GA 30034</u>	School
Redan (PK-5)	<u>1914 Stone Mountain-Lithonia Rd, Lithonia, GA 30058</u>	School
Redan High (9-12)	<u>5247 Redan Road, Stone Mountain, GA 30088</u>	School
Redan Middle (6-8)	<u>1775 Young Road, Lithonia, GA 30058</u>	School
Robert Shaw (PK-5)	<u>362 Glendale Road, Scottdale, GA 30341</u>	School
Rock Chapel (PK-5)	<u>1130 Rock Chapel Road, Lithonia, GA 30058</u>	School
Rockbridge (PK-6)	<u>445 Halwick Way, Stone Mountain, GA 30083</u>	School
Rowland (348) (V) (PK-5)	<u>1317 S. Indian Creek Drive, Stone Mountain, GA 30083</u>	School
Sagamore Hills (PK-5)	<u>1865 Alderbrook Road, Atlanta, GA 30345</u>	School
Salem Middle (6-8)	<u>5333 Salem Road, Lithonia, GA 30058</u>	School
Sequoyah Middle (6-8)	<u>3456 Aztec Drive, Doraville, GA 30340</u>	School
Shadow Rock (PK-5)	<u>1040 Kingway Drive, Lithonia, GA 30058</u>	School
Shadow Rock Center	<u>1040 Kingway Drive, Lithonia, GA 30058</u>	School
Smoke Rise (PK-5)	<u>1991 Silver Hill Road, Stone Mountain, GA 30087</u>	School
Snapfinger (PK-5)	<u>1365 Snapfinger Road, Decatur, GA 30032</u>	School
Southwest DeKalb High (9-12)	<u>2683 Kelley Chapel Road, Decatur, GA 30034</u>	School
Stephenson High (9-12)	<u>701 Stephenson Road, Stone Mountain, GA 30087</u>	School
Stephenson Middle (6-8)	<u>922 Stephenson Road, Stone Mountain, GA 30087</u>	School
Stone Mill (PK-5)	<u>4900 Sheila Lane, Stone Mountain, GA 30083</u>	School
Stone Mountain (PK-5)	<u>6720 James B. Rivers Drive, Stone Mountain, GA 30083</u>	School
Stone Mountain High (9-12)	<u>4555 Central Drive, Stone Mountain, GA 30083</u>	School
Stone Mountain Middle (6-8)	<u>4301 Sarr Parkway, Stone Mountain, GA 30083</u>	School
Stoneview (PK-5)	<u>2629 Huber Street, Lithonia, GA 30058</u>	School
Tapestry Public Charter School	<u>4046 Chamblree-Tucker Road, Atlanta, GA 30340</u>	School
The Museum School of Avondale Estates (K-7)	<u>923 Forrest Blvd, Decatur, GA 30030</u>	School
Toney (PK-5)	<u>2701 Oakland Terrace, Decatur, GA 30032</u>	School
Towers High (9-12)	<u>3919 Brookcrest Circle, Decatur, GA 30032</u>	School
Tucker High (9-12)	<u>5036 LaVista Road, Tucker, GA 30084</u>	School
Tucker Middle (6-8)	<u>2160 Idlewood Road, Tucker, GA 30084</u>	School



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Name	Address	Type
Vanderlyn (PK-5)	<u>1877 Vanderlyn Drive, Dunwoody, GA 30338</u>	School
Wadsworth Magnet (PK-5)	<u>2084 Green Forest Drive, Decatur, GA 30032</u>	School
Warren Tech	<u>3075 Alton Road, Atlanta, GA 30341</u>	School
Woodridge (PK-5)	<u>4120 Cedar Ridge Trail, Stone Mountain, GA 30083</u>	School
Woodward (PK-5)	<u>3034 Curtis Drive, NE, Atlanta, GA 30019</u>	School
Wynbrooke Theme (PK-5)	<u>440 Wicksbury Way, Stone Mountain, GA 30087</u>	School
Ivy Preparatory Academy At Kirkwood (IPA)	<u>1807 Memorial Drive, Atlanta, Georgia 30317</u>	School
Charles Drew Charter School	<u>301 E Lake Blvd, Atlanta, Georgia 30317</u>	School
Atlanta Charter Middle School	<u>820 Essie Ave, Atlanta, Georgia 30316</u>	School
Path Academy	<u>3007 Hermance Drive, NE, Atlanta, Georgia 30319</u>	School
St. Pius X Catholic High School, Atlanta	<u>2674 Johnson Road NE, Atlanta, Georgia 30345</u>	School
The Paideia School, Atlanta	<u>1509 Ponce De Leon Avenue Northeast, Atlanta, GA 30307</u>	School
Marist High School	<u>3790 Ashford Dunwoody Road Northeast, Atlanta, GA 30319</u>	School
Academy of Lithonia Charter School, Lithonia	<u>3235 Evans Mill Road, Lithonia, Georgia 30038</u>	School
Friends School of Atlanta, Decatur	<u>862 South Columbia Drive, Decatur, Georgia 30030</u>	School
Greenforest McCalep Christian Academic Center, Decatur	<u>3250 Rainbow Drive, Decatur, Georgia 30034</u>	School
Yeshiva Ohr Yisrael	<u>1458 Holly Lane Northeast, Atlanta, Georgia 30329</u>	School
Temima High School for Girls	<u>1985 Lavista Road Northeast, Atlanta, Georgia 30329</u>	School
Torah Day School of Atlanta	<u>1985 Lavista Road Northeast, Atlanta, Georgia 30329</u>	School
Immacualte Heart of Mary Catholic School (K-8)	<u>2855 Briaclyff road, NE, Atlanta, Georgia 30329</u>	School



APPENDIX D: HAZARD RISK ANALYSIS



Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan



Carl Vinson
Institute of Government
UNIVERSITY OF GEORGIA



Introduction

The Federal Disaster Mitigation Act of 2000 (DMA2K) requires state, local, and tribal governments to develop and maintain a mitigation plan to be eligible for certain federal disaster assistance and hazard mitigation funding programs.

Mitigation seeks to reduce a hazard's impacts, which may include loss of life, property damage, disruption to local and regional economies, and the expenditure of public and private funds for recovery. Sound mitigation must be based on a sound risk assessment that quantifies the potential losses of a disaster by assessing the vulnerability of buildings, infrastructure, and people.

In recognition of the importance of planning in mitigation activities, FEMA Hazus-MH, a powerful disaster risk assessment tool based on geographic information systems (GIS). This tool enables communities of all sizes to predict estimated losses from floods, hurricanes, earthquakes, and other related phenomena and to measure the impact of various mitigation practices that might help reduce those losses.

In 2022, the Georgia Department of Emergency Management partnered with the Carl Vinson Institute of Government at the University of Georgia to develop a detailed risk assessment focused on defining hurricane, riverine flood, and tornado risks in DeKalb County, Georgia. This assessment identifies the characteristics and potential consequences of the disaster, how much of the community could be affected by the disaster, and the impact on community assets.

Risk Assessment Process Overview

Hazus-MH Version 2.2 SP1 was used to perform the analyses for DeKalb County. The Hazus-MH application includes default data for every county in the US. This Hazus-MH data was derived from a variety of national sources and in some cases the data are also several years old. Whenever possible, using local provided data is preferred. DeKalb County provided building inventory information from the county's property tax assessment system. This section describes the changes made to the default Hazus-MH inventory and the modeling parameters used for each scenario.

County Inventory Changes

The default Hazus-MH site-specific point inventory was updated using data compiled from the Georgia Emergency Management Agency (GEMA). The default Hazus-MH aggregate inventory (General Building Stock) was also updated prior to running the scenarios. Reported losses reflect the updated data sets.

General Building Stock Updates

General Building Stock (GBS) is an inventory category that consists of aggregated data (grouped by census geography — tract or block). Hazus-MH generates a combination of site-specific and aggregated loss estimates based on the given analysis and user input.

The GBS records for DeKalb County were replaced with data derived from parcel and property assessment data obtained from DeKalb County. The county provided property assessment data was current as of November 2021 and the parcel data current as of November 2021. Records without improvements were deleted. The parcel boundaries were converted to parcel points located in the centroids of each parcel boundary; then, each parcel point was linked to an assessor record based upon matching parcel numbers. The parcel assessor match-rate for DeKalb County is 100%. The generated building inventory represents the approximate

locations (within a parcel) of structures. The building inventory was aggregated by census block. Both the tract and block tables were updated. Table 1 shows the results of the changes to the GBS tables by occupancy class.

Table 1: GBS Building Exposure Updates by Occupancy Class*



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General Occupancy	Default Hazus-MH Count	Updated Count	Default Hazus-MH Exposure	Updated Exposure
Commercial	13,947	6,670	\$13,046,956,000	\$12,186,755,000
Industrial	3,328	951	\$2,315,533,000	\$1,871,459,000
Residential	206,947	213,813	\$65,913,862,000	\$124,235,839,000
Agricultural	525	0	\$196,471,000	\$0
Religious	1,583	230	\$1,526,135,000	\$250,159,000
Government	491	0	\$547,765,000	\$0
Education	639	89	\$1,513,469,000	\$323,004,000
Total	227,460	221,753	\$85,060,191,000	\$138,867,216,000

*The exposure values represent the total number and replacement cost for all DeKalb County Buildings

For DeKalb County, the updated GBS was used to calculate hurricane wind losses. The flood losses and tornado losses were calculated from building inventory modeled in Hazus-MH as User-Defined Facility (UDF)², or site-specific points. Figure 1 shows the distribution of buildings as points based on the county provided data.

² The UDF inventory category in Hazus-MH allows the user to enter site-specific data in place of GBS data.

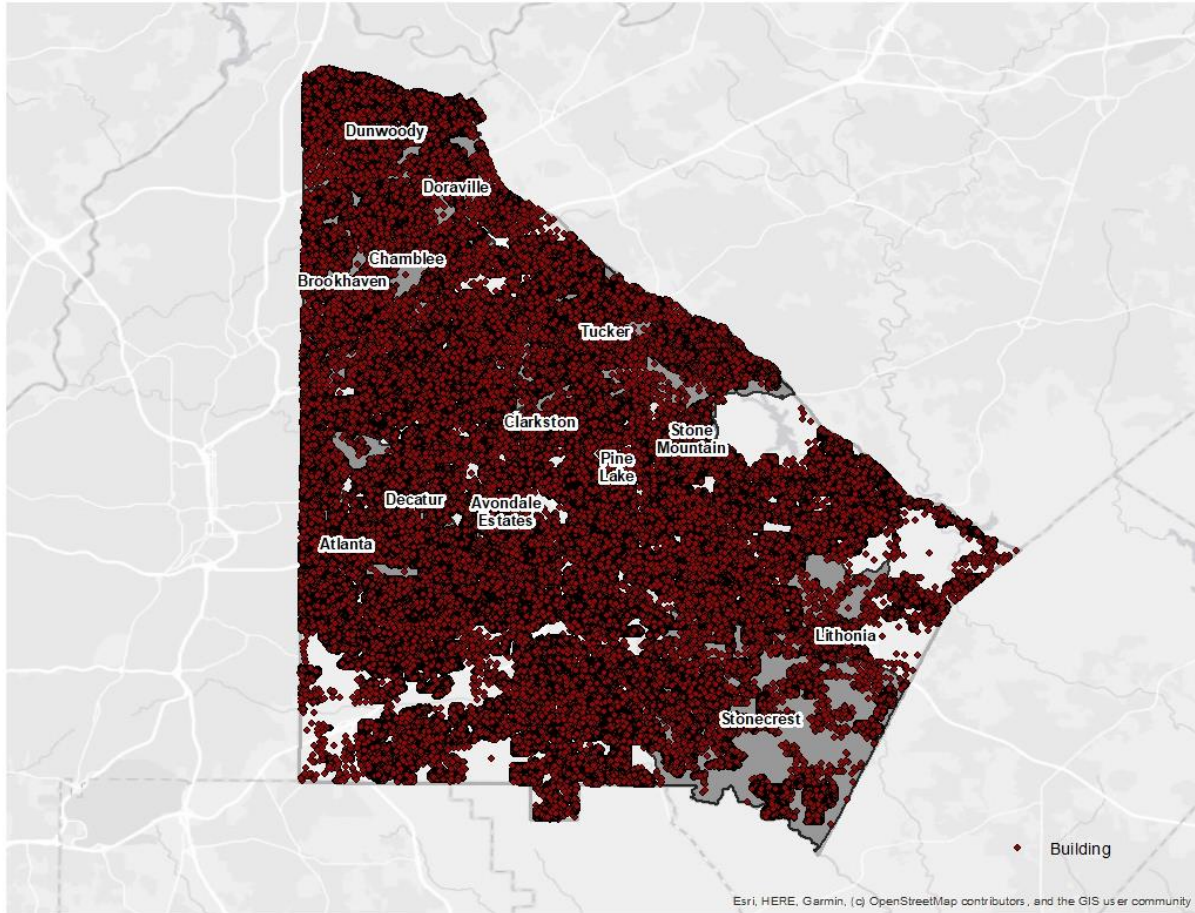


FIGURE 1: DEKALB COUNTY OVERVIEW

Essential Facility Updates

The default Hazus-MH essential facility data was updated to reflect improved information available in the Georgia Mitigation Information System (GMIS) as of November 2021. For these risk analyses, only GMIS data for buildings that Hazus-MH classified as Essential Facilities was integrated into Hazus-MH because the application provides specialized reports for these five facilities. Essential Facility inventory was updated for the analysis conducted for this report. The following table summarizes the counts and exposures, where available, by Essential Facility classification of the updated data.

Essential facilities include:

- Care facilities
- EOCs
- Fire stations
- Police stations
- Schools

Table 2: Updated Essential Facilities

Classification	Updated Count	Updated Exposure
Atlanta		
EOC	0	\$0
Care	3	\$45,209,000



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Classification	Updated Count	Updated Exposure
Fire	0	\$0
Police	0	\$0
School	3	\$183,199,000
Total	6	\$228,408,000
Avondale Estates		
EOC	0	\$0
Care	0	\$0
Fire	1	\$114,000
Police	0	\$0
School	1	\$863,000
Total	2	\$977,000
Brookhaven		
EOC	0	\$0
Care	0	\$0
Fire	1	\$45,000
Police	1	\$34,000
School	11	\$75,038,000
Total	13	\$75,117,000
Chamblee		
EOC	0	\$0
Care	0	\$0
Fire	1	\$119,000
Police	0	\$0
School	5	\$14,227,000
Total	6	\$14,346,000
Clarkston		
EOC	0	\$0
Care	0	\$0
Fire	1	\$418,000
Police	0	\$0
School	0	\$0
Total	1	\$418,000
Decatur		
EOC	0	\$0
Care	0	\$0
Fire	0	\$0
Police	0	\$0
School	12	\$55,715,000



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Classification	Updated Count	Updated Exposure
Total	12	\$55,715,000
Doraville		
EOC	0	\$0
Care	0	\$0
Fire	0	\$0
Police	0	\$0
School	2	\$10,568,000
Total	2	\$10,568,000
Dunwoody		
EOC	0	\$0
Care	0	\$0
Fire	3	\$31,755,000
Police	0	\$0
School	7	\$35,409,000
Total	10	\$67,164,000
Lithonia		
EOC	0	\$0
Care	0	\$0
Fire	0	\$0
Police	1	\$1,133,000
School	1	\$4,631,000
Total	2	\$5,764,000
Pine Lake		
EOC	0	\$0
Care	0	\$0
Fire	0	\$0
Police	0	\$0
School	0	\$0
Total	0	\$0
Stone Mountain		
EOC	0	\$0
Care	0	\$0
Fire	1	\$439,000
Police	0	\$0
School	2	\$6,351,000
Total	3	\$6,790,000
Stonecrest		
EOC	0	\$0



Classification	Updated Count	Updated Exposure
Care	1	\$6,655,000
Fire	2	\$809,000
Police	1	\$268,000
School	13	\$49,522,000
Total	17	\$57,254,000
Tucker		
EOC	1	\$17,950,000
Care	0	\$0
Fire	2	\$733,000
Police	2	\$18,117,000
School	9	\$25,004,000
Total	14	\$61,804,000
Unincorporated Areas of DeKalb County		
EOC	0	\$0
Care	3	\$60,133,000
Fire	14	\$9,008,000
Police	5	\$8,339,000
School	93	\$242,528,000
Total	115	\$320,008,000

Assumptions and Exceptions

Hazus-MH loss estimates may be impacted by certain assumptions and process variances made in this risk assessment.

- The DeKalb County analysis used Hazus-MH Version 2.2 SP1, which was released by FEMA in May 2015.
- County provided parcel and property assessment data may not fully reflect all buildings in the county. For example, some counties do not report not-for-profit buildings such as government buildings, schools and churches in their property assessment data. This data was used to update the General Building Stock as well as the User Defined Facilities applied in this risk assessment.
- Georgia statute requires that the Assessor's Office assign a code to all of the buildings on a parcel based on the buildings primary use. If there is a residential or a commercial structure on a parcel and there are also agricultural buildings on the same parcel Hazus-MH looks at the residential and commercial "primary" structures first and then combines the value of all secondary structures on that parcel with the value of the primary structure. The values and building counts are still accurate but secondary structures are accounted for under the same classification as the primary structure. Because of this workflow, the only time that a parcel would show a value for an agricultural building is when there are no residential or commercial structures on the parcel thus making the agricultural building the primary structure. This is the reason that agricultural building counts and total values seem low or are nonexistent.
- GBS updates from assessor data will skew loss calculations. The following attributes were defaulted or calculated:
 - Foundation Type was set from Occupancy Class
 - First Floor Height was set from Foundation Type
 - Content Cost was calculated from Replacement Cost
- It is assumed that the buildings are located at the centroid of the parcel.



- The essential facilities extracted from the GMIS were only used in the portion of the analysis designated as essential facility damage. They were not used in the update of the General Building Stock or the User Defined Facility inventory.

The hazard models included in this risk assessment included:

- Hurricane assessment which was comprised of a wind only damage assessment.
- Flood assessment based on the 1% annual chance event that includes riverine assessments.
- Tornado assessment based on GIS modeling.

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)³. 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 DeKalb County by creating a 20-mile buffer around the county to include storms that didn't make direct landfall in DeKalb 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, DeKalb County has had 16 tropical systems within 20 miles of its county borders (Table 4).

Table 4: Tropical Systems affecting DeKalb County⁴

YEAR	DATE RANGE	NAME	MAX WIND(Knots)	MAX PRESSURE	MAX CAT
1859	September 15-18	UNNAME D	81	0	H1

³ 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.

⁴ 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.



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YEAR	DATE RANGE	NAME	MAX WIND(Knots)	MAX PRESSURE	MAX CAT
1887	July 20-28	UNNAME D	98	0	H2
1893	September 27 - October 05	UNNAME D	132	948	H4
1900	September 11-15	UNNAME D	52	0	TS
1902	October 03-13	UNNAME D	104	970	H2
1903	September 09-16	UNNAME D	92	988	H1
1907	September 18-23	UNNAME D	46	0	TS
1911	August 23-31	UNNAME D	98	972	H2
1912	June 07-17	UNNAME D	69	0	TS
1940	August 05-14	UNNAME D	98	1008	H2
1959	October 06-09	IRENE	46	1003	TS
1994	June 30 - July 07	ALBERTO	63	1014	TS
1994	August 14-19	BERYL	58	1013	TS
1995	August 22-28	JERRY	40	1010	TS
1997	July 16-27	DANNY	81	1013	H1
2004	August 25 - September 10	FRANCE S	144	1009	H4

Category Definitions:

TS – Tropical storm

TD – Tropical depression

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

E – Extra-tropical cyclone

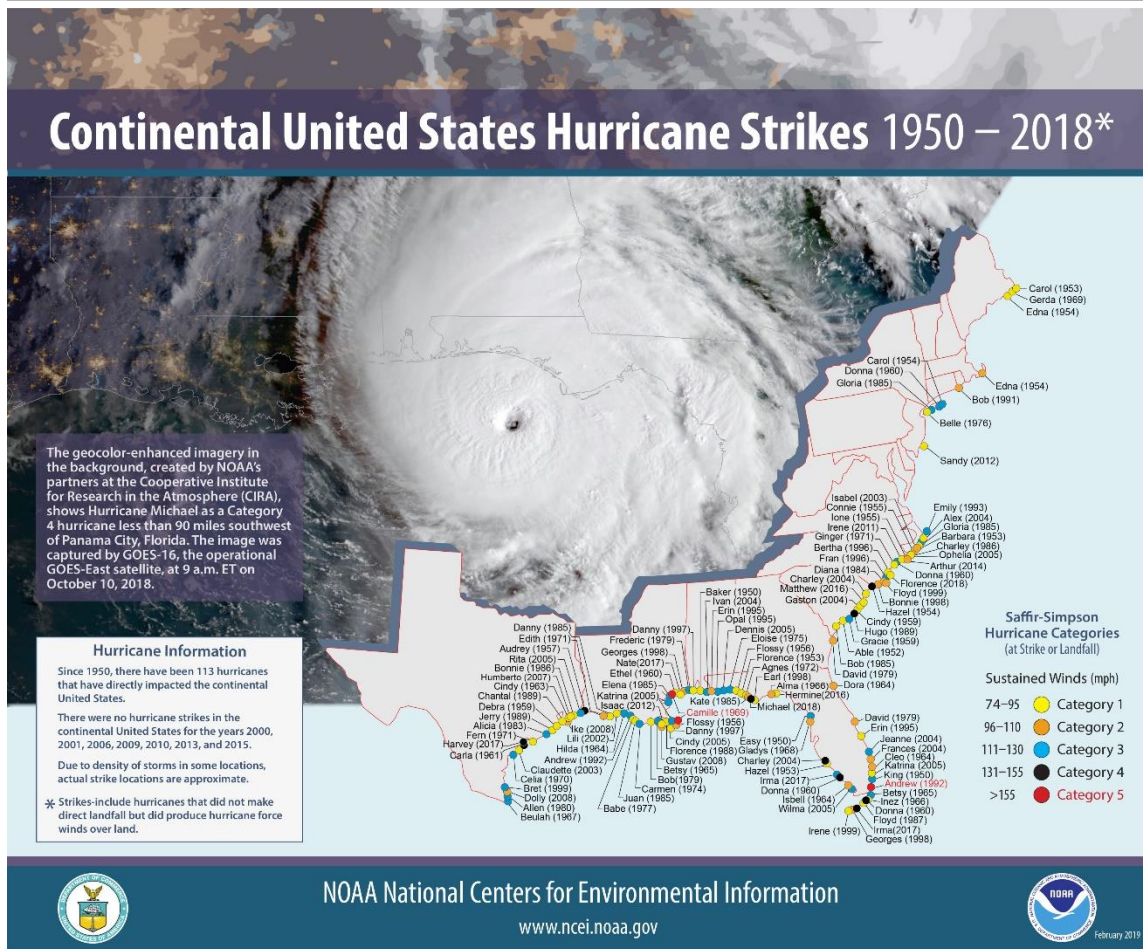


FIGURE 2: CONTINENTAL UNITED STATES HURRICANE STRIKES: 1950 TO 2018⁵

Probabilistic Hurricane Scenario

The following probabilistic wind damage risk assessment modeled a Tropical Storm with maximum winds of 67 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 DeKalb 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.

⁵ Source: NOAA National Centers for Environmental Information

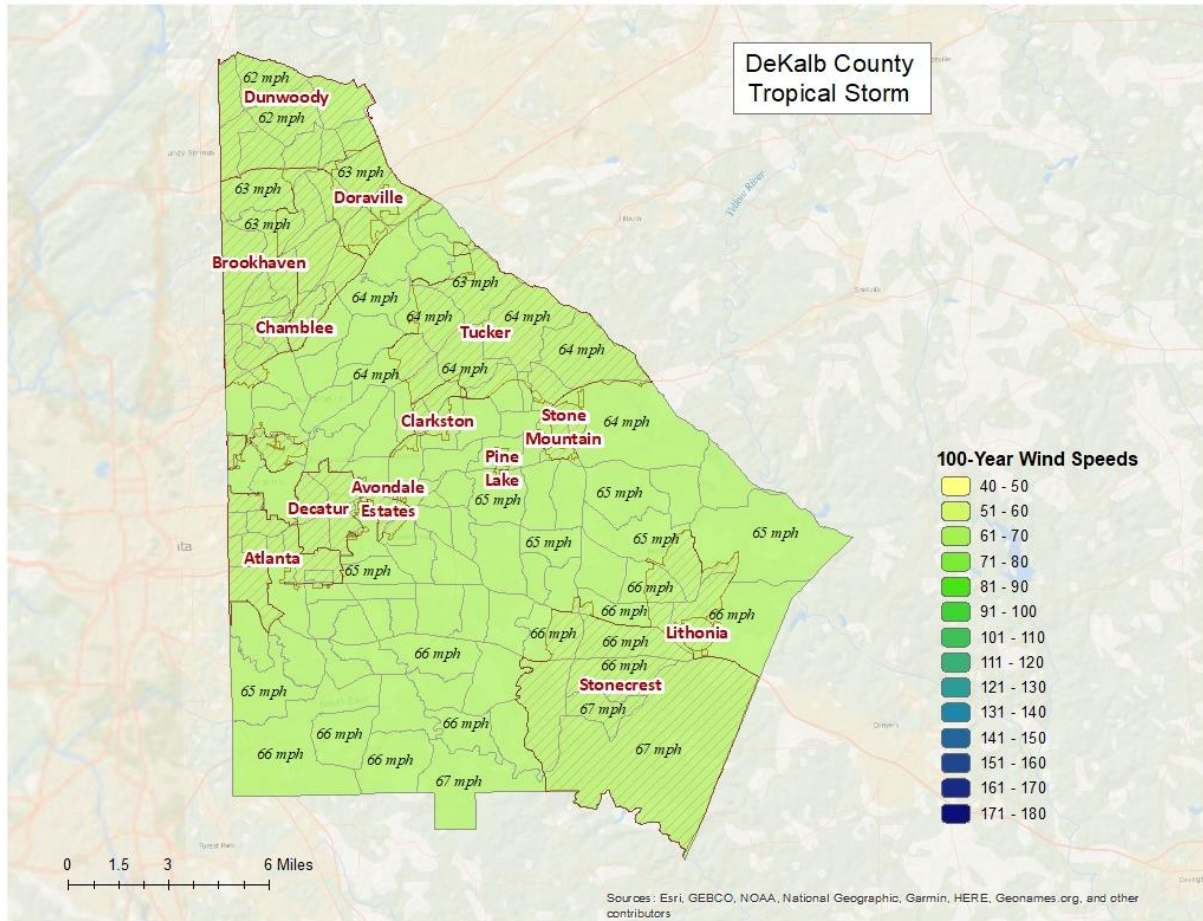


FIGURE 3: WIND SPEEDS BY STORM CATEGORY

Wind-Related Building Damages

Buildings in DeKalb 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 DeKalb 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 ⁶	Loss Ratio
Tropical Storm	232	\$53,991,190	\$69,558,650	0.04%

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.

⁶ Includes property damage (infrastructure, contents, and inventory) as well as business interruption losses.

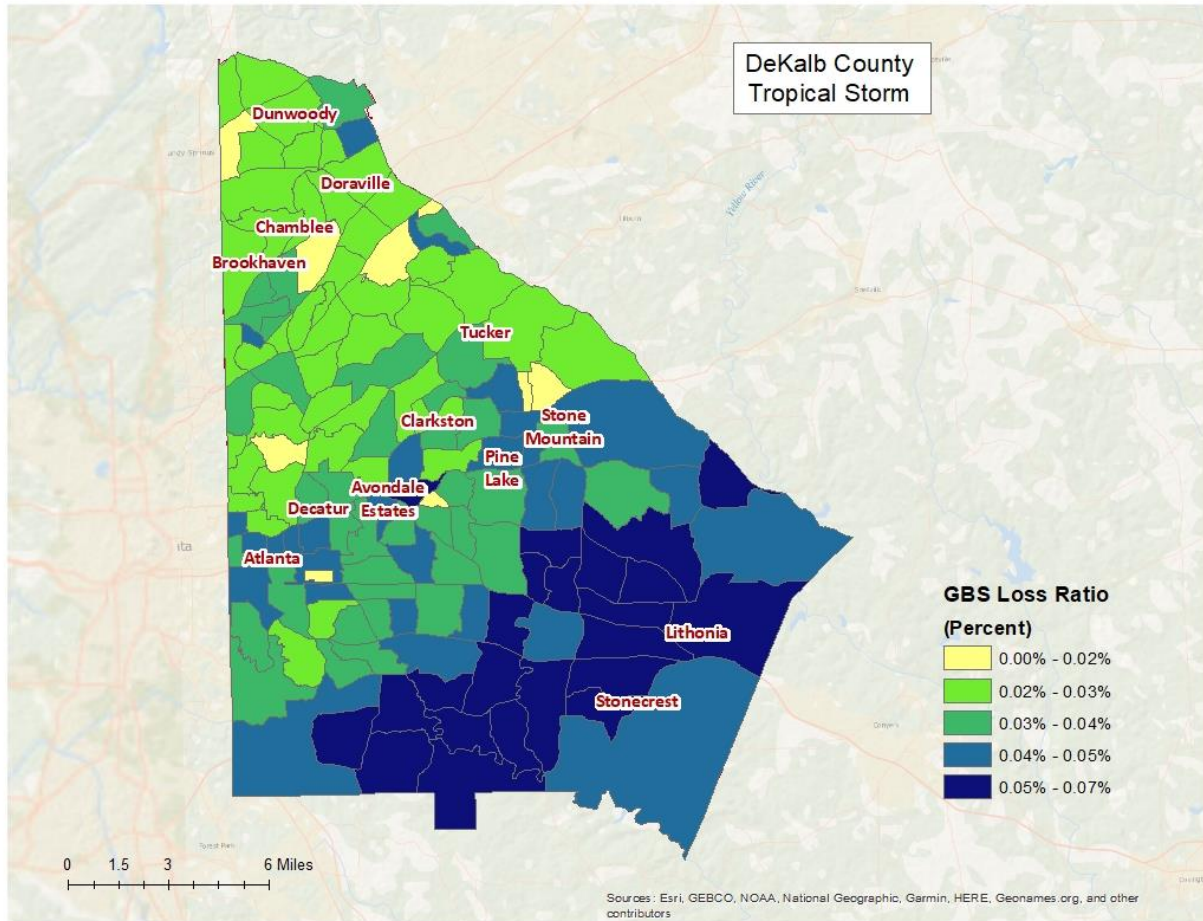


FIGURE 4: HURRICANE WIND BUILDING LOSS RATIOS

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.

There are 203 essential facilities in DeKalb County.

Classification	Number
EOCs	1
Fire Stations	26
Care Facilities	7
Police Stations	10
Schools	159

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	1	0	203



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 DeKalb 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	757	0	5,922	3,259	9,938

Figure 5 shows the distribution of all wind related debris resulting from a Tropical Storm. Each dot represents 20 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.

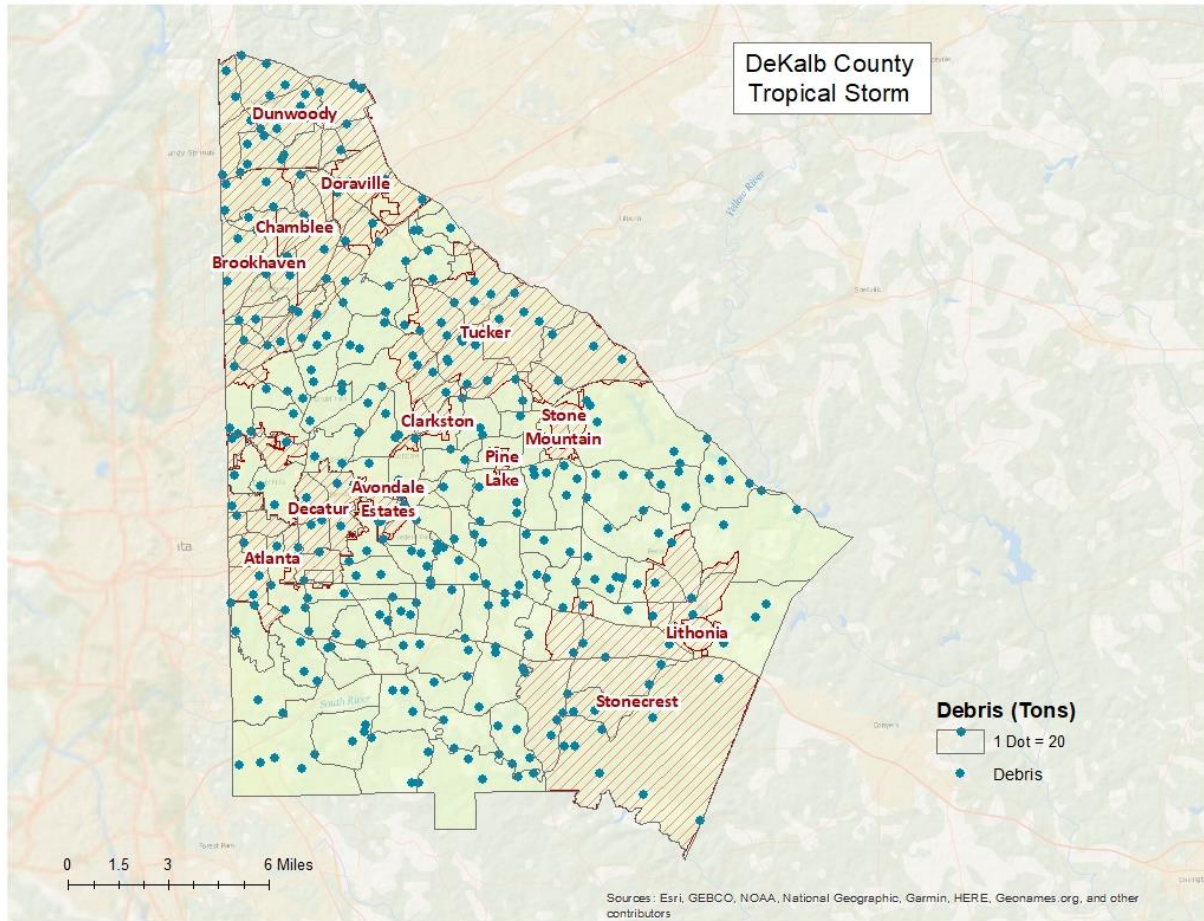


FIGURE 5: WIND-RELATED DEBRIS WEIGHT (TONS)



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, nearshore, 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 DeKalb County flood risk assessment analyzed at risk structures in the SFHA.

The SFHA is the area where the National Flood Insurance Program's (NFIP) floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies. The owner of a structure in a high-risk area must carry flood insurance, if the owner carries a mortgage from a federally regulated or insured lender or

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.

Riverine 1% Flood Scenario

Riverine losses were determined from the 1% flood boundaries downloaded from the FEMA Flood Map Service Center in January 2022. 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.

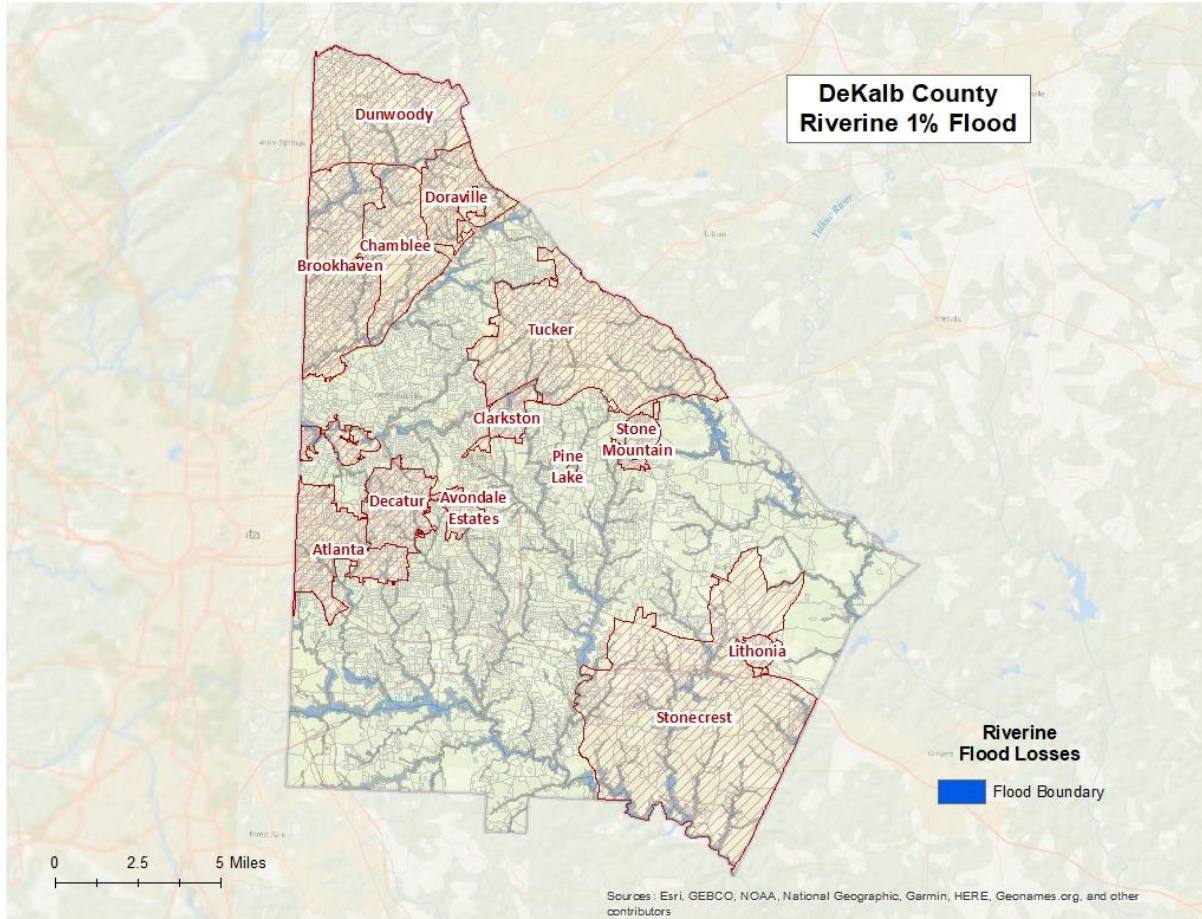


FIGURE 6: RIVERINE 1% FLOOD INUNDATION



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Riverine 1% Flood Building Damages

Buildings in DeKalb 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 DeKalb 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 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 9: DEKALB 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
ATLANTA					
COMMERCIAL	291	9	\$268,698,650	\$1,791,840	0.67%
RELIGIOUS	33	1	\$26,063,010	\$47,676	0.18%
RESIDENTIAL	12,181	182	\$9,728,152,969	\$30,868,391	0.32%
AVONDALE ESTATES					
RESIDENTIAL	1,495	12	\$1,118,375,123	\$3,669,867	0.33%
COMMERCIAL	74	1	\$33,711,240	\$27,701	0.08%
BROOKHAVEN					
RESIDENTIAL	13,616	241	\$13,731,481,344	\$46,482,665	0.34%
COMMERCIAL	327	6	\$1,984,293,540	\$28,361,187	1.43%
INDUSTRIAL	19	2	\$32,860,630	\$920,356	2.80%
CHAMBLEE					
COMMERCIAL	685	7	\$1,020,323,120	\$1,253,667	0.12%
INDUSTRIAL	149	1	\$168,908,930	\$181,776	0.11%
RESIDENTIAL	5,726	118	\$3,592,454,771	\$14,851,744	0.41%
CLARKSTON					
RESIDENTIAL	1,160	15	\$364,225,849	\$516,595	0.14%
DECATUR					



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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
COMMERCIAL	288	1	\$550,474,460	\$95,611	0.02%
INDUSTRIAL	15	1	\$3,801,220	\$120,631	3.17%
RESIDENTIAL	7,362	207	\$8,584,234,852	\$33,093,188	0.39%
DORAVILLE					
RESIDENTIAL	2,292	57	\$1,145,344,710	\$7,160,796	0.63%
COMMERCIAL	447	4	\$577,378,570	\$1,438,878	0.25%
INDUSTRIAL	97	2	\$172,759,740	\$496,380	0.29%
DUNWOODY					
RESIDENTIAL	12,607	42	\$10,478,841,349	\$5,619,995	0.05%
COMMERCIAL	400	2	\$2,254,785,560	\$13,026	0.00%
PINE LAKE					
RESIDENTIAL	343	10	\$153,868,426	\$920,951	0.60%
STONE MOUNTAIN					
RESIDENTIAL	1,978	29	\$571,337,319	\$1,906,618	0.33%
STONECREST					
COMMERCIAL	453	8	\$877,969,346	\$4,508,706	0.51%
INDUSTRIAL	120	1	\$231,795,755	\$515,005	0.24%
RESIDENTIAL	16,683	377	\$6,635,461,086	\$38,526,782	0.58%
TUCKER					
INDUSTRIAL	216	3	\$523,171,040	\$269,764	0.05%
RESIDENTIAL	11,302	162	\$6,939,302,119	\$18,903,800	0.27%



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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
COMMERCIAL	756	4	\$1,363,291,350	\$18,882,002	1.39%
UNINCORPORATED					
INDUSTRIAL	251	8	\$286,170,621	\$4,214,169	1.47%
RELIGIOUS	153	8	\$154,474,160	\$5,370,178	3.48%
COMMERCIAL	2,680	53	\$3,097,482,997	\$8,977,502	0.29%
RESIDENTIAL	126,579	2,842	\$61,044,179,900	\$339,233,087	0.56%
COUNTY TOTAL					
	220,778	4,416	\$137,697,673,756	\$619,240,534	

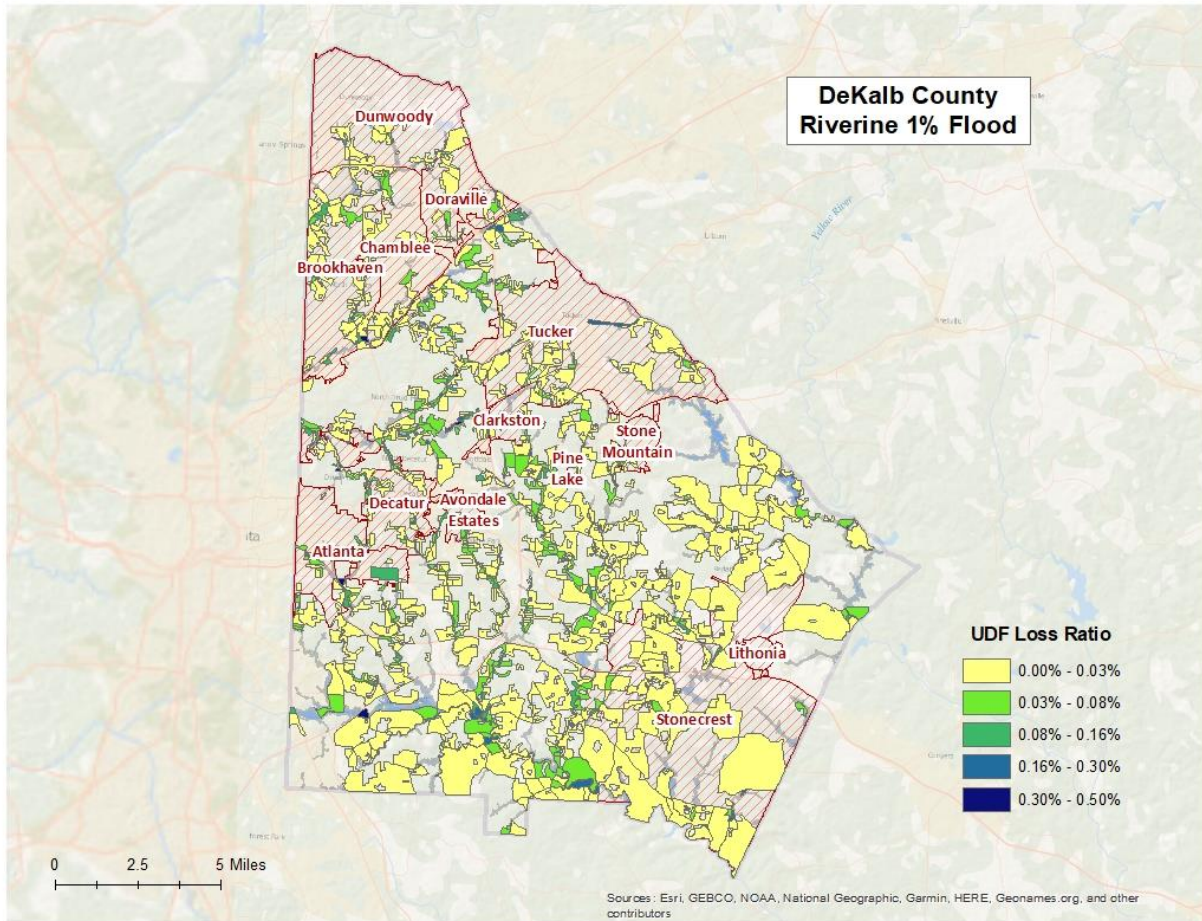


FIGURE 7: DeKALB COUNTY POTENTIAL LOSS RATIOS OF TOTAL BUILDING EXPOSURE TO LOSSES SUSTAINED TO BUILDINGS FROM THE 1% RIVERINE FLOOD BY 2010 CENSUS BLOCK

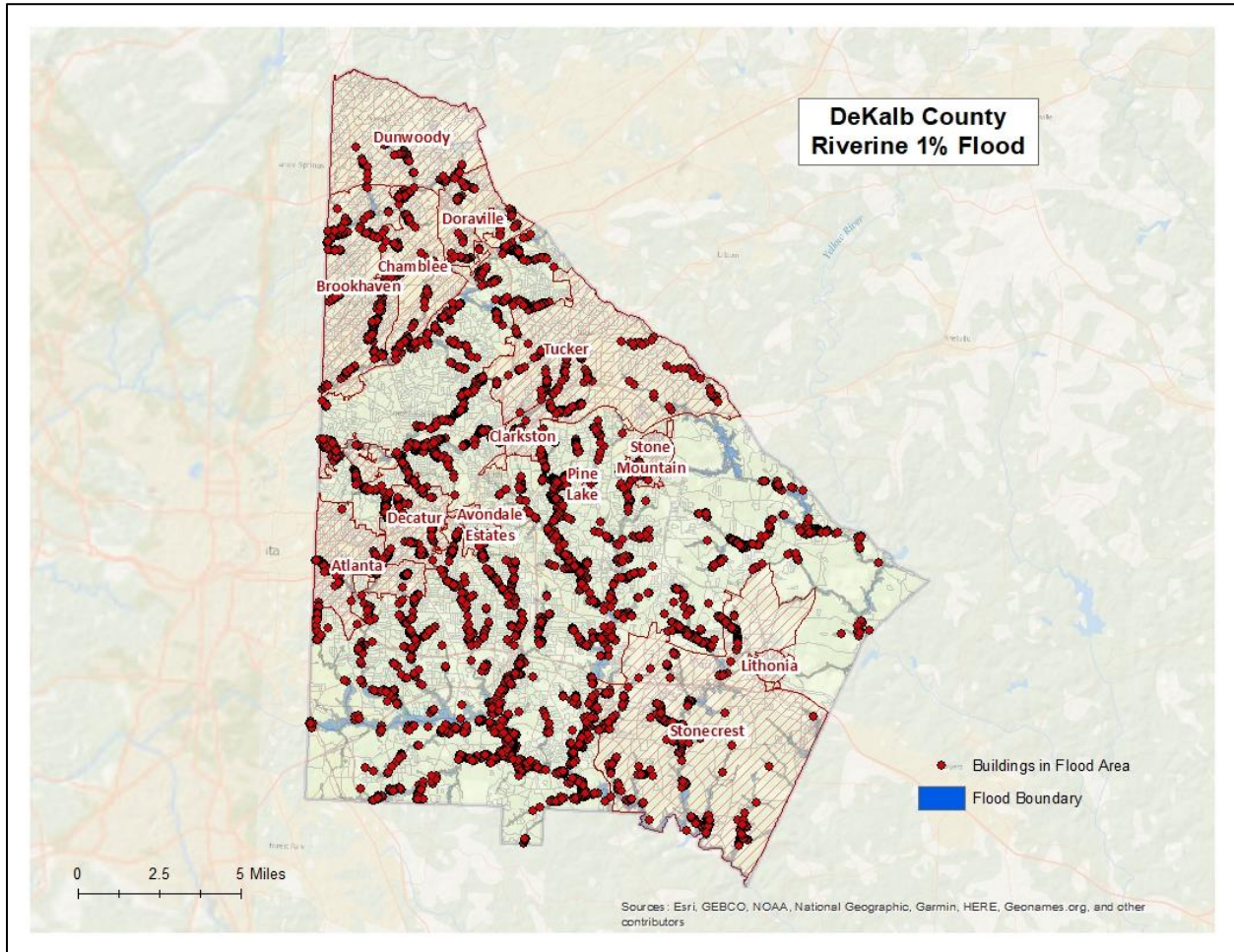


FIGURE 8: DeKALB COUNTY DAMAGED BUILDINGS IN RIVERINE FLOODPLAIN (1% FLOOD)

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 was subject to damage in the DeKalb County riverine 1% probability floodplain.

TABLE 10: RIVERINE 1% FLOOD DAMAGED ESSENTIAL FACILITIES

Name	Category	City
Fire Station 24	Fire Station	Stone Mountain



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 13,994 households might be displaced due to the flood. Displacement includes households evacuated within or very near to the inundated area. Displaced households represent 41,982 individuals, of which 34,704 may require short term publicly provided shelter. The results are mapped in Figure 9.

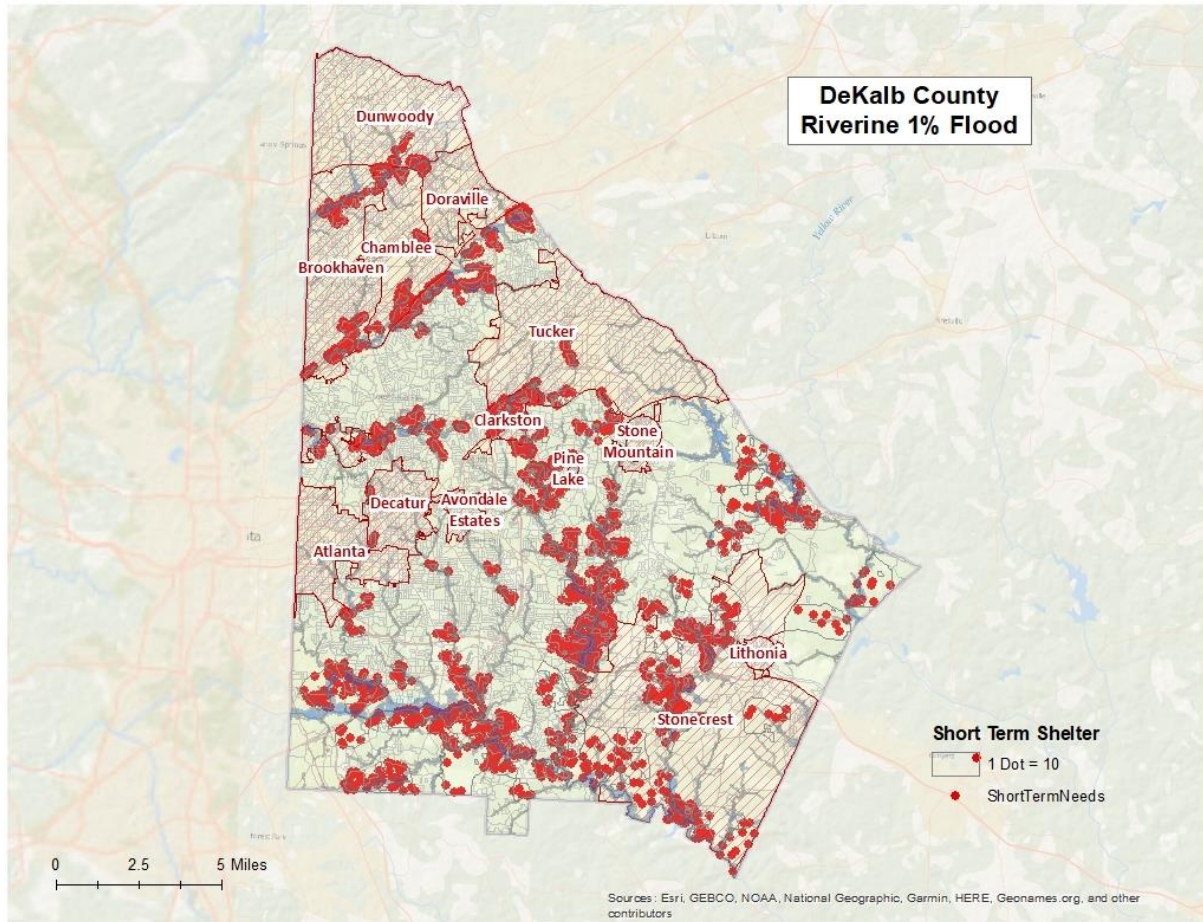


FIGURE 9: RIVERINE 1% ESTIMATED FLOOD SHELTER REQUIREMENTS



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 172,505 tons of debris might be generated: 1) Finishes- 58,632 tons; 2) Structural – 58,251 tons; and 3) Foundations- 55,622 tons. The results are mapped in Figure 10.

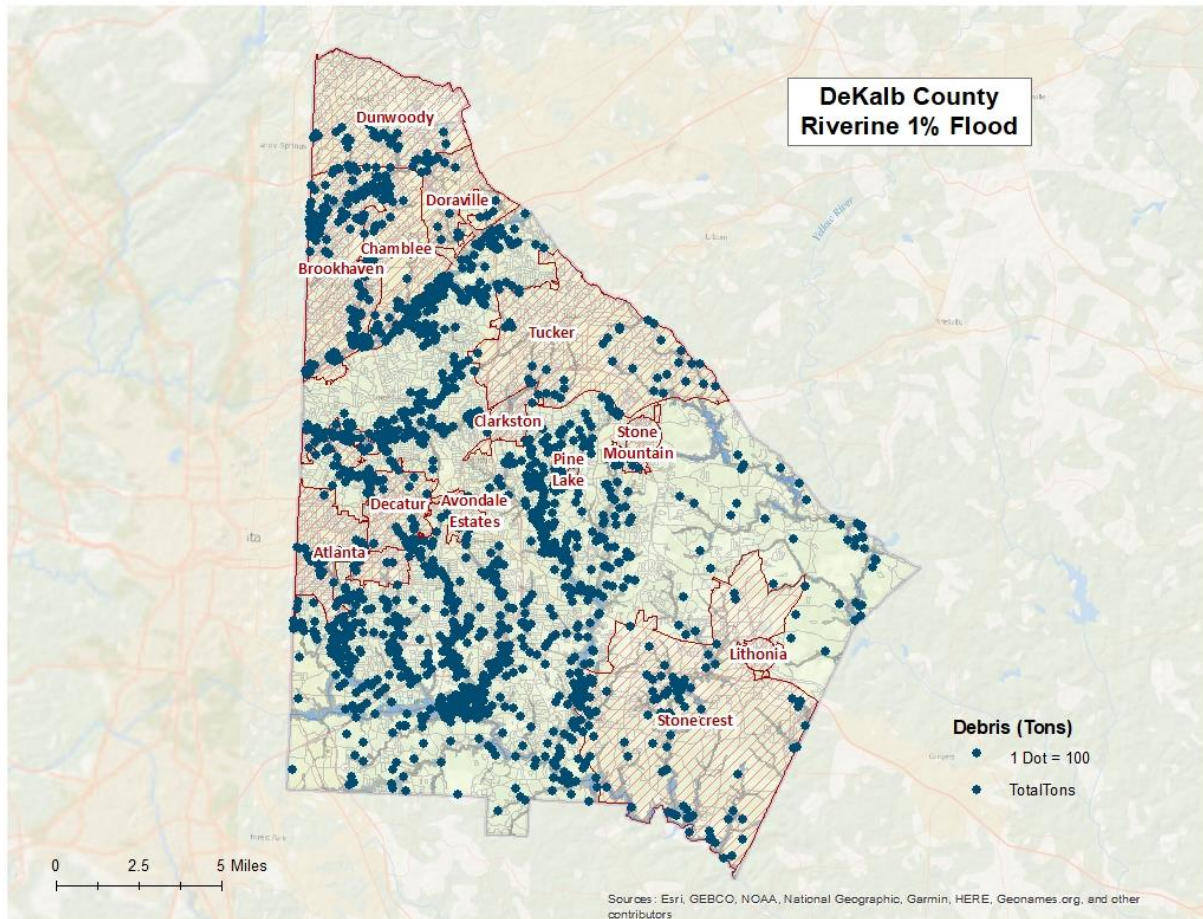


Figure 10: Riverine 1% Flood Debris Weight (Tons)



Tornado Risk Assessment

Hazard Definition

Tornadoes pose a great risk to the state of Georgia and its citizens. Tornadoes can occur at any time during the day or night. They can also happen during any month of the year. The unpredictability of tornadoes makes them one of Georgia's most dangerous hazards. Their extreme winds are violently destructive when they touch down in the region's developed and populated areas. Current estimates place the maximum velocity at about 300 miles per hour, but higher and lower values can occur. A wind velocity of 200 miles per hour will result in a wind pressure of 102.4 pounds per square foot of surface area—a load that exceeds the tolerance limits of most buildings. Considering these factors, it is easy to understand why tornadoes can be so devastating for the communities they hit.

Tornadoes are defined as violently-rotating columns of air extending from thunderstorms and cyclonic events. Funnel clouds are rotating columns of air not in contact with the ground; however, the violently-rotating column of air can reach the ground very quickly and become a tornado. If the funnel cloud picks up and blows debris, it has reached the ground and is a tornado.

Tornadoes are classified according to the Fujita tornado intensity scale. Originally introduced in 1971, the scale was modified in 2006 to better define the damage and estimated wind scale. The Enhanced Fujita Scale ranges from low intensity EF0 with effective wind speeds of 65 to 85 miles per hour, to EF5 tornadoes with effective wind speeds of over 200 miles per hour. The Enhanced Fujita intensity scale is included in Table 11.

TABLE 11: ENHANCED FUJITA TORNADO RATING

Fujita Number	Estimated Wind Speed	Path Width	Path Length	Description of Destruction
EF0 Gale	65-85 mph	6-17 yards	0.3-0.9 miles	Light damage, some damage to chimneys, branches broken, sign boards damaged, shallow-rooted trees blown over.
EF1 Moderate	86-110 mph	18-55 yards	1.0-3.1 miles	Moderate damage, roof surfaces peeled off, mobile homes pushed off foundations, attached garages damaged.
EF2 Significant	111-135 mph	56-175 yards	3.2-9.9 miles	Considerable damage, entire roofs torn from frame houses, mobile homes demolished, boxcars pushed over, large trees snapped or uprooted.
EF3 Severe	136-165 mph	176-566 yards	10-31 miles	Severe damage, walls torn from well-constructed houses, trains overturned, most trees in forests uprooted, heavy cars thrown about.
EF4 Devastating	166-200 mph	0.3-0.9 miles	32-99 miles	Complete damage, well-constructed houses leveled, structures with weak foundations blown off for some distance, large missiles generated.
EF5 Incredible	> 200 mph	1.0-3.1 miles	100-315 miles	Foundations swept clean, automobiles become missiles and thrown for 100 yards or more, steel-reinforced concrete structures badly damaged.

Source: <http://www.srh.noaa.gov>

Hypothetical Tornado Scenario

For this report, an EF3 tornado was modeled to illustrate the potential impacts of tornadoes of this magnitude in the county. The analysis used a hypothetical path based upon an EF3 tornado event running along the predominant direction of historical tornados (southeast to northwest). The tornado path was placed to travel through Atlanta, Decatur and Avondale Estates. The selected widths were modeled after a re-creation of the Fujita-Scale guidelines based on conceptual wind speeds, path widths, and path lengths. There is no guarantee that every tornado will fit exactly into one of these categories. Table 12 depicts tornado path widths and expected damage.

TABLE 12: TORNADO PATH WIDTHS AND DAMAGE CURVES



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Fujita Scale	Path Width (feet)	Maximum Expected Damage
EF-5	2,400	100%
EF-4	1,800	100%
EF-3	1,200	80%
EF-2	600	50%
EF-1	300	10%
EF-0	300	0%

Within any given tornado path there are degrees of damage. The most intense damage occurs within the center of the damage path, with decreasing amounts of damage away from the center. After the hypothetical path is digitized on a map, the process is modeled in GIS by adding buffers (damage zones) around the tornado path. Figure 11 describes the zone analysis.

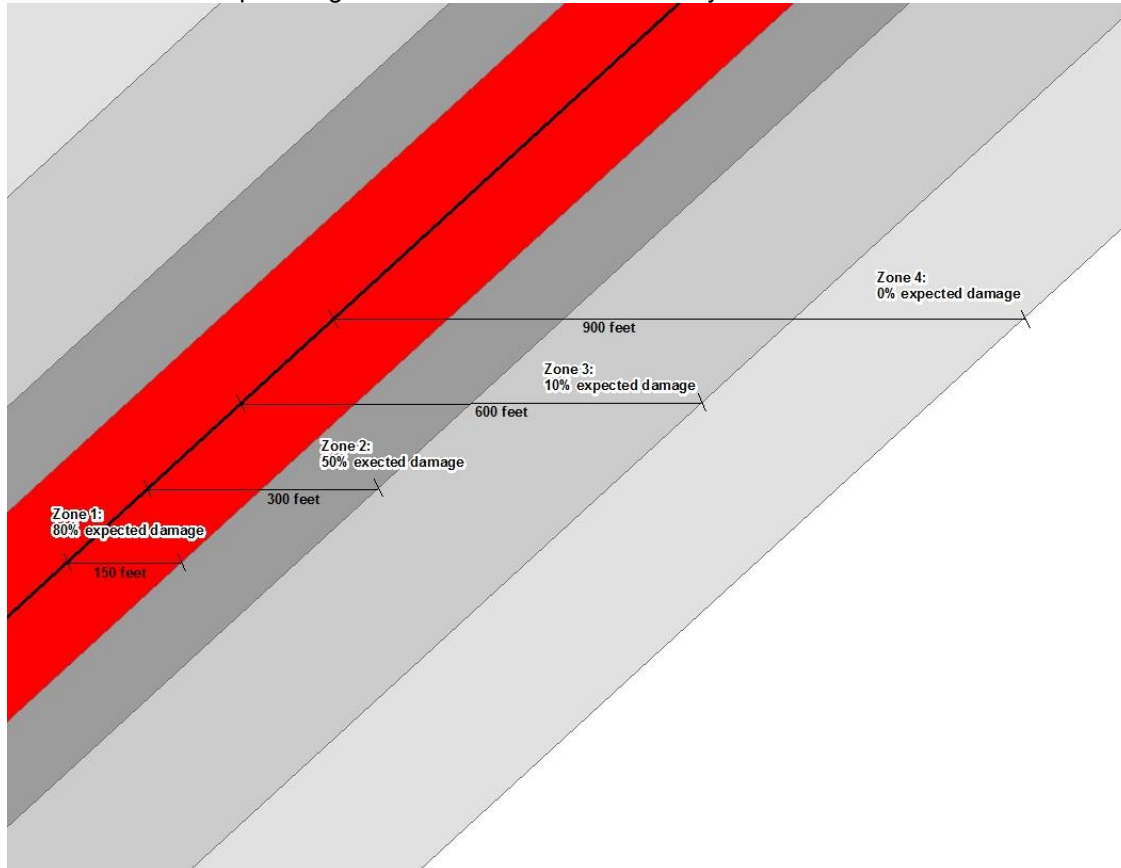


FIGURE 11: EF SCALE TORNADO ZONES

AN EF3 TORNADO HAS FOUR DAMAGE ZONES, DEPICTED IN TABLE 13. MAJOR DAMAGE IS ESTIMATED WITHIN 150 FEET OF THE TORNADO PATH. THE OUTER BUFFER IS 900 FEET FROM THE TORNADO PATH, WITHIN WHICH BUILDINGS WILL NOT EXPERIENCE ANY DAMAGE. THE SELECTED HYPOTHETICAL TORNADO PATH IS DEPICTED IN FIGURE 12 AND THE DAMAGE CURVE BUFFER ZONES ARE SHOWN IN FIGURE 13.

TABLE 13: EF3 TORNADO ZONES AND DAMAGE CURVES

Zone	Buffer (feet)	Damage Curve
1	0-150	80%
2	150-300	50%
3	300-600	10%
4	600-900	0%

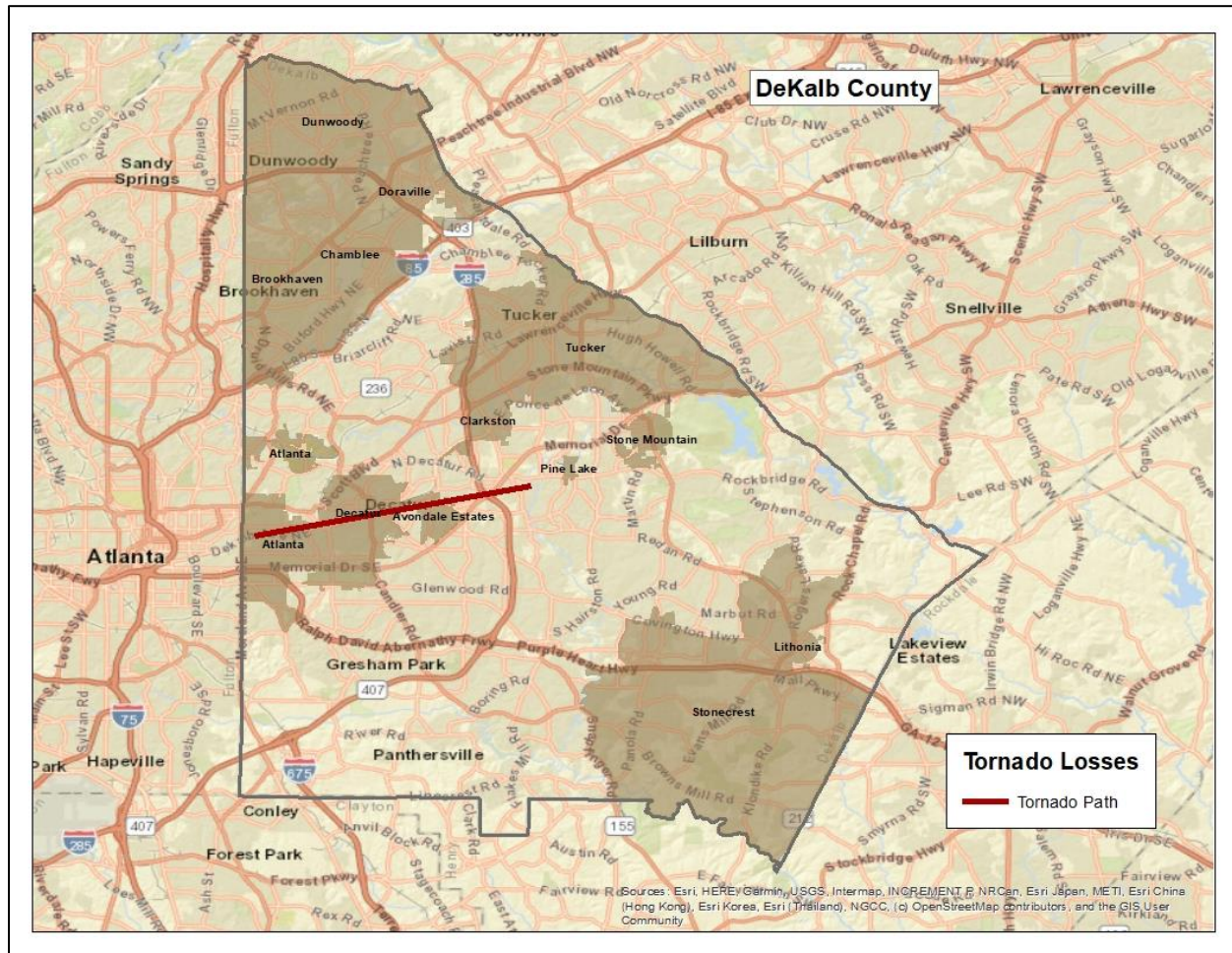


FIGURE 12: HYPOTHETICAL EF3 TORNADO PATH IN DEKALB COUNTY

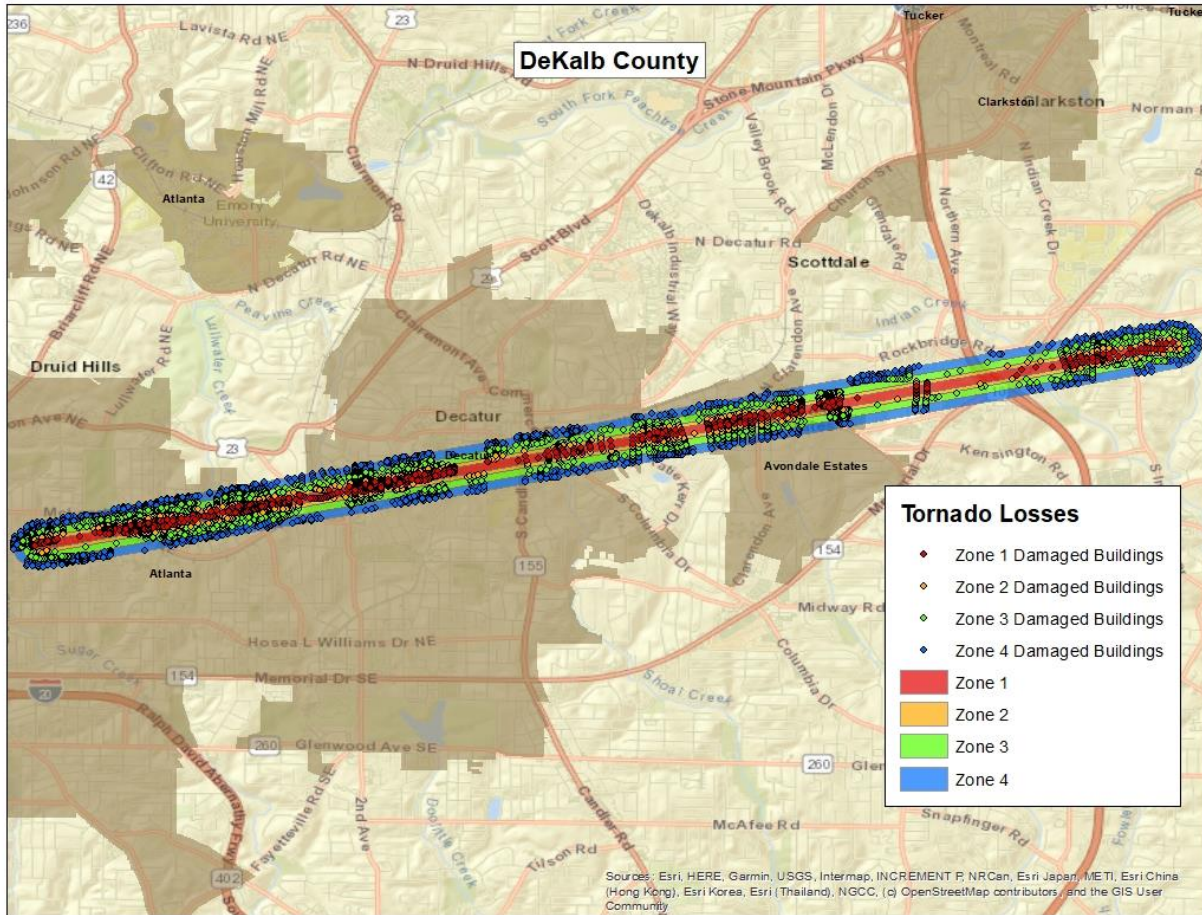


FIGURE 13: MODELED EF3 TORNADO DAMAGE BUFFERS IN DEKALB COUNTY

EF3 Tornado Building Damages

The analysis estimated that approximately 3708 buildings could be damaged, with estimated building losses of \$745 million. The building losses are an estimate of building replacement costs multiplied by the percentages of damage. The overlay was performed against parcels provided by DeKalb County that were joined with Assessor records showing estimated property replacement costs. The Assessor records often do not distinguish parcels by occupancy class if the parcels are not taxable and thus the number of buildings and replacement costs may be underestimated. The results of the analysis are depicted in Table 14.

TABLE 14: ESTIMATED BUILDING LOSSES BY OCCUPANCY TYPE

Occupancy	Buildings Damaged	Building Losses
Commercial	184	\$29,799,298
Education	6	\$4,490,370
Industrial	23	\$2,407,978
Religious	2	\$44,173
Residential	3,493	\$707,780,592
Total	3,708	\$744,522,411



EF3 Tornado Essential Facility Damage

There were six essential facilities located in the tornado path – five schools and one fire station. Table 15 outlines the specific facility and the amount of damage under the scenario.

TABLE 15: ESTIMATED ESSENTIAL FACILITIES DAMAGED

Facility	Amount of Damage
Agnes Scott College	Major Damage
Decatur High School	Minor Damage
Dunaire Elementary School (PK-5)	Minor Damage
Renfroe Middle School	Minor Damage
Talley Street Upper Elementary School	Minor Damage
Fire Station 3	Minor Damage

According to the Georgia Department of Education, Decatur High School's enrollment was approximately 1,732 students, Dunaire Elementary (PK-5) School's enrollment was approximately 409 students, Renfroe Middle School's enrollment was approximately 1,339 students, and Talley Street Upper Elementary School's enrollment was approximately 697 students as of October 2021. Agnes Scott College's enrollment was approximately 1,014 students as of Fall Semester 2020. Depending on the time of day, a tornado strike as depicted in this scenario could result in significant injury and loss of life. In addition, arrangements would have to be made for the continued education of the students in another location.

The location of the damaged Essential Facility is mapped in Figure 14.

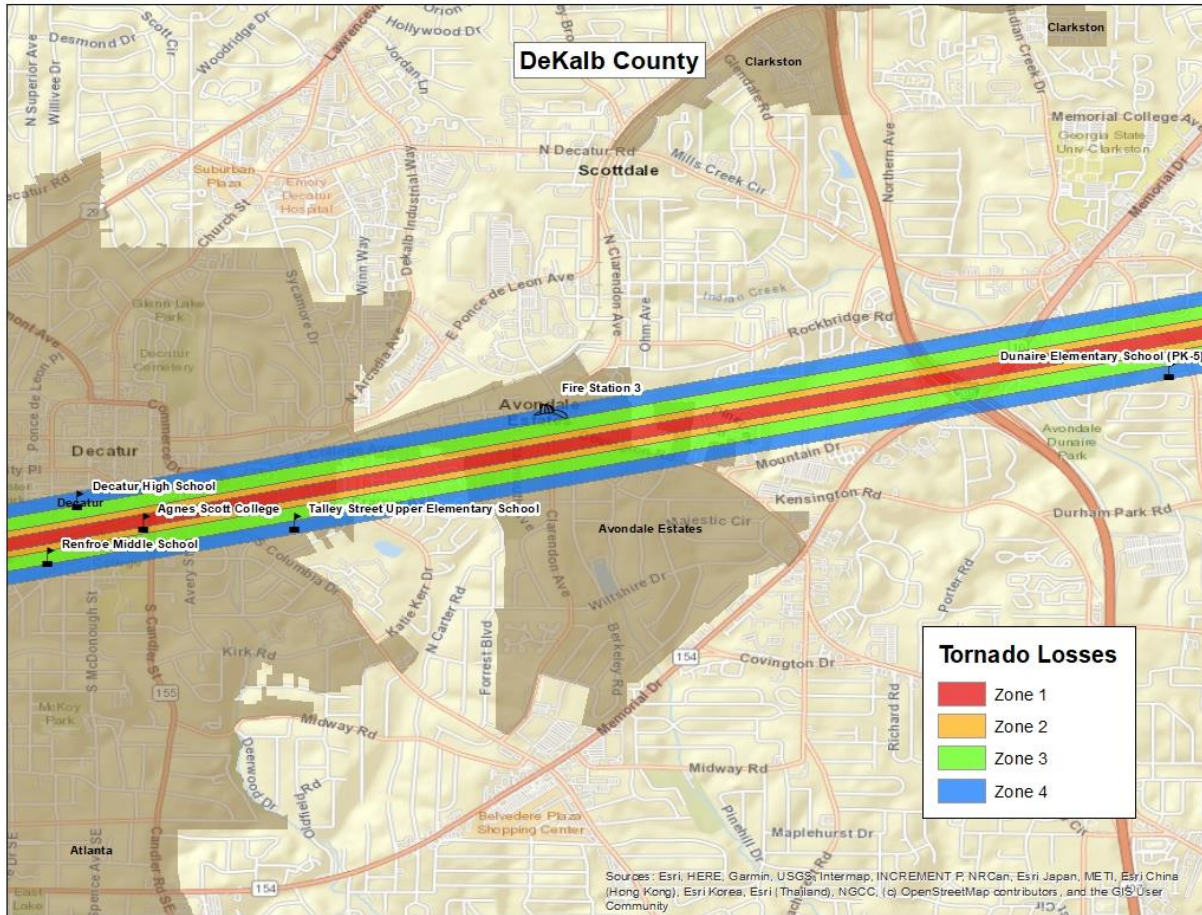


FIGURE 14: MODELED ESSENTIAL FACILITY DAMAGE IN DEKALB COUNTY



Exceptions Report

Hazus Version 2.2 SP1 was used to perform the loss estimates for DeKalb County, Georgia. Changes made to the default Hazus-MH inventory and the modeling parameters used to setup the hazard scenarios are described within this document.

Reported losses reflect the updated data sets. Steps, algorithms and assumptions used during the data update process are documented in the project workflow named PDM_GA_Workflow.doc.

Statewide Inventory Changes

The default Hazus-MH Essential Facility inventory was updated for the entire state prior to running the hazard scenarios for DeKalb County.

Updates to the Critical Facility data used in GMIS were provided by DeKalb County in November 2021. These updates were applied by The Carl Vinson Institute of Government at the University of Georgia. Table 16 summarizes the difference between the original Hazus-MH default data and the updated data for DeKalb County.

TABLE 16: ESSENTIAL FACILITY UPDATES

Site Class	Feature Class	Default Replacement Cost	Default Count	Updated Replacement Cost	Updated Count
EF	Care	\$303,084,000	15	\$111,997,000	7
EF	EOC	\$880,000	1	\$17,950,000	1
EF	Fire	\$14,271,000	20	\$43,440,000	26
EF	Police	\$7,999,000	11	\$27,891,000	10
EF	School	\$542,613,000	189	\$703,055,000	159

County Inventory Changes

The GBS records for DeKalb County were replaced with data derived from parcel and property assessment data obtained from DeKalb County. The county provided property assessment data was current as of November 2021 and the parcel data current as of November 2021.

General Building Stock Updates

The X and Y coordinates for the center point of each parcel and assessor records were provided to The University of Georgia's Carl Vinson Institute of Government from DeKalb County. The X and Y coordinates were converted to parcel points located in the centroids of each parcel. Each parcel point was linked to an assessor record based upon matching parcel numbers. Since these points were created from the tabular assessment records, there is naturally a 100% match between the data and the geography. If there are any records that were not contained in the assessment records, they also did not create a centroid and likewise, do not generate a tax bill. The generated Building Inventory represents the approximate locations (within a parcel) of building exposure. The Building Inventory was aggregated by Census Block and imported into Hazus-MH using the Hazus-MH Comprehensive Data Management System (CDMS). Both the 2010 Census Tract and Census Block tables were updated.

Less than one percent of the CAMA values were either missing (<Null> or '0'), did not match CAMA domains or were unusable ('Unknown', 'Other', 'Pending'). These were replaced with 'best available' values. Missing Year Built values were populated from average values per Census Block. Missing Condition, Construction and Foundation values were populated with the highest-frequency CAMA values per Occupancy Class. Missing Area values were populated with the average CAMA values per Occupancy Class.

The resulting Building Inventory was used to populate the Hazus-MH General Building Stock and User Defined Facility tables. The updated General Building Stock was used to calculate flood and tornado losses. Changes to the building counts and exposure that were modeled in DeKalb County are sorted by General Occupancy in Table 1 at the beginning of this report. If replacements cost or building value were



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not present for a given record in the Assessor data, replacement costs were calculated from the Building Area (sqft) multiplied by the Hazus-MH RS Means (\$/sqft) values for each Occupancy Class. Differences between the default and updated data are due to various factors. The Assessor records often do not distinguish parcels by occupancy class when the parcels are not taxable; therefore, the total number of buildings and the building replacement costs for government, religious/non-profit, and education may be underestimated.

User Defined Facilities

Building Inventory was used to create Hazus-MH User Defined Facility (UDF) inventory for flood modeling. Hazus-MH flood loss estimates are based upon the UDF point data. Buildings within the flood boundary were imported into Hazus-MH as User Defined Facilities and modeled as points.

TABLE 18: USER DEFINED FACILITY EXPOSURE

Class	Hazus-MH Feature	Counts	Exposure
BI	Building Exposure	221,753	\$138,867,869,333
Riverine UDF	Structures Inside 1% Annual Chance Riverine Flood Area	4,762	\$2,679,551,960

Assumptions

- Flood analysis was performed on Building Inventory. Building Inventory within the flood boundary was imported as User Defined Facilities. The point locations are parcel centroid accuracy.
- The analysis is restricted to the county boundary. Events that occur near the county boundary do not contain loss estimates from adjacent counties.
- The following attributes were defaulted or calculated:
First Floor Height was set from Foundation Type
Content Cost was calculated from Building Cost



APPENDIX E: GEMHSA WORKSHEET #3A – INVENTORY OF ASSETS

Note: These worksheets are a requirement for Georgia Emergency Management Agency/Homeland Security (GEMA/HS). This information is used to determine the equivalent process for DeKalb County and its participating jurisdictions' building inventory within the affected hazard area for the spatially (flooding) and non-spatially (all-hazards) that could impact the planning area.

GEMHSA Worksheet #3a
Jurisdiction: DeKalb County
Hazard: All Hazards (except flooding)

Inventory of Assets

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	213,813	213,813	100.000%	124,235,839,000	124,235,839,000	100.000%	764,382	764,382	100%
Commercial	6,670	6,670	100.000%	12,186,755,000	12,186,755,000	100.000%	0	0	0%
Industrial	951	951	100.000%	1,871,459,000	1,871,459,000	100.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non-profit	230	230	100.000%	250,159,000	250,159,000	100.000%	0	0	0%
Government	0	0	0.000%	0	0	0.000%	0	0	0%
Education	89	89	100.000%	323,004,000	323,004,000	100.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	221,753	221,753	100.000%	138,867,216,000	138,867,216,000	100.000%	764,382	764,382	100%

***Note:** This table represents all hazards that could affect DeKalb County. The data was taken from GBS Building Exposure Updates by Occupancy Class from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this plan.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N

**GEMHSA Worksheet #3a****Inventory of Assets****Jurisdiction: City of Avondale Estates****Hazard: All Hazards (except flooding)**

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	1,495	1,495	100.000%	1,118,375,123	1,118,375,123	100.000%	3,567	3,567	100%
Commercial	74	74	100.000%	33,711,240	33,711,240	100.000%	0	0	0%
Industrial	0	0	0.000%	0	0	0.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non-profit	0	0	0.000%	0	0	0.000%	0	0	0%
Government	0	0	0.000%	0	0	0.000%	0	0	0%
Education	0	0	0.000%	0	0	0.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	1,569	1,569	100.000%	1,152,086,363	1,152,086,363	100.000%	3,567	3,567	100%

***Note:** This table represents all hazards that could affect the City of Avondale Estates. The data was taken from DeKalb County Riverine 1% Building Losses – Total Building and Total Building Exposure value from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this 2022 DeKalb County MJHMP update.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N

**GEMHSA Worksheet #3a****Inventory of Assets****Jurisdiction: City of Brookhaven****Hazard: All Hazards (except flooding)**

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	13,616	13,616	100.000%	13,731,481,344	13,731,481,344	100.000%	55,161	55,161	100%
Commercial	327	327	100.000%	1,984,293,540	1,984,293,540	100.000%	0	0	0%
Industrial	19	19	100.000%	32,860,630	32,860,630	100.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non-profit	0	0	0.000%	0	0	0.000%	0	0	0%
Government	0	0	0.000%	0	0	0.000%	0	0	0%
Education	0	0	0.000%	0	0	0.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	13,962	13,962	100.000%	15,748,635,514	15,748,635,514	100.000%	55,161	55,161	100%

***Note:** This table represents all hazards that could affect the City of Brookhaven. The data was taken from DeKalb County Riverine 1% Building Losses – Total Building and Total Building Exposure value from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this 2022 DeKalb County MJHMP update.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N



GEMHSA Worksheet #3a
Jurisdiction: City of Chamblee
Hazard: All Hazards (except flooding)

Inventory of Assets

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	5,726	5,726	100.000%	3,592,454,771	3,592,454,771	100.000%	30,164	30,164	100%
Commercial	685	685	100.000%	1,020,323,120	1,020,323,120	100.000%	0	0	0%
Industrial	149	149	100.000%	168,908,930	168,908,930	100.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non-profit	0	0	0.000%	0	0	0.000%	0	0	0%
Government	0	0	0.000%	0	0	0.000%	0	0	0%
Education	0	0	0.000%	0	0	0.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	6,560	6,560	100.000%	4,781,686,821	4,781,686,821	100.000%	30,164	30,164	100%

***Note:** This table represents all hazards that could affect the City of Chamblee. The data was taken from DeKalb County Riverine 1% Building Losses – Total Building and Total Building Exposure value from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this 2022 DeKalb County MJHMP update.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N

**GEMHSA Worksheet #3a****Inventory of Assets****Jurisdiction: City of Clarkson****Hazard: All Hazards (except flooding)**

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	1,160	1,160	100.000%	364,225,849	364,225,849	100.000%	14,756	14,756	100%
Commercial	0	0	0.000%	0	0	0.000%	0	0	0%
Industrial	0	0	0.000%	0	0	0.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non-profit	0	0	0.000%	0	0	0.000%	0	0	0%
Government	0	0	0.000%	0	0	0.000%	0	0	0%
Education	0	0	0.000%	0	0	0.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	1,160	1,160	100.000%	364,225,849	364,225,849	100.000%	14,756	14,756	100%

***Note:** This table represents all hazards that could affect the City of Clarkson. The data was taken from DeKalb County Riverine 1% Building Losses – Total Building and Total Building Exposure value from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this 2022 DeKalb County MJHMP update.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N

**GEMHSA Worksheet #3a****Inventory of Assets****Jurisdiction: City of Decatur****Hazard: All Hazards (except flooding)**

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	7,362	7,362	100.000%	8,584,234,852	8,584,234,852	100.000%	24,928	24,928	100%
Commercial	288	288	100.000%	550,474,460	550,474,460	100.000%	0	0	0%
Industrial	15	15	100.000%	3,801,220	3,801,220	100.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non-profit	0	0	0.000%	0	0	0.000%	0	0	0%
Government	0	0	0.000%	0	0	0.000%	0	0	0%
Education	0	0	0.000%	0	0	0.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	7,665	7,665	100.000%	9,138,510,532	9,138,510,532	100.000%	24,928	24,928	100%

***Note:** This table represents all hazards that could affect the City of Decatur. The data was taken from DeKalb County Riverine 1% Building Losses – Total Building and Total Building Exposure value from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this 2022 DeKalb County MJHMP update.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N



APPENDIX

GEMHSA Worksheet #3a**Inventory of Assets****Jurisdiction: City of Doraville****Hazard: All Hazards (except flooding)**

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	2,292	2,292	100.000%	1,145,344,710	1,145,344,710	100.000%	10,623	10,623	100%
Commercial	447	447	100.000%	577,378,570	577,378,570	100.000%	0	0	0%
Industrial	97	97	100.000%	172,759,740	172,759,740	100.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non-profit	0	0	0.000%	0	0	0.000%	0	0	0%
Government	0	0	0.000%	0	0	0.000%	0	0	0%
Education	0	0	0.000%	0	0	0.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	2,836	2,836	100.000%	1,895,483,020	1,895,483,020	100.000%	10,623	10,623	100%

***Note:** This table represents all hazards that could affect the City of Doraville. The data was taken from DeKalb County Riverine 1% Building Losses – Total Building and Total Building Exposure value from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this 2022 DeKalb County MJHMP update.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N



GEMHSA Worksheet #3a
Jurisdiction: City of Dunwoody
Hazard: All Hazards (except flooding)

Inventory of Assets

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	12,607	12,607	100.000%	10,478,841,349	10,478,841,349	100.000%	51,683	51,683	100%
Commercial	400	400	100.000%	2,254,785,560	2,254,785,560	100.000%	0	0	0%
Industrial	0	0	0.000%	0	0	0.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non-profit	0	0	0.000%	0	0	0.000%	0	0	0%
Government	0	0	0.000%	0	0	0.000%	0	0	0%
Education	0	0	0.000%	0	0	0.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	13,007	13,007	100.000%	12,733,626,909	12,733,626,909	100.000%	51,683	51,683	100%

***Note:** This table represents all hazards that could affect the City of Dunwoody. The data was taken from DeKalb County Riverine 1% Building Losses – Total Building and Total Building Exposure value from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this 2022 DeKalb County MJHMP update.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N

**GEMHSA Worksheet #3a****Inventory of Assets****Jurisdiction: City of Lithonia****Hazard: All Hazards (except flooding)**

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	24,452	24,452	100.000%	22,811,371,129	22,811,371,129	100.000%	2,662	2,662	100%
Commercial	0	0	0.000%	0	0	0.000%	0	0	0%
Industrial	0	0	0.000%	0	0	0.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non- profit	0	0	0.000%	0	0	0.000%	0	0	0%
Government	2	2	100.000%	5,764,000	5,764,000	100.000%	0	0	0%
Education	0	0	0.000%	0	0	0.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	24,454	24,454	100.000%	22,817,135,129	22,817,135,129	100.000%	2,662	2,662	100%

***Note:** This table represents all hazards that could affect the City of Lithonia. The data was taken from DeKalb County Riverine 1% Building Losses – Total Building and Total Building Exposure value from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this 2022 DeKalb County MJHMP update.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N



GEMHSA Worksheet #3a
Jurisdiction: City of Pine Lake
Hazard: All Hazards (except flooding)

Inventory of Assets

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	343	343	100.000%	153,868,426	153,868,426	100.000%	752	752	100%
Commercial	0	0	0.000%	0	0	0.000%	0	0	0%
Industrial	0	0	0.000%	0	0	0.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non-profit	0	0	0.000%	0	0	0.000%	0	0	0%
Government	0	0	0.000%	0	0	0.000%	0	0	0%
Education	0	0	0.000%	0	0	0.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	343	343	100.000%	153,868,426	153,868,426	100.000%	752	752	100%

***Note:** This table represents all hazards that could affect the City of Pine Lake. The data was taken from DeKalb County Riverine 1% Building Losses – Total Building and Total Building Exposure value from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this 2022 DeKalb County MJHMP update.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N

**GEMHSA Worksheet #3a****Inventory of Assets****Jurisdiction: City of Stone Mountain****Hazard: All Hazards (except flooding)**

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	1,978	1,978	100.000%	571,337,319	571,337,319	100.000%	6,703	6,703	100%
Commercial	0	0	0.000%	0	0	0.000%	0	0	0%
Industrial	0	0	0.000%	0	0	0.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non-profit	0	0	0.000%	0	0	0.000%	0	0	0%
Government	0	0	0.000%	0	0	0.000%	0	0	0%
Education	0	0	0.000%	0	0	0.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	1,978	1,978	100.000%	571,337,319	571,337,319	100.000%	6,703	6,703	100%

***Note:** This table represents all hazards that could affect the City of Stone Mountain. The data was taken from DeKalb County Riverine 1% Building Losses – Total Building and Total Building Exposure value from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this 2022 DeKalb County MJHMP update.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N



GEMHSA Worksheet #3a
Jurisdiction: City of Stonecrest
Hazard: All Hazards (except flooding)

Inventory of Assets

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	16,683	16,683	100.000%	6,635,461,086	6,635,461,086	100.000%	59,194	59,194	100%
Commercial	453	453	100.000%	877,969,346	877,969,346	100.000%	0	0	0%
Industrial	120	120	100.000%	231,795,755	231,795,755	100.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non-profit	0	0	0.000%	0	0	0.000%	0	0	0%
Government	0	0	0.000%	0	0	0.000%	0	0	0%
Education	0	0	0.000%	0	0	0.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	17,256	17,256	100.000%	7,745,226,187	7,745,226,187	100.000%	59,194	59,194	100%

***Note:** This table represents all hazards that could affect the City of Stonecrest. The data was taken from DeKalb County Riverine 1% Building Losses – Total Building and Total Building Exposure value from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this 2022 DeKalb County MJHMP update.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N

**GEMHSA Worksheet #3a****Inventory of Assets****Jurisdiction: City of Tucker****Hazard: All Hazards (except flooding)**

Task A. Determine the proportion of buildings, the value of buildings, and the population in your community or state that are in hazard areas.

Type of Structure (Occupancy Class)	Number of Structures			Value of Structures			Number of People		
	# in Community of State	# in Hazard Area	% in Hazard Area	\$ in Community or State	\$ in Hazard Area	% in Hazard Area	# in Community or State	# in Hazard Area	% in Hazard Area
Residential	11,302	11,302	100.000%	6,939,302,119	6,939,302,119	100.000%	37,005	37,005	100%
Commercial	756	756	100.000%	1,363,291,350	1,363,291,350	100.000%	0	0	0%
Industrial	216	216	100.000%	523,171,040	523,171,040	100.000%	0	0	0%
Agricultural	0	0	0.000%	0	0	0.000%	0	0	0%
Religious/ Non-profit	0	0	0.000%	0	0	0.000%	0	0	0%
Government	0	0	0.000%	0	0	0.000%	0	0	0%
Education	0	0	0.000%	0	0	0.000%	0	0	0%
Utilities	0	0	0.000%	0	0	0.000%	0	0	0%
Total	12,274	12,274	100.000%	8,825,764,509	8,825,764,509	100.000%	37,005	37,005	100%

***Note:** This table represents all hazards that could affect the City of Tucker. The data was taken from DeKalb County Riverine 1% Building Losses – Total Building and Total Building Exposure value from the Hazard Risk Analyses Supplement to the DeKalb County Joint Hazard Mitigation Plan (HAZUS®) and Community Demographics within this 2022 DeKalb County MJHMP update.

Task B. Determine whether (and where) you want to collect additional inventory data.

	Y	N
1. Do you know where the greatest damages may occur in your area?	Y	N
2. Do you know whether your critical facilities will be operational after a hazard event?		N
3. Is there enough data to determine which assets are subject to the greatest potential damages?	Y	
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards?	Y	
5. Is there enough data to determine whether certain areas of historic, environmental, political, or cultural significance are vulnerable to potential hazards?	Y	
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence?	Y	
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives?		N

APPENDIX F: PLAN ADOPTION RESOLUTIONS**APPENDIX G: STATE OF GEORGIA APPROVAL LETTER****APPENDIX H: FEMA APPROVAL LETTER**



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GEORGIA EMERGENCY MANAGEMENT AND HOMELAND SECURITY AGENCY

BRIAN P. KEMP
GOVERNOR



JAMES C. STALLINGS
DIRECTOR

February 9, 2023

Mr. Michael Thurmond
Chief Executive Officer
DeKalb County
1300 Commerce Drive
Decatur, Georgia 30030

Dear Mr. Thurmond,

I am pleased to inform you that the DeKalb County Hazard Mitigation Plan has been federally approved for a period of five (5) years, to February 5, 2028.. With this approval, DeKalb County is an eligible applicant for the Hazard Mitigation Assistance (HMA) grant programs made available through the Georgia Emergency Management and Homeland Security Agency (GEMA/HS).

We commend DeKalb County for the development of a solid and workable mitigation plan that will guide hazard mitigation activities over the coming years. The DeKalb County Hazard Mitigation Plan established a firm foundation to pursue many valuable and needed mitigation projects that have been identified by DeKalb County. Implementation of these projects will ultimately make your community a safer, more sustainable place to live, even through times of disaster.

I strongly encourage the DeKalb County Hazard Mitigation planning team to perform an annual review and assessment of the effectiveness of the mitigation plan and provide a report on any updates or changes made to the plan. This report should be coordinated through your DeKalb County Emergency Management Agency (EMA) Director who will take care of the updates to be submitted to GEMA/HS.

If you would like more information on the HMA grant application process, please contact Monique McBride, Risk Reduction Specialist, at 470-225-3817.

Sincerely,

R. Alan Sloan
Hazard Mitigation Deputy Manager

lh/as

Enclosure

cc: Joseph Cox, Director

DeKalb County Emergency Management Agency
Sheri Russo, Area Coordinator

Georgia Emergency Management and Homeland Security Agency

U.S. Department of Homeland Security
Region 4
3005 Chamblee Tucker Road
Atlanta, GA 30341



FEMA

February 6, 2023

Mr. Steven Clark
Hazard Mitigation Manager
Georgia Emergency Management and Homeland Security Agency
P.O. Box 18055
Atlanta, GA 30316-0055

Reference: DeKalb County Hazard Mitigation Plan

Dear Mr. Clark:

We are pleased to inform you the DeKalb County Hazard Mitigation Plan update complies with the Federal hazard mitigation planning requirements resulting from the Disaster Mitigation Act of 2000, as contained in 44 CFR §201.6. Effective February 6, 2023, the plan is approved for a period of five (5) years to February 5, 2028.

Enclosed is the status of all participating jurisdictions. Approved jurisdictions are eligible applicants through the State for the following mitigation grant programs administered by the Federal Emergency Management Agency (FEMA):

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

Please note that all funding requests will be evaluated individually according to the program's specific eligibility requirements.

The State and all plan participants should be commended for their close coordination and communications with our office in the review and subsequent approval of the plan. If you or any plan participant need assistance, please do not hesitate to contact Lillian Huffman, of my staff, at (202) 765-8968.

Sincerely,

A handwritten signature in blue ink, reading "Kristen M. Martinenza".

Kristen M. Martinenza, P.E., CFM
Branch Chief, Risk Analysis Branch
FEMA Region 4

Enclosure

Enclosure: Plan Participant Status List

Attached is the list of participating jurisdictions in the referenced hazard mitigation plan.

Community Name		Jurisdiction Status	Date Approved by FEMA
1)	Avondale Estates city	APA	
2)	Brookhaven city	APA	
3)	Chamblee city	APA	
4)	Clarkston city	APA	
5)	Decatur city	Approved	2/6/23
6)	DeKalb County	Approved	2/6/23
7)	Doraville city	APA	
8)	Dunwoody city	APA	
9)	Lithonia city	APA	
10)	Pine Lake city	APA	
11)	Stone Mountain city	APA	