WALKER COUNTY
HAZARD MITIGATION PLAN 2011

Including the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville

Chapter 1
Introduction

1.1 Purpose

The Disaster Mitigation Act of 2000 has helped to bring attention to the need for successful hazard mitigation planning throughout the United States. Section 322 of the Act emphasizes the importance of comprehensive multi-hazard planning at the local level, both natural and technological, and the necessity of effective coordination between State and local entities to promote an integrated, comprehensive approach to mitigation planning. The Hazard Mitigation Planning and Hazard Mitigation Grant Program (HMGP) interim final rule published on February 26, 2002, identifies these new local mitigation planning requirements. According to this rule, state and local governments are required to develop, submit, and obtain FEMA approval of a hazard mitigation plan (HMP). Completion of an HMP that meets the new Federal requirements will increase access to funds for local governments and allow them to remain eligible for Stafford Act assistance.

The HMP becomes part of the foundation for emergency management planning, exercises, training, preparedness and mitigation within the County. Such a plan sets the stage for long-term disaster resistance through identification of actions that will, over time, reduce the exposure of people and property to identifiable hazards. This plan provides an overview of the hazards that threaten the County, and what safeguards have been implemented, or may need to considered for implementation in the future.

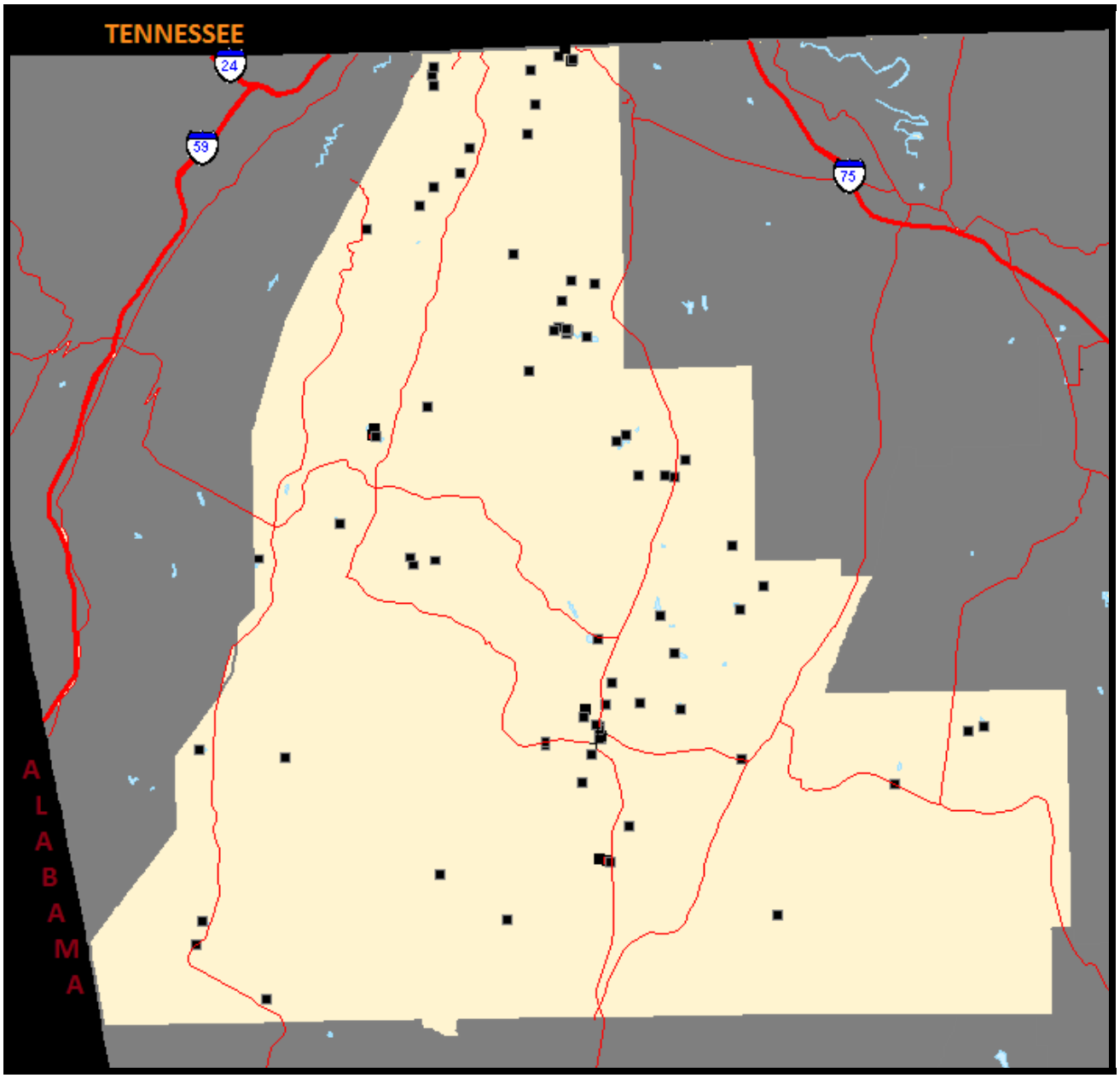
Hazards, for purposes of this plan, have been divided into two basic categories: natural and technological. Natural hazards include all hazards that are not caused either directly or indirectly by man and are frequently related to weather events, such as tornados and winter storms. Technological hazards include hazards that are directly or indirectly caused by man, including hazardous materials spills and weapons of mass destruction (WMD) events, although terrorism is not the particular focus of this Plan. This Plan also makes some recommendations that transcend this classification of natural and technological hazards. In other words, some of the recommendations contained within this Plan apply to many or all hazards. This is commonly referred to as an “all-hazards approach”. Most hazards throughout the United States could happen anytime and anywhere. However, the main focus of this plan is on those hazards that are most likely to affect Walker County and the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville in the future.

1.2 Organization of the Plan

The Hazard Mitigation Plan (HMP) consists of four main components: 1) the narrative plan, 2) the Hazard History Database, 3) the Hazard Frequency Table, and 4) a Critical Facilities Database. The narrative plan itself is the main component of the HMP. This part of the Plan includes an overview of the planning process, a summary of the County's hazard history, hazard frequency projections, a detailed discussion of proposed mitigation measures, and a description of how future reviews and updates to the Plan will be handled. The Hazard History Database is attached as a Microsoft Excel spreadsheet and includes relevant information on past hazards within the County. The Hazard Frequency Table is derived from the hazard history and provides frequency-related statistics for each discussed hazard. This table is also attached as a Microsoft Excel spreadsheet. Finally, the Critical Facilities Database is an online tool developed in part by UGA for GEMA that contains detailed information on critical facilities within the County. Critical facilities for the purposes of this plan are those facilities that are among the most important within a specific jurisdiction with regard to the security and welfare of the persons and property within that jurisdiction. Typical critical facilities include hospitals, fire stations, police stations, critical records storage locations, etc. These facilities will be given special consideration during mitigation planning. For instance, a critical facility should not be located in a floodplain if at all possible. Using the critical facilities information, including GPS coordinates and replacement values, along with different hazard maps from GEMA, this database becomes a valuable planning tool that can be used by Counties to help estimate losses and assess vulnerabilities. This interactive Critical Facilities Database will also help to integrate mitigation planning into their other planning processes.

The following map displays the location of critical facilities within Walker County and the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville. These facilities may be viewed in much greater detail within the Critical Facilities Database. Access to this database is limited and can only be viewed with the permission of the EMA Director due to the sensitive nature of some of the information.

Walker County Critical Facilities Map



A risk assessment, which is composed of elements from each of the four main HMP components, provides the factual basis for all mitigation activities proposed within this Plan.

Inventory of Critical Facilities: Critical facilities are defined as facilities that provide essential products and services to the public. Many of these facilities are government buildings that provide a multitude of services to the public, including most public safety disciplines such as emergency management, fire, police, and EMS. Other government buildings/facilities commonly classified as critical facilities are water distribution systems, wastewater treatment facilities, public works, public schools, administrative services, and post offices. For the purposes of this Plan, critical facilities have been identified by the HMPC and important information gathered for each one. This information is located in the Critical Facilities Database (Appendix A).

Hazard Identification: During the planning process, a hazard history was created based upon available records from the past fifty years. This hazard history includes the natural and technological hazards that are most likely to affect the County. Unfortunately, record keeping was not as accurate or detailed decades ago as it is now. Therefore, the most useful information relating to these hazard events is found within the last ten to fifteen years. This fact is obvious upon review of the Hazard History Database (Appendix B), and the Hazard Frequency Table (Appendix C).

Profile of Hazard Events: Each hazard identified was analyzed to determine likely causes and characteristics, and what portions of the County's population and infrastructure were most affected. However, each of the hazards discussed in this Plan has the potential to negatively impact any given point within the County. A profile of each hazard discussed in this plan is provided in Chapter 2.

Vulnerability Assessment: This step is accomplished with the Critical Facilities Database by comparing GEMA hazard maps with the inventory of affected critical facilities, other buildings, and population exposed to each hazard (see Worksheets 3a).

Estimating Losses: Using the best available data, this step involved estimating structural and other financial losses resulting from a specific hazard. This is also accomplished to some degree using the Critical Facilities Database. Describing vulnerability in terms of dollar amounts provides the County with a rough framework in which to estimate the potential effects of hazards on the built environment.

Based on information gathered, the Plan identifies some specific mitigation goals, objectives, and actions to reduce exposure or impact from hazards that have the most impact on each community. A framework for Plan implementation and maintenance is also presented within this document.

Planning grant funds from the Federal Emergency Management Agency, administered by GEMA, funded the HMP. The HMP was developed by the HMPC, with technical assistance from GEMA and North Georgia Consulting Group.

1.3 Participants in Planning Process

This Hazard Mitigation Plan (HMP) is designed to protect both the unincorporated areas of the County as well as the Cities. Though the County facilitated this planning process, the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville provided critical input into the process. Without this mutual cooperation, the Plan would not exist in its present comprehensive form. Note: Please keep in mind that throughout this Plan, the term "county" typically refers to all of Walker County, including the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville.

The process for updating Walker County's Hazard Mitigation Plan can be found in the Federal Emergency Management Association's (FEMA) Hazard Mitigation Planning's "How To" Guides. According to "Getting Started: Building Support for Mitigation Planning;" the suggested process for preparing a Hazard Mitigation Plan is to 1) Organize resources and identify stakeholders and those holding technical expertise; 2) Access risks to the community; 3) Develop a Mitigation Plan and lastly; 4) Implement and Monitor that plan once it is adopted. (FEMA 386-1)

The Walker County Hazard Mitigation Planning Committee (HMPC) is made up of 19 members. The Chairman of the HMPC is Curtis Creekmur. The Chairman's responsibilities include all decisions relating to the overall direction of the Plan, retrieval of data from various departments, and serving as a central point of contact for all matters relating to the Plan. The consultant, NGCG, is responsible for facilitation of HMPC meetings, integration of updated data into the Plan, grant administration, and other administrative functions. The HMPC was represented by a very diverse cross-section of the County's population. This included local government officials, County and City employees, representatives from state agencies, Red Cross personnel, utilities representatives, and others. This diverse group provided valuable input into the planning process including identifying hazards and developing important mitigation measures to be considered in the future. The entire HMPC met several times over the course of this planning process. These meetings occurred on March 31, 2011, June 6, 2011, September 29, 2011, and November 18, 2011. Other meetings were held throughout this planning process at various times between two or more HMPC members in order to accomplish smaller tasks. Two public meetings relating to this Plan are required by FEMA: one during the drafting stages of the Plan, and one after the final version of the Plan is completed. The first of these two meetings occurred on September 29, 2011 during the drafting stages of the Plan. Once necessary revisions were made to the Plan, a second public meeting was held on November 18, 2011. This final version was then submitted to GEMA and FEMA for review and approval. Upon receipt of FEMA approval, this Plan will be presented to Walker County and the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville for adoption. All final public meetings will be advertised in the local newspaper. Prior to adoption at the final Walker County public meeting, the public will be provided with an additional opportunity to review and comment on the Plan.

The Plan is the result of a community-wide effort put forth over the past several months utilizing FEMA's Hazard Mitigation Plan "How To" Guides to aid in laying out the planning process described above. Stakeholders and persons with technical expertise were identified early in the process. Full participation was provided by Walker County and the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville. Each jurisdiction had representatives on the Hazard Mitigation Planning Committee and provided critical data to the HMPC for consideration.

The public involvement elements of this Plan were reviewed by the HMPC. They were determined to have remained effective and were approved for use in the current Plan update process.

Members of the HMPC are as follows:

Bill Glascock (City of Lookout Mountain)
Catherine Edgemon (City of LaFayette)
Curtis Creekmur (Walker County Operations)
David Ashburn (Walker County)
Jim Killcreas
Jim Powell (City of Chickamauga)
Johnny Baker (City of Rossville)
Kelia Kimbell (Walker County Planning Dept)
Kevin Jones (City of LaFayette)
Leslie Edwards (City of Rossville)
Mark Askew (Walker County)
Michael Haney (City of Chickamauga)
Paul Linder (Walker County Fire Dept)
Phil Jeffers
Randy Camp (Walker County Fire Dept)
Ray Crowder (City of Chickamauga)
Rod Robertson (City of LaFayette)
Tommy Freeman (City of LaFayette)
Vanessa Gossett (City of LaFayette)

1.4 HRV summary/Mitigation goals

Walker County has experienced a number of hazard events throughout its history, most resulting in fairly localized damage. Flooding, tornados, winter storms, wildfire, severe thunderstorms, earthquakes, dam failure and hazardous materials to varying degrees represent known threats to Walker County. The Walker County HMPC used information gathered throughout this planning process to identify mitigation goals and objectives as well as some recommended mitigation actions. Each potential mitigation measure identifies an organization or agency responsible for initiating the necessary action, as well as potential resources, which may include grant programs and human resources. An estimated timeline is also provided for each mitigation action.

1.5 Multi-Jurisdictional Special Considerations

The Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville were active participants and equal partners in the planning process as well as the previous planning process. As an active part of the HMPC, the cities contributed significantly to the identification of mitigation goals and objectives and potential mitigation measures contained within the HMP.

Participation in Mitigation Plan

Jurisdiction	***2011 Plan***	***2006 Plan***
Walker County	✓	✓
City of Chickamauga	✓	✓
City of LaFayette	✓	✓
City of Lookout Mountain	✓	✓
City of Rossville	✓	✓

1.6 Adoption, Implementation, Monitoring, Evaluation

Upon completion of the Plan, it will be forwarded to GEMA for initial review. GEMA will then forward the Plan to FEMA for final review and approval. Once final FEMA approval has been received, Walker County and the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville will be responsible for initiating the appropriate courses of action related to this Plan. Actions taken may be in coordination with one another or may be pursued separately. The "Plan Update and Maintenance" section of this document details the formal process that will ensure that the Walker County HMP remains an active and relevant document. The HMP maintenance process includes monitoring and evaluating the Plan annually, and producing a complete Plan revision every five years. Additionally, procedures will ensure public participation throughout the plan maintenance process. This Plan will be considered for integration into various existing plans and programs, including the Walker County Comprehensive Plan at its next scheduled update. Mitigation actions within the HMP may be used by the County and Cities as one of many tools to better protect the people and property of Walker County and the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville. Walker County and the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville are each individually responsible for the processes necessary to formally adopt this Plan.

Adoption Status

Jurisdiction	***Date of Adoption***
Walker County	**Upon GEMA & FEMA Approval**
City of Chickamauga	**Upon GEMA & FEMA Approval**
City of LaFayette	**Upon GEMA & FEMA Approval**
City of Lookout Mountain	**Upon GEMA & FEMA Approval**
City of Rossville	**Upon GEMA & FEMA Approval**

1.7 Review and Incorporation

The HMPC recognized the need to integrate other plans, codes, regulations, procedures and programs into this Hazard Mitigation Plan (HMP). Walker County did not have the opportunity to incorporate the original HMP's strategy into other planning mechanisms, but will now ensure that during the planning process for new and updated local planning documents such as a comprehensive plan or Local Emergency Operations Plan, the EMA Director will provide a copy of the HMP to the appropriate parties, so incorporation will be more likely to occur in future updates. It will be recommended that all goals and strategies of new and updated local planning documents be consistent with, and support the goals of, the HMP and will not contribute to increased hazards in the affected jurisdiction(s).

Record of Review

Existing planning mechanisms	Reviewed? (Yes/No)	Method of use in Hazard Mitigation Plan
Comprehensive Plan (multi-jurisdictional)	Yes	Development trends
Local Emergency Operations Plan	Yes	Identifying hazards; Assessing vulnerabilities
Storm Water Management / Flood Damage Protection Ordinance	Yes	Mitigation strategies
Building and Zoning Codes and Ordinances	Yes	Development trends; Future growth
Mutual Aid Agreements	Yes	Assessing vulnerabilities
State Hazard Mitigation Plan	Yes	Risk assessment
Land Use Maps	Yes	Assessing vulnerabilities; Development trends; Future growth
Critical Facilities Maps	Yes	Locations
Community Wildfire Protection Plan	Yes	Mitigation strategies

As set forth in the plan maintenance section of this plan (Section 6.4), the Hazard Mitigation Planning Committee will meet during the plan approval anniversary date of every year to complete a review of the Hazard Mitigation Plan. It is during this review process that the mitigation strategy and other information contained within the Hazard Mitigation Plan are considered for incorporation into other planning mechanisms as appropriate. Opportunities to integrate the requirements of this HMP into other local planning mechanisms will continue to be identified through future meetings of the HMPC on an annual basis. The primary means for integrating mitigation strategies into other local planning mechanisms will be through the revision, update and implementation of each jurisdiction's individual action plans that require specific planning and administrative tasks (e.g., plan amendments and ordinance revisions).

During the planning process for new and updated local planning documents such as a comprehensive plan or Local Emergency Operations Plan, the EMA Director will provide a copy of the HMP to the appropriate parties. It will be recommended that all goals and strategies of new and updated local planning documents be consistent with, and support the goals of, the HMP and will not contribute to increased hazards in the affected jurisdiction(s).

Although it is recognized that there are many benefits to integrating components of this plan into other local planning mechanisms, and that components are actively integrated into other planning mechanisms when appropriate, the development and maintenance of this stand-alone HMP is deemed by the committee to be the most effective method to ensure implementation of local hazard mitigation actions at this time. Therefore, the review and incorporation efforts made in this update and the last, which consisted of a simple review of the documents listed in the chart above by various members of the HMPC, are considered successful by the HMPC and will likely be utilized in future updates.

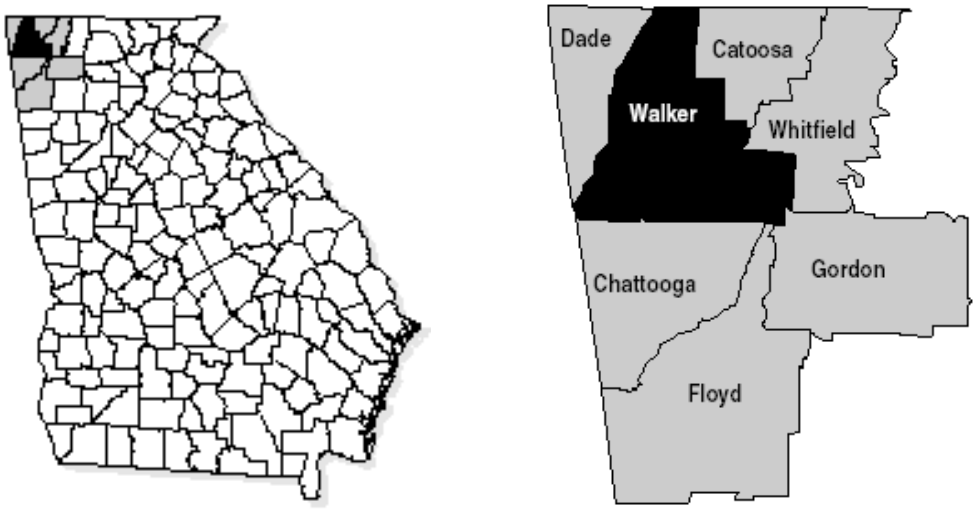
The County's EMA is committed to incorporating hazard mitigation planning into its Local Emergency Operations Plan and other public emergency management activities. As the EMA Director becomes aware of updates to other County or City plans, codes, regulations, procedures and programs, the Director will continue to look for opportunities to include hazard mitigation into these mechanisms.

1.8 Scope of Updates

Many changes have been made to the HMP in this updated version. These changes are summarized in the following table.

Chapter or Section	Chapter or Section Description	Changes this Update
1.2	Organization of the Plan	Descriptions
1.3	Participants in Planning Process	Data
1.5	Multi-Jurisdictional Special Considerations	Data
1.6	Adoption, Implementation, Monitoring, Evaluation	Descriptions, Data
1.7	Review and Incorporation	Descriptions, Data
1.8	Scope of Updates	Descriptions, Data
1.9	Brief County Overview	Descriptions, Data
2	Introduction	Descriptions, Data
2.1	Severe Thunderstorm	Descriptions, Data, Visual Aids
2.2	Winter Storm	Descriptions, Data, Visual Aids
2.3	Flooding	Descriptions, Data, Visual Aids
2.4	Tornado	Descriptions, Data, Visual Aids
2.5	Wildfire	Descriptions, Data, Visual Aids
2.6	Drought	Descriptions, Data, Visual Aids
2.7	Earthquake	Descriptions, Data, Visual Aids
3.1	Hazardous Materials Rel.	Descriptions, Data, Visual Aids
3.2	Dam Failure	Descriptions, Data, Visual Aids
4	Land Use & Dev. Trends	Descriptions, Data, Visual Aids
5	HM Goals Obj. & Actions	Descriptions, Data
6.1	Action Plan Implementation	Descriptions
6.2	Evaluation	Descriptions
6.3	Multi-Jurisdictional Strategy & Considerations	Descriptions
6.4	Plan Update & Maintenance	Descriptions, Data
7.2	References	Data
App. A	Critical Facilities Database	Data, Visual Aids
App. B	Hazard History Database	Data
App. C	Hazard Frequency Table	Data
App. D	Other Planning Documents	Descriptions, Data, Visual Aids

1.9 Brief County Overview



County Formed: December 18, 1833

County Seat: LaFayette

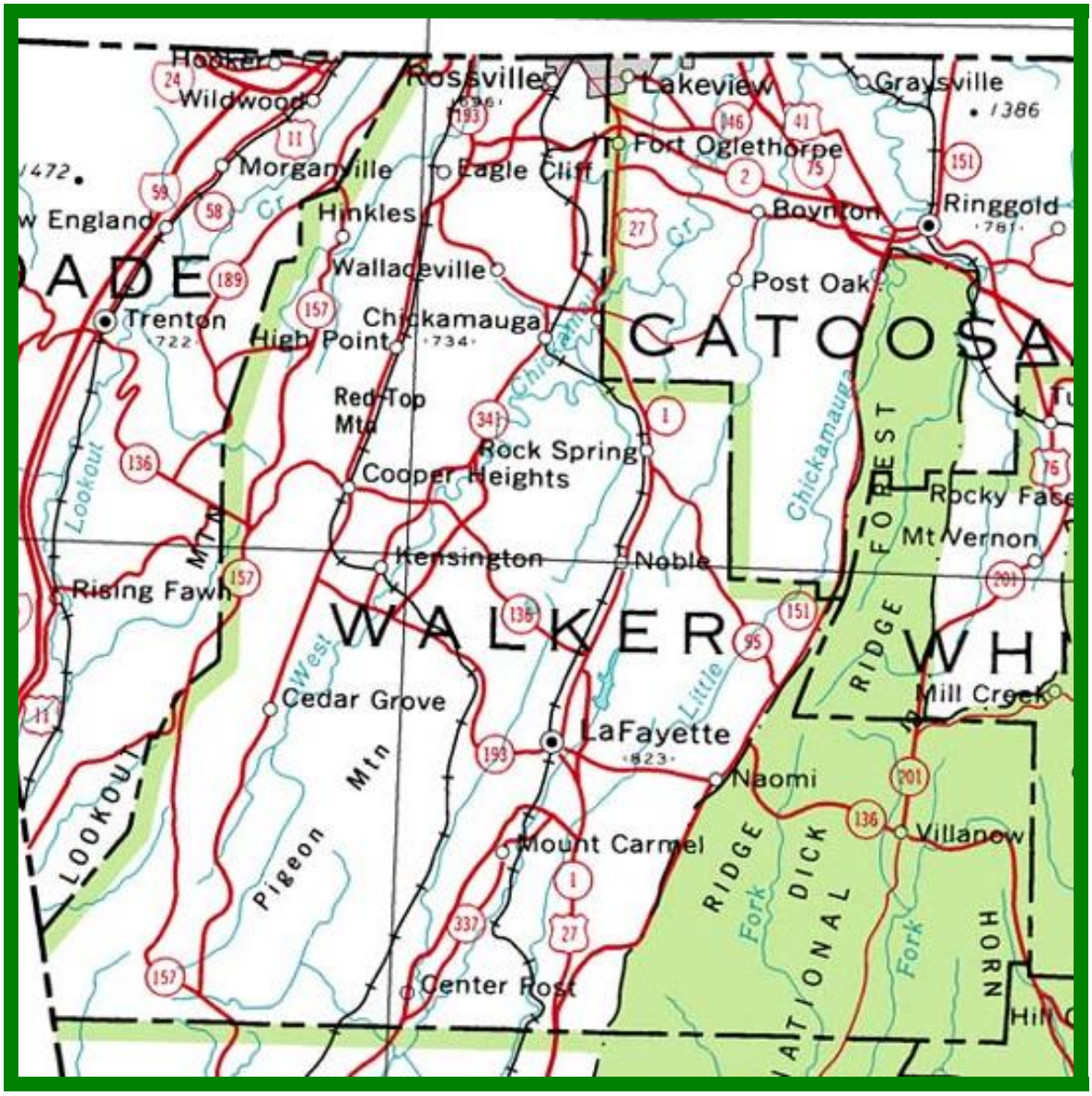
Incorporated Cities: Chickamauga, LaFayette, Lookout Mountain, and Rossville

Table 2-3 Population Trends 2000 and 2010 – County and Cities

Geographic Area	Total Population			
	2000	2010	% Change 2000-2010	Annual Growth Rate 2000-2010
Walker County	61,053	68,756	12.6	1.20%
Chickamauga	2,245	3,101	38.1	3.28%
LaFayette	6,702	7,121	6.3	0.61%
Lookout Mountain	1,617	1,602	-0.9	-0.09%
Rossville	3,511	4,105	16.9	1.58%

Source: U. S. Census Bureau, Census 2000 SF 1; 2010 Census Redistricting Data (Public Law 94-171) Summary File, Table P1

Total Area: 446.3 square miles



History: Walker County, the 99th county created in the state, was formed from part of Cherokee County in 1833. It was named after Major Freeman Walker of Augusta, a lawyer and U.S. Senator. Walker County is home to the John B. Gordon Hall which is the oldest standing brick school building in Georgia, completed in 1836.

Points of Interest: Walker County has two of Georgia's top 25 tourist attractions: Chickamauga-Chattanooga Battlefield National Park and Rock City Gardens.

Notable Citizens: There are several notable people from Walker County including John Ross who was the "Principle Chief" of the Cherokees for forty years. He also served in the War of 1812 under Andrew Jackson. Another interesting person from Walker County was Garnet Carter, the inventor of the first miniature golf course, which was on top of Lookout Mountain. He was also the leading force behind the Rock City attraction.

Education: Northwestern Technical College

Annual Events: Some of the local festivals are the John Ross Festival, Chickamauga Christmas in the Streets, Downtown Days, the Freedom Festival and the LaFayette Downtown Christmas Parade.

Chapter 2
Local Natural Hazard, Risk and Vulnerability (HRV) Summary

The Walker County Hazard Mitigation Planning Committee (HMPC) identified seven natural hazards the County could be vulnerable to based upon scientific evidence, of known past events, and on future probabilities. As a result of this planning process, which included an analysis of the risks associated with probable frequency and impact of each hazard, the HMPC determined that each of these natural hazards pose a threat significant enough to address within this Plan. These include drought, earthquake, flooding, severe thunderstorm (including hail & lightning), tornado, wildfire, and winter storm. For this plan update, the HMPC reviewed the natural hazards listed in the 2011 Georgia Hazard Mitigation Strategy Standard Plan Update to assess the applicability of these hazards to Walker County and the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville (See Table 2.1). Each of these natural hazards is addressed in this chapter of the Plan. An explanation and results of the vulnerability assessment are found in Tables 2-1 and 2-2.

Table 2.1 – Hazards Terminology Differences

Hazards Identified in 2008 Georgia State Plan	Equivalent/Associated Hazards Identified in the 2011 Walker County Plan	Difference
Tornadoes	Tornados	
Wind	Severe Thunderstorms	HMPC views as an associated hazard.
Severe Weather	Severe Thunderstorms	Difference in terminology.
Hailstorm	Severe Thunderstorms	HMPC views as an associated hazard.
Lightning	Severe Thunderstorms	HMPC views as an associated hazard.
Tropical Cyclonic Events	Severe Thunderstorms Flooding	Due to the County's inland location, not directly viewed as a threat. Tropical weather has limited effects within the County and is generally considered in terms of Severe Thunderstorms and Flooding, associated hazards.
Inland Flooding	Flooding	Difference in terminology.
Dam Failure	Dam Failure	
Earthquake	Earthquake	
Severe Winter Storms	Winter Storms	Difference in terminology.
Wildfire	Wildfire	
Drought	Drought	
Heat		HMPC does not view as a threat.
Sinkhole		HMPC does not view as a threat.
Landslide		HMPC does not view as a threat.
Coastal Flooding		Due to county's inland location, HMPC does not view as a threat.

Table 2.2 – Vulnerability Assessment *(see Keys below)*

HAZARD	Walker	Chickamauga	LaFayette	Lookout Mountain	Rossville
Severe Thunderstorms (includes lightning & hail)					
Frequency	H	H	H	H	H
Severity	H	H	H	H	M
Probability	H	H	H	H	H
Tornados					
Frequency	H	H	M	H	H
Severity	H	H	H	EX	H
Probability	H	H	M	H	H
Flooding					
Frequency	M	H	H	H	H
Severity	H	EX	H	H	M
Probability	M	H	H	H	H
Winter Storms					
Frequency	M	H	M	H	H
Severity	H	H	H	H	M
Probability	M	H	M	H	H
Drought					
Frequency	M	H	M	H	H
Severity	H	M	H	H	M
Probability	M	H	M	H	H
Wildfire					
Frequency	M	H	M	H	M
Severity	H	M	H	EX	H
Probability	M	H	M	H	M
Earthquake					
Frequency	L	L	M	M	H
Severity	M	L	M	M	H
Probability	L	L	M	M	H
Dam Failure					
Frequency	L	L	L	VL	L
Severity	M	L	M	L	L
Probability	L	L	L	VL	L
Hazardous Materials Release					
Frequency	H	M	M	H	M
Severity	H	L	H	H	M
Probability	H	M	M	H	M
Landslide					
Frequency	NA	NA	NA	NA	NA
Severity	NA	NA	NA	NA	NA
Probability	NA	NA	NA	NA	NA
Tropical Cyclonic Events (Hurricanes & Tropical Storms)					
Frequency	NA	NA	NA	NA	NA
Severity	NA	NA	NA	NA	NA
Probability	NA	NA	NA	NA	NA
Coastal Flooding					
Frequency	NA	NA	NA	NA	NA
Severity	NA	NA	NA	NA	NA
Probability	NA	NA	NA	NA	NA
Sinkhole					
Frequency	NA	NA	NA	NA	NA
Severity	NA	NA	NA	NA	NA
Probability	NA	NA	NA	NA	NA

Key for Table 2.2 – Vulnerability Assessment Frequency and Probability Definitions

NA = Not applicable; not a hazard to the jurisdiction
VL = Very low risk/occurrence
L = Low risk; little damage potential (for example, minor damage to less than 5% of the jurisdiction)
M = Medium risk; moderate damage potential (for example, causing partial damage to 5-15% of the jurisdiction, infrequent occurrence)
H = High risk; significant risk/major damage potential (for example, destructive, damage to more than 15% of the jurisdiction, regular occurrence)
EX = Extensive risk/probability/impact

Key for Table 2.2 – Vulnerability Assessment Severity Definitions

	Low	Mod	High	Ext.
Tropical Cyclonic Events		*(See Wind & Inland Flooding)*		
Coastal Flooding	NA	NA	NA	NA
Wind – Wind Speed	38 MPH	39–50 MPH	50-73 MPH	73–91 MPH
Severe Weather		*(See Wind & Inland Flooding)*		
Tornado - Magnitude	< F3	F3	F4	F5
Inland Flooding - Water depth	3” or less	3 – 8”	8-12”	12”+
Severe Winter Storms – Ice/ Sleet	½” or less	½ – 4”	4-7”	7”+
Severe Winter Storms - Snow	1” or less	1-6”	6-12”	12”+
Drought – Duration	1 year	1 – 2 years	2-5 years	5+ years
Wildfire - # of Acres	<50	50-110	110-200	200+
Earthquake - Magnitude	1-2	3	4	5+
Landslide	NA	NA	NA	NA
Sinkhole	NA	NA	NA	NA

2.1 Severe Thunderstorms (including Hail & Lightning)

A. Hazard Identification – A Severe Thunderstorm is defined as a thunderstorm producing wind at or above 58 mph and/or hail ¾ of an inch in diameter or larger. This threshold is met by approximately 10% of all thunderstorms. These storms can strike any time of year, but similar to tornados, are most frequent in the spring and summer months. They are nature's way of providing badly needed rainfall, dispersing excessive atmospheric heat buildup and cleansing the air of harmful pollutants. Not only can severe thunderstorms produce injury and damage from violent straight-line winds, hail, and lightning, but these storms can produce tornados very rapidly and without warning. Note: For the purposes of this Plan, severe thunderstorms that result from tropical storms and hurricanes are included in this section.

The most damaging phenomena associated with thunderstorms, excluding tornado activity, are thunderstorm winds. These winds are generally short in duration involving straight-line winds and/or gusts in excess of 50 mph. However, these winds can gust to more than 100 miles an hour, overturning trailers, unroofing homes, and toppling trees and power lines. Such winds tend to affect areas of the County with significant tree stands, as well as areas with exposed property, infrastructure, and above-ground utilities. Resulting damage often includes power outages, transportation and economic disruptions, and significant property damage. Severe thunderstorms can ultimately leave a population with injuries and loss of life. Thunderstorms produce two types of wind. Tornados are characterized by rotational winds. The other more predominant winds from a thunderstorm, downbursts, are small areas of rapidly descending air beneath a thunderstorm that strike the ground producing isolated areas of significant damage. Every thunderstorm produces a downburst. The typical downburst consists of only a 25 mph gusty breeze, accompanied by a temperature drop of as much as 20 degrees within a few minutes. However, severe downburst winds can reach from 58 to 100 mph, or more, significantly increasing the potential for damage to structures. Downbursts develop quickly with little or no advance warning and come from thunderstorms whose radar signatures appear non-severe. There is no sure method of detecting these events, but atmospheric conditions have been identified which favor the development of downbursts. Severe downburst winds have been measured in excess of 120 miles per hour, or the equivalent of an F2 tornado, on the Fujita Scale. Such winds have the potential to produce both a loud “roaring” sound and the widespread damage typical of a tornado. This is why downbursts are often mistaken for tornados.

Hail can also be a destructive aspect of severe thunderstorms. Hail causes more monetary loss than any other type of thunderstorm-spawned severe weather. Annually, the United States suffers about one billion dollars in crop damage from hail. Storms that produce hailstones only the size of a dime can produce dents in the tops of vehicles, damage roofs, break windows and cause significant injury or even death. Unfortunately hail is often much larger than a dime and can fall at speeds in excess of 100 mph. Hailstones are created when strong rising currents of air called updrafts carry water droplets high into the upper reaches of thunderstorms where they freeze. These frozen water droplets fall back toward the earth in downdrafts. In their descent, these frozen droplets bump into and coalesce with unfrozen water droplets and are then carried back up high within the storm where they refreeze into larger frozen drops. This cycle may repeat itself several times until the frozen water droplets become so large and heavy that the updraft can no longer support their weight. Eventually, the frozen water droplets fall back to earth as hailstones.

Finally, one of the most frightening aspects of thunderstorms is lightning. Lightning kills nearly one hundred people every year in the United States and injures hundreds of others. A possible contributing reason for this is that lightning victims frequently are struck before or just after the occurrence of precipitation at their location. Many people apparently feel safe from lightning when they are not experiencing rain. Lightning tends to travel the path of least resistance and often seeks out tall or metal objects. With lightning however, it's all relative. A 'tall' object can be an office tower, a home, or a child standing on a soccer field. Lightning can and does strike just about any object in its path. Some of the most dangerous and intense lightning may occur with severe thunderstorms during the summer months, when outdoor activities are at their peak.

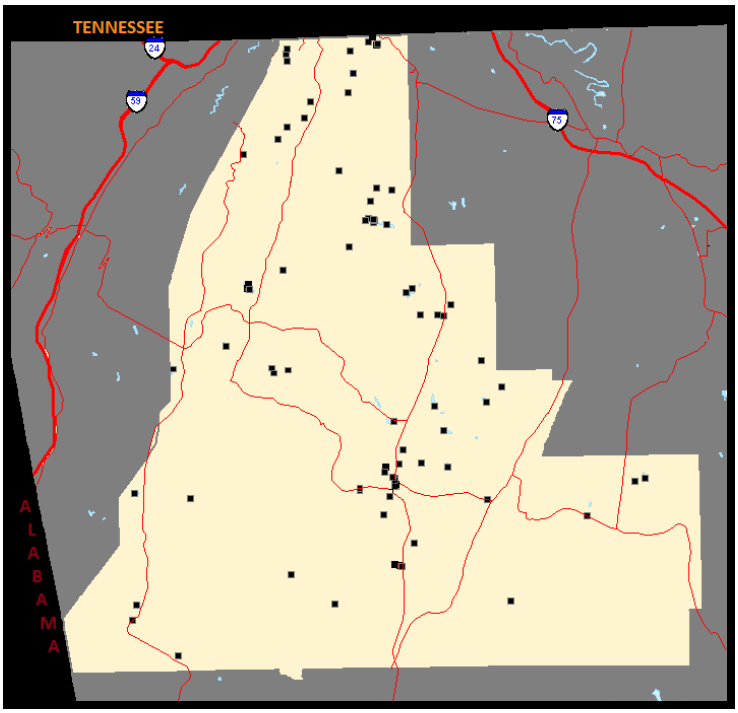
B. Hazard Profile – Severe thunderstorms, hail, and lightning are serious threats to the residents of Walker County. Over the course of a year, the County experiences dozens of thunderstorms, with about one in ten being severe. Severe thunderstorms occur more frequently than any other natural hazard event within Walker County. Most of these storms include lightning and/or hail. There have been dozens of severe thunderstorm events within Walker County over the past fifty years according to available documentation. It is very likely this is a low estimate due to poor record keeping in decades past. It is clear from information collected that more accurate record- keeping related to severe thunderstorms developed over the past two decades, with even more detailed information available for the past ten years.

Most of the available information relating to severe thunderstorms, hail, and lightning occurrences within Walker County fails to describe damage estimates in great detail. However, with each thunderstorm event it is likely there are unreported costs related to infrastructure and utilities repair and public safety costs, at a minimum. Severe thunderstorms have occurred in all parts of the day and night within Walker County. They have also taken place in every single month of the year.

The Walker County HMPC utilized data from the National Climatic Data Center, the National Weather Service, numerous weather-related news articles and various online resources, and the Walker County Emergency Operations Plan in researching severe thunderstorms and their impact on the County. With most of the County's recorded severe thunderstorm events, only basic information was available. It is also likely that some severe thunderstorm events have gone unrecorded. Therefore, any conclusions reached based upon available information on severe thunderstorms within Walker County should be treated as the minimal possible threat.

During the past fifty years, documentation of 156 severe thunderstorm events within Walker County was found. This number includes reported hail and lightning events. Based on the entire fifty-year period, a severe thunderstorm is likely to occur approximately three times per year in Walker County according to available information. More precisely, every year in Walker County there is a 312% chance of a severe thunderstorm event based upon available documentation. When only the past ten-year period is taken into consideration, the likelihood of such an event in Walker County increases dramatically to a 880% chance per year (or about nine per year). The HMPC has determined that focusing on the past ten-year period, rather than the entire fifty-year period, is likely to provide the most accurate information available at this time.

C. Assets Exposed to Hazard – In evaluating assets that are susceptible to severe thunderstorms, hail, and lightning, the committee determined that, since this hazard is not spatially defined, all public and private property is susceptible to severe thunderstorms, including all critical facilities. The map below identifies critical facilities located within the hazard area which, in the case of severe thunderstorms, includes the entire County.



D. Estimate of Potential Losses – For loss estimate information, please refer to the Critical Facilities Database (Appendix A).

E. Multi-Jurisdictional Concerns – Any portion of Walker County can be negatively impacted by severe thunderstorms, hail, and lightning. Therefore, any mitigation steps taken related to these weather events will be pursued on a countywide basis and include the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville.

F. Hazard Summary – Overall, severe thunderstorm, hail, and lightning events pose one of the greatest threats to Walker County in terms of property damage, injuries and loss of life. These weather events represent the most frequently occurring natural hazard within Walker County and have a great potential to negatively impact the County each year. Based on the frequency of this hazard, as well as its ability to negatively impact any part of the County, the HMPC recommends that the mitigation measures identified in this plan for severe thunderstorm, hail, and lightning be aggressively pursued. Specific mitigation actions related to these weather events are identified in Chapter 5.

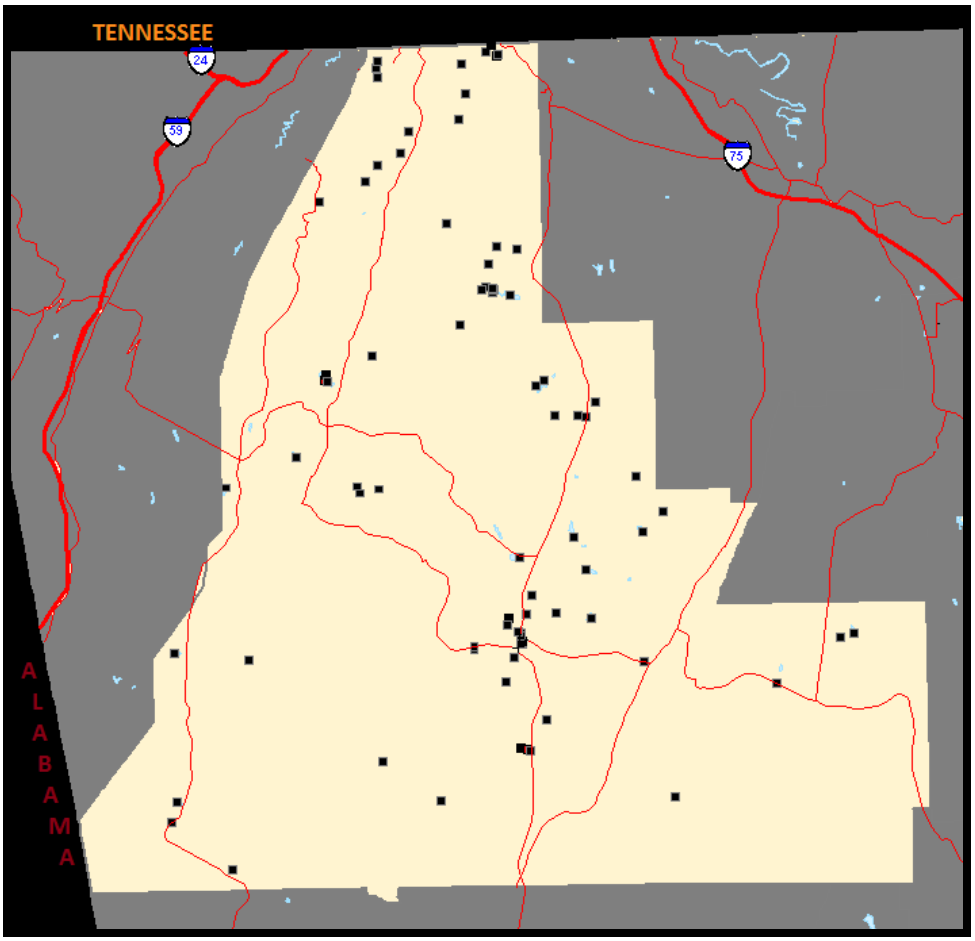
2.2 Winter Storms

A. Hazard Identification – The Walker County HMPC researched historical data from the National Climatic Data Center, The National Weather Service, as well as information from past newspaper articles and various online resources relating to winter storms in Walker County Winter storms bring the threat of freezing rain, ice, sleet, snow and the associated dangers. A heavy accumulation of ice, especially when accompanied by high winds, devastates trees and power lines. Such storms make highway travel or any outdoor activity extremely hazardous due to falling trees, ice, and other debris.

B. Hazard Profile – Although winter storms occur relatively infrequently, they have the potential to wreak havoc on the community when they do strike. Winter storms within Walker County typically cause damage to power lines, trees, buildings, structures, and bridges, to varying degrees. Due to the County's high elevation, many highways have steep grades, resulting in very hazardous travel conditions when they are covered with frozen precipitation. Another hazard exists due to the large tree population. Trees and branches weighed down by snow and ice become very dangerous to person and property.

During the past fifty years, documentation of 39 winter storms was found. Based on the entire fifty-year period, a winter storm is likely to occur within Walker County about once every 15 months according to available information. More precisely, every year in Walker County there is a 78% chance of a winter storm based upon available documentation. However, when only the past ten-year period is taken into consideration, the likelihood of such an event in Walker County increases significantly to a 210% chance per year (or about two storms per year). The HMPC has determined that focusing on the past ten-year period, rather than the entire fifty-year period, is likely to provide the most accurate information available at this time.

C. Assets Exposed to Hazard - In evaluating assets that may potentially be impacted by the effects of winter storms, the HMPC determined that all critical facilities, public and private property, are susceptible. The map below identifies critical facilities located within the hazard area which, in the case of winter storms, includes the entire County.



D. Estimate of Potential Losses - For loss estimate information, please refer to the Critical Facilities Database (Appendix A).

E. Multi-Jurisdictional Concerns – Any portion of Walker County can be negatively impacted by winter storms. Therefore, any mitigation steps taken related to winter storms will be pursued on a countywide basis and include the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville.

G. Hazard Summary – Winter storms, unlike other natural hazards, typically afford communities some advance warning. The National Weather Service issues winter storm warnings and advisories as these storms approach. Unfortunately, even with advance warning, some of the most destructive winter storms have occurred in the Southern United States, where buildings, infrastructure, crops, and livestock are not well-equipped for severe winter conditions. Motorists, not accustomed to driving in snow and icy conditions, pose an additional danger on roads and highways. The Walker County HMPC recognized the potential threats of winter storms and identified specific mitigation actions. These can be found in Chapter 5.

2.3 Flooding

A. Hazard Identification: The vulnerability of a river or stream to flooding depends upon several variables. Among these are topography, ground saturation, rainfall intensity and duration, soil types, drainage, drainage patterns of streams, and vegetative cover. A large amount of rainfall over a short time span can result in flash flood conditions. Nationally, the total number of flash flood deaths has exceeded tornado fatalities during the last several decades. Two factors seem to be responsible for this: public apathy regarding the flash flood threat and increased urbanization. A small amount of rain can also result in floods in locations where the soil is saturated from a previous wet period or if the rain is concentrated in an area of impermeable surfaces such as large parking lots, paved roadways, etc. Topography and ground cover are also contributing factors for floods in that water runoff is greater in areas with steep slopes and little or no vegetation.

B. Hazard Profile: The Walker County HMPC researched flood information on Walker County for the past fifty years. The main sources of information used by the HMPC were the National Climatic Data Center, the Walker County Emergency Operations Plan, newspaper articles, and various online resources. What was found was that flooding has caused moderate to severe damage on numerous occasions.

Flood events on record in Walker County are usually associated with areas in the vicinity of Colbert Hollow Rd, McIntyre Rd, Andrews Ln, Crow Gap Rd south of Tatum, W. Cove Rd to Hog Jowl Rd, Lee Clarkston Rd, Johnson Rd/Five Points Rd area, Crittendon Ave at West 7th, 8th, and 9th Streets, Longwood area off of Lee-Gordon Mill Rd, Oakwood Baptist Church, Coke Oven Rd at Hwy 341, N. Longhollow Rd and Davis Rd at Lytle Rd, Chestnut Hills Trailer Park, McFarland Ave at Jenkins Rd, the 400 to 800 block of Schmitt Rd, Wilson Rd at Crestview Dr, Rock Creek Rd including Shaddow Ave, Kendrick's Switch between Phillip Hollow and the railroad tracks, Boss Rd at Bonds Rd, the 3700 block of Chamberlain Rd, Rocky Ln off Chamberlain Rd, the 2200 to 2300 block of Kay Conley Rd, Kay Conley Rd east of the Dollar General store, Straight Gut Rd south of Kevin Ln at the bridge, Glentana St at West Maple St, the City of Rossville Maintenance Barn and City Recreational Facilities, Villanow Mill Creek Rd between Clement Rd and Bill Scott Rd, Clement Rd at Smith, Green Lake, and Morgan Rds, Lower Mill Creek Rd, East Hwy 136 near Abby Drive, Smith Gap Rd off Hwy 151, Smith Gap Rd at Forestry Rd, Forestry Rd 227 off the 3500 block of Manning Mill Rd, and several locations throughout the City of Lookout Mountain.

Relatively little information on flooding damage estimates, in terms of dollars, was available. However, with each of these events there were certainly significant costs related to road repair, infrastructure repair, and public safety, at a minimum. Most of the flood damage that has occurred historically within the County appears to be "public" flood damage. More specifically, roads and culverts washing out have been the most common flooding problem on record.

During this fifty-year period, documentation of 15 flood events was found. Based on the entire fifty-year period, a significant flood event is likely to occur approximately once every three years in Walker County based upon available information. More precisely, every year in Walker County there is a 30% chance of a significant flood event based upon available documentation. When only the past ten-year period is taken into consideration, the likelihood of such an event in Walker County remains relatively constant at a 130% chance per year (about once every nine months).

Walker County (CID No. 130180), the City of Chickamauga (CID No. 130181), the City of LaFayette (CID No. 130182), and the City of Rossville (CID No. 130183) each participates in the National Flood Insurance Program (NFIP) and follows the Program guidelines to ensure future development is carried out in the best interests of the public. According to NFIP guidelines, each jurisdiction has executed a Flood Damage Prevention Ordinance. The purpose of this ordinance is to minimize the loss of human life and health as well as to minimize public and private property losses due to flood conditions. The ordinance requires that potential flood damage be evaluated at the time of initial construction of structures, facilities and utilities, and that certain uses be restricted or prohibited based on this County evaluation. The ordinance also requires that potential homebuyers be notified that property is located in a flood area. In addition, all construction must adhere to the Georgia State Minimum Standard Codes (Uniform Codes Act). The minimum standards established by these codes provide reasonable protection to persons and property within structures that comply with the regulations for most natural hazards.

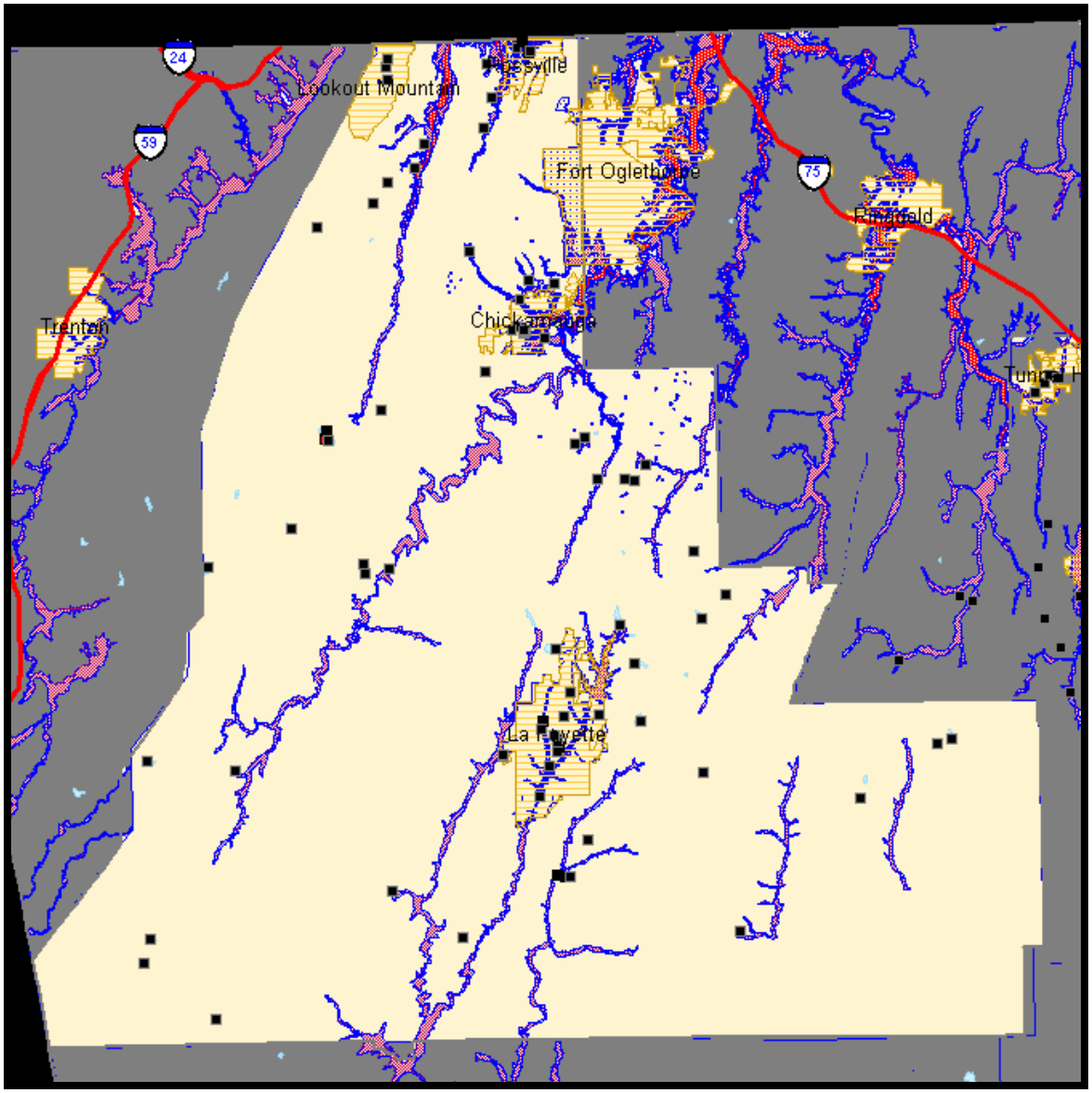
According to the National Flood Insurance Reform Act, a repetitive loss structure is defined as "…a building covered by a contract for flood insurance that has incurred flood-related damages on two occasions during a 10-year period ending on the date of the event for which a second claim is made, in which the cost of repairing the flood damage, on the average, equaled or exceeded 25 percent of the market value of the building at the time of each such flood event." Presently, there are thirteen "repetitive loss structures" on file for Walker County. Specific addresses for repetitive loss structures cannot be included in this Plan, but a current list of these structures may be viewed in GMIS by authorized individuals, as determined by the EMA Director.

C. Assets Exposed to Hazard – In evaluating assets that may potentially be impacted by the effects of flooding, the HMPC determined that, although all critical facilities, public and private property are potentially susceptible to flooding, structures located within the vicinity of Colbert Hollow Rd, McIntyre Rd, Andrews Ln, Crow Gap Rd south of Tatum, W. Cove Rd to Hog Jowl Rd, Lee Clarkston Rd, Johnson Rd/Five Points Rd area,

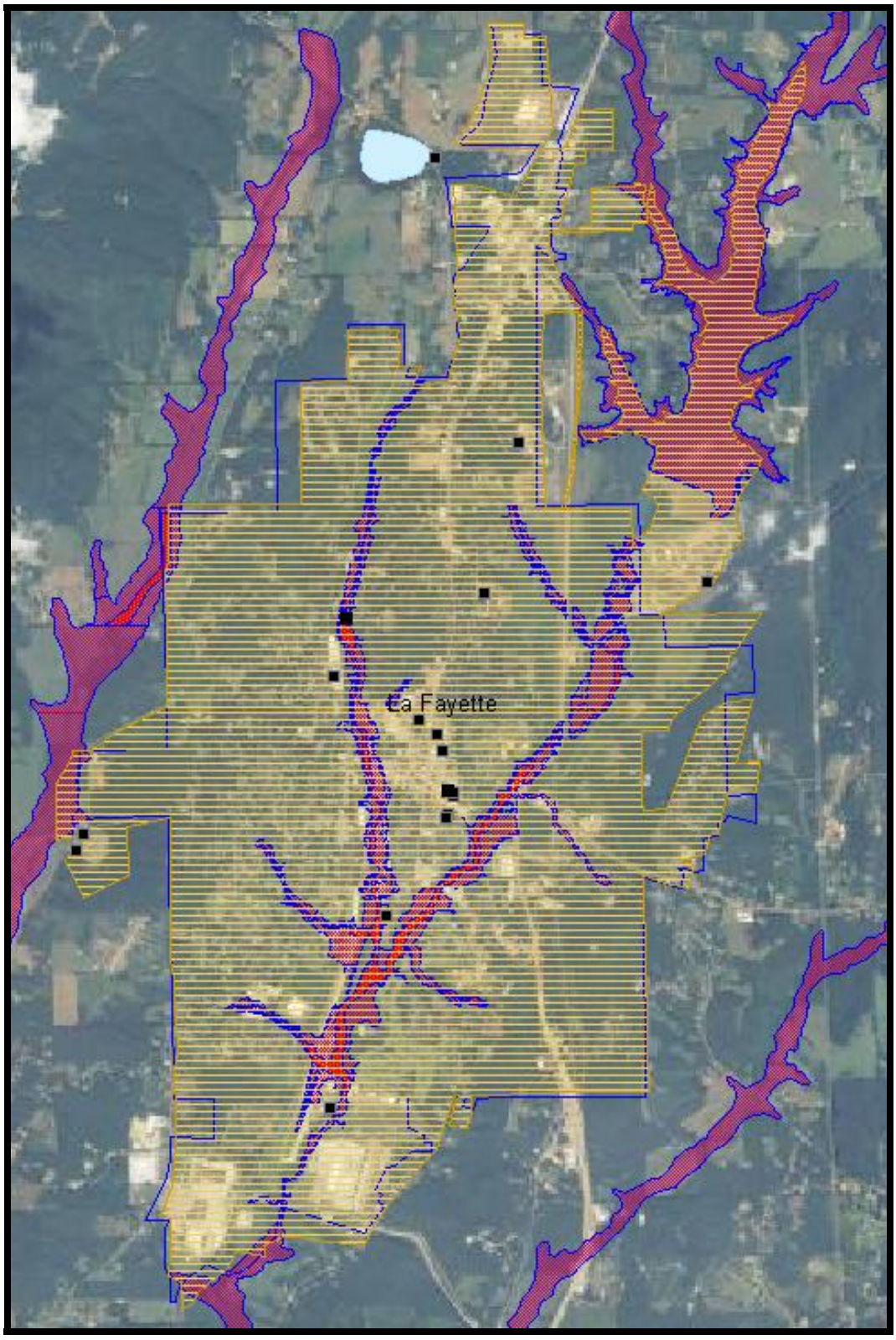
Crittendon Ave at West 7th, 8th, and 9th Streets, Longwood area off of Lee-Gordon Mill Rd, Oakwood Baptist Church, Coke Oven Rd at Hwy 341, N. Longhollow Rd and Davis Rd at Lytle Rd, Chestnut Hills Trailer Park, McFarland Ave at Jenkins Rd, the 400 to 800 block of Schmitt Rd, Wilson Rd at Crestview Dr, Rock Creek Rd including Shaddow Ave, Kendrick's Switch between Phillip Hollow and the railroad tracks, Boss Rd at Bonds Rd, the 3700 block of Chamberlain Rd, Rocky Ln off Chamberlain Rd, the 2200 to 2300 block of Kay Conley Rd, Kay Conley Rd east of the Dollar General store, Straight Gut Rd south of Kevin Ln at the bridge, Glentana St at West Maple St, the City of Rossville Maintenance Barn and City Recreational Facilities, Villanow Mill Creek Rd between Clement Rd and Bill Scott Rd, Clement Rd at Smith, Green Lake, and Morgan Rds, Lower Mill Creek Rd, East Hwy 136 near Abby Drive, Smith Gap Rd off Hwy 151, Smith Gap Rd at Forestry Rd, Forestry Rd 227 off the 3500 block of Manning Mill Rd, and several locations throughout the City of Lookout Mountain are the most susceptible.

The maps below identify the locations of critical facilities in relationship to the known flooding hazard areas. Maps on the pages that follow identify the individual flood-prone areas that are listed in Section C.

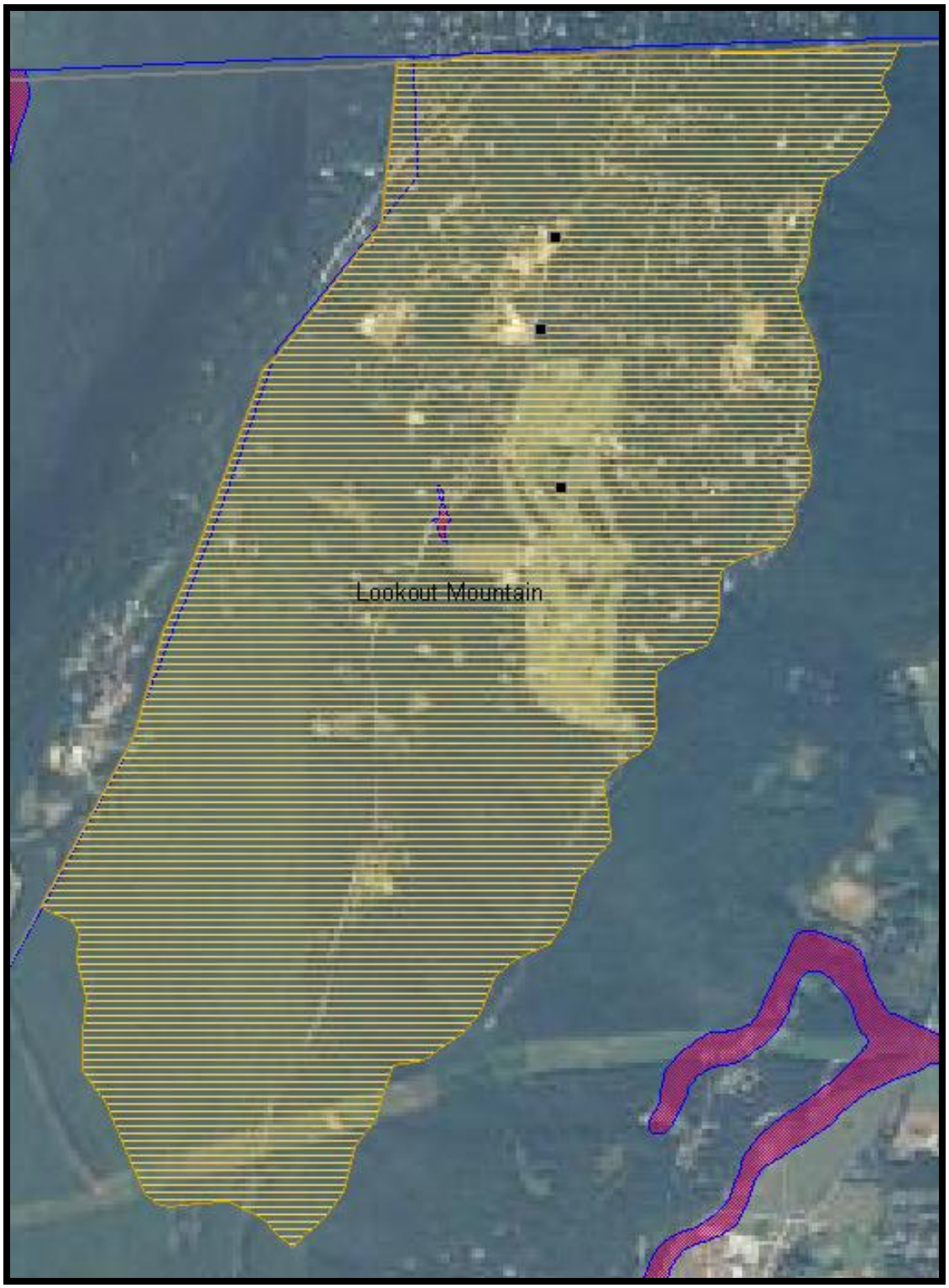
Walker County



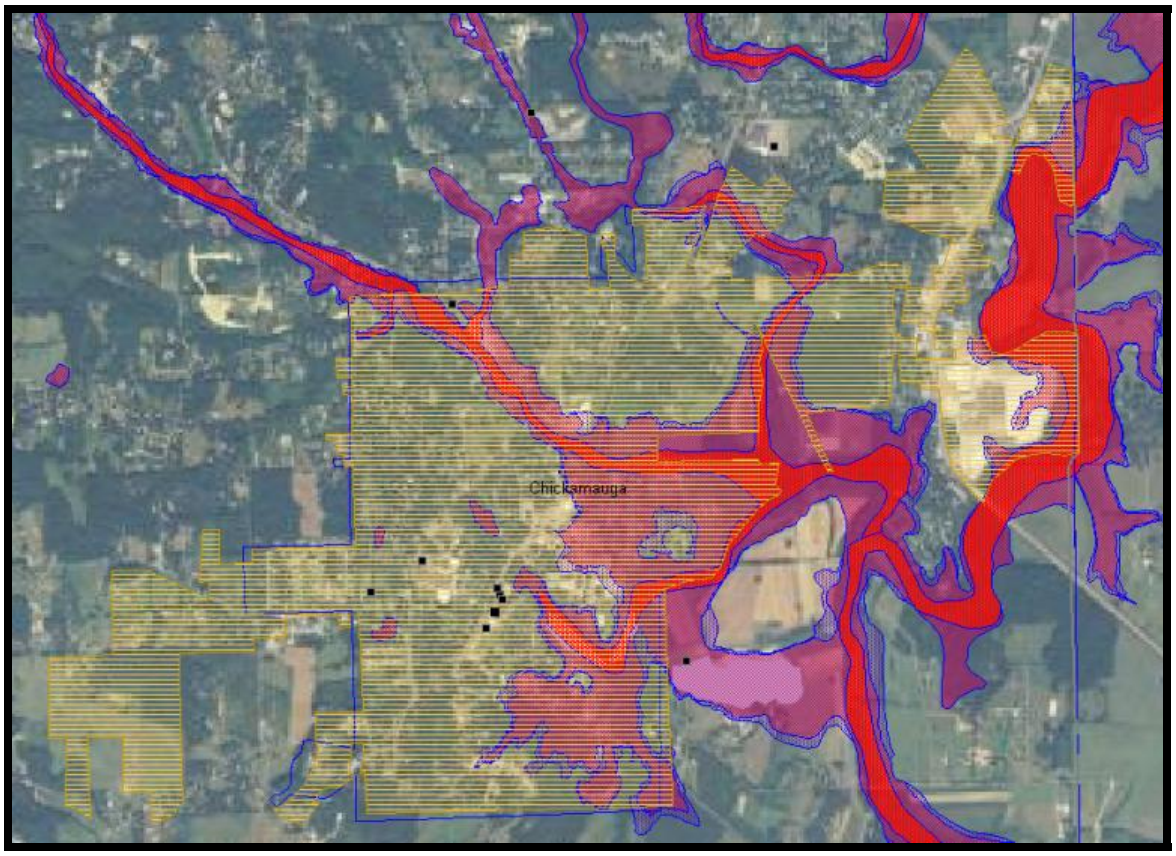
City of LaFayette



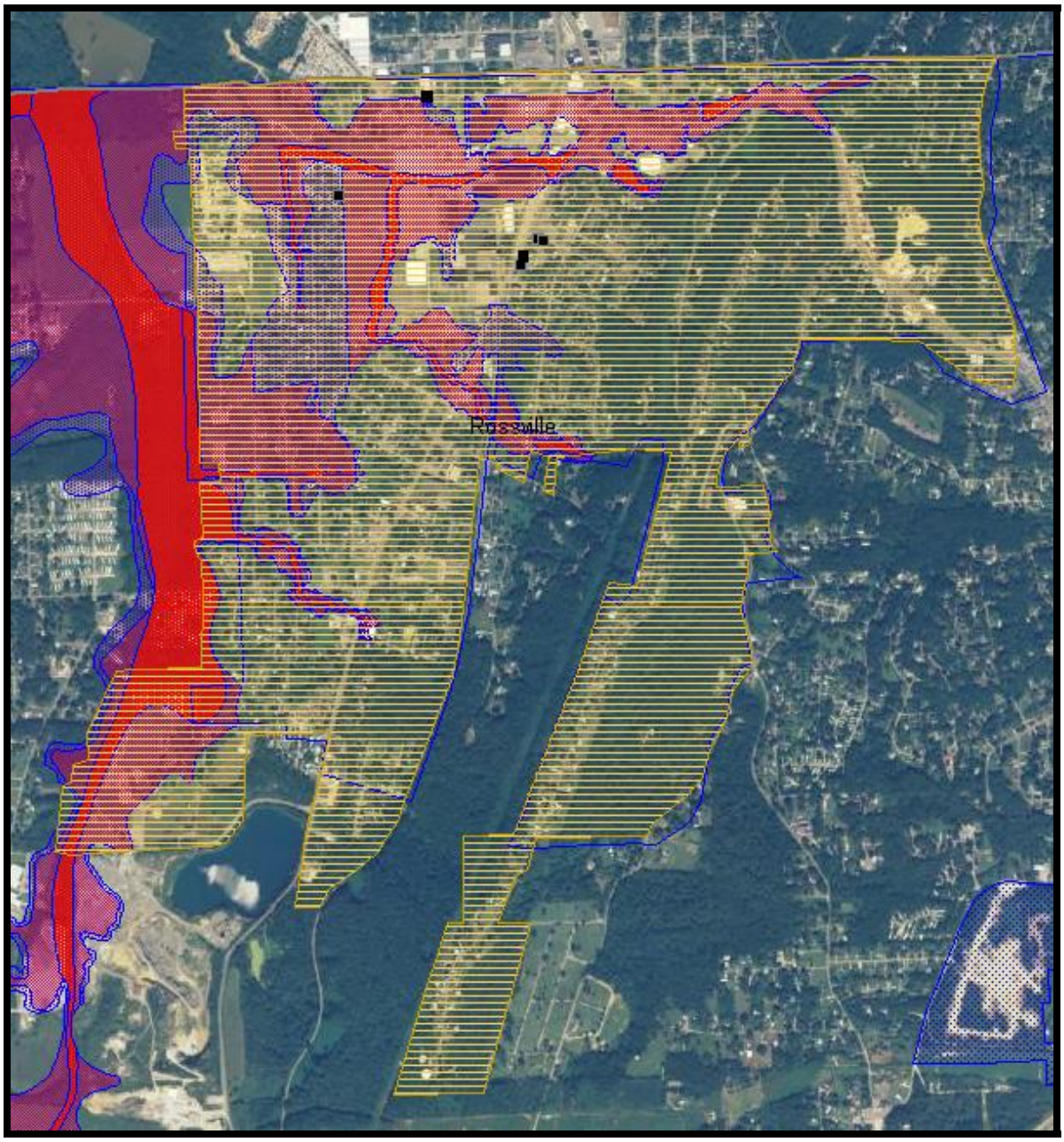
City of Lookout Mountain



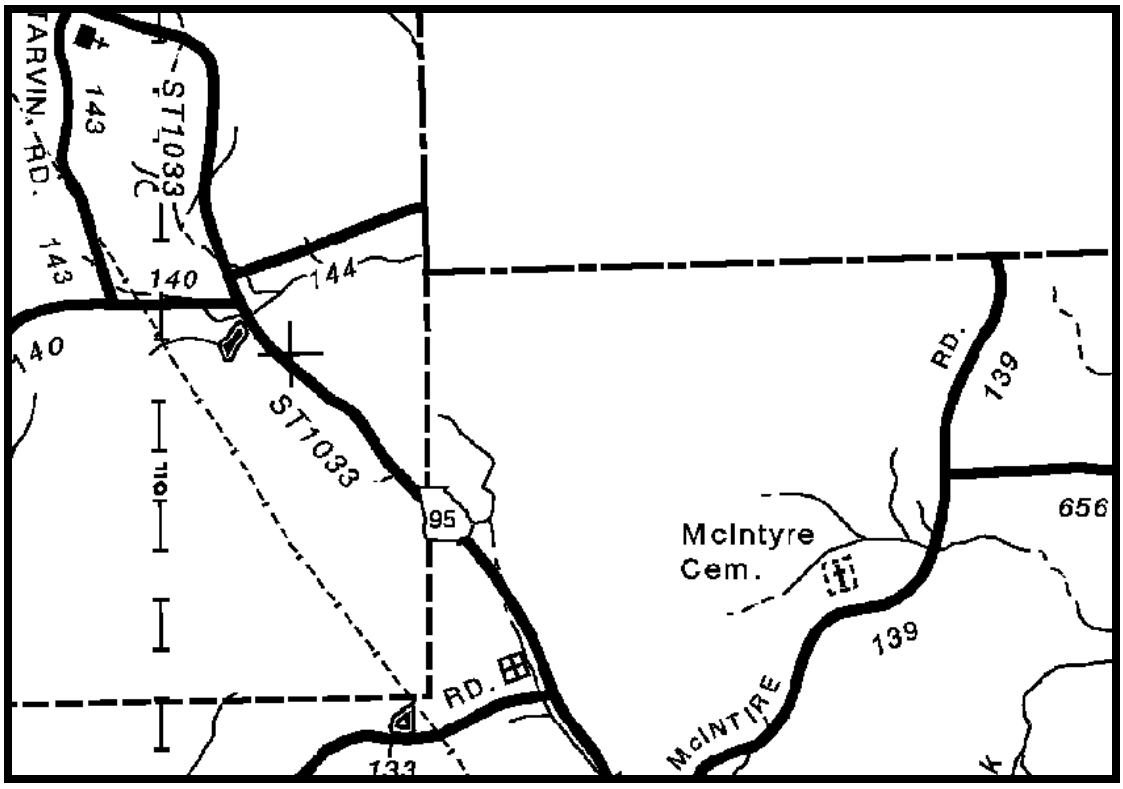
City of Chickamauga

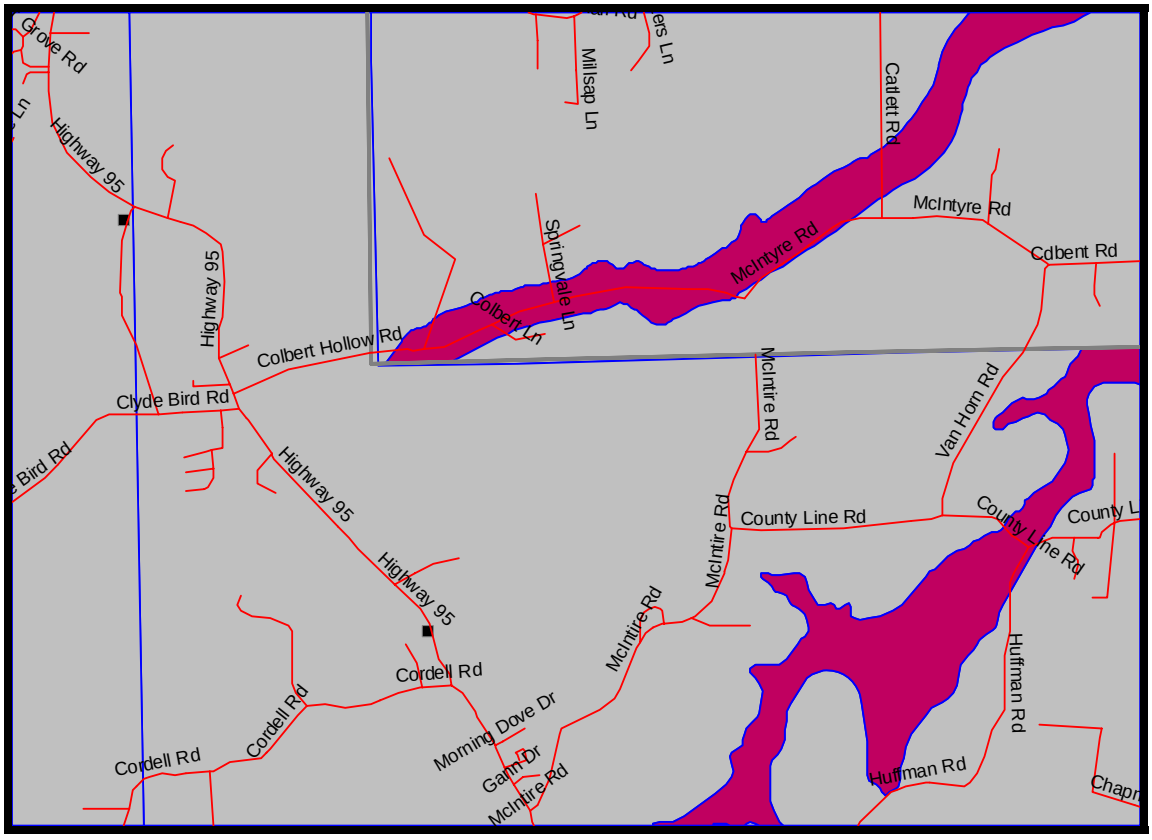


City of Rossville

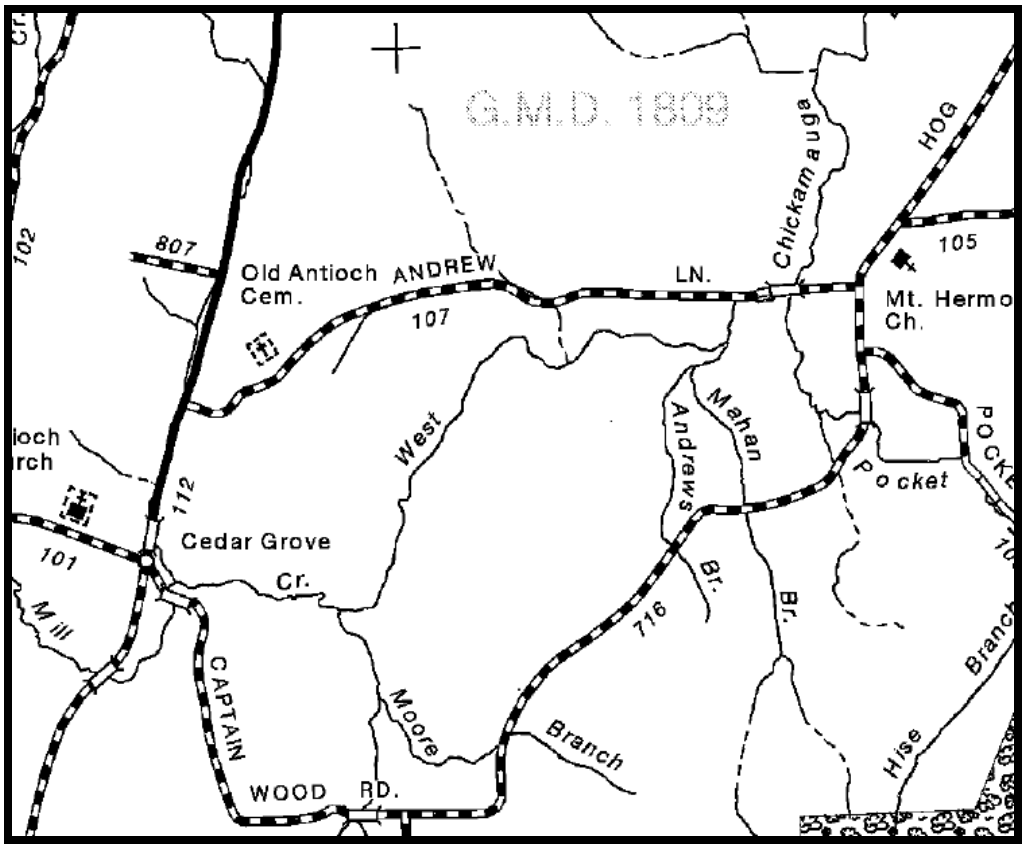


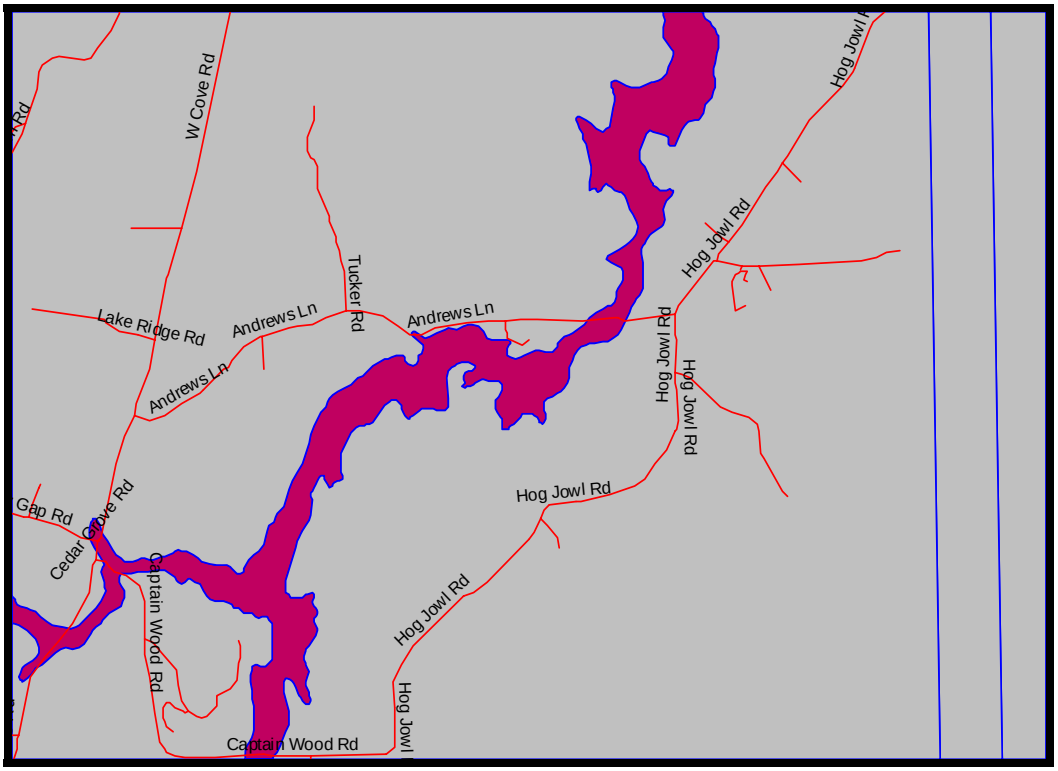
Colbert Hollow Rd; McIntyre Rd:



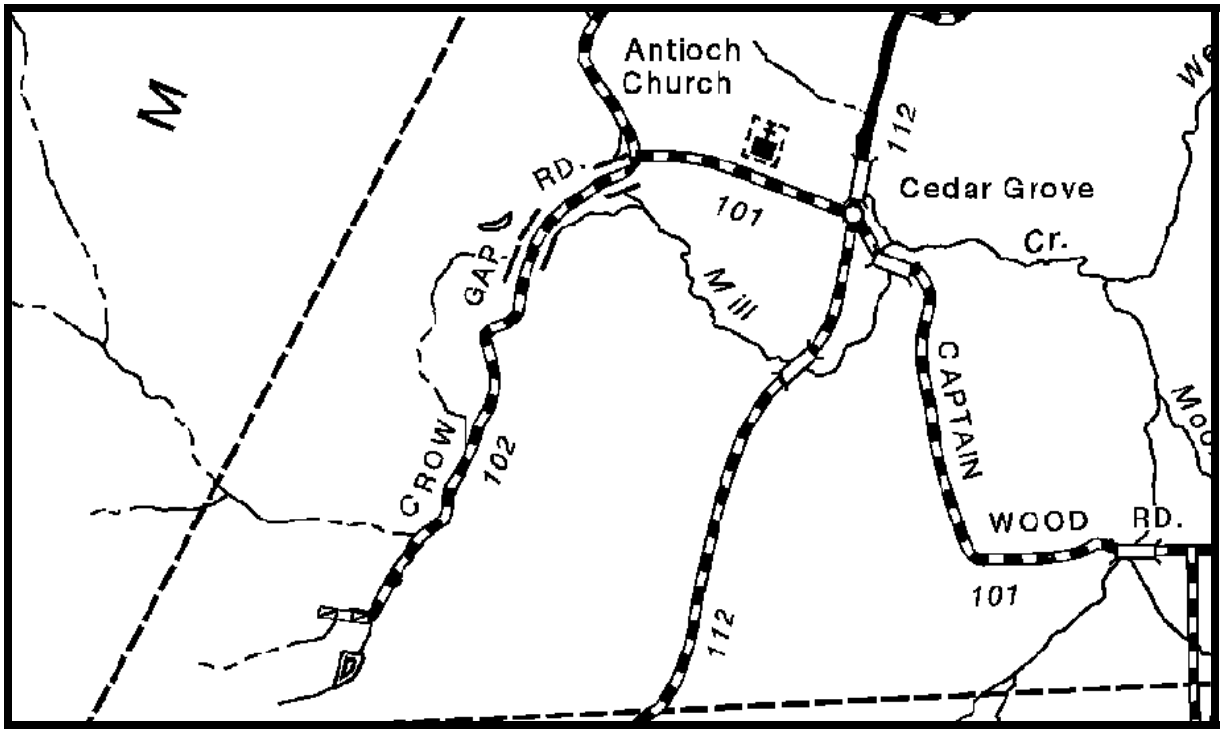


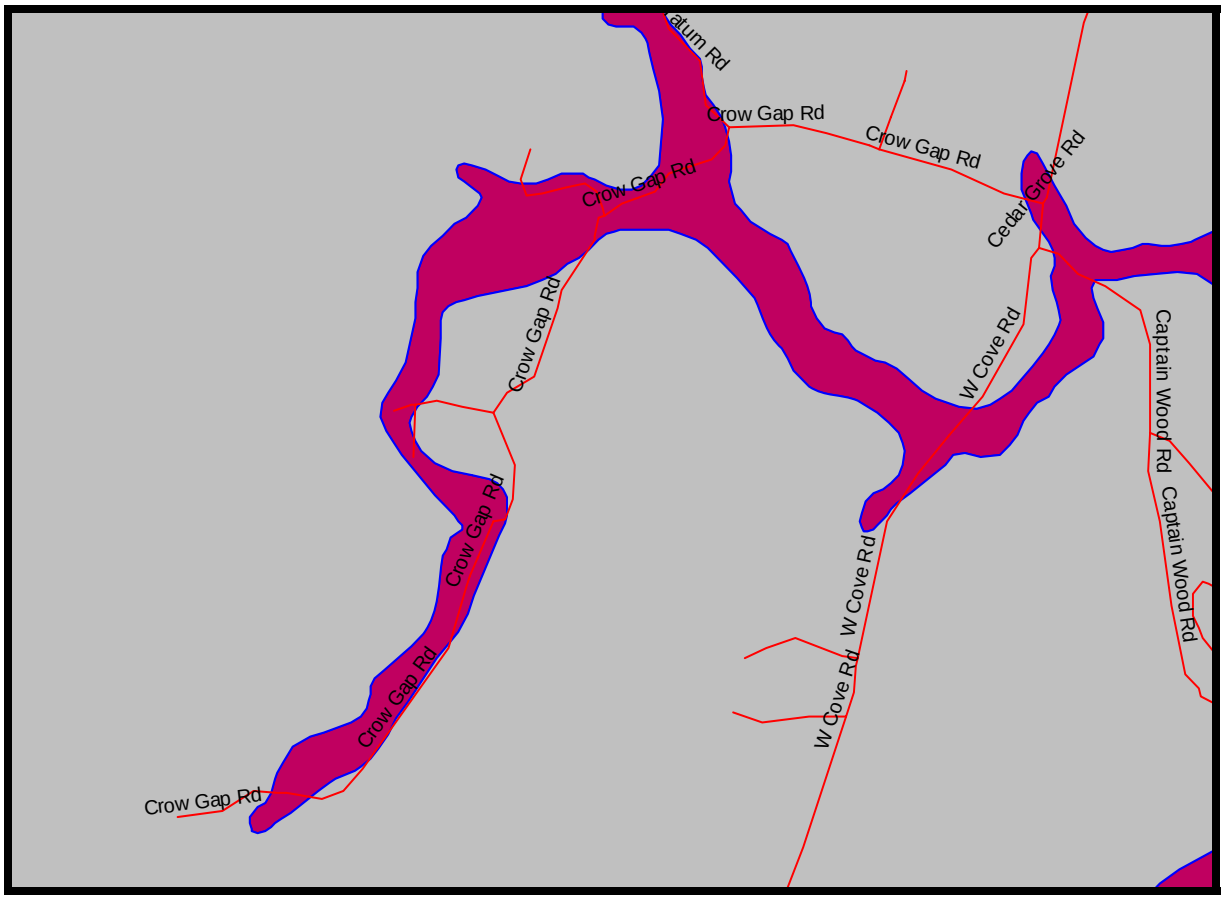
Andrews Ln, W. Cove Rd to Hog Jowl Rd:



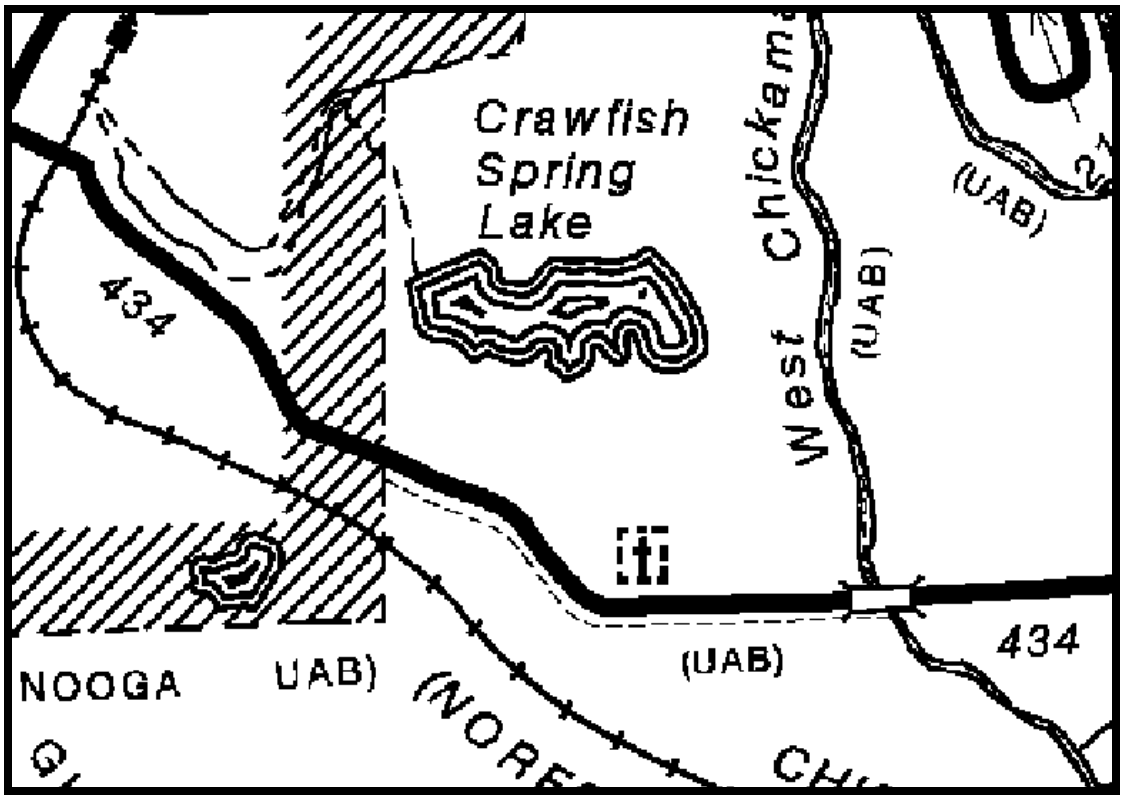


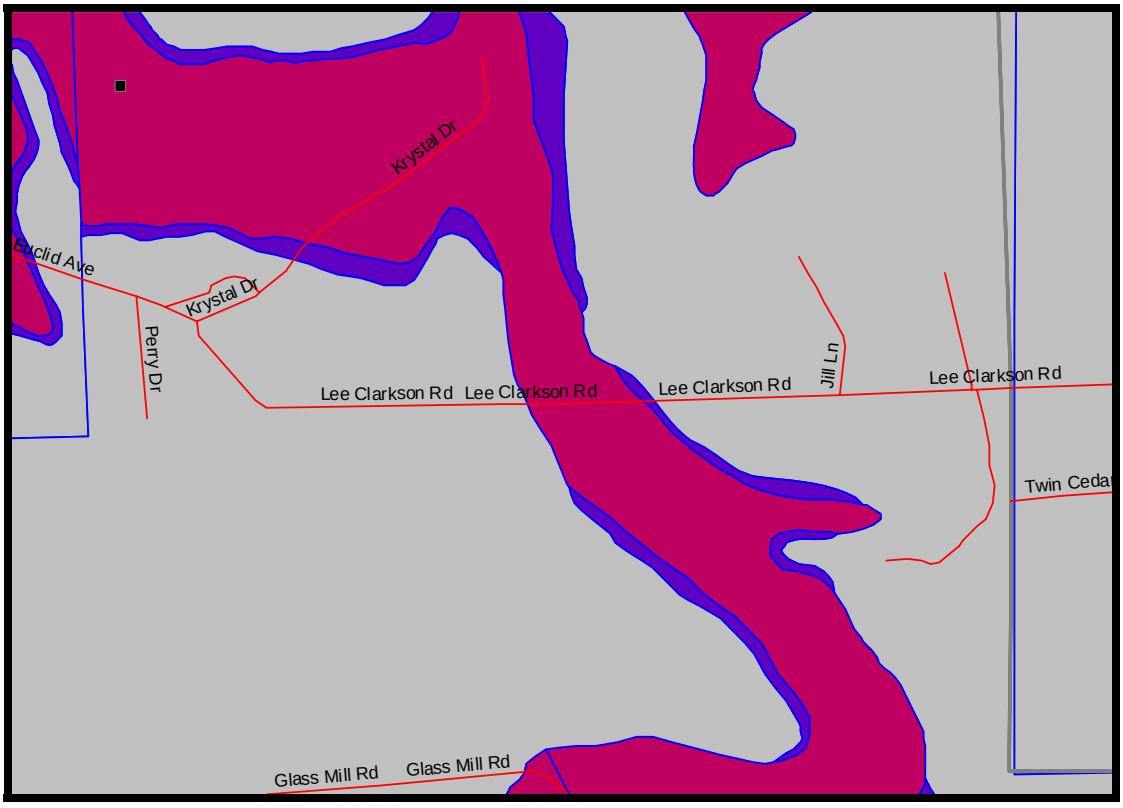
Crow Gap Rd south of Tatum:



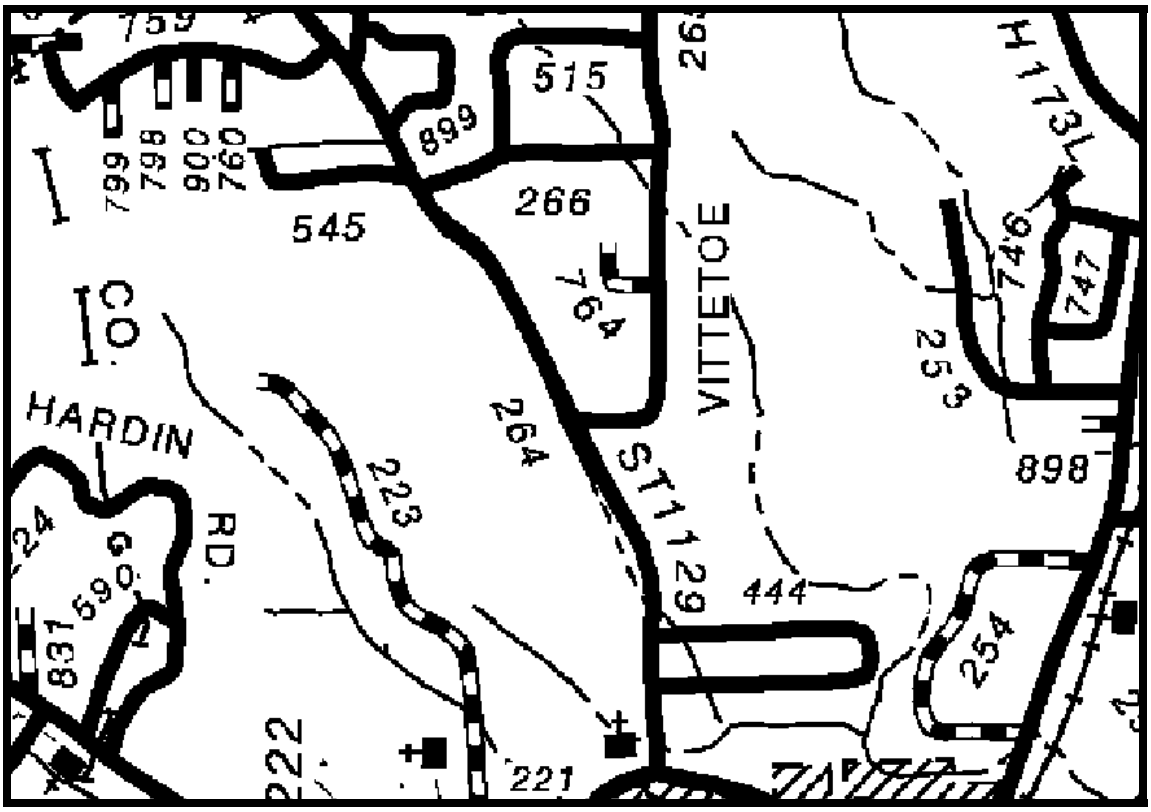


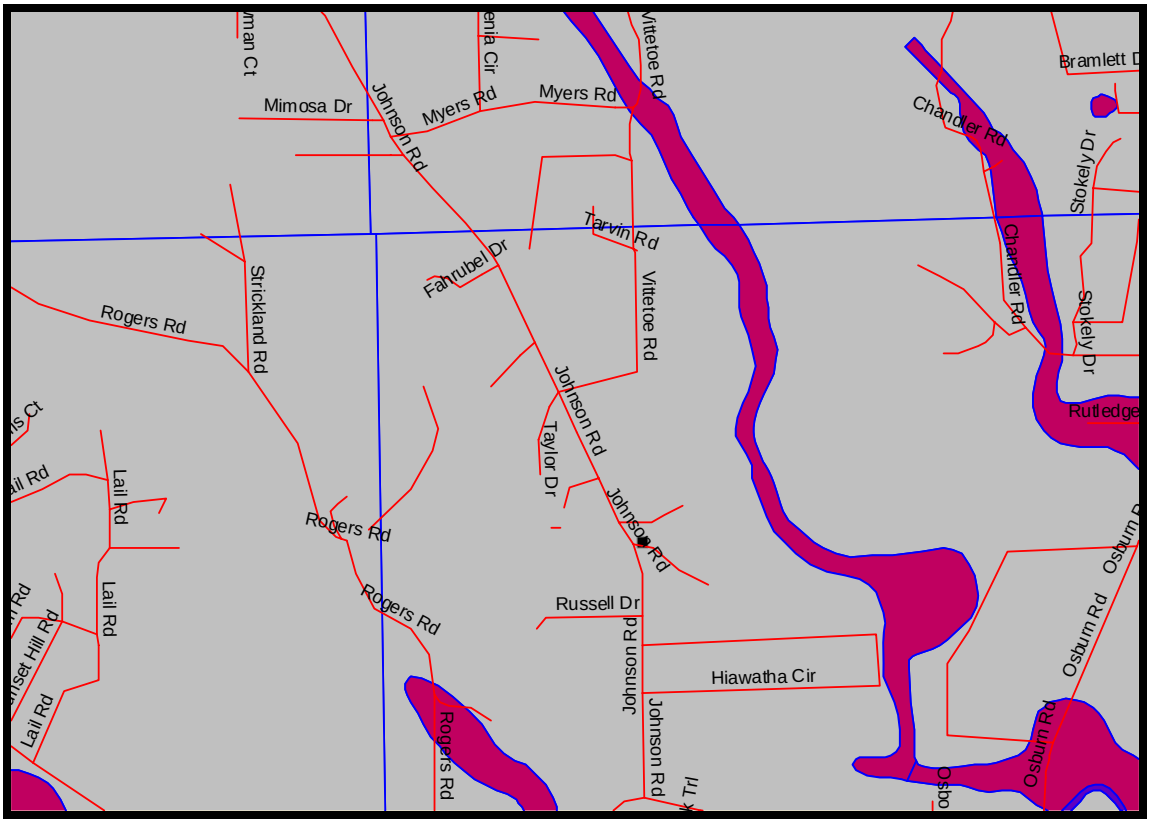
Lee Clarkston Rd:



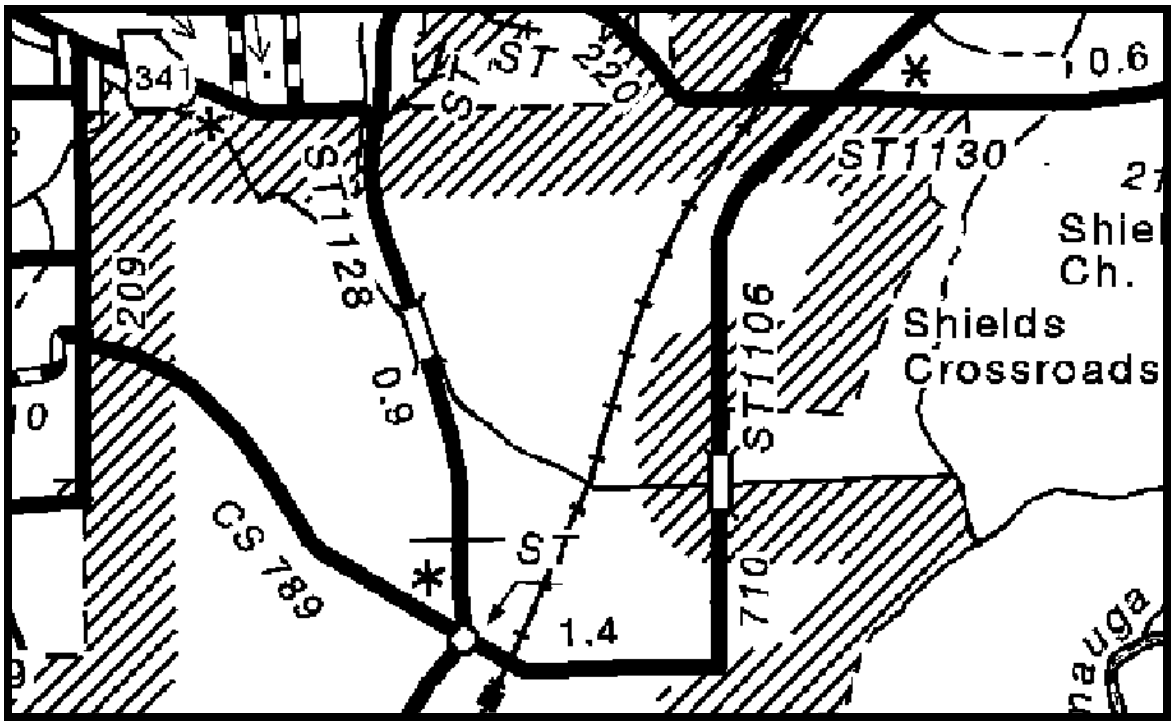


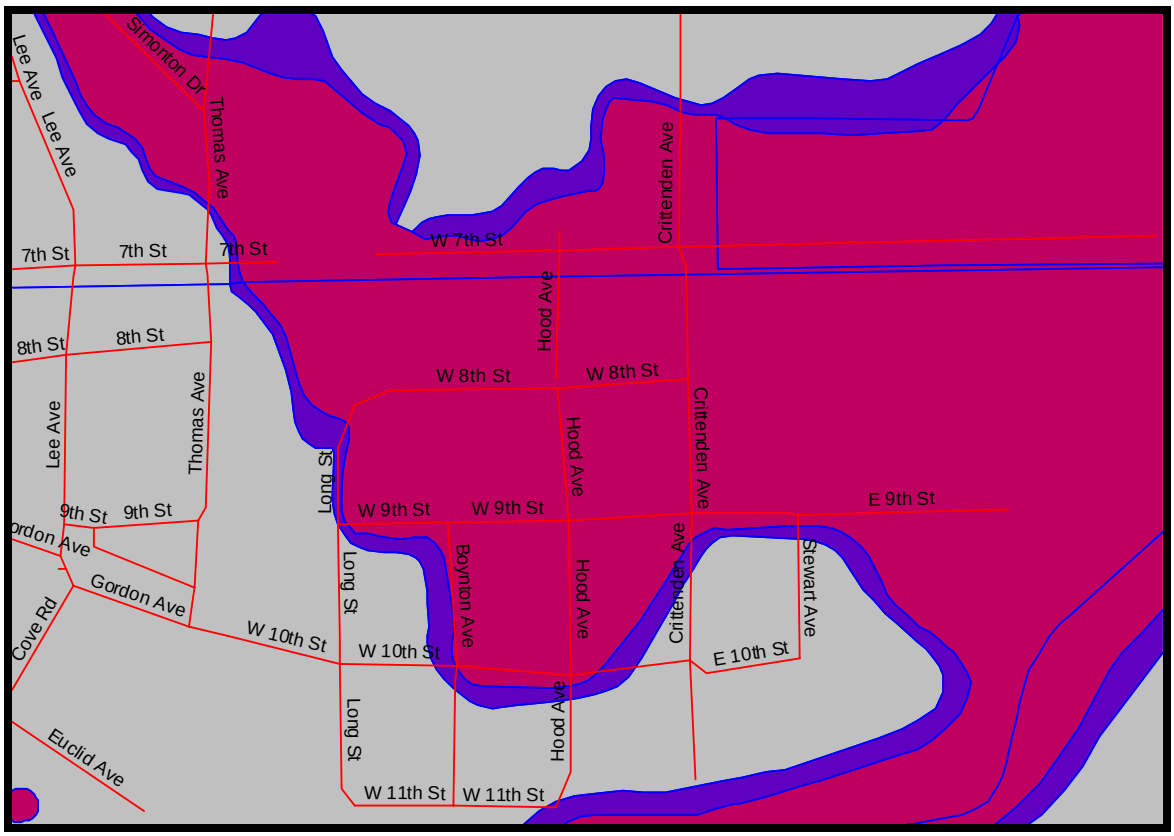
Johnson Rd/Five Points Rd area:



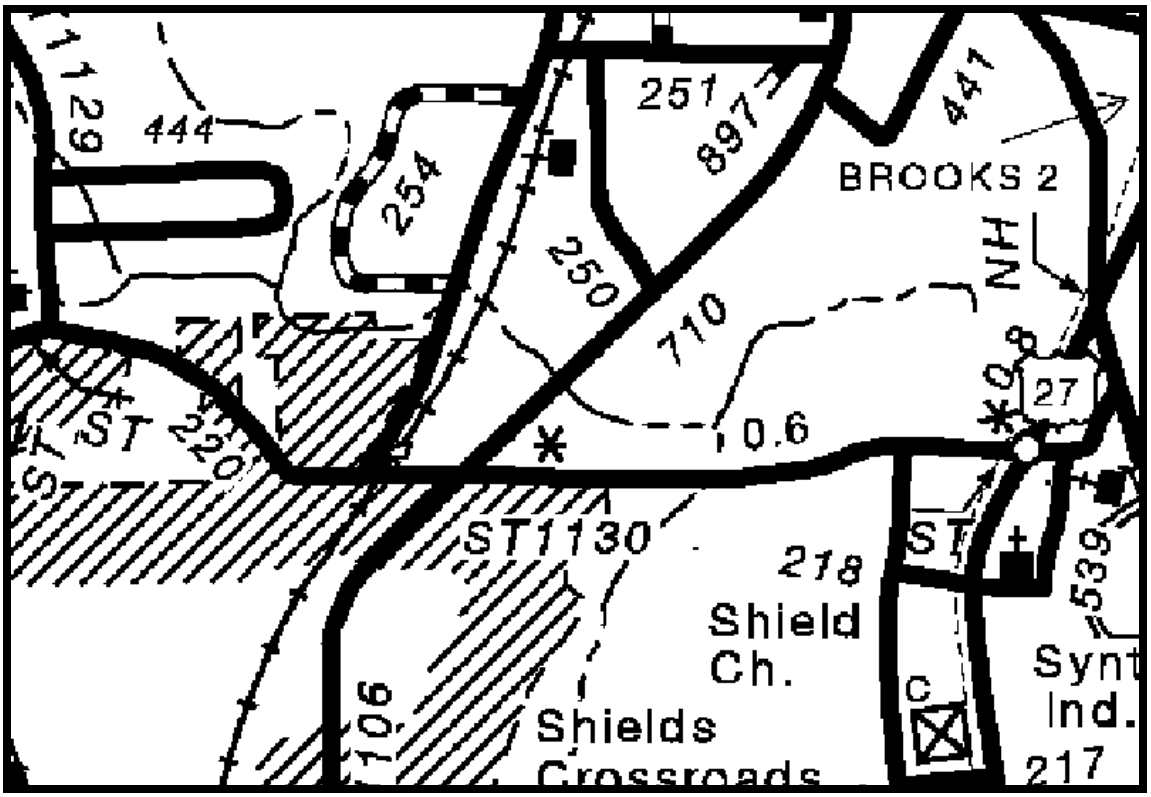


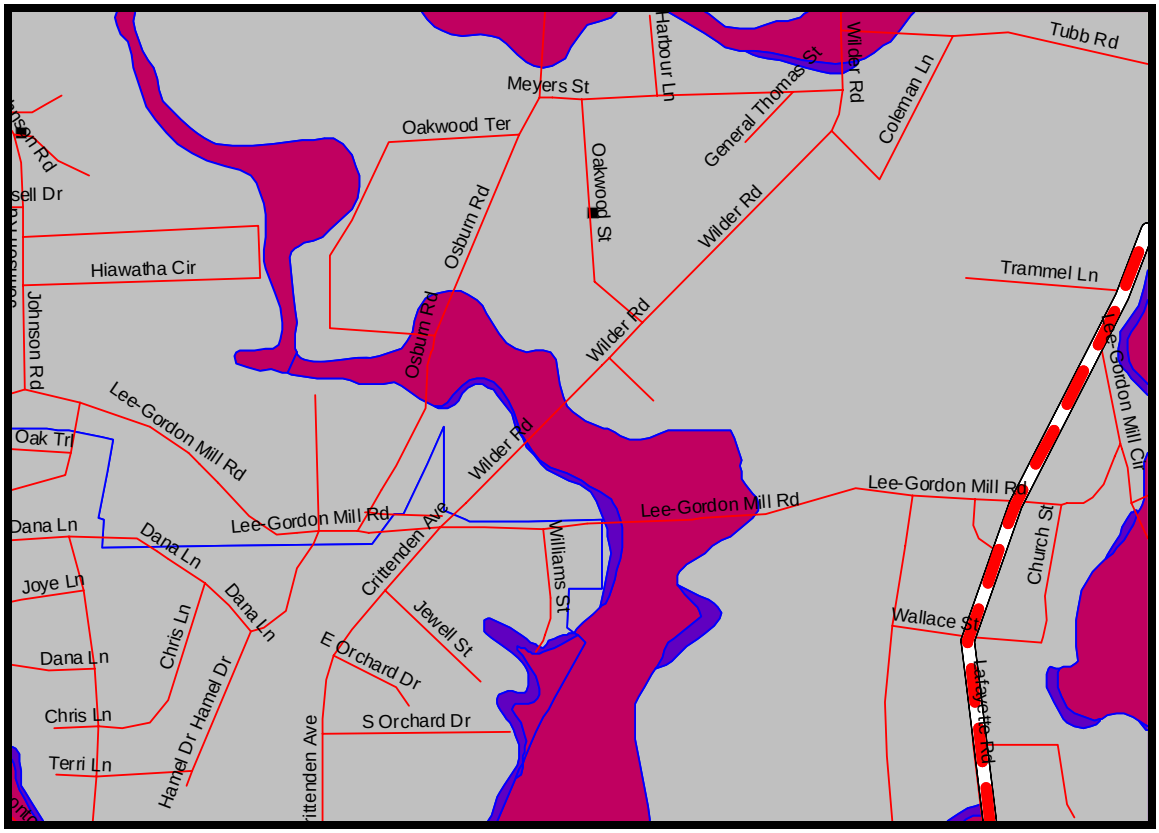
Crittendon Ave at West 7th, 8th, and 9th Streets:



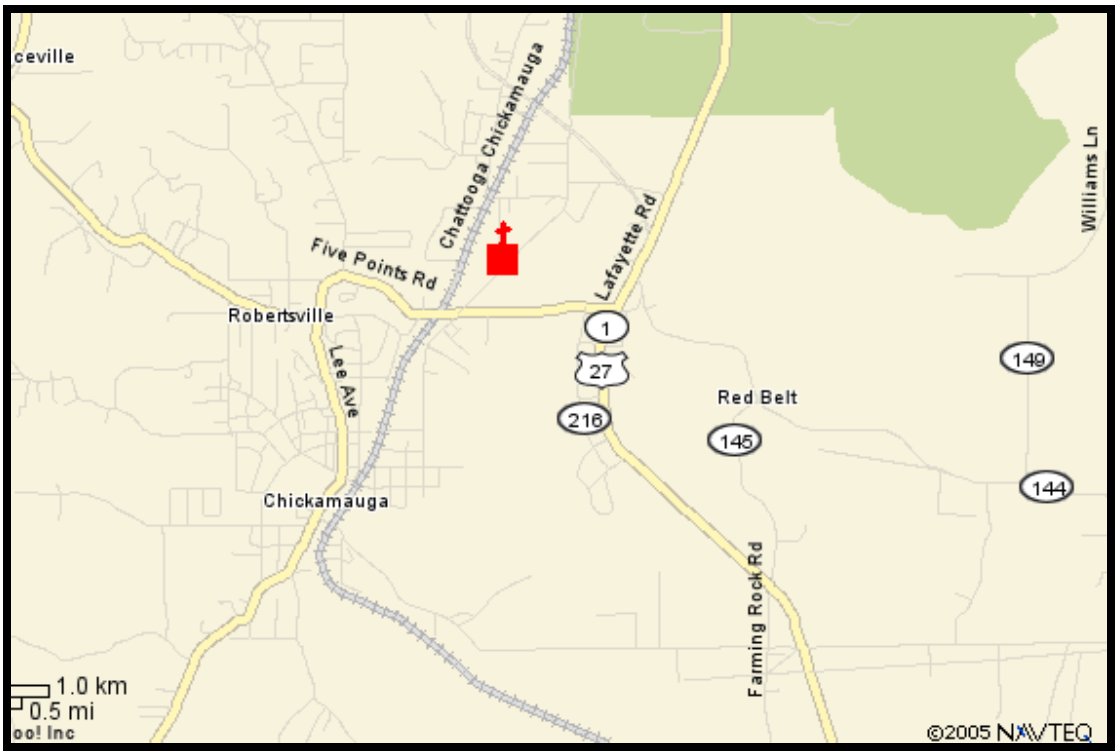


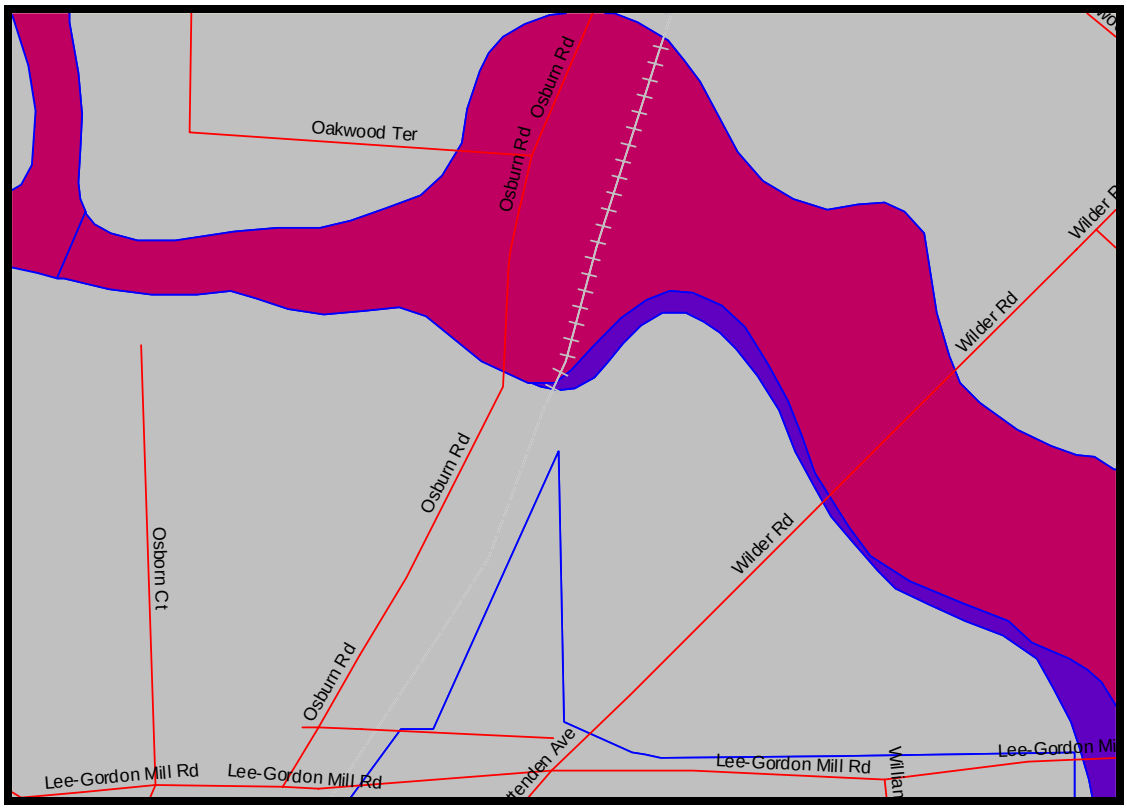
Longwood area off of Lee-Gordon Mill Rd:



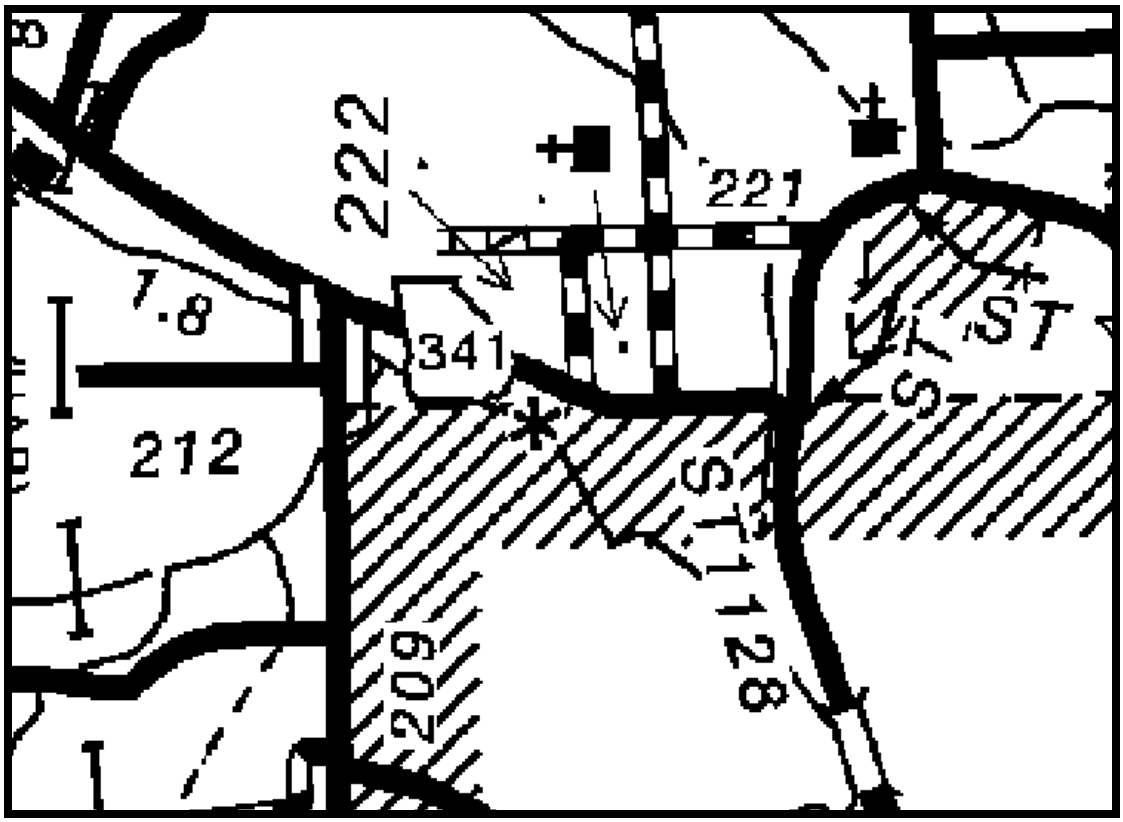


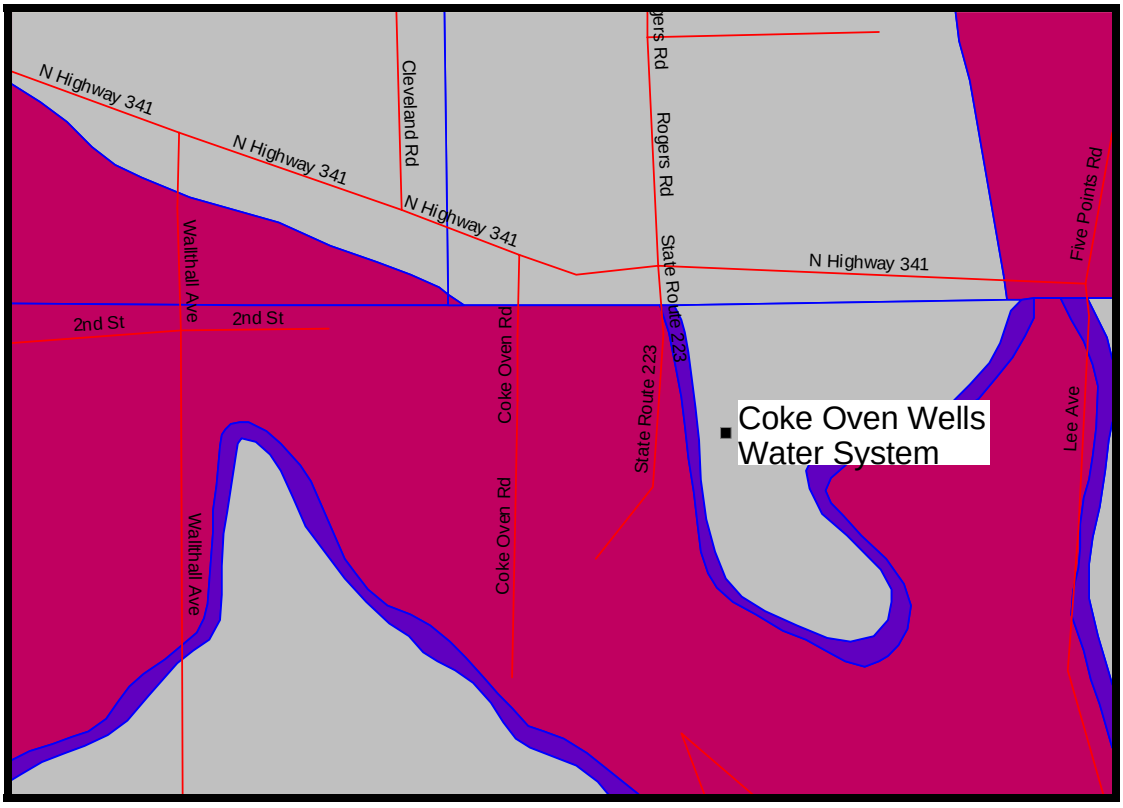
Oakwood Baptist Church:



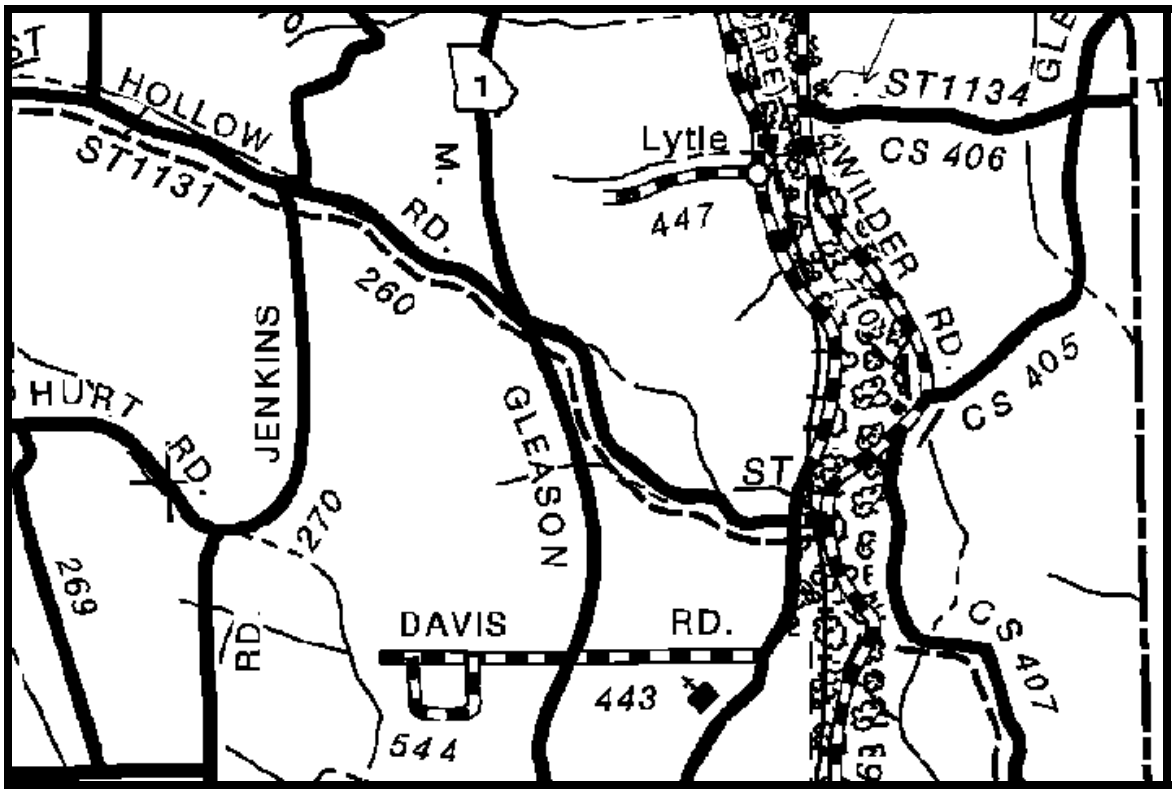


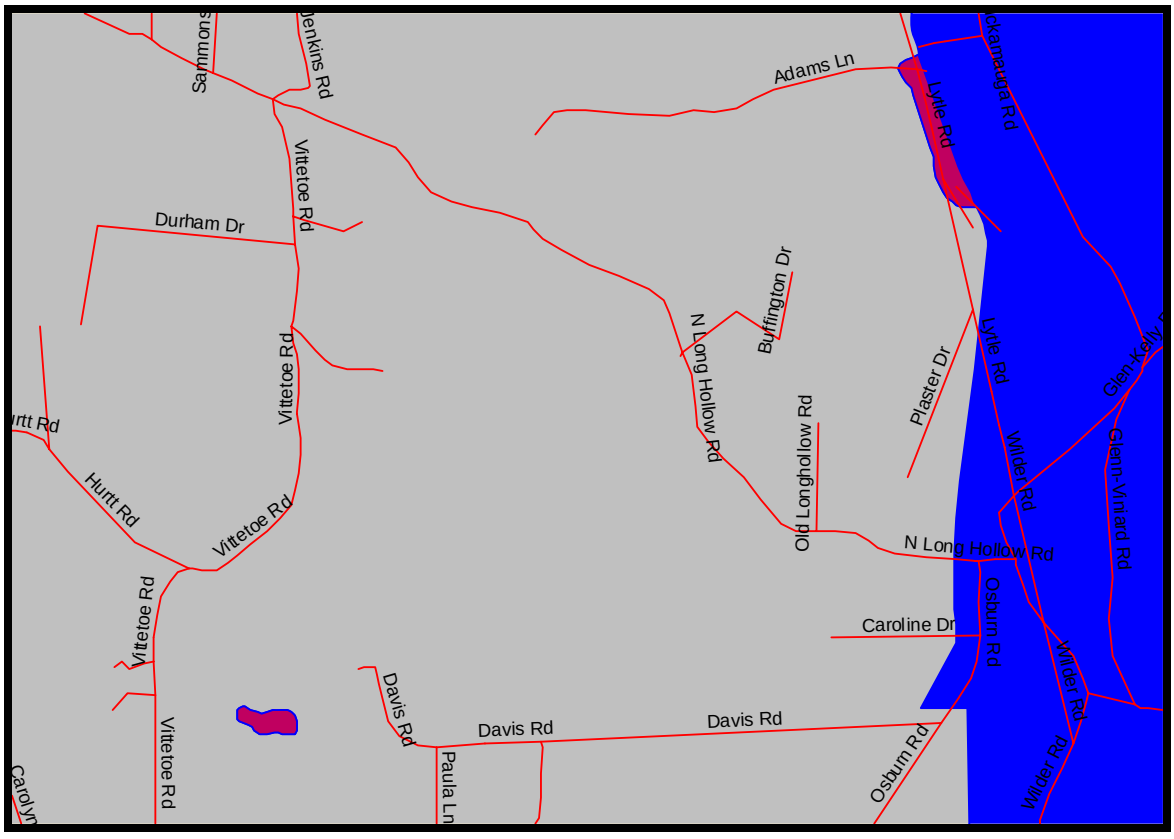
Coke Oven Rd at Hwy 341:



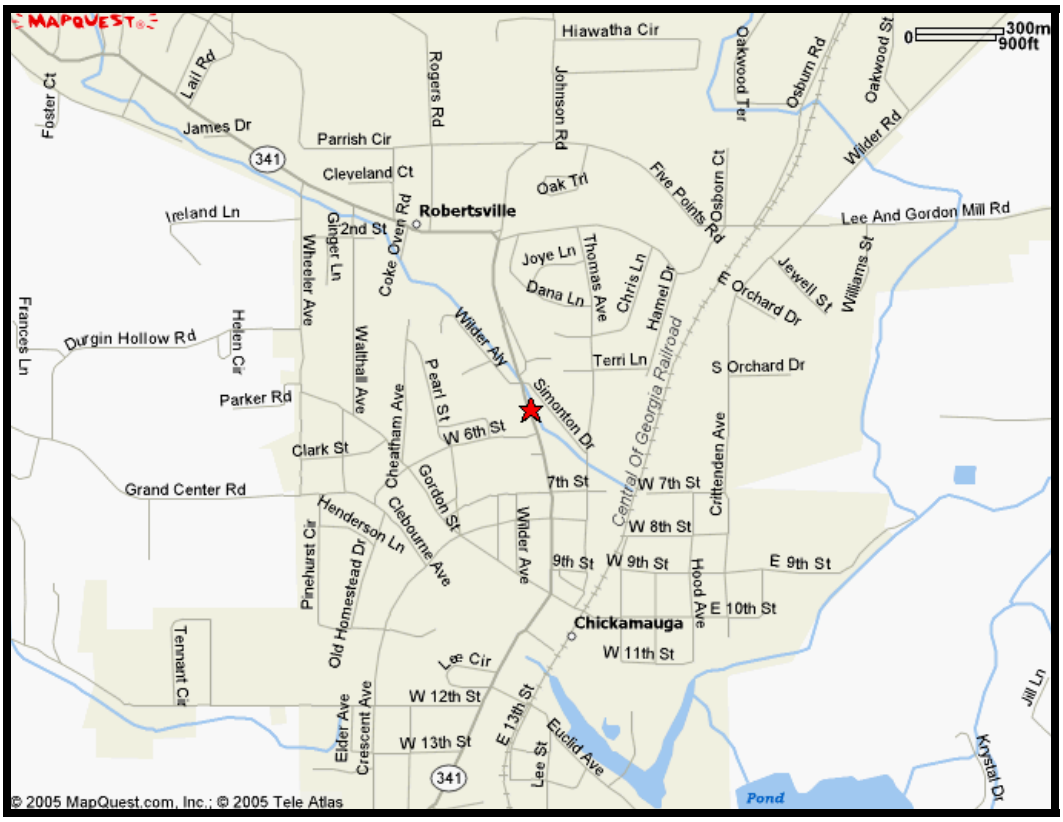


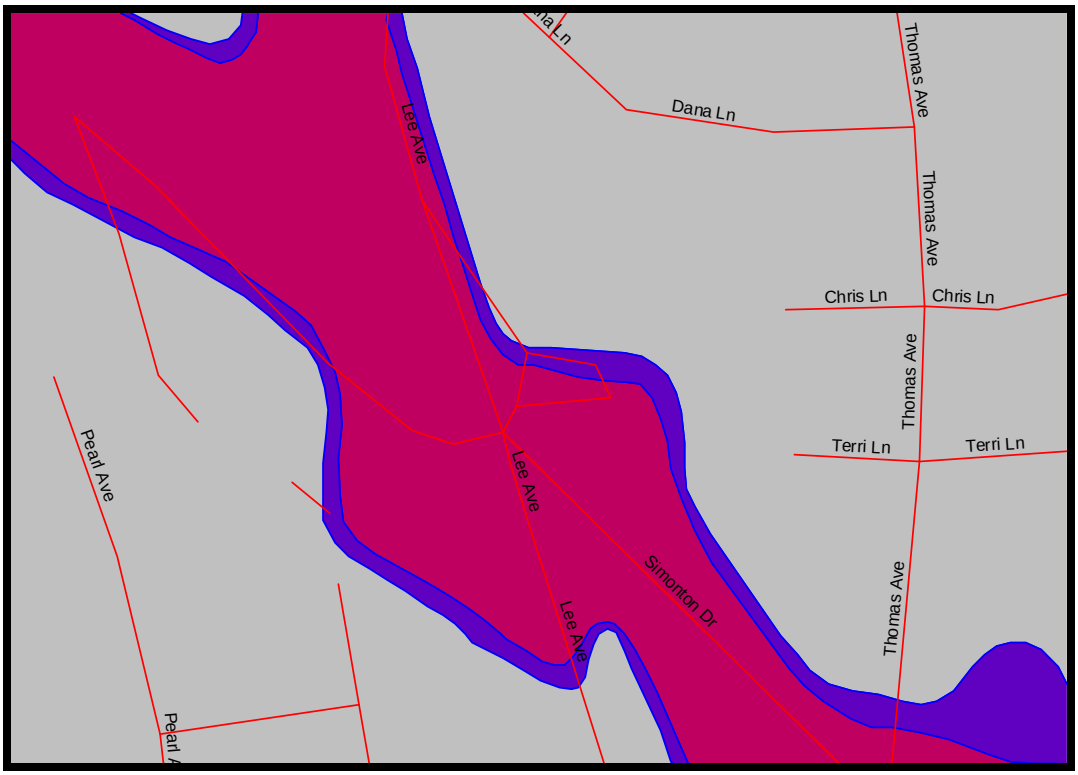
N. Longhollow Rd and Davis Rd at Lytle Rd:



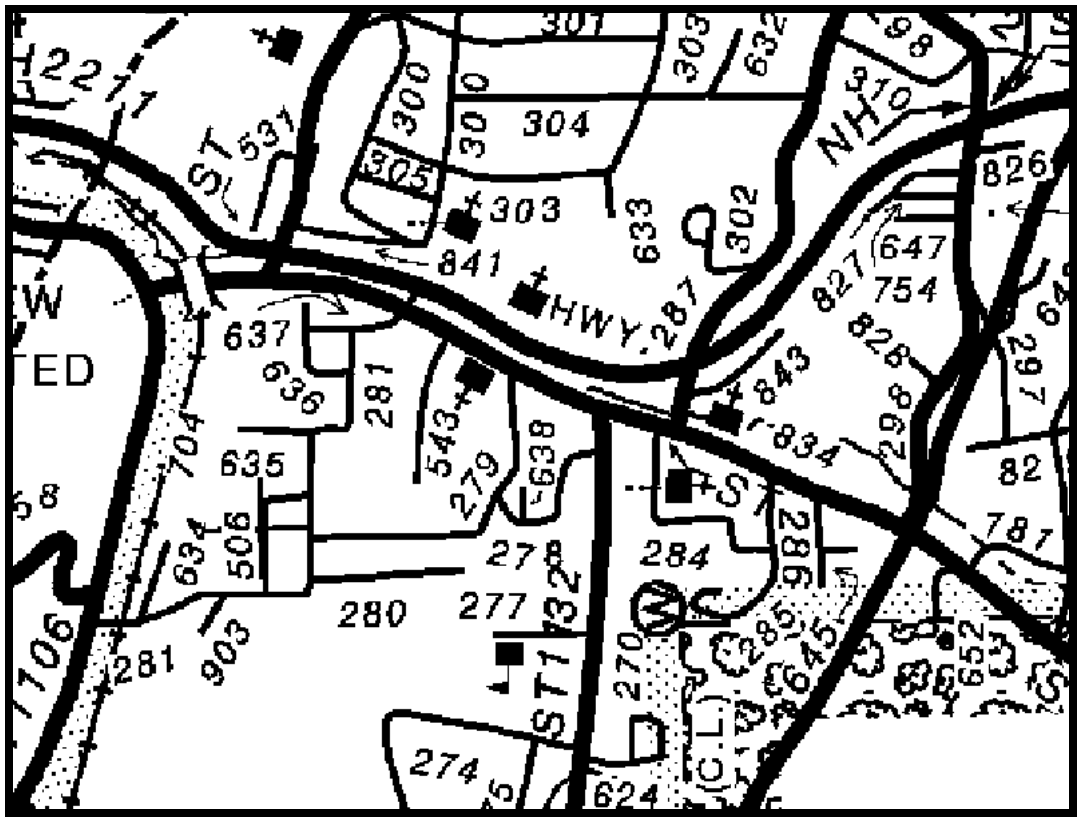


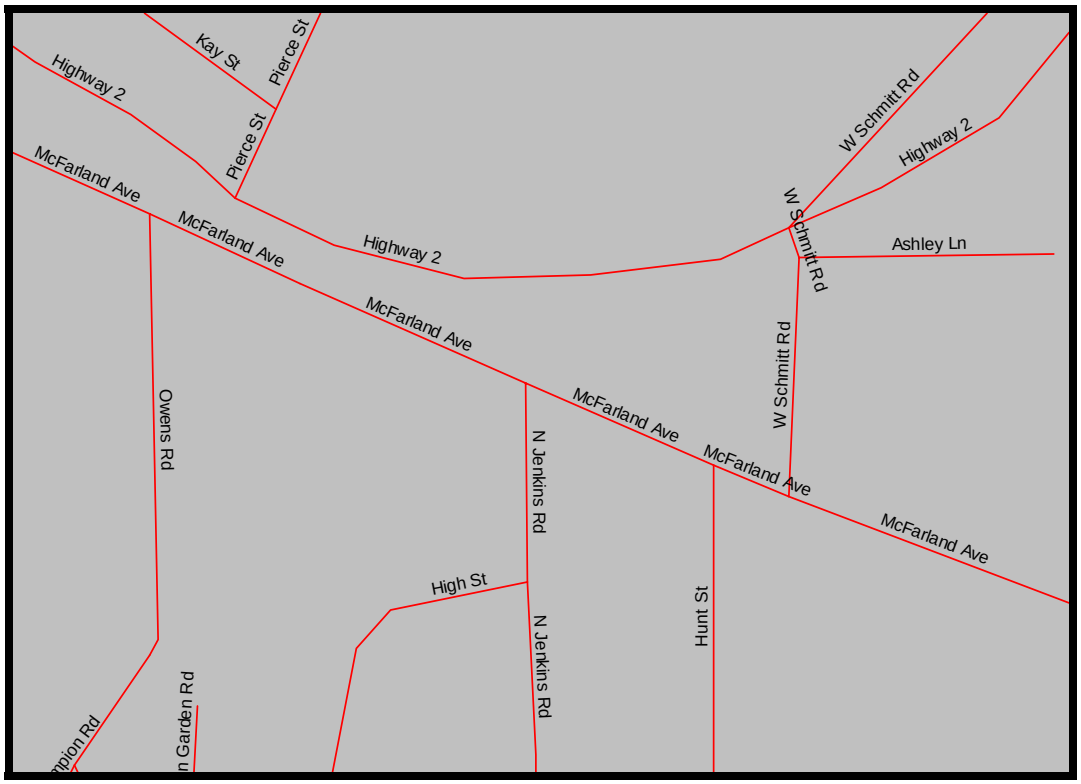
Chestnut Hills Trailer Park:



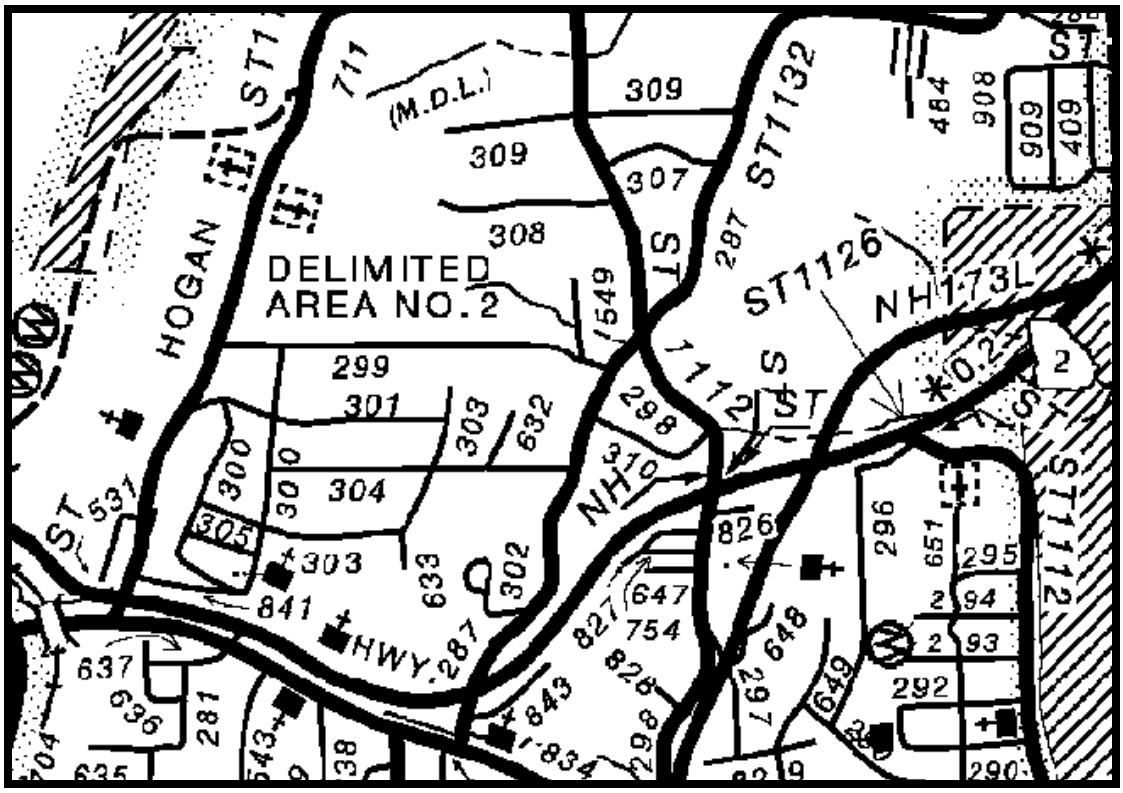


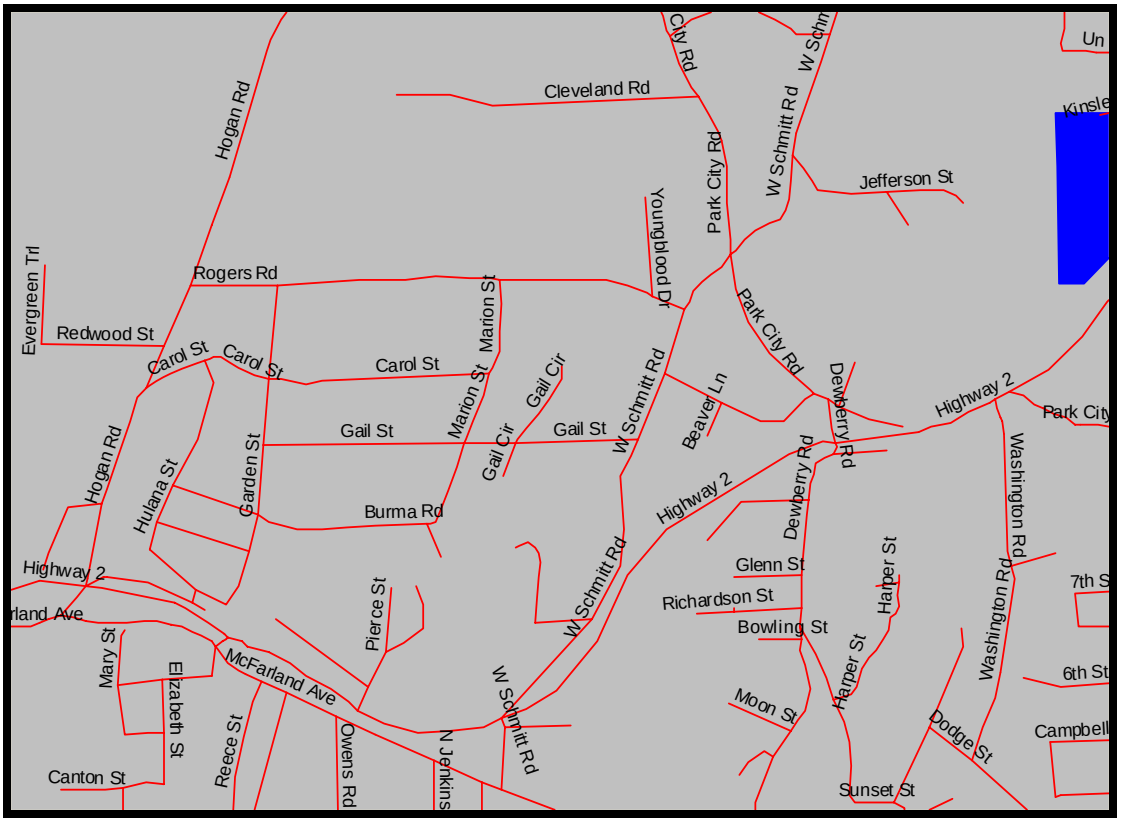
McFarland Ave at Jenkins Rd:



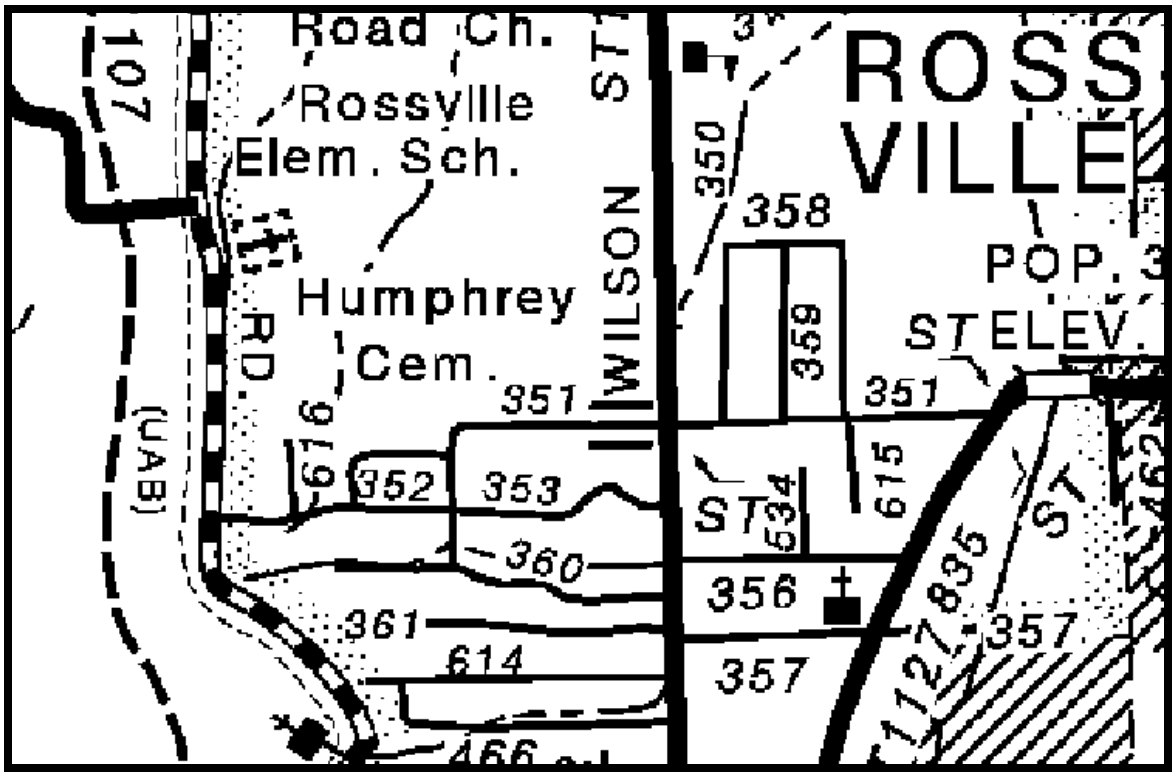


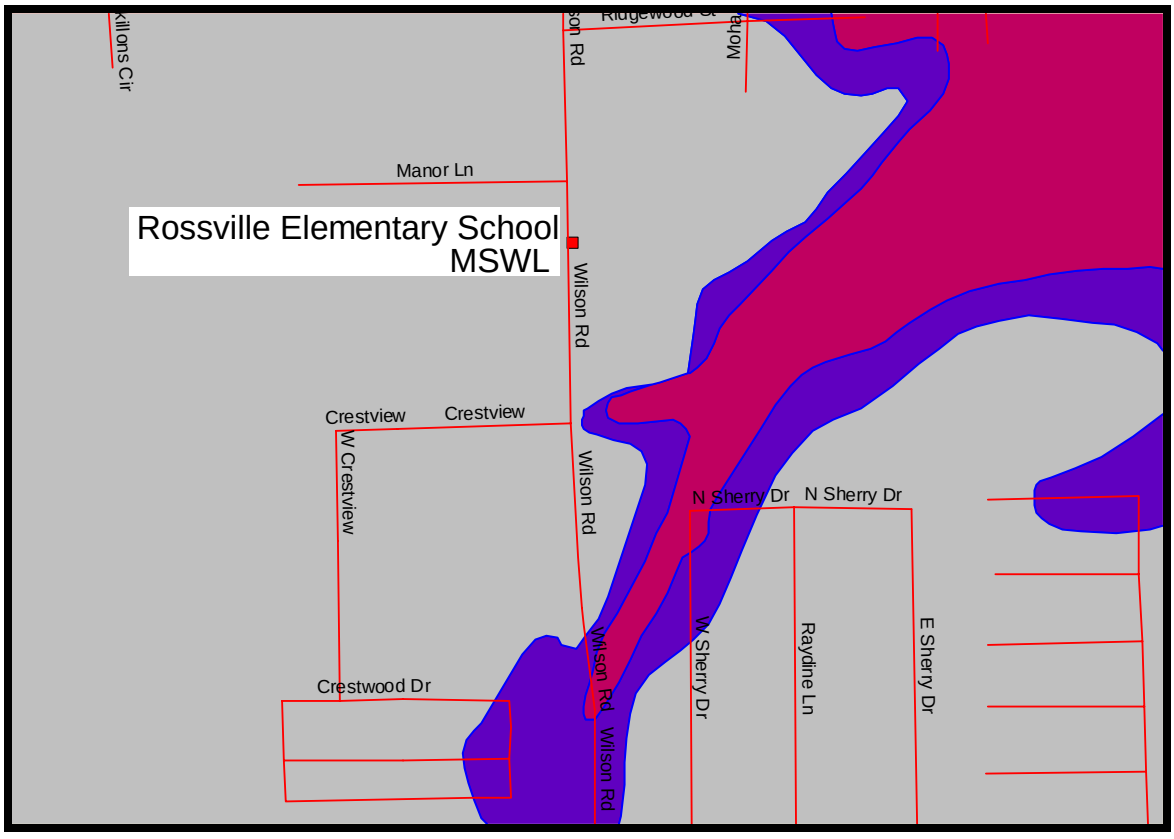
400 to 800 block of Schmitt Rd:



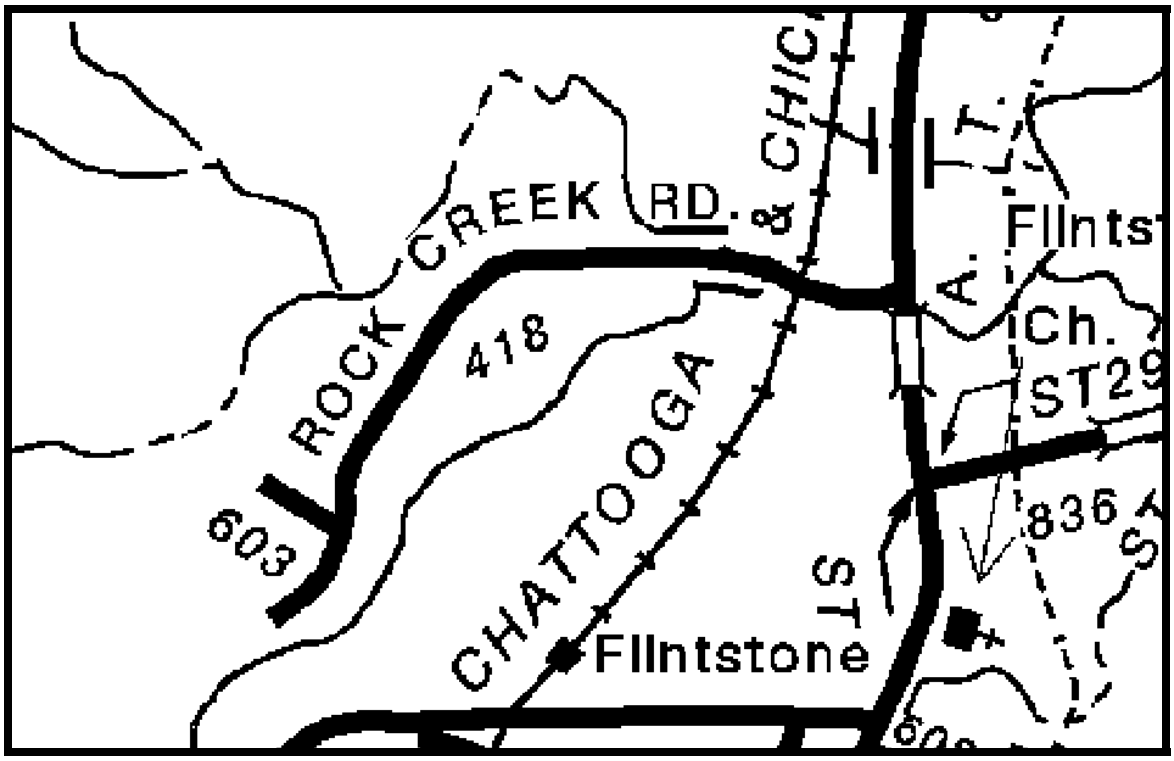


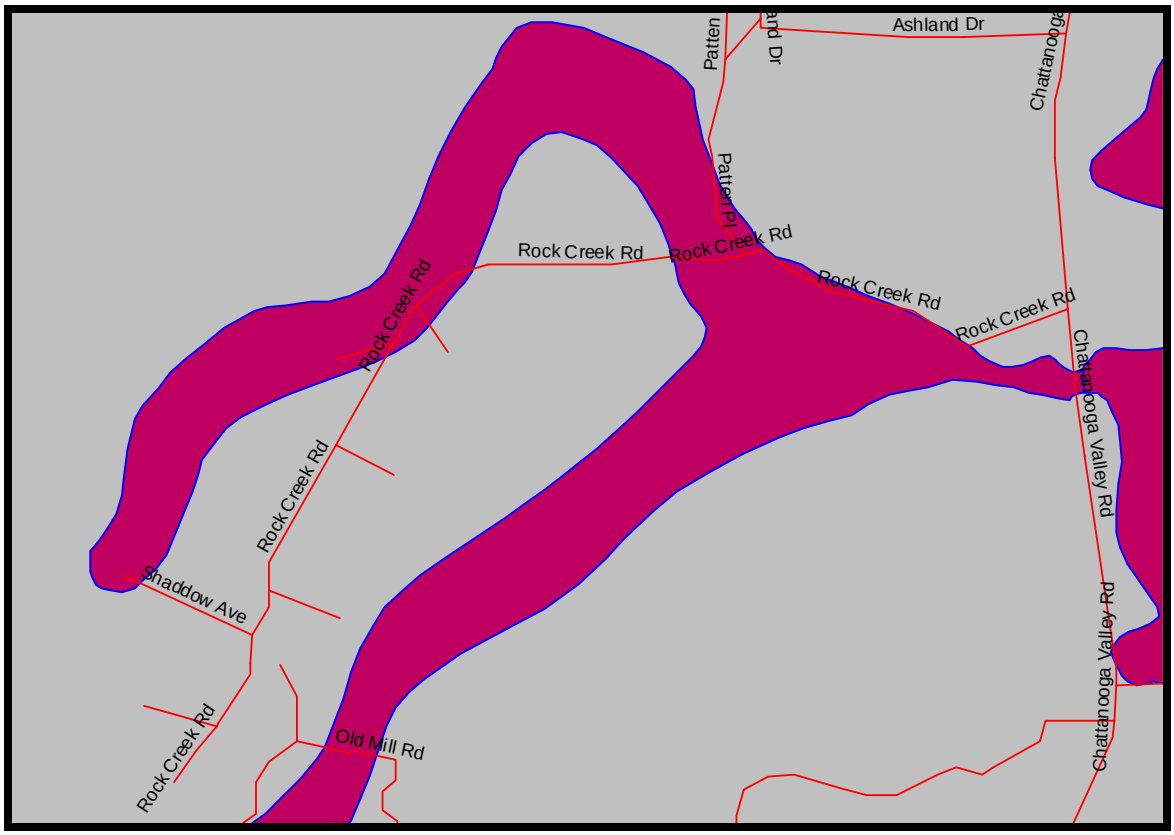
Wilson Rd at Crestview Dr:



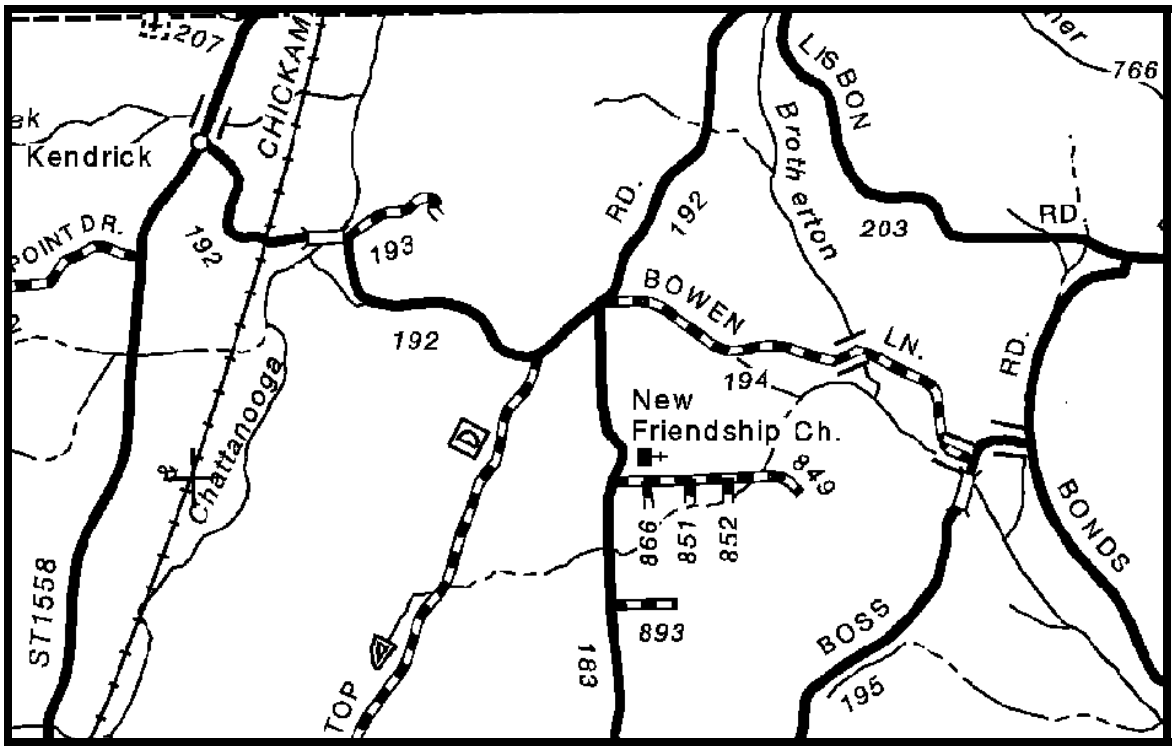


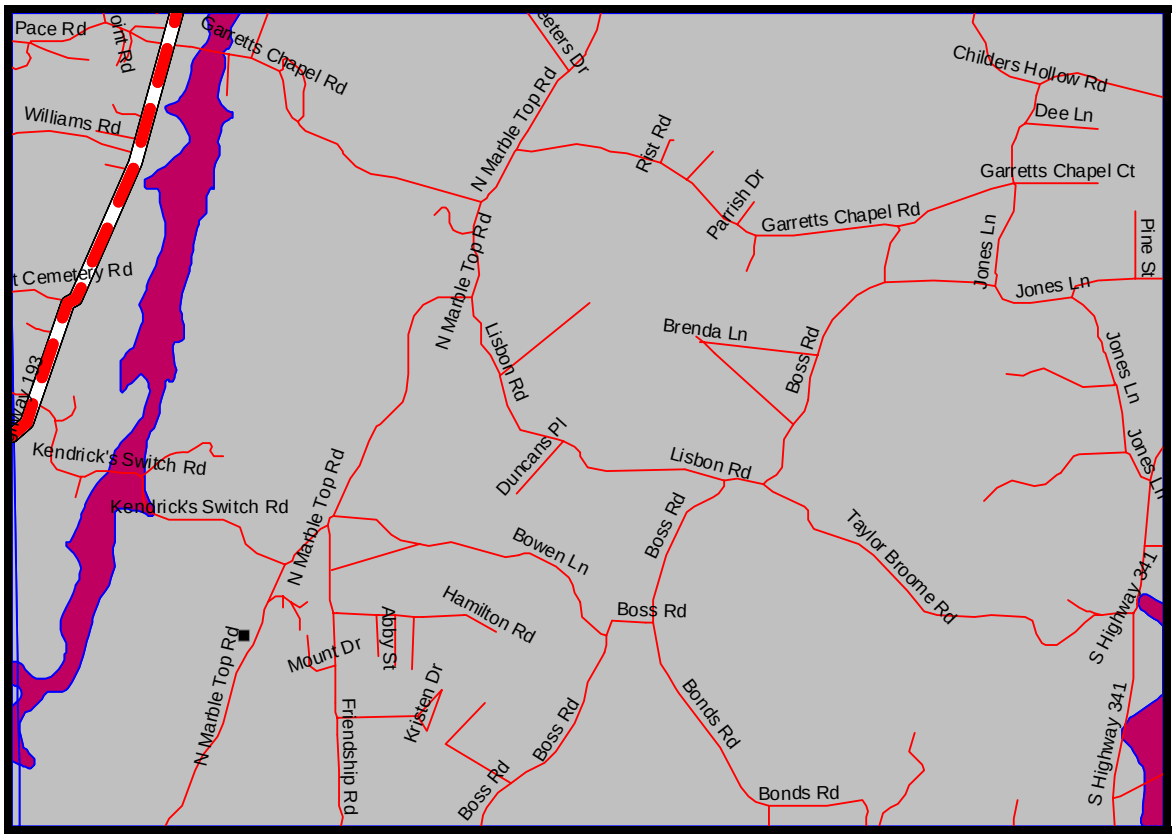
Rock Creek Rd including Shaddow Ave:



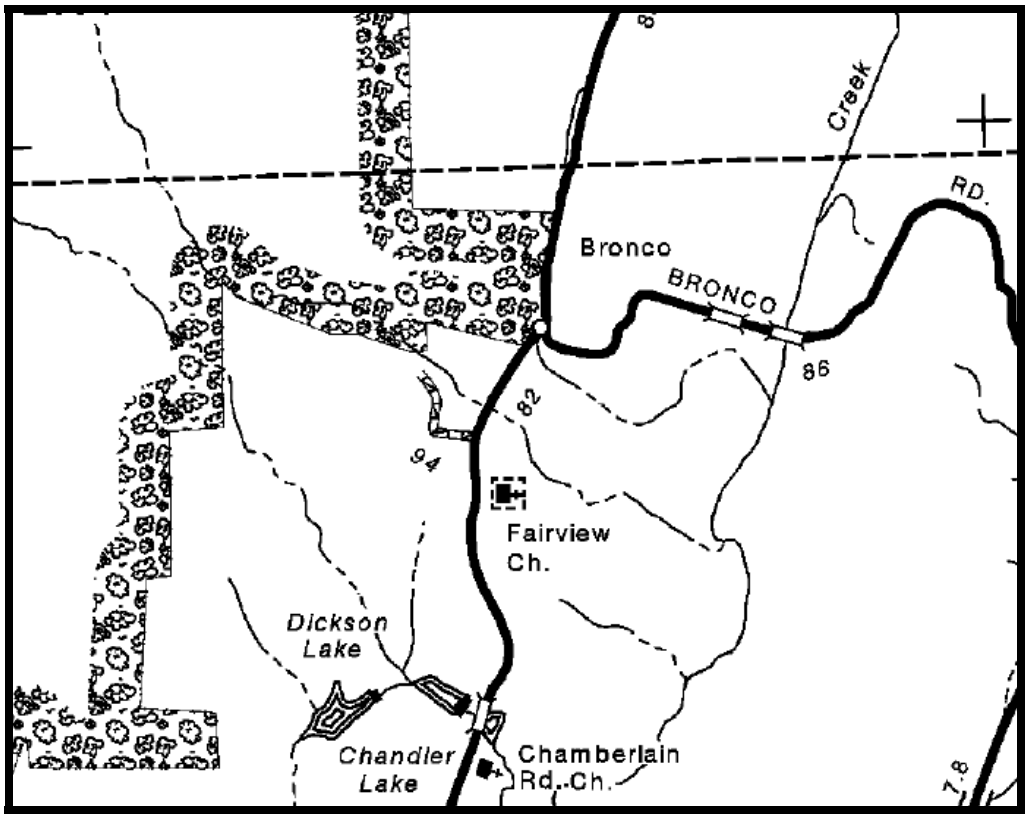


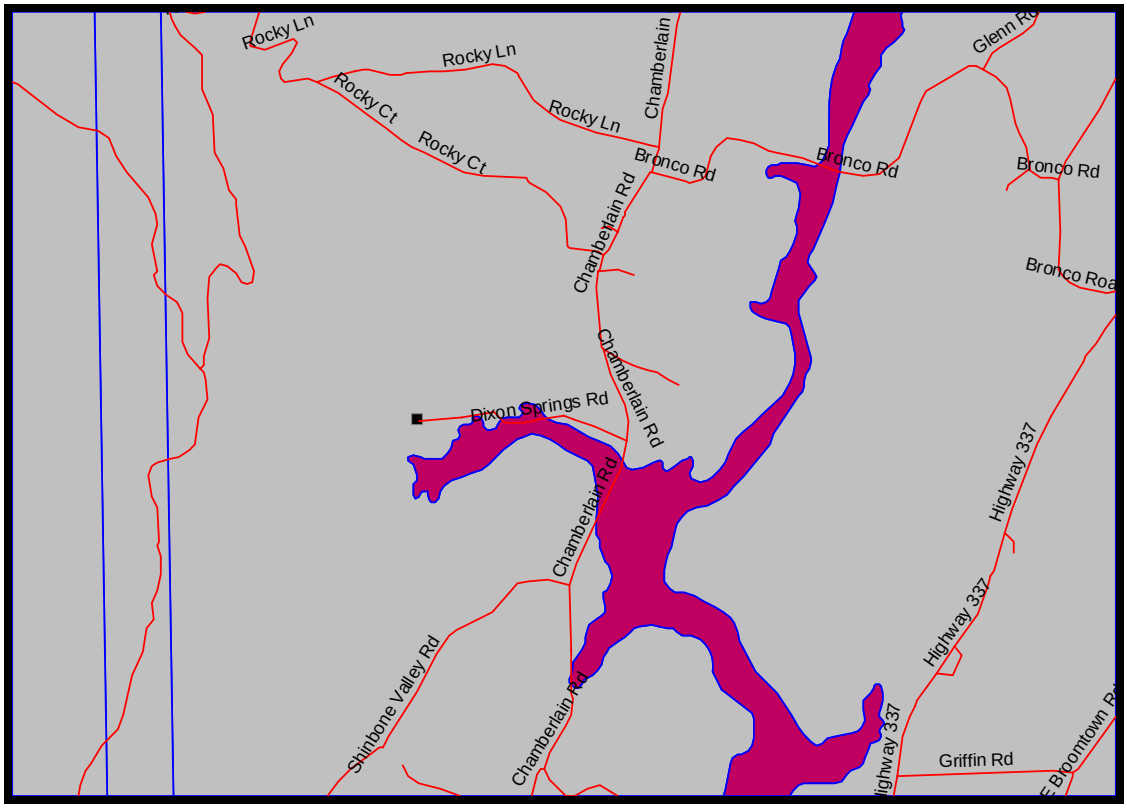
Kendrick's Switch between Phillip Hollow and the railroad tracks, Boss Rd at Bonds Rd:



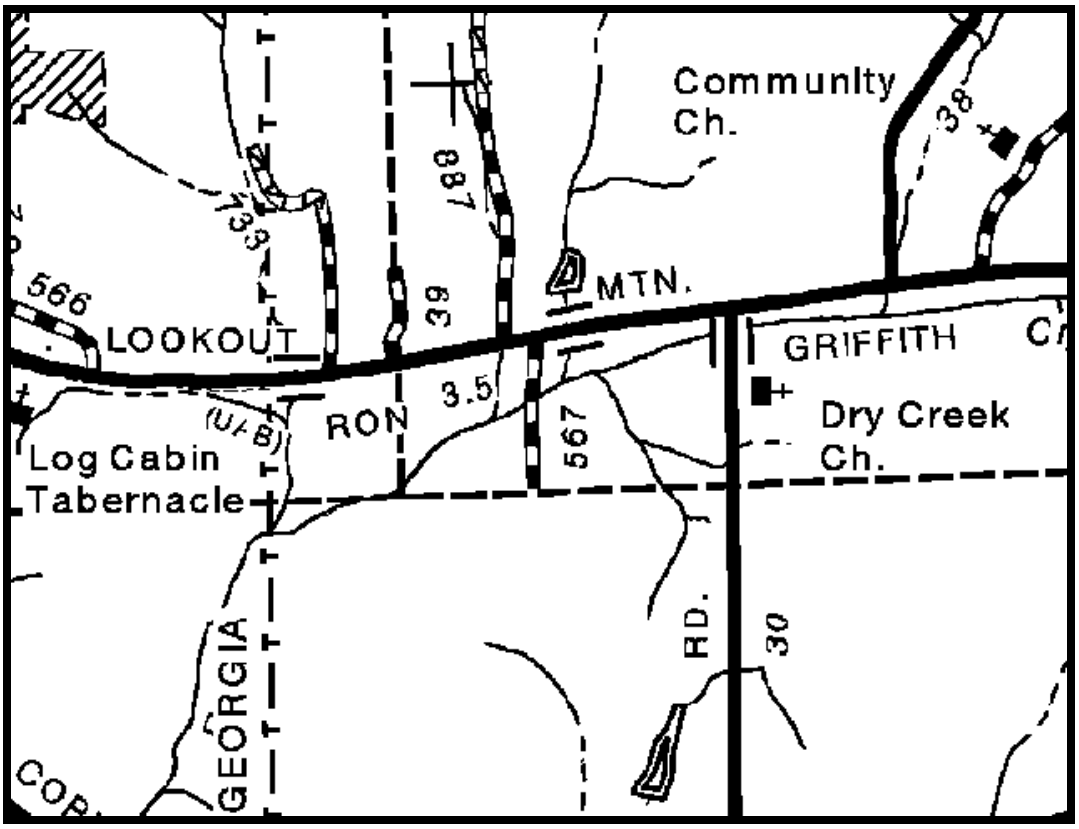


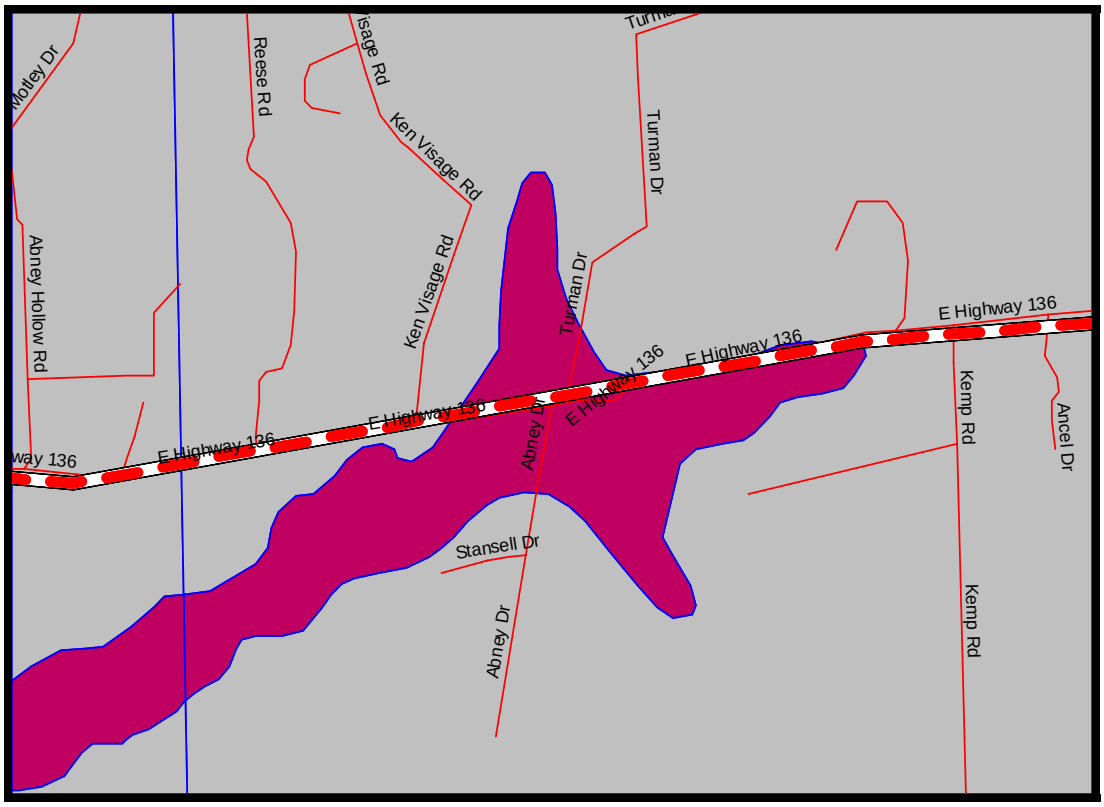
3700 block of Chamberlain Rd, Rocky Ln off Chamberlain Rd:



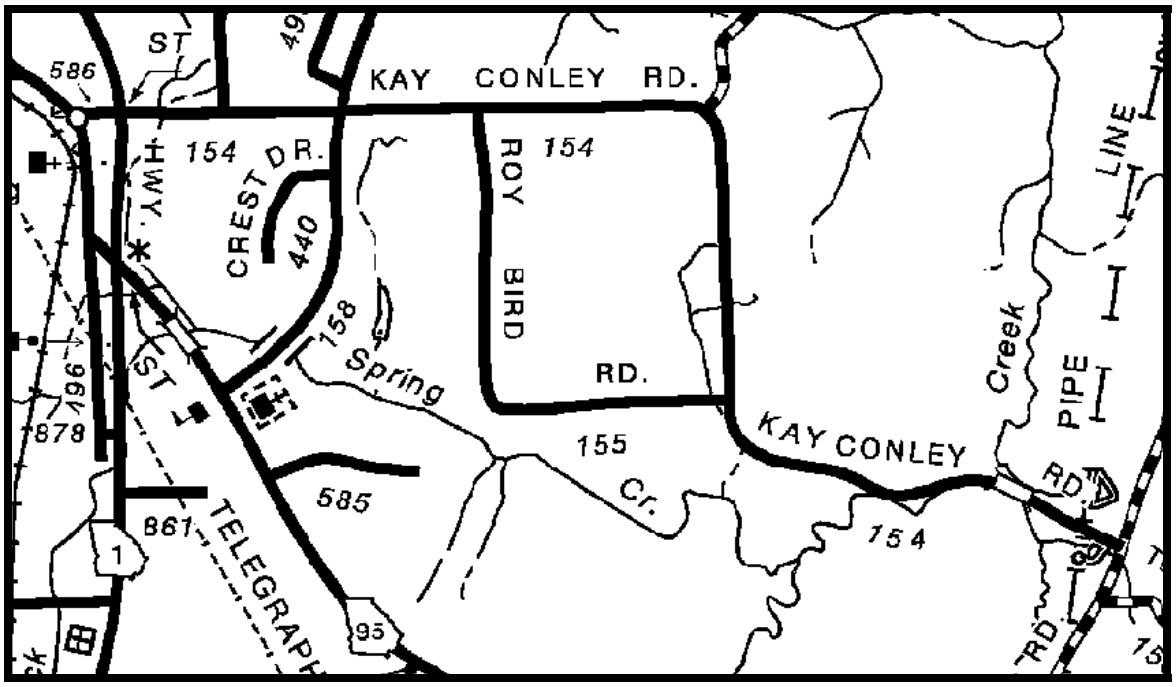


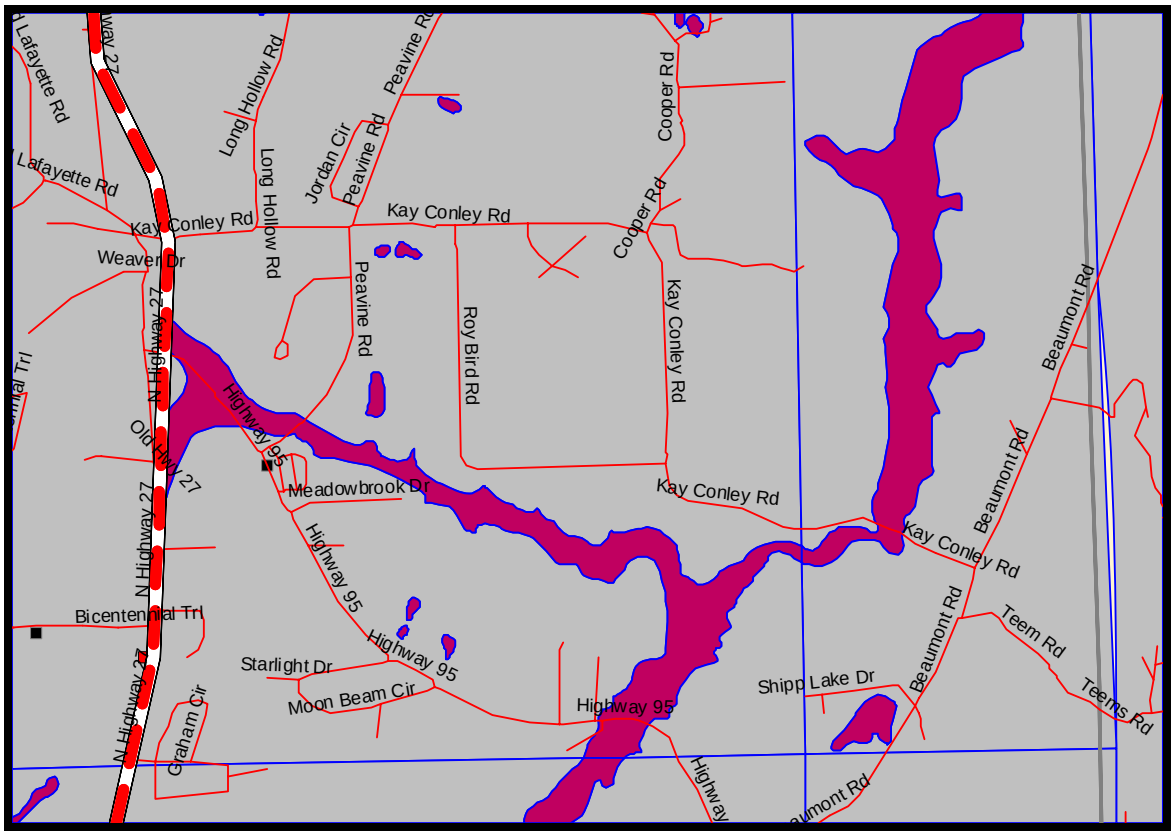
East Hwy 136 near Abby Drive:



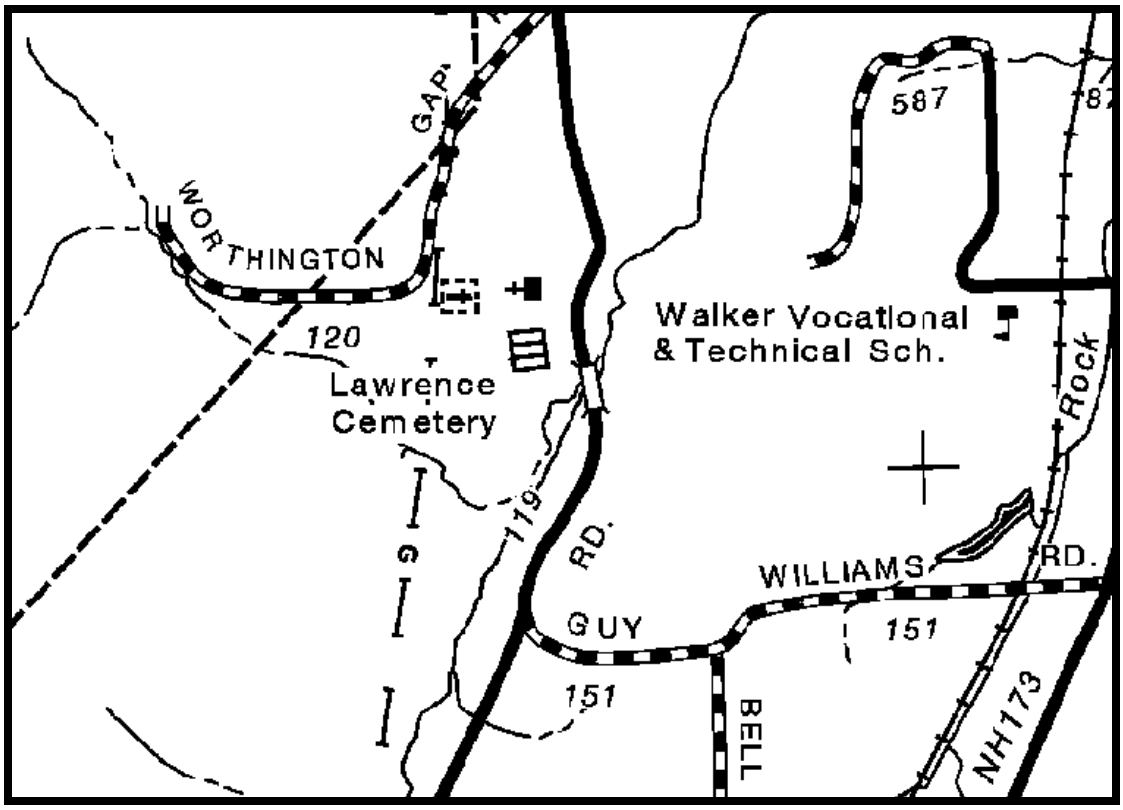


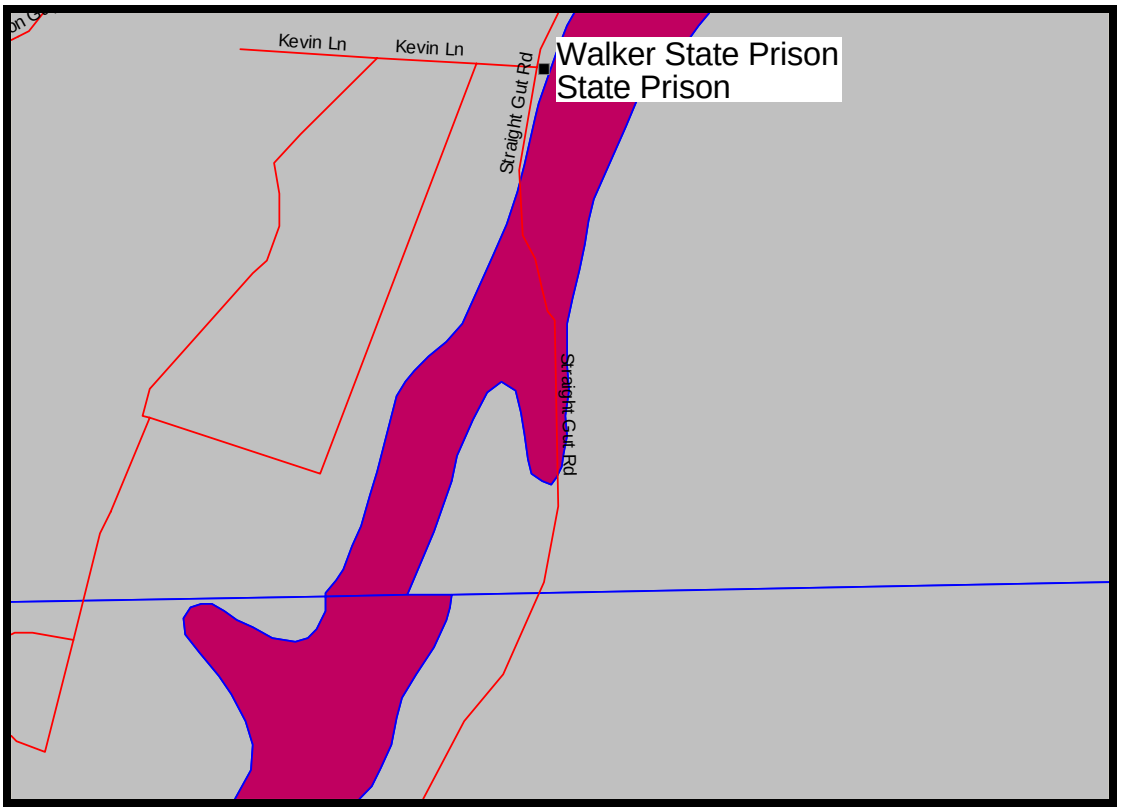
2200-2300 block of Kay Conley Rd, and Kay Conley Rd east of the Dollar General store:



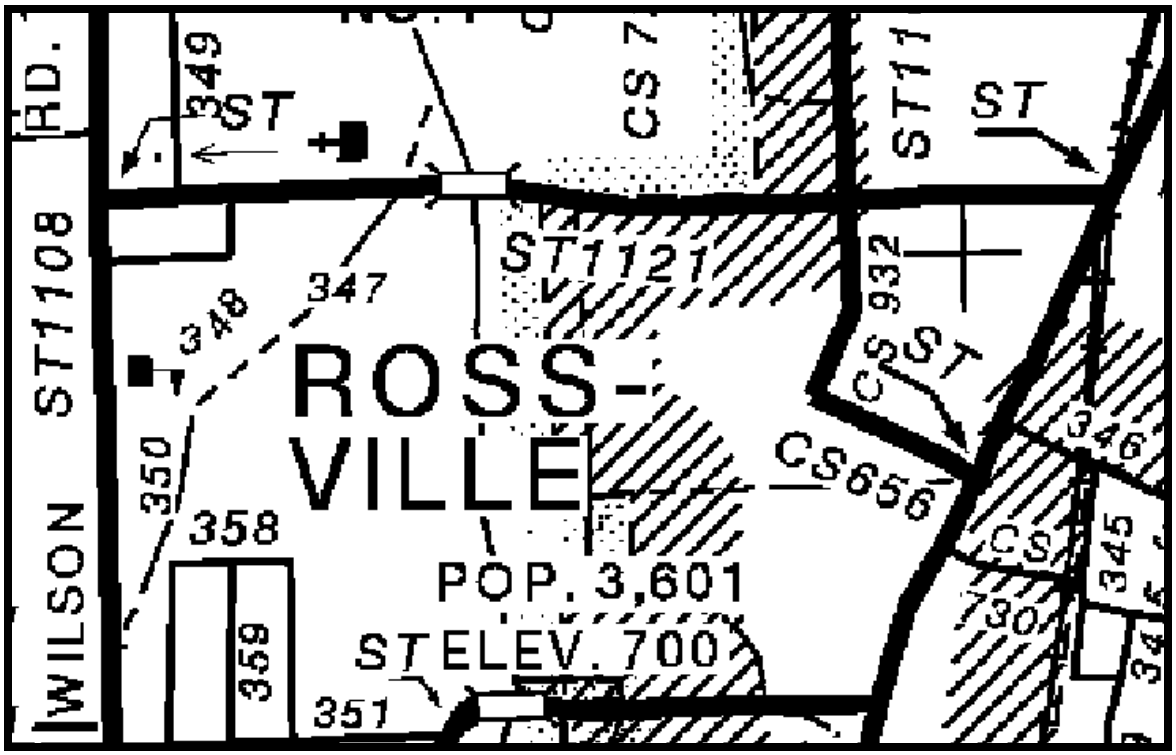


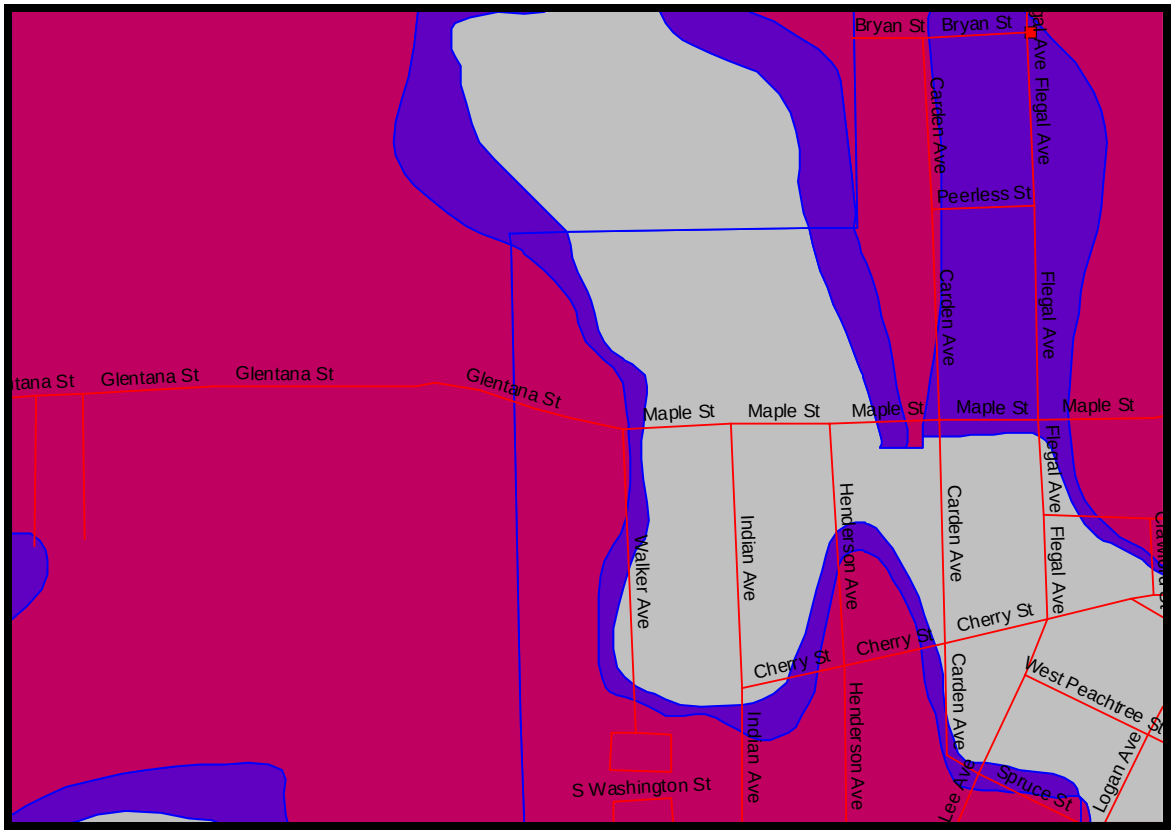
Straight Gut Rd south of Kevin Ln at the bridge:



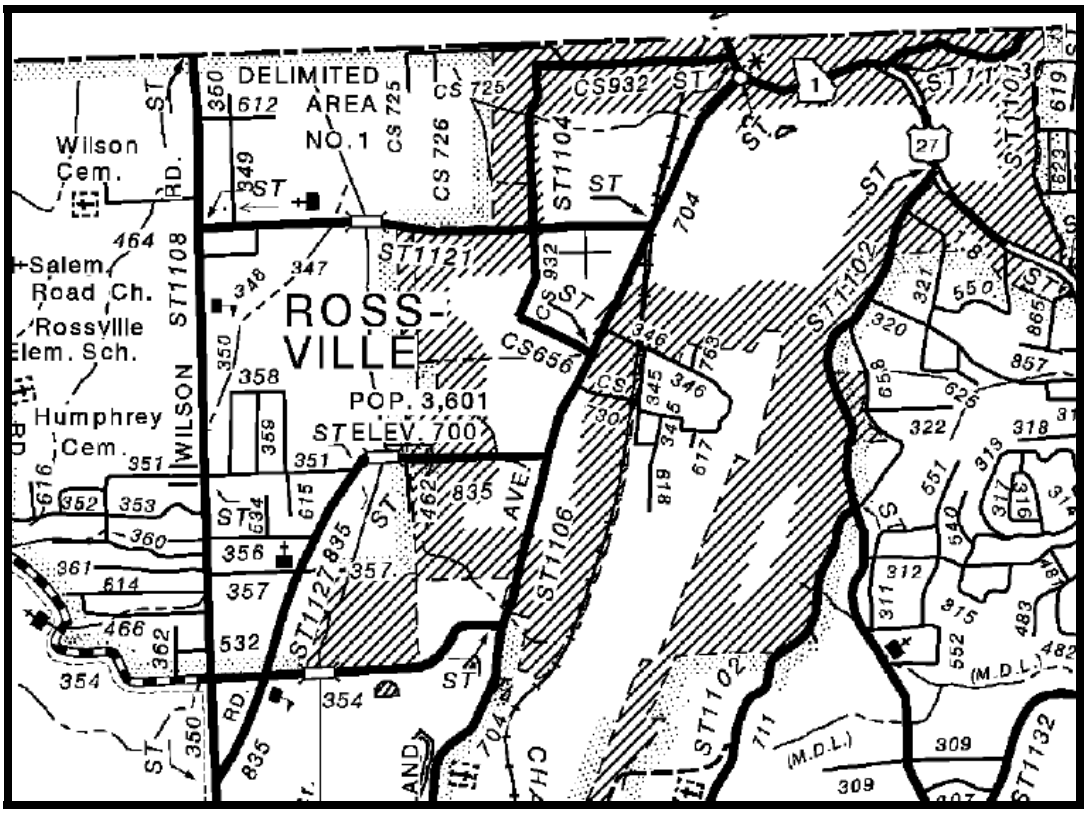


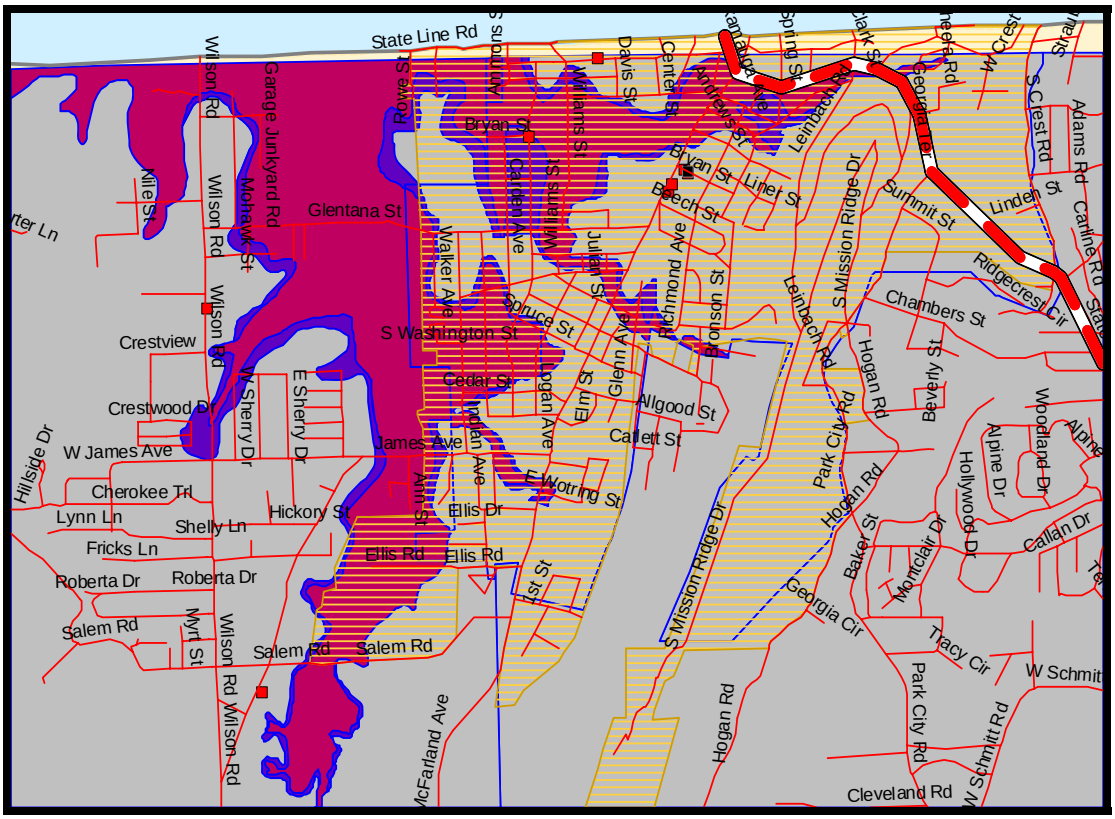
Glentana St at West Maple St:



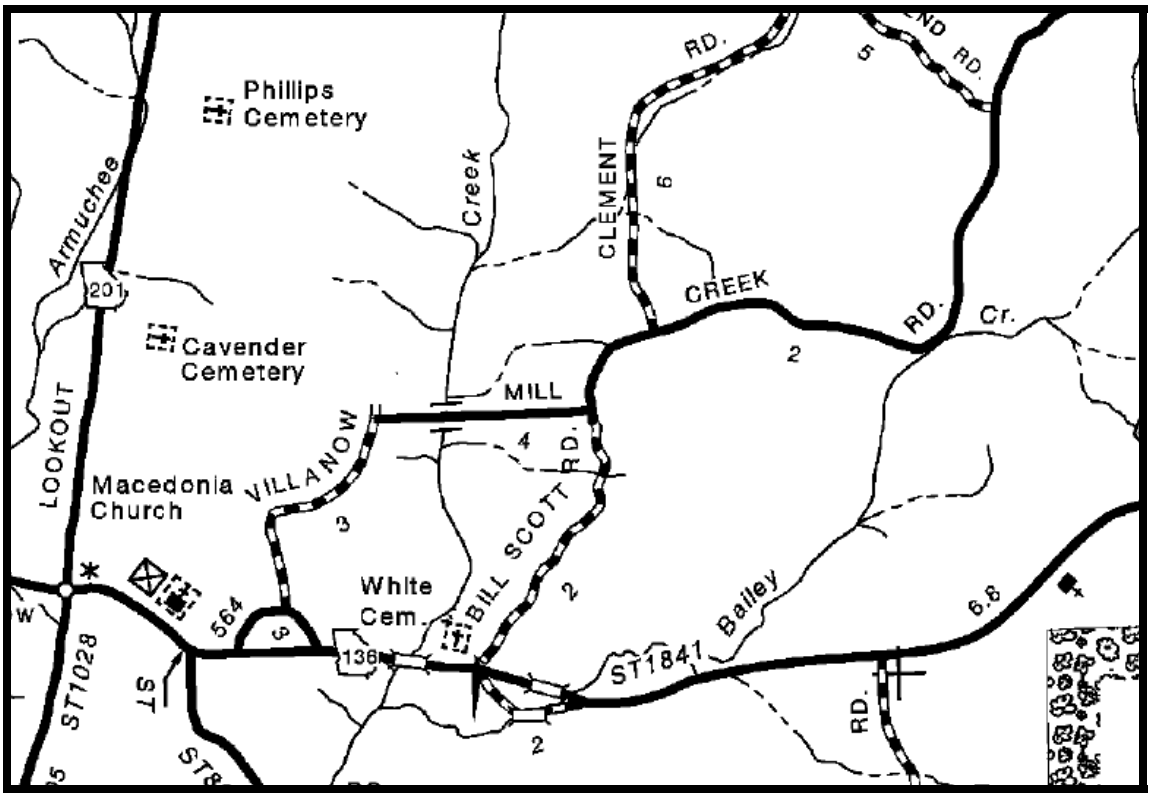


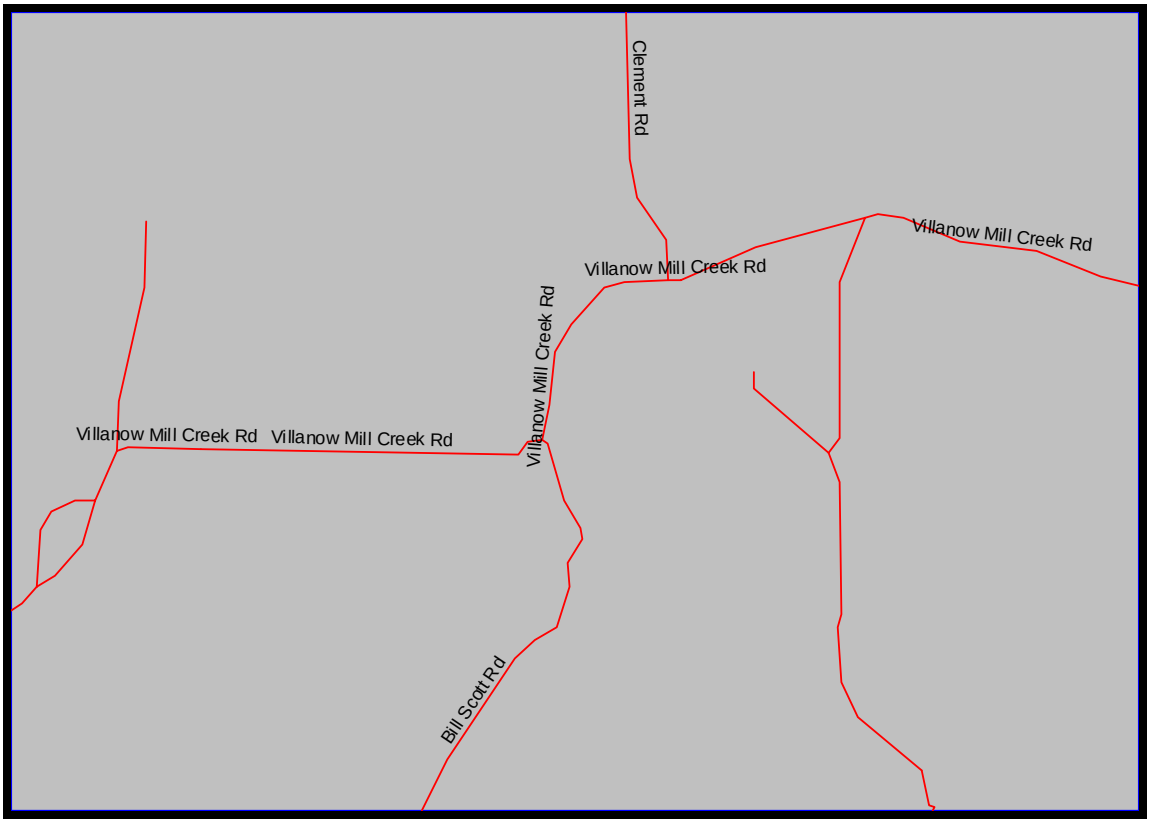
The City of Rossville Maintenance Barn and City Recreational Facilities:



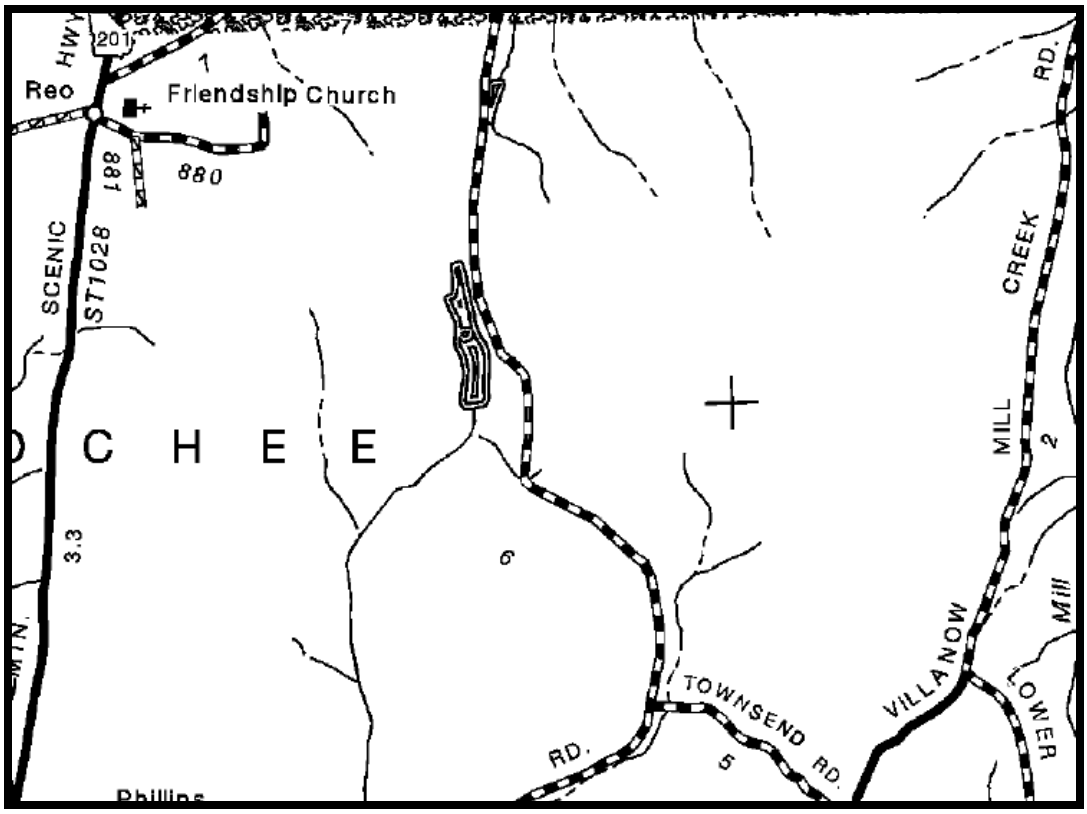


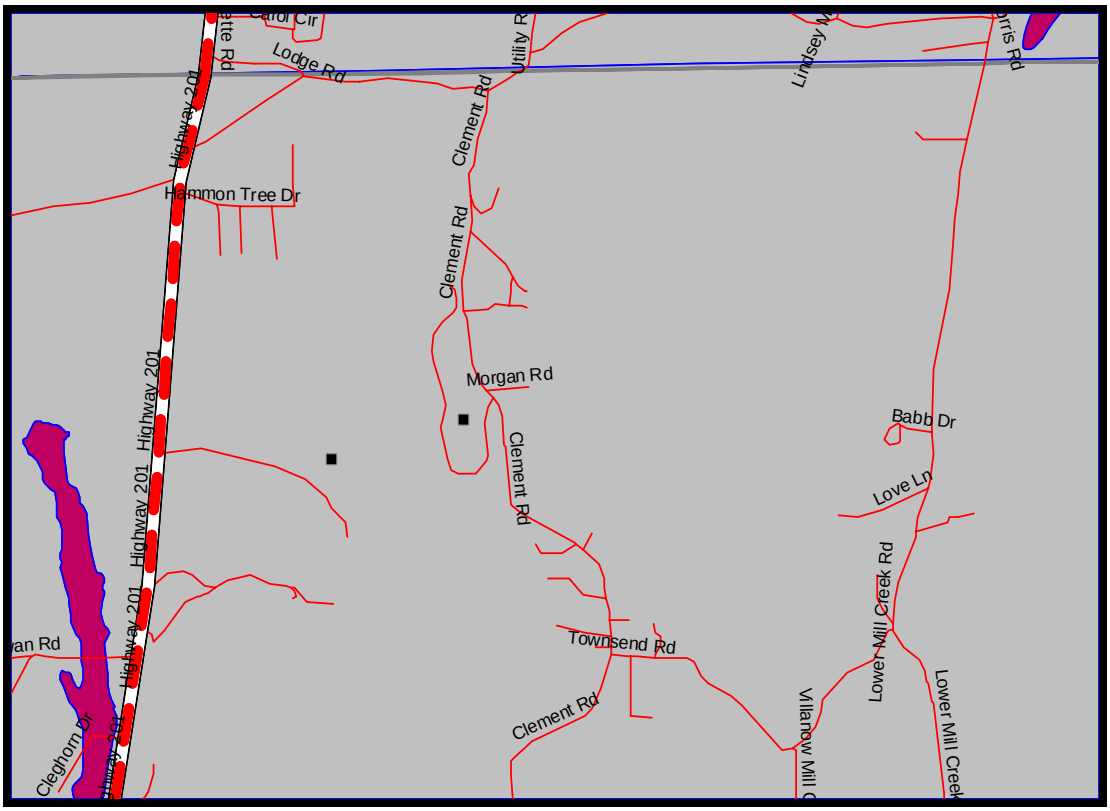
Villanow Mill Creek Rd between Clement Rd and Bill Scott Rd:



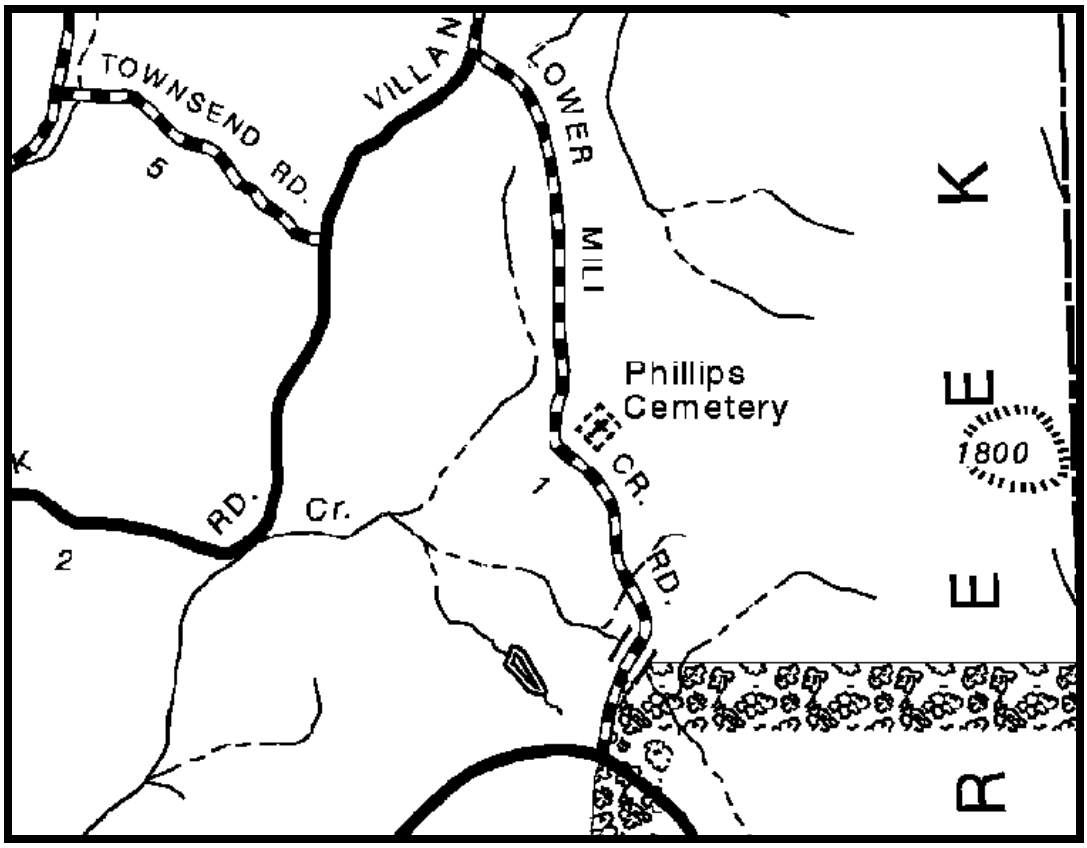


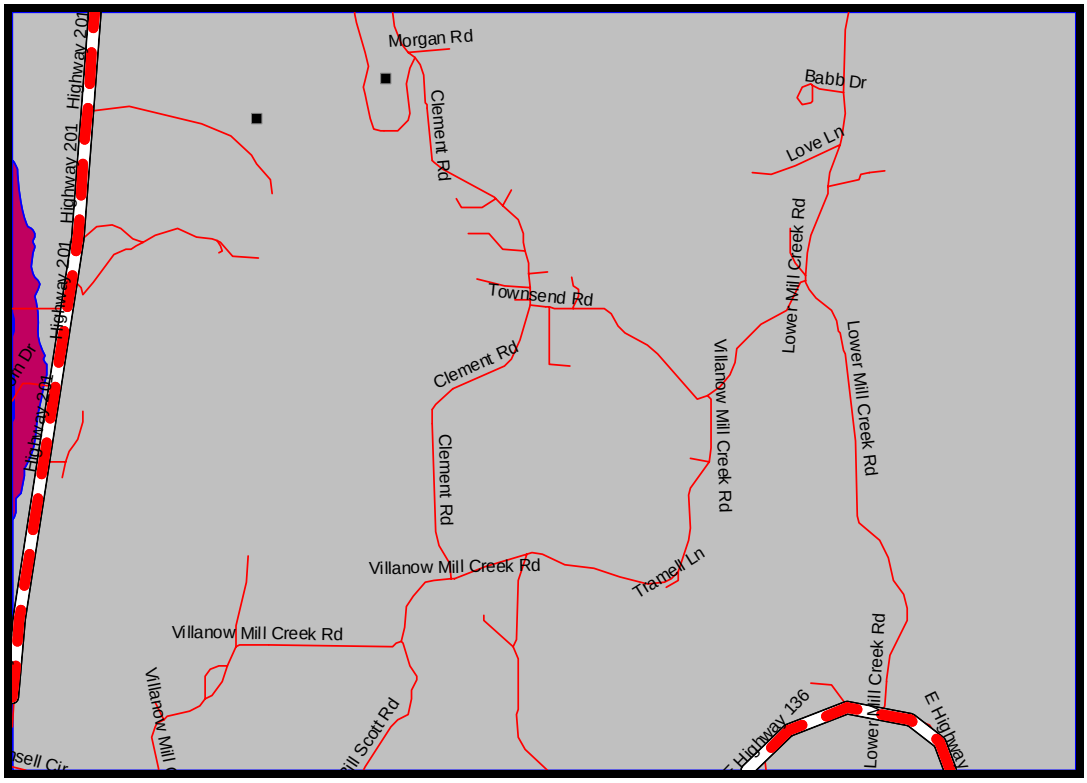
Clement Rd at Smith, Green Lake, and Morgan Rds:



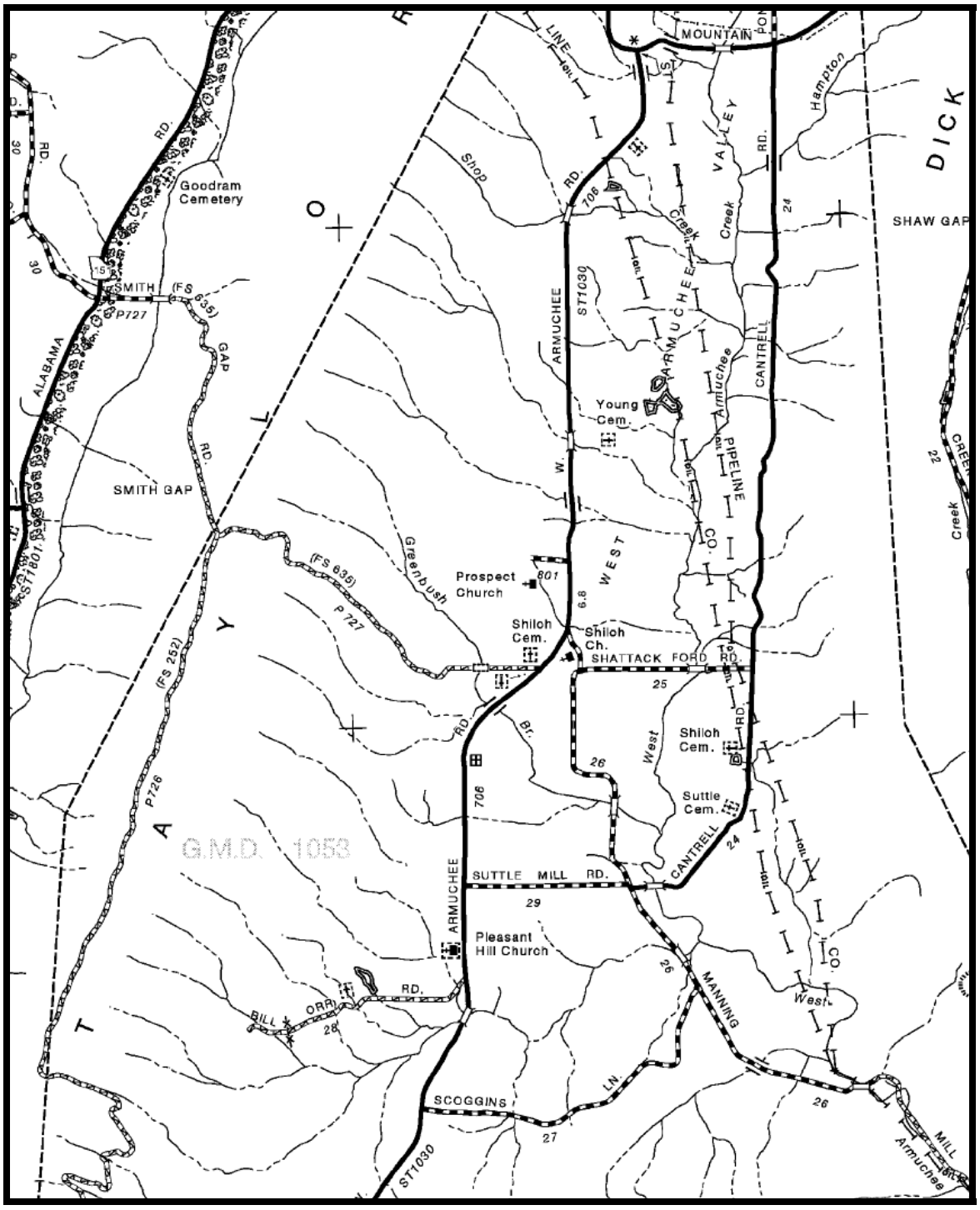


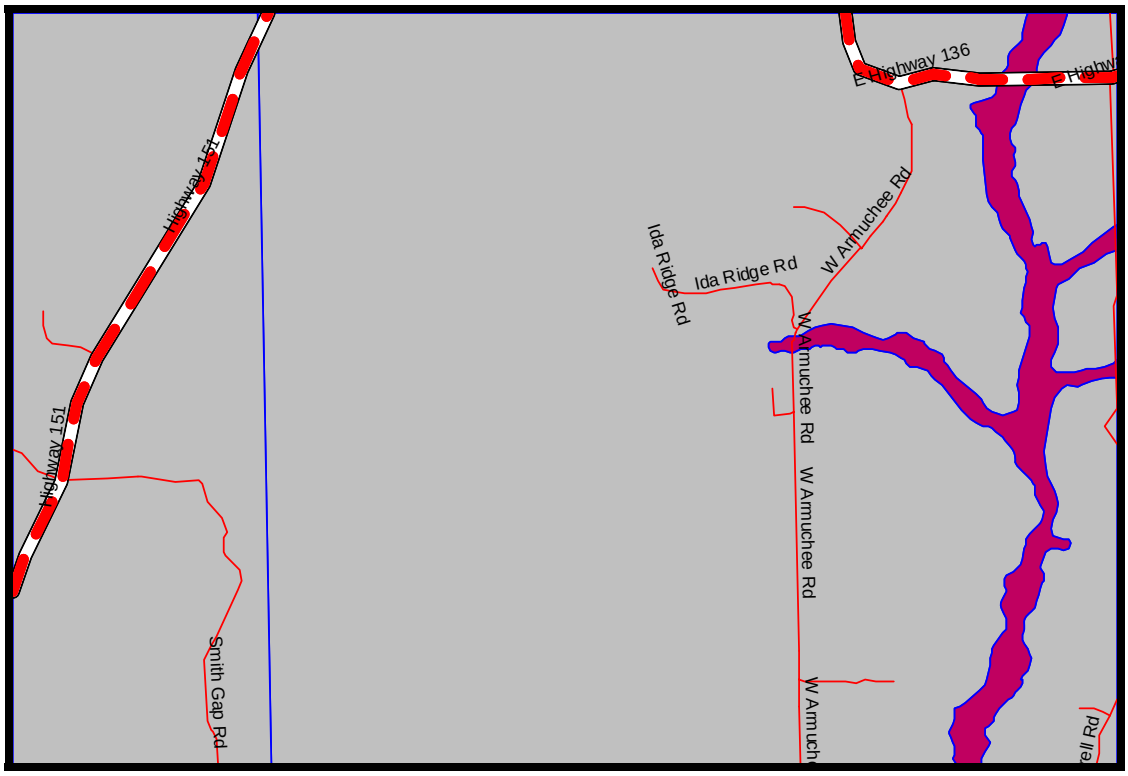
Lower Mill Creek Rd:

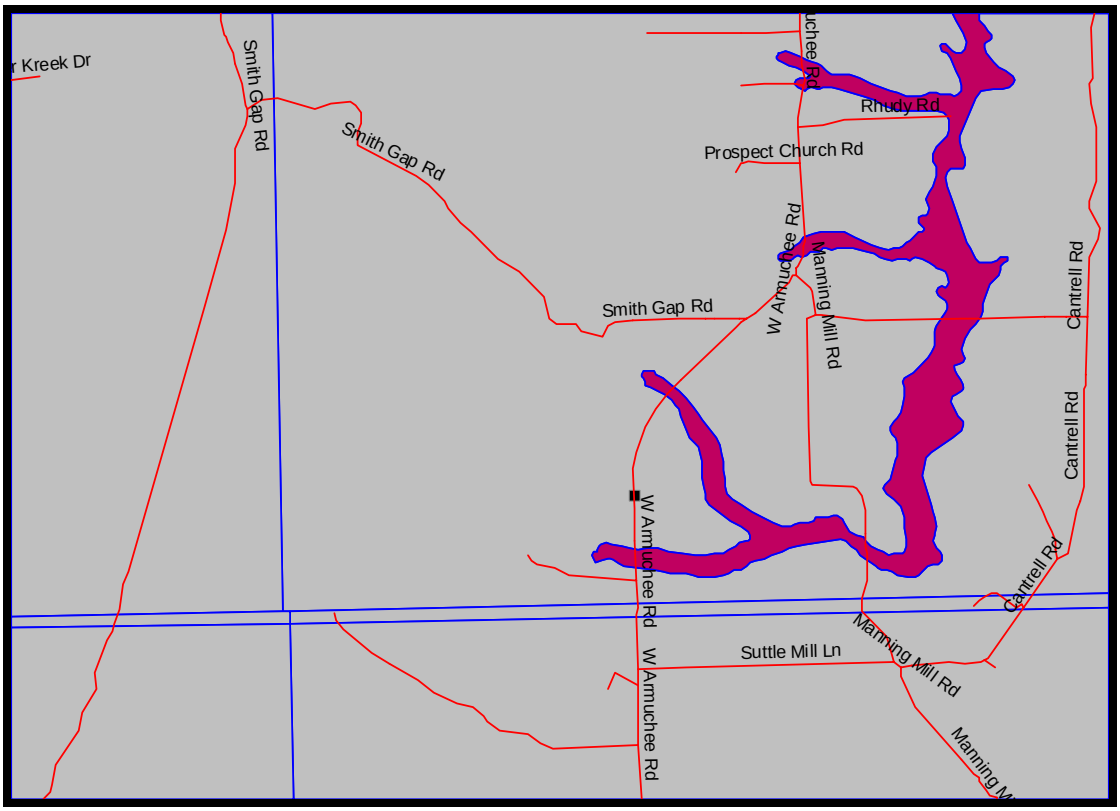




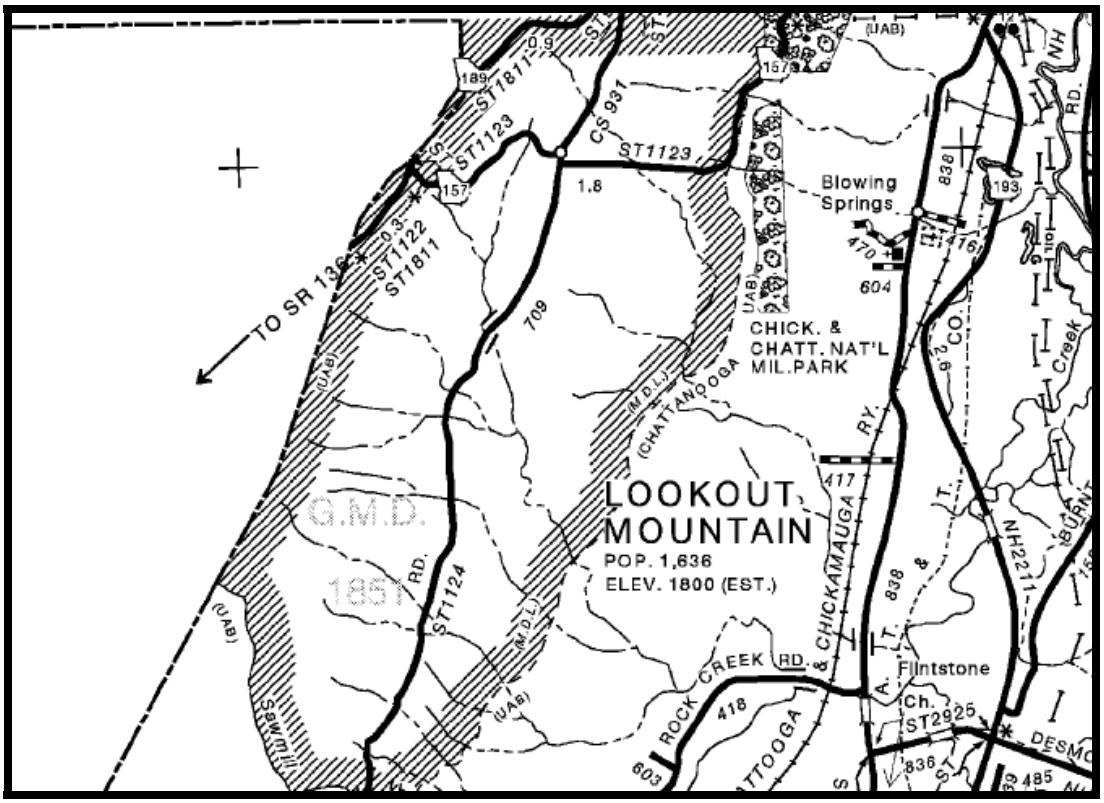
Smith Gap Rd at Hwy 151, Smith Gap Rd at Forestry Rd, Forestry Rd 227 off the 3500 block of Manning Mill Rd:

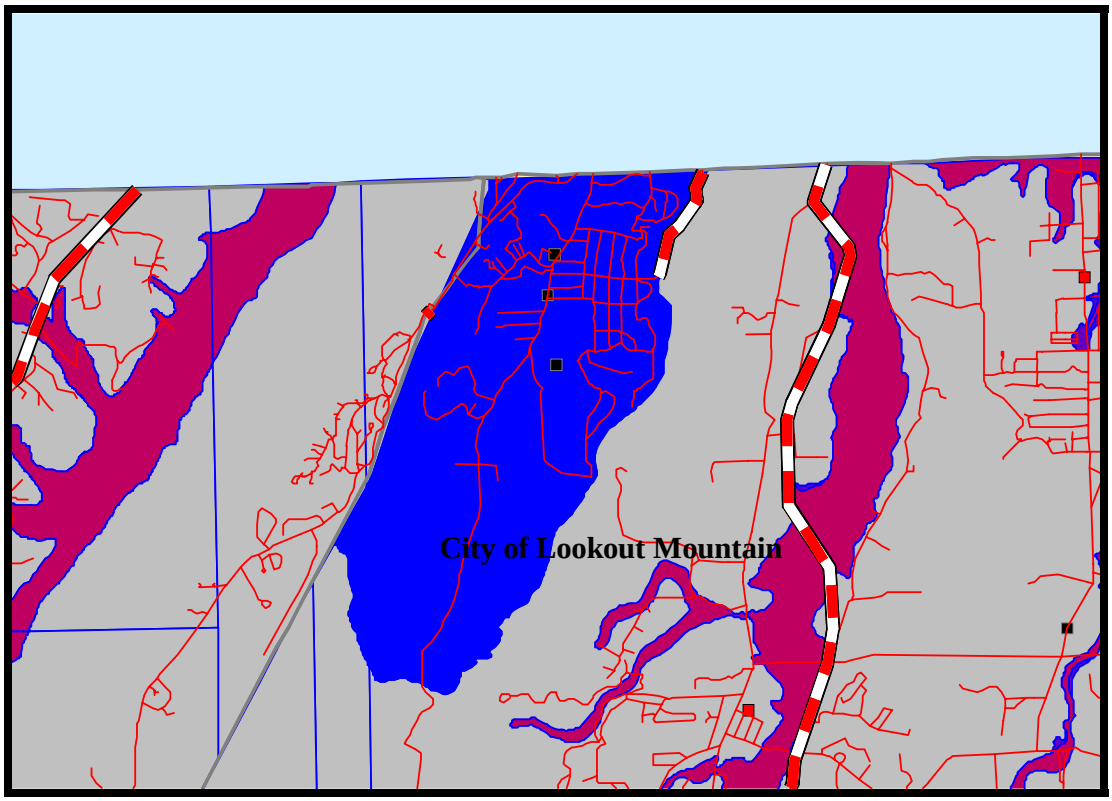



Highway 151
Highway 151
Smith Gap Rd
Ida Ridge Rd
Ida Ridge Rd
W Armuchee Rd
W Armuchee Rd
W Armuchee Rd
W Armuchee Rd


Smith Gap Rd
Smith Gap Rd
Smith Gap Rd
Rhudy Rd
Prospect Church Rd
W Armuchee Rd
Manning Mill Rd
Cantrell Rd
Cantrell Rd
Cantrell Rd
W Armuchee Rd
W Armuchee Rd
Suttle Mill Ln
Manning Mill Rd

Several locations throughout the City of Lookout Mountain:





D. Estimate of Potential Losses – For loss estimate information, please refer to the Critical Facilities Database (Appendix A).

E. Multi-Jurisdictional Concerns – Any portion of Walker County can potentially be impacted by flooding, however, the areas most prone to flooding have historically been those areas located in the vicinity of Colbert Hollow Rd, McIntyre Rd, Andrews Ln, Crow Gap Rd south of Tatum, W. Cove Rd to Hog Jowl Rd, Lee Clarkston Rd, Johnson Rd/Five Points Rd area, Crittendon Ave at West 7th, 8th, and 9th Streets, Longwood area off of Lee-Gordon Mill Rd, Oakwood Baptist Church, Coke Oven Rd at Hwy 341, N. Longhollow Rd and Davis Rd at Lytle Rd, Chestnut Hills Trailer Park, McFarland Ave at Jenkins Rd, the 400 to 800 block of Schmitt Rd, Wilson Rd at Crestview Dr, Rock Creek Rd including Shaddow Ave, Kendrick's Switch between Phillip Hollow and the railroad tracks, Boss Rd at Bonds Rd, the 3700 block of Chamberlain Rd, Rocky Ln off Chamberlain Rd, the 2200 to 2300 block of Kay Conley Rd, Kay Conley Rd east of the Dollar General store, Straight Gut Rd south of Kevin Ln at the bridge, Glentana St at West Maple St, the City of Rossville Maintenance Barn and City Recreational Facilities, Villanow Mill Creek Rd between Clement Rd and Bill Scott Rd, Clement Rd at Smith, Green Lake, and Morgan Rds, Lower Mill Creek Rd, East Hwy 136 near Abby Drive, Smith Gap Rd off Hwy 151, Smith Gap Rd at Forestry Rd, Forestry Rd 227 off the 3500 block of Manning Mill Rd, and several locations throughout the City of Lookout Mountain. Any mitigation steps taken related to flooding will be pursued on a countywide basis and include the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville. According to the available flood maps, the areas of highest concern are located in and around the Cities of Chickamauga, LaFayette, and Rossville, and several areas spread throughout the County.

F. Hazard Summary – Severe flooding has the potential to inflict significant damage within Walker County. Mitigation of flood damage requires the community to have knowledge of flood-prone areas, including roads, bridges, bodies of water, and critical facilities, as well as the location of the County's designated shelters. The Walker County HMPC identified flooding as a hazard requiring mitigation measures and identified specific mitigation goals, objectives and action items they deemed necessary to lessen the impact of flooding. These findings are found in Chapter 5.

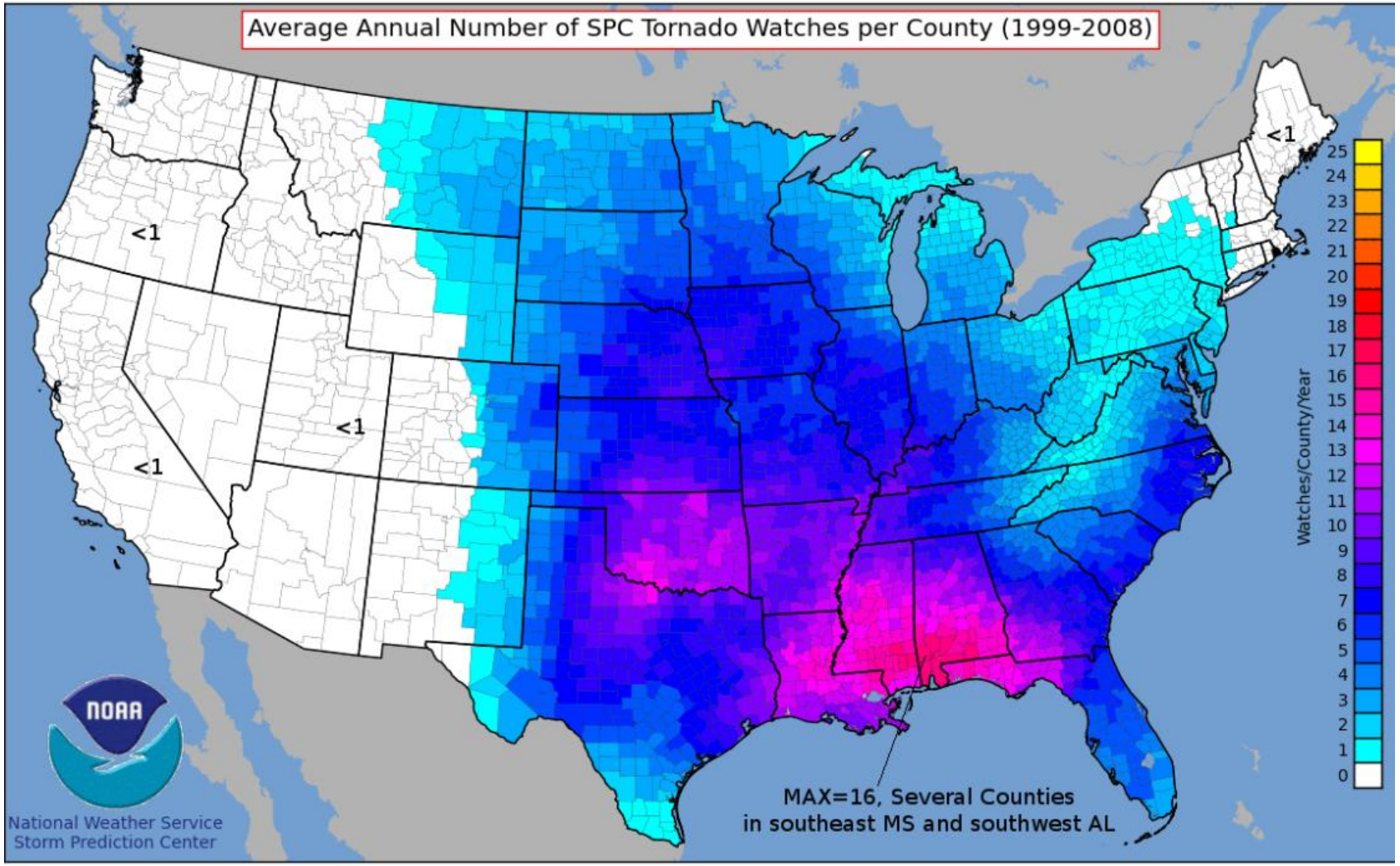
2.4 Tornados

A. Hazard Identification – A tornado is a dark, funnel-shaped cloud containing violently rotating air that develops below a heavy cumulonimbus cloud mass and extends toward the earth. The funnel twists about, rises and falls, and where it reaches the earth causes great destruction. The diameter of a tornado varies from a few feet to a mile; the rotating winds attain velocities of 200 to 300 mph, and the updraft at the center may reach 200 mph. A tornado is usually accompanied by thunder, lightning, heavy rain, and a loud "freight train" noise. In comparison with a hurricane, a tornado covers a much smaller area but can be just as violent and destructive. The atmospheric conditions required for the formation of a tornado include great thermal instability, high humidity, and the convergence of warm, moist air at low levels with cooler, drier air aloft. A tornado travels in a generally northeasterly direction with a speed of 20 to 40 mph. The length of a tornado's path along the ground varies from less than one mile to several hundred. The Fujita Scale is the standard scale for rating the severity of a tornado as measured by the damage it causes (see table below).

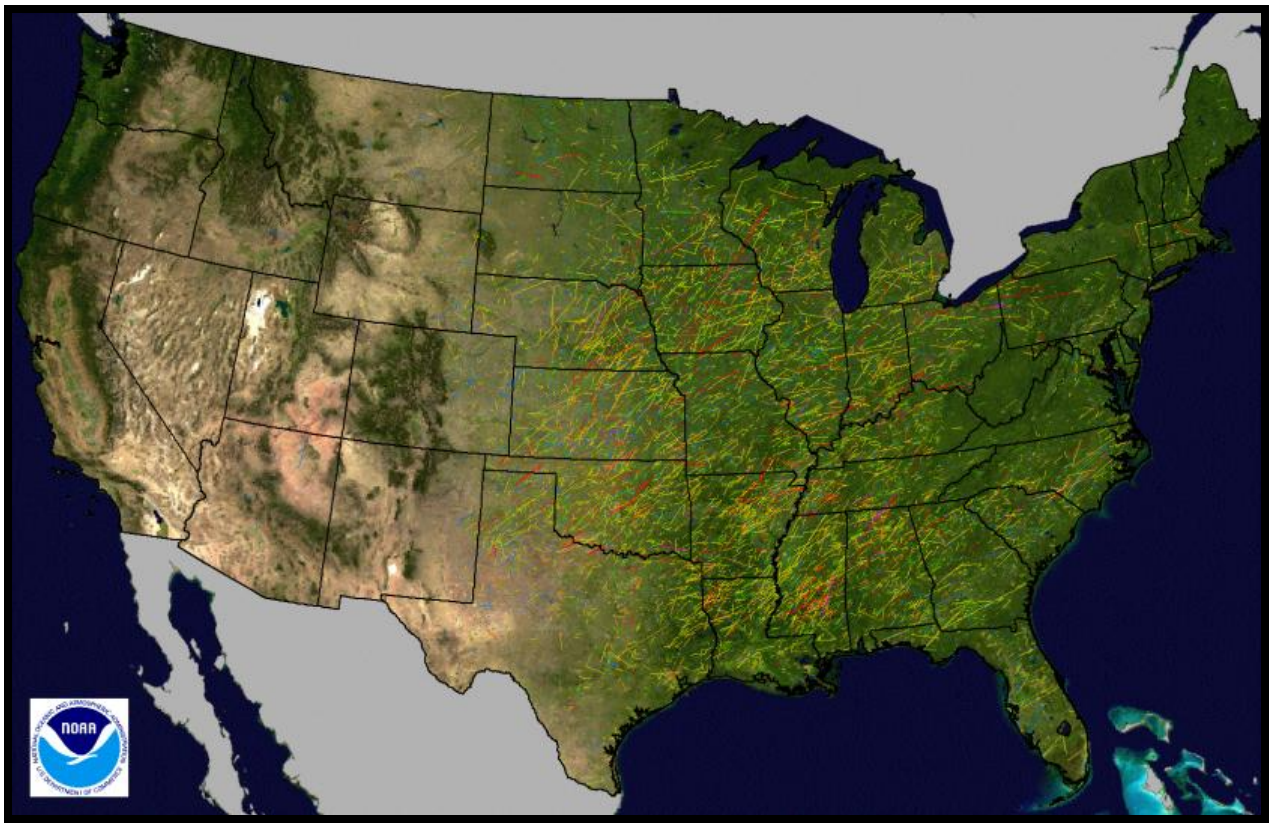
The Fujita Scale of Tornado Intensity

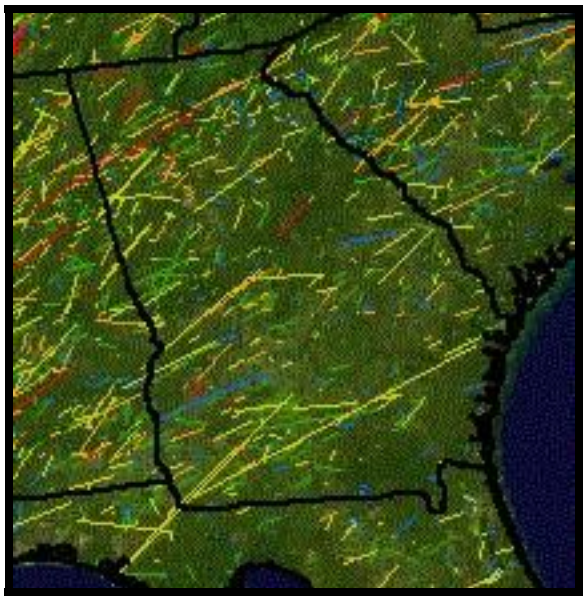
F-Scale Number	Intensity Phrase	Wind Speed	Type of Damage Done
F0	Gale tornado	40-72 mph	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.
F1	Moderate tornado	73-112 mph	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
F2	Significant tornado	113-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
F3	Severe tornado	158-206 mph	Roof and some walls torn off well constructed houses; trains overturned; most trees in forest uprooted
F4	Devastating tornado	207-260 mph	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	Incredible tornado	261-318 mph	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel re-inforced concrete structures badly damaged.

The NOAA map below represents the average annual number of NOAA Storm Prediction Center tornado watches (per county) from 1999 through 2008.

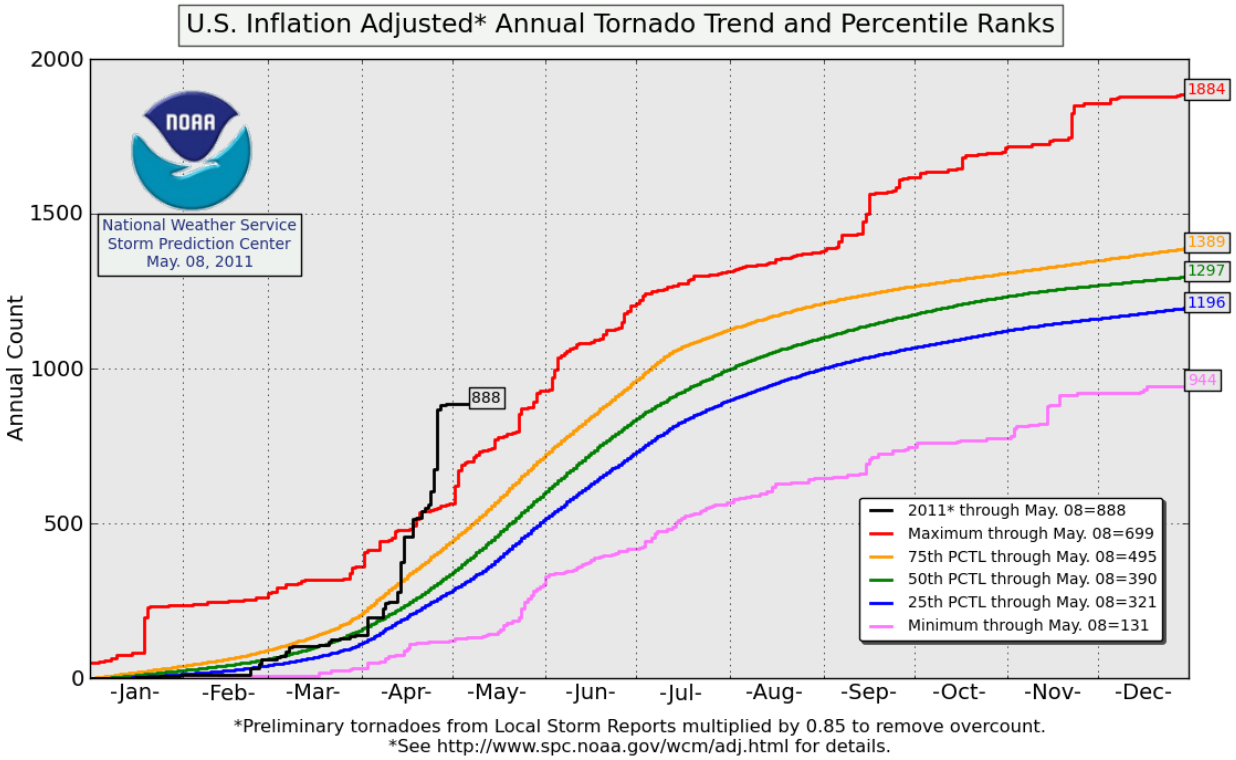


The following two NOAA maps represent the United States severe report database (tornadoes 1950-2010) converted into shapefile (.shp) file format as well as a Geographic Information System (GIS) database. In other words, these maps show the estimated paths of recorded tornados over this time period.

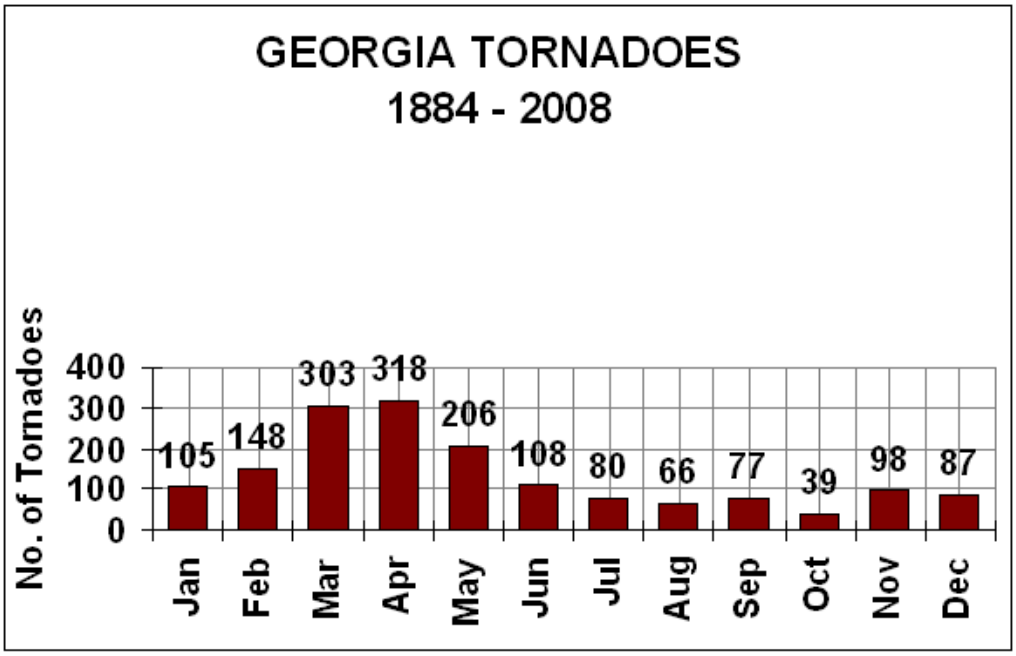




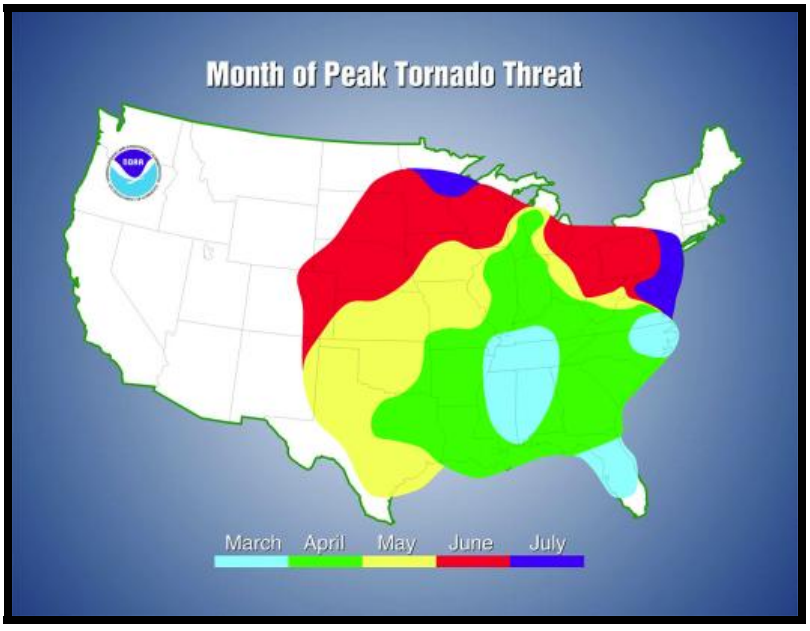
The Annual Tornado Trend chart below is a result of the following methodology applied to the SPC observed tornado dataset by Harold Brooks, NSSL and Greg Carbin, SPC. As tornado reports come in and are reviewed, the actual, or "smoothed", tornado numbers are added to this chart. (Details: A simple linear regression equation is fit to the 1954-2007 annual tornado totals. This equation is then used to compute the delta, or difference, between the original/observed annual tornado total and the smoothed, or "adjusted" annual total represented by the point on the linear trend line for that year.)



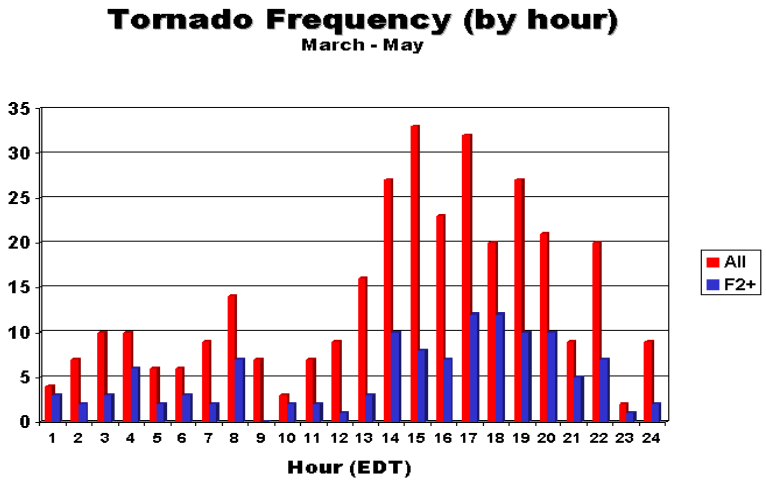
Tornados are considered to be the most unpredictable and destructive of weather events, even though they are not the most frequently occurring natural hazard within Walker County. Tornado season in Georgia ordinarily runs from March through August, with the peak activity being in April. However, tornados can strike at any time of the year when certain atmospheric conditions are met. See the graph below.

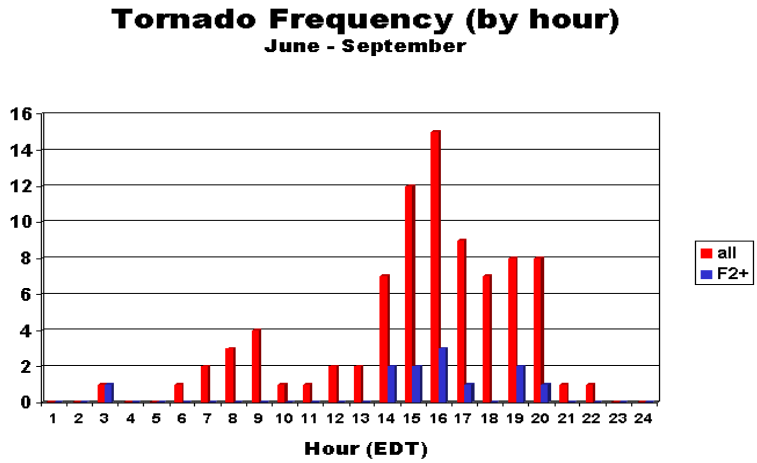


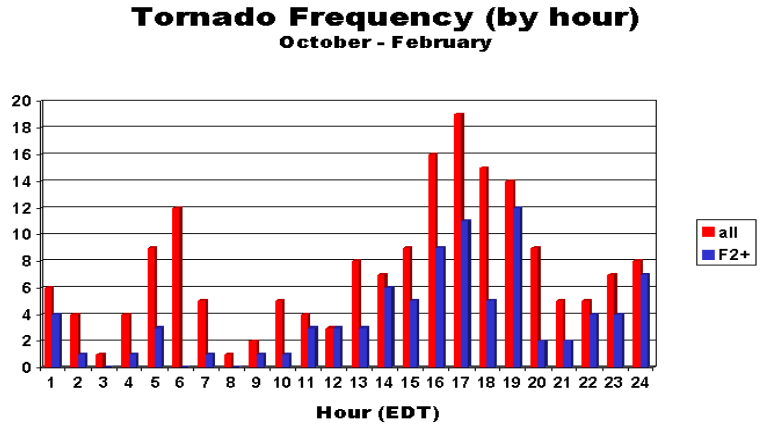
On average, Walker County tornado events tend to peak by the month of April along with most of the Southeastern United States. Other parts of the country tend to peak later in the summer.



Tornados can also strike at any time of day or night, including early morning hours, though they are most common throughout the afternoon and into the evening hours. See graphs below:



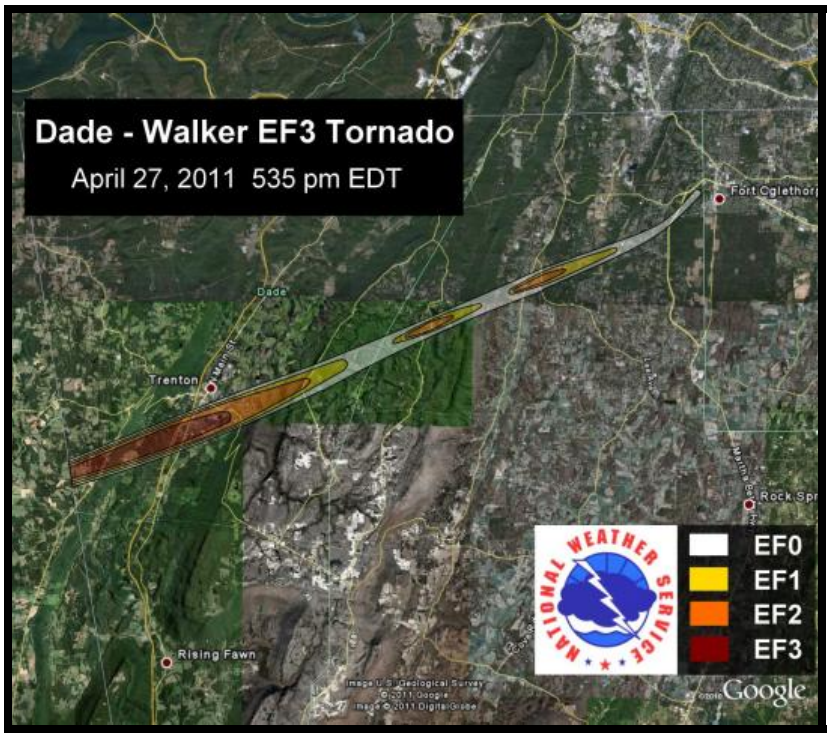




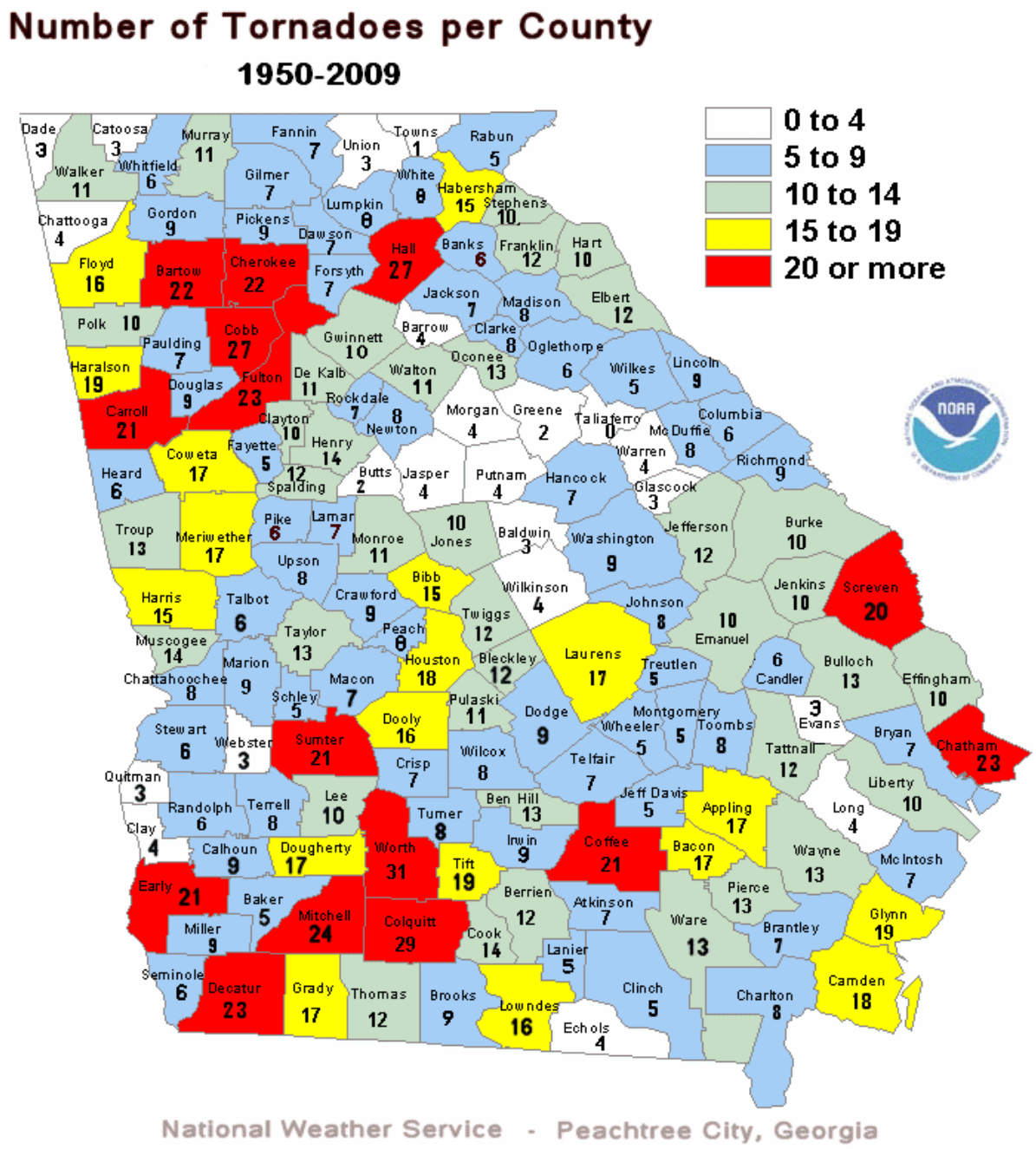
B. Hazard Profile – All areas within Walker County are vulnerable to the threat of a tornado. There is simply no method to determine exactly when or where a tornado will occur. The Walker County Hazard Mitigation Planning Committee (HMPC) reviewed historical data from the Georgia Tornado Database, the National Climatic Data Center, newspaper articles, and various online resources in researching the past effects of tornados within the County. With most of the County's recorded tornado events, only basic information was available. However, dozens of tornado watches have been recorded during this period, and certainly some tornados go undetected or unreported. Therefore, any conclusions reached based upon available information on tornados within Walker County should be treated as the minimal possible threat.

During the past fifty years, documentation of nine tornado events was found. Based on the entire fifty-year period, a tornado is likely to occur within Walker County approximately once every five years. More precisely, every year in Walker County there is a 18% chance of a tornado event according to available documentation. When only the past ten-year period is taken into consideration, the likelihood of such an event in Walker County is estimated somewhat lower at a 10% chance per year. The HMPC has determined that focusing on the more active fifty-year period, rather than the past ten-year period, is likely to provide the most accurate information available at this time.

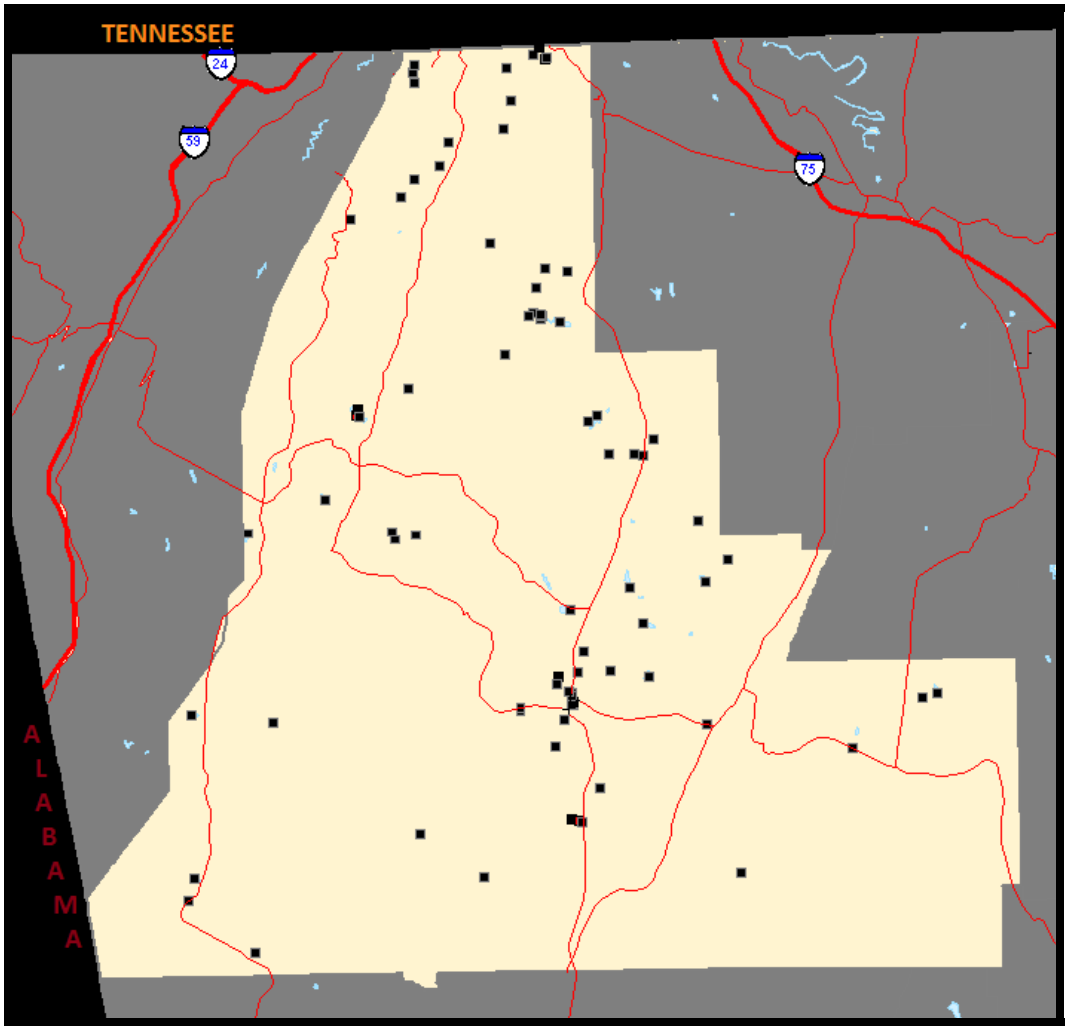
The most recent tornado to strike Walker County was on April 27, 2011. A National Weather Service survey team determined that an EF3 tornado with winds of 150 MPH occurred in Dade and Walker Counties. The path length was 18 miles with a width of six tenths of a mile. Note that this path length only includes the area in Georgia (the tornado tracked into Georgia from Alabama). Homes were destroyed, 18 with major damage and tens of thousands of trees were downed. There were 2 fatalities and 12 injuries with this storm.



The following statewide map shows the 11 Walker County tornados on record from the specific time period of 1950 to 2009. This is not the same time period used for this plan (1961 to 2011); however, the map is useful in that it demonstrates the tornado activity of the County in relationship to surrounding counties, and the entire state.

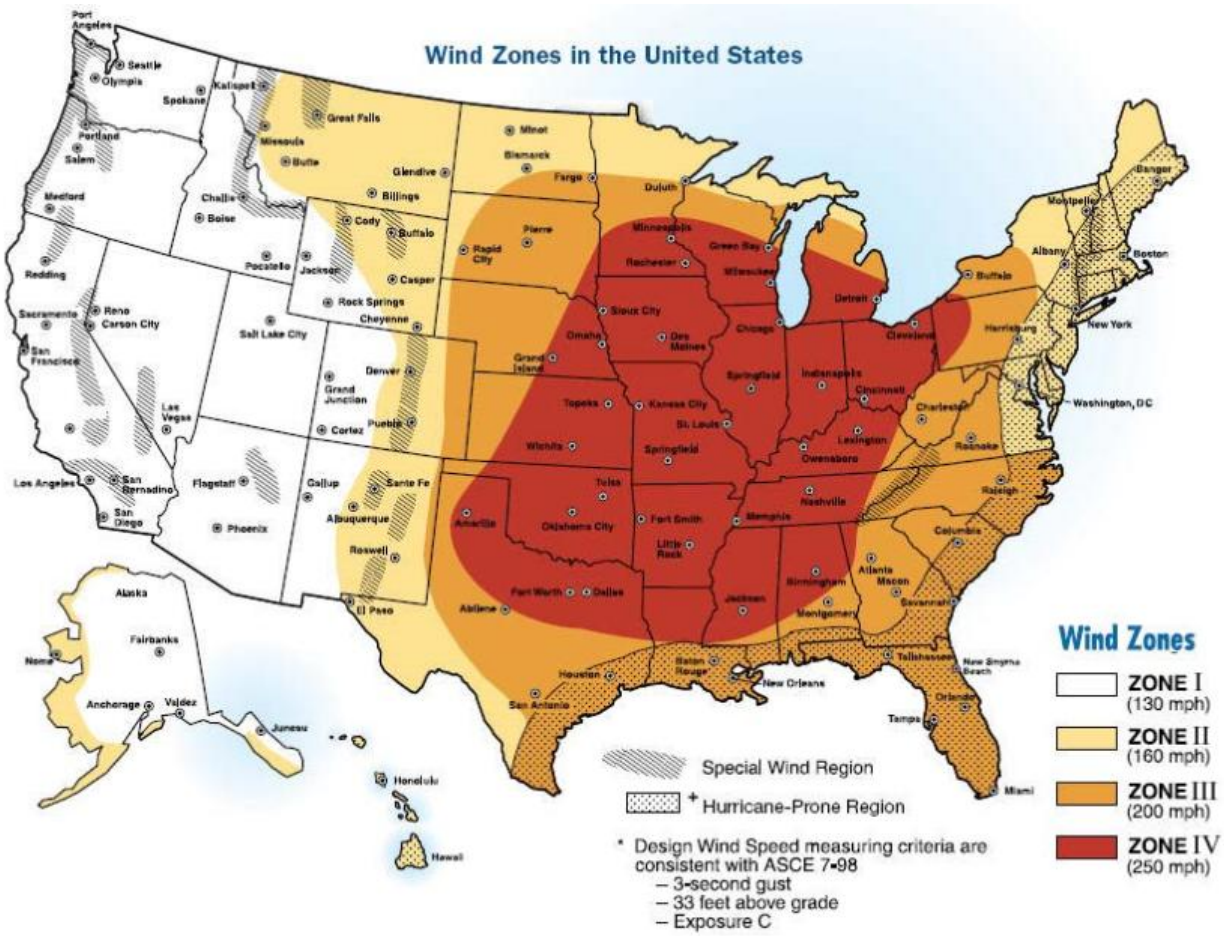


C. Assets Exposed to Hazard - Tornados are unpredictable and are indiscriminate as to when or where they strike. In evaluating assets that may potentially be impacted by the effects of tornados, the HMPC determined that all critical facilities, public and private property, are susceptible. The map below identifies critical facilities located within the hazard area which, in the case of tornados, includes the entire County.

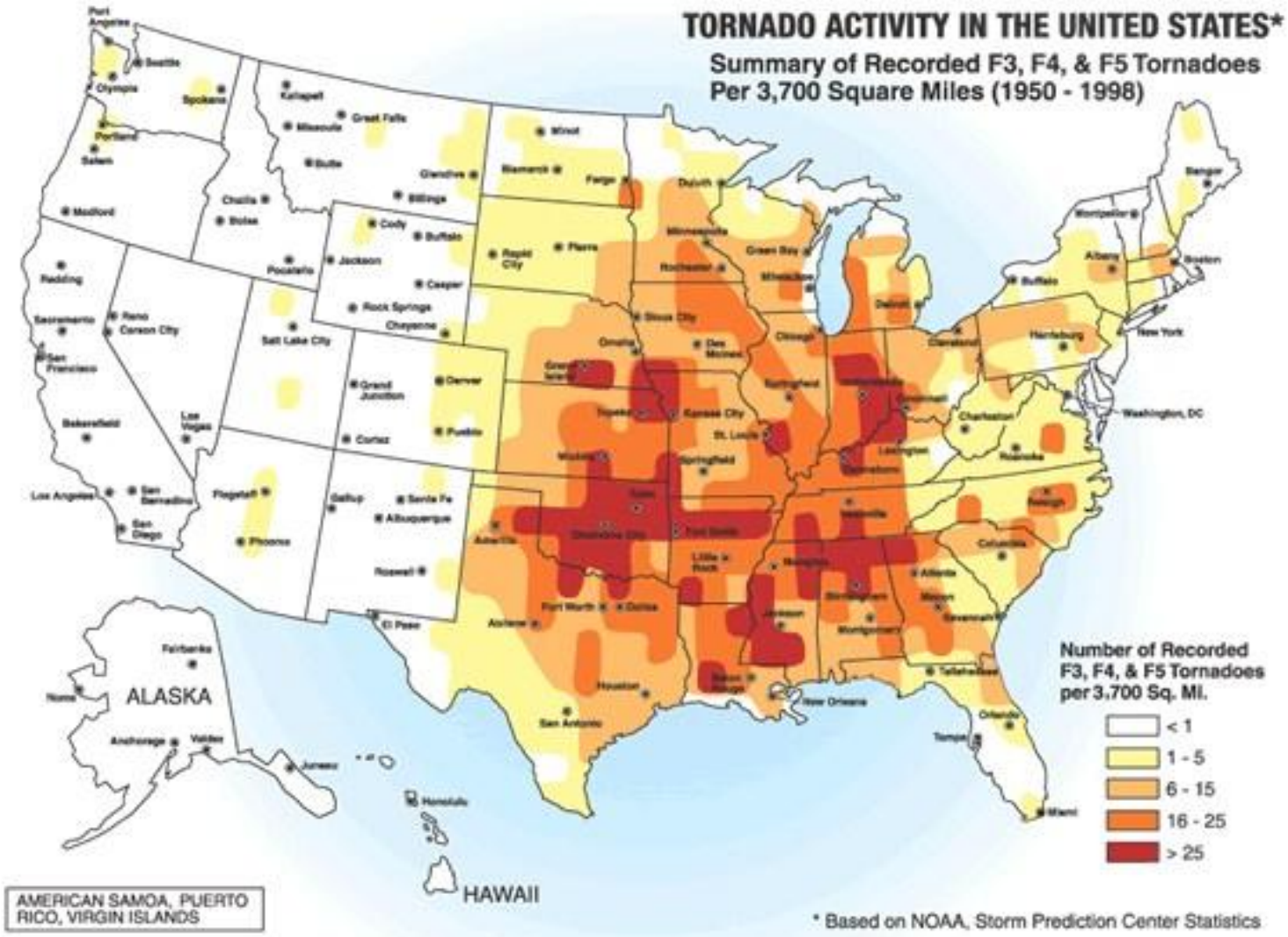


D. Estimate of Potential Losses – For loss estimate information, please refer to the Critical Facilities Database (Appendix A).

Walker County is located in wind zone IV, which is associated with 250-mph design wind speeds as determined by the American Society of Civil Engineers (ASCE). Construction must adhere to the Georgia State Minimum Standard Codes (Uniform Codes Act). The minimum standards established by these codes provide reasonable protection from most natural hazards. See the following two ASCE maps and table.


Wind Zones in the United States
Wind Zones
ZONE I
(130 mph)
ZONE II
(160 mph)
ZONE III
(200 mph)
ZONE IV
(250 mph)
Special Wind Region
+ Hurricane-Prone Region
* Design Wind Speed measuring criteria are consistent with ASCE 7-98
– 3-second gust
– 33 feet above grade
– Exposure C

Wind Zones	Areas Affected
Zone I (130 mph)	All of Washington, Oregon, California, Idaho, Utah, and Arizona. Western parts of Montana, Wyoming, Colorado and New Mexico. Most of Alaska except the east and south coastlines.
Zone II (160 mph)	Eastern parts of Montana, Wyoming, Colorado, New Mexico. Most of North Dakota. Northern parts of Minnesota, Wisconsin and Michigan.Western parts of South Dakota, Nebraska and Texas. All New England States. Eastern parts of New York, Pennsylvania, Maryland, and Virginia. Washington, DC.
Zone III (200 mph)	Areas of Minnesota, South Dakota, Nebraska, Colorado, Kansas, Oklahoma, Texas, Louisiana, Mississippi, Alabama, Georgia, Tennessee, Kentucky, Pennsylvania, New York, Michigan, and Wisconsin. Most or all of Florida, Georgia, South Carolina, North Carolina, Virginia, West Virginia. All of American Somoa, Puerto Rico, and Virgin Islands.
Zone IV (250 mph)	Mid US including all of Iowa, Missouri, Arkansas, Illinois, Indiana, and Ohio and parts of adjoining states of Minnesota, South Dakota, Nebraska, Kansas, Oklahoma, Texas, Louisiana, Mississippi, Alabama, Georgia, Tennessee, Kentucky, Pennsylvania, Michigan, and Wisconsin. Guam.
Special Wind Region	Isolated areas in the following states: Washington, Oregon, California, Idaho, Utah, Arizona, Montana, Wyoming, Colorado, New Mexico. The borders between Vermont and New Hampshire; between NewYork, Massachusetts and Connecticut; between Tennessee and North Carolina.
Hurricane Susceptible Region	Southern US coastline from Gulf Coast of Texas eastward to include entire state of Florida. East Coastline from Maine to Florida, including all of Massachusetts, Connecticut, Rhode Island, Delaware, and Washington DC. All of Hawaii, Guam, American Samoa, Puerto Rico and Virgin Islands.


TORNADO ACTIVITY IN THE UNITED STATES*
Summary of Recorded F3, F4, & F5 Tornadoes
Per 3,700 Square Miles (1950 - 1998)
Number of Recorded
F3, F4, & F5 Tornadoes
per 3,700 Sq. Mi.
< 1
1 - 5
6 - 15
16 - 25
> 25
ALASKA
HAWAII
AMERICAN SAMOA, PUERTO
RICO, VIRGIN ISLANDS
* Based on NOAA, Storm Prediction Center Statistics

Tornado Activity in the United States Summary of Recorded F3, F4 & F5 Tornadoes per 3,700 Square Miles (1950 - 1998) Based on NOAA, Storm Prediction Center Statistics	
Number of Recorded Major Tornadoes	**Areas Affected**
< 1	All or most of Washington, Oregon, California, Idaho, Utah, Arizona, Montana, Wyoming, Colorado, New Mexico, Maine, New Hampshire, Vermont and Rhode Island. Parts of North Dakota, Minnesota, Wisconsin, Michigan, Texas, Florida, Delaware, Alaska, Hawaii, American Somoa, Puerto Rico and Virgin Islands. Isolated areas in Massachusetts, New York, Connecticut, Pennsylvania, Maryland, Ohio, Kentucky and Louisiana.
1 - 5	Most of South Dakota, Virginia, West Virginia, and North Carolina. Parts of North Dakota, Nebraska, Texas, Minnesota, Wisconsin, Michigan, New York, Pennsylvania, Maryland, Washington DC, and South Carolina. Isolated areas in Washington, Oregon, Montana, Wyoming, Kansas, New Mexico, Ohio, Kentucky, Tennessee, Maine, Georgia and Florida.
6 - 15	Parts of South Dakota, Nebraska, Kansas, Texas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Mississippi, Ohio, Alabama, and Pennsylvania. Isolated areas of Oklahoma, Arkansas, Louisiana, New Hampshire, Massachusetts, New York, West Virginia, Kentucky, North Carolina, South Carolina, Georgia, and Florida.
16 - 25	Half of Indiana, parts of Kansas, Texas, Iowa, Kansas, Missouri, Arkansas, Louisiana, Indiana, Kentucky, Tennessee, Mississippi, Alabama and Georgia. Isolated areas in the following states: North Dakota, Minnesota, Wisconsin, Michigan, Louisiana, Michigan, Ohio, Virginia, North Carolina, and South Carolina.
> 25	Most of Oklahoma, half of Indiana, and isolated areas in the following states: Nebraska, Kansas, Texas, Missouri, Arkansas, Louisiana, Ohio, Kentucky, Tennessee, Mississippi, Alabama and Georgia.

Last Modified: Wednesday, 11-Aug-2010 14:25:54 EDT

Levels of Risk for High-Wind Events

Number of Tornadoes (see Wind Zone Map)	Wind Zone (see Frquency Map)			
	I	II	III	IV
<1	LOW Risk	LOW Risk	LOW Risk	MODERATE Risk
1–5	LOW Risk	MODERATE Risk	HIGH Risk	HIGH Risk
6–10	LOW Risk	MODERATE Risk	HIGH Risk	HIGH Risk
11–15	HIGH Risk	HIGH Risk	HIGH Risk	HIGH Risk
>15	HIGH Risk	HIGH Risk	HIGH Risk	HIGH Risk

LOW Risk – Sheltering from high winds is a matter of preference.

MODERATE Risk – Shelter should be considered for protection from high winds.

HIGH Risk – Shelter is the preferred method of protection from high winds.

E. Multi-Jurisdictional Concerns - Walker County and the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville have a design wind speed of 250 mph as determined by the American Society of Civil Engineers (ASCE). Since no part of the County is immune from tornados, any mitigation steps taken related to tornados will be undertaken on a countywide basis, including the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville.

F. Hazard Summary – Based on its history, Walker County has a high exposure to potential damage from tornados. Should a tornado strike dense residential areas, or certain critical facilities, significant damage and loss of life could occur. Due to the destructive power of tornados it is essential that the mitigation measures identified in this plan receive full consideration. Specific mitigation recommendations related to tornados are identified in Chapter 5.

2.5 Wildfire

A. Hazard Identification – The Walker County HMPC utilized data from Georgia Forestry and the Walker County Local Emergency Operations Plan in researching wildfires and their impact on the County.

A wildfire is defined as an uncontrolled fire occurring in any natural vegetation. For a wildfire to occur, there must be available oxygen, a supply of fuel, and enough heat to kindle the fuel. Often, these fires are begun by combustion and heat from surface and ground fires and can quickly develop into a major conflagration. A large wildfire may crown, which means it may spread rapidly through the topmost branches of the trees before involving undergrowth or the forest floor. As a result, violent blowups are common in forest fires, and on rare occasion they may assume the characteristics of a firestorm. A firestorm is a violent convection caused by a continuous area of intense fire and characterized by destructively violent surface indrafts. Sometimes it is accompanied by tornado-like whirls that develop as hot air from the burning fuel rises. Such a fire is beyond human intervention and subsides only upon the consumption of everything combustible in the locality. No records were found of such an event ever occurring within Walker County, but this potential danger will be considered when planning mitigation efforts.

The threat of wildfire varies with weather conditions: drought, heat, and wind participate in drying out the timber or other fuel, making it easier to ignite. Once a fire is burning, drought, heat, and wind all increase its intensity. Topography also affects wildfire, which spreads quickly uphill and slowly downhill. Dried grass, leaves, and light branches are considered flash fuels; they ignite readily, and fire spreads quickly in them, often generating enough heat to ignite heavier fuels such as tree trunks, heavy limbs, and the matted duff of the forest floor. Such fuels, ordinarily slow to kindle, are difficult to extinguish. Green fuels (growing vegetation) are not considered flammable, but an intense fire can dry out leaves and needles quickly enough to allow ready ignition. Green fuels sometimes carry a special danger: evergreens, such as pine, cedar, fir, and spruce, contain flammable oils that burst into flames when heated sufficiently by the searing drafts of a wildfire.

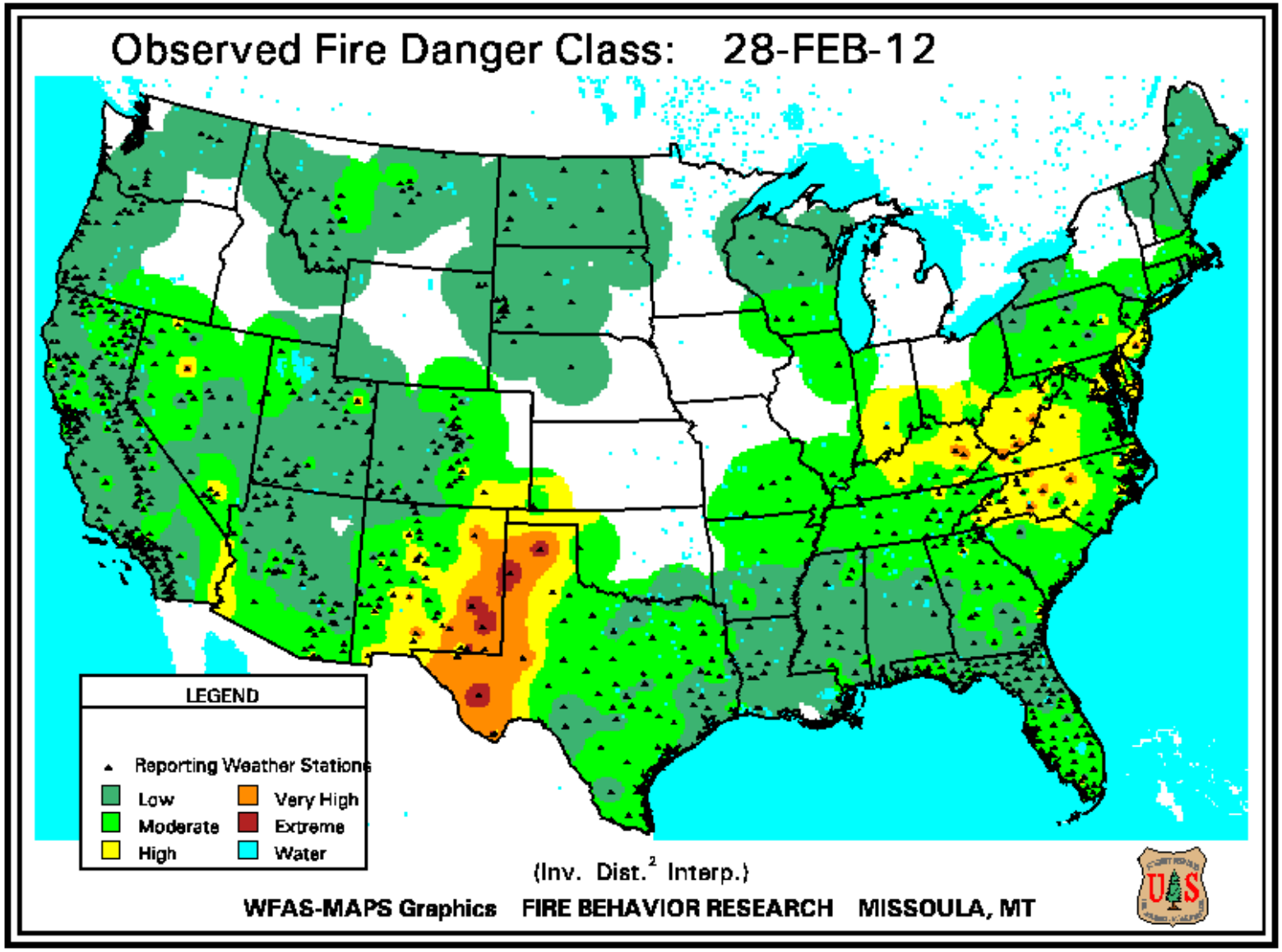
Tools for fighting wildfires range from the standard equipment of fire departments to portable pumps, tank trucks, and earth-moving equipment. Firefighting forces specially trained to deal with wildfire are maintained by local, state and federal entities including the Walker County Fire Department, Georgia Forestry, and U.S. Forest Service. These

trained firefighters may attack a fire directly by spraying water, beating out flames, and removing vegetation at the edge of the fire to contain it behind a fire line. When the very edge is too hot to approach, a fire line is built at a safe distance, sometimes using strip burning or backfire to eliminate fuel in the path of the uncontrolled fire or to change the fire's direction or slow its progress. Backfiring is used only as a last resort.

The control of wildfires has developed into an independent and complex science costing approximately $100 million annually in the United States. Because of the extremely rapid spreading and customary inaccessibility of fires once started, the chief aim of this work is prevention. However, despite the use of modern techniques (e.g., radio communications, rapid helicopter transport, and new types of chemical firefighting apparatus) more than 10 million acres of forest are still burned annually. Of these fires, about two thirds are started accidentally by people, almost one quarter are of incendiary origin, and more than 10% are due to lightning.

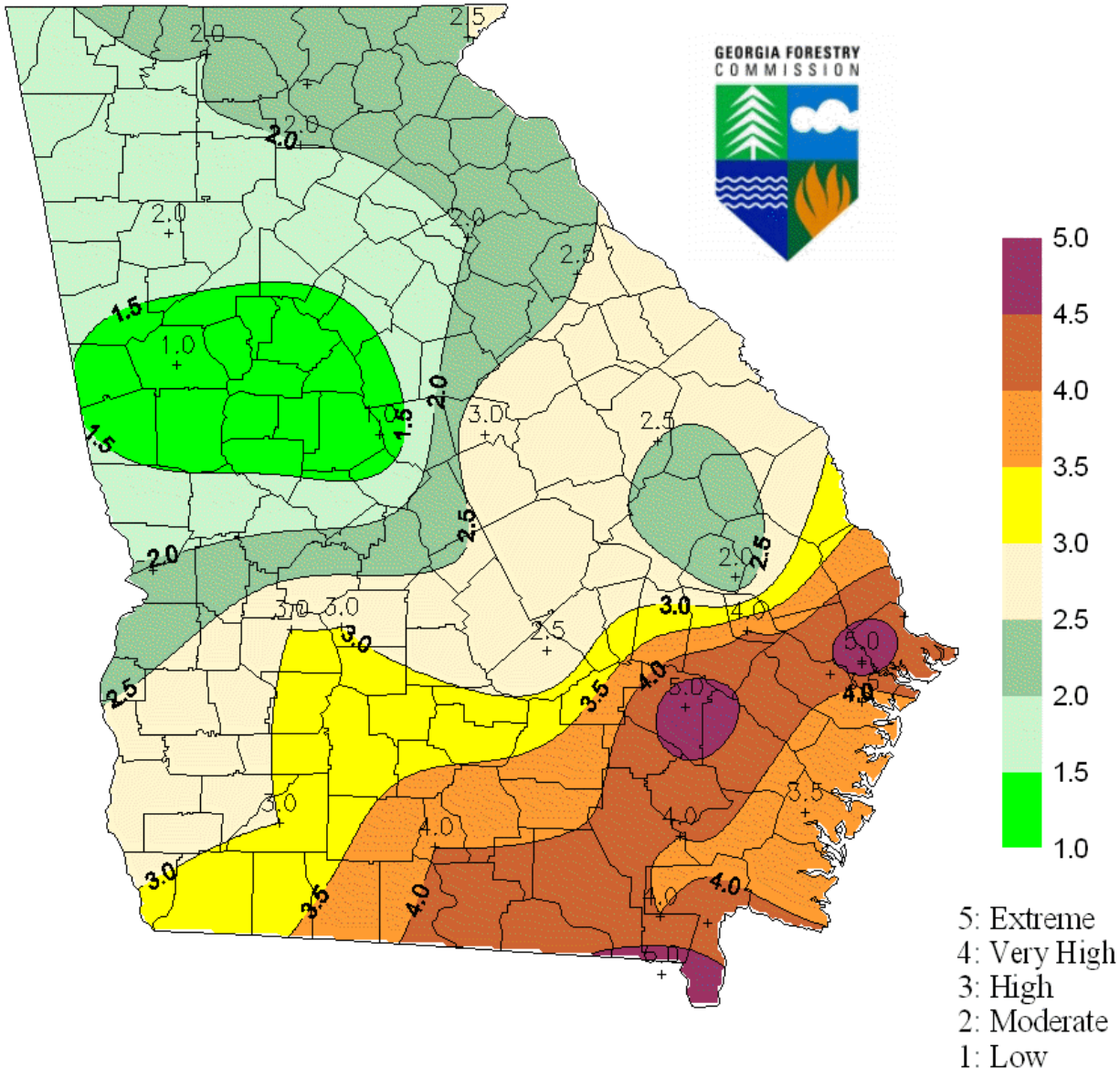
B. Hazard Profile – Wildfires are a serious threat to Walker County. For the past fifty-years, documentation of 4,344 wildfire events was found. Based on the entire fifty-year period, it is likely that a wildfire event will occur approximately 87 times per year in Walker County, or about once every five to six days. More precisely, every year in Walker County there is an 8,688% chance of a wildfire event based upon available documentation. However, when only the past ten-year period is taken into consideration, the likelihood of such an event in Walker County decreases significantly to a 5,990% chance per year (or about 60 wildfires per year). This is largely due to improved public education and firefighting response capabilities. The HMPC has determined that focusing on the past ten years, rather than the entire fifty-year period, is likely to provide the most accurate information available at this time.

As of February 28, 2012, Walker County's threat of wildfire was classified as "moderate" by the U.S. Forest Service. However, this status can change from week to week. See the following map.


Observed Fire Danger Class: 28-FEB-12
LEGEND
Reporting Weather Stations
Low
Moderate
High
Very High
Extreme
Water
(Inv. Dist.^{2} Interp.)
WFAS-MAPS Graphics FIRE BEHAVIOR RESEARCH MISSOULA, MT

Another resource utilized during the planning process comes from the Georgia Forestry Commission. GFC forecasts a "low" to "moderate" level of fire danger for Walker County for February 28, 2012. These results change daily. See map below.

Forecast Fire Danger for Tomorrow
Produced at February 28, 2012 130pm EST

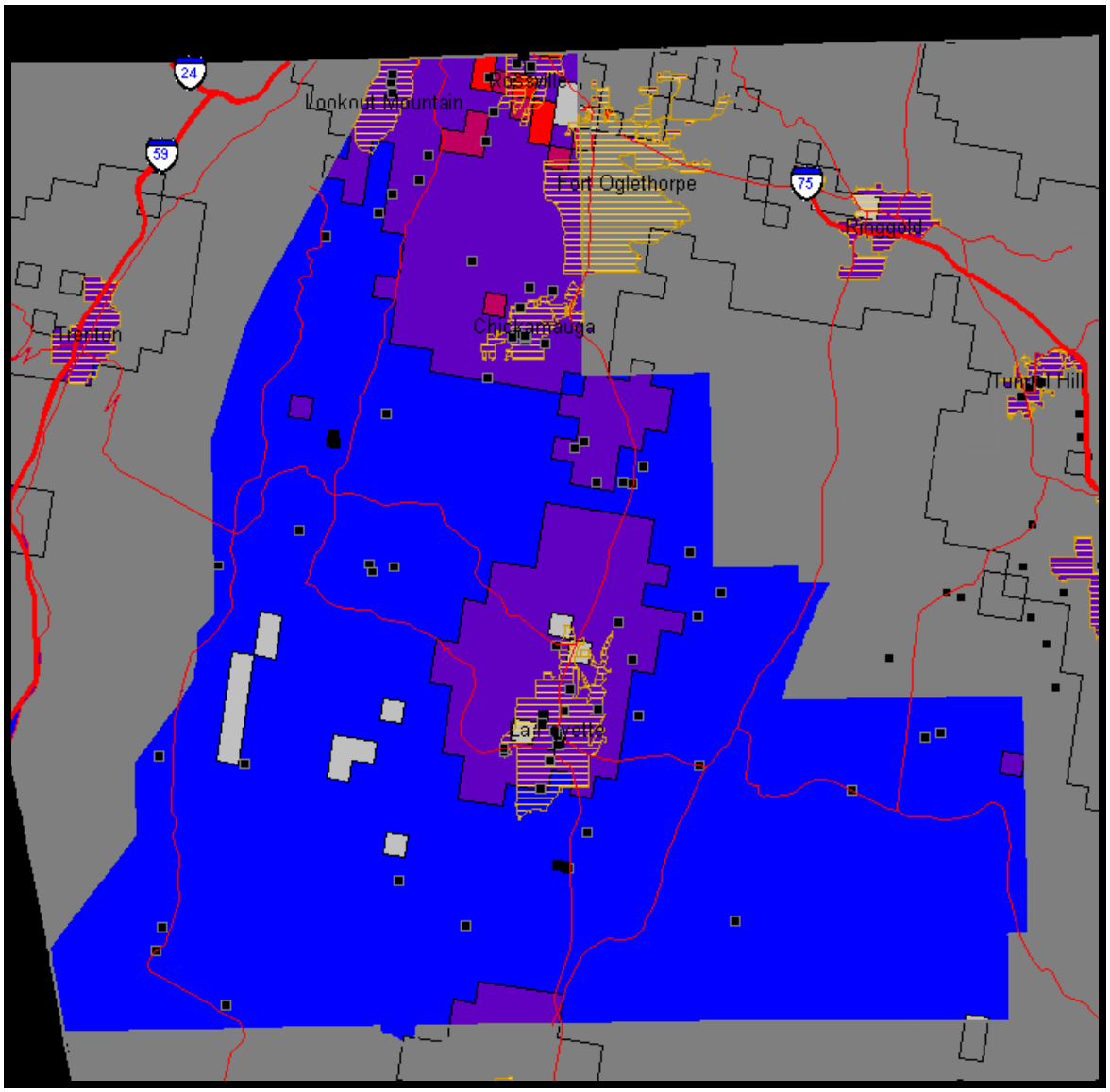


C. Assets Exposed to Hazard – In evaluating assets that are susceptible to wildfire, the committee determined that all public and private property is susceptible to wildfire, including all critical facilities. The maps on the following pages display the wildfire risk potential for Walker County and each of the municipalities, including locations of critical facilities within the hazard areas. The following key applies to each of the maps.

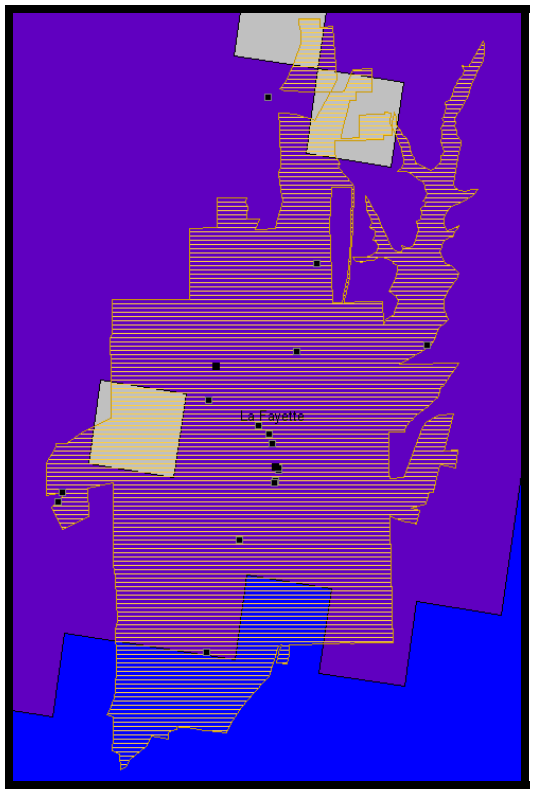
	Wildfire Threat Category	Description
	0	LOWEST THREAT: includes areas with no houses, areas with bodies of water, agricultural areas, and/or cities
	1	VERY LOW THREAT
	2	LOW THREAT
	3	MODERATE THREAT
	4	HIGH THREAT

The Wildfire Risk Layer was based on the USDA Forest Service, RMRS Fire Sciences Laboratory "Wildland Fire Risk to Flammable Structures, V 1.0" map. Although this data was not intended for use at a detail greater than state-wide analysis, it has been included as the best available data on wildfire risk. The scores are based on the risk value from the original layer. The horizontal positional accuracy is unknown for this layer.

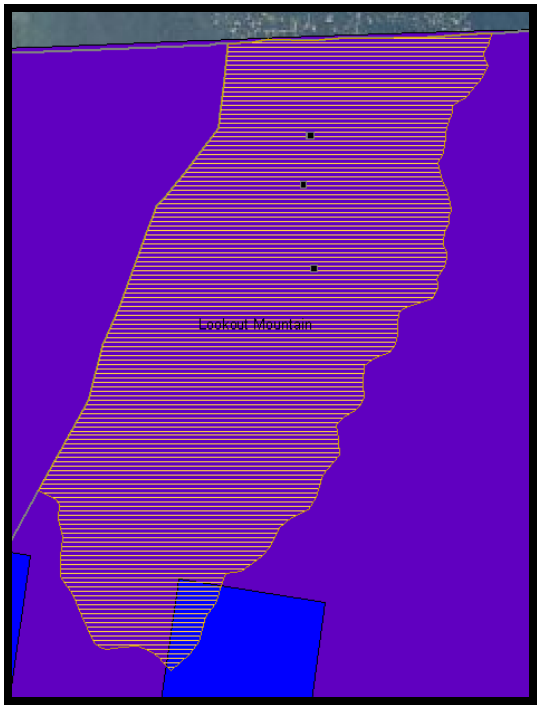
Walker County:



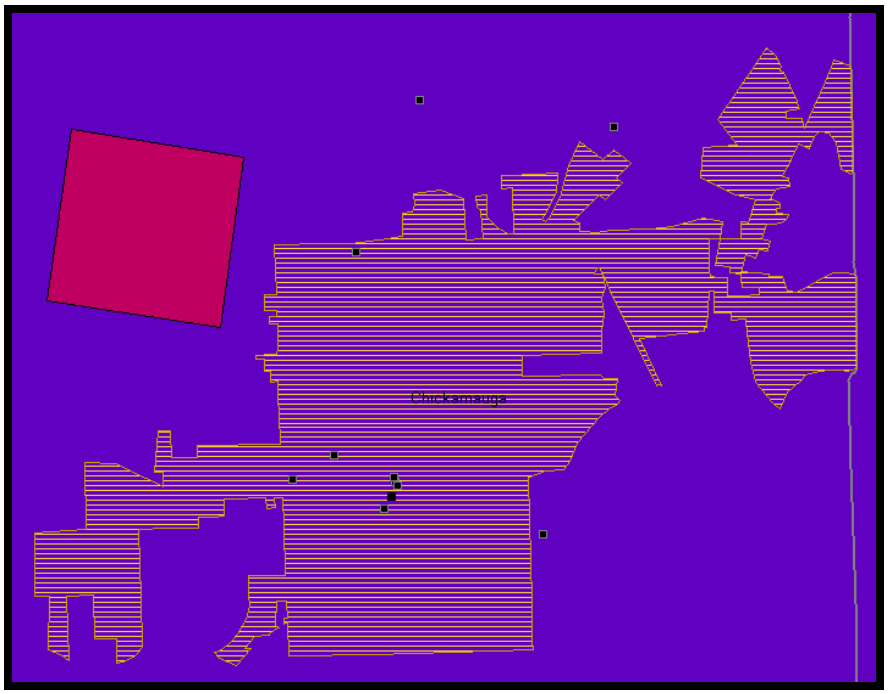
City of LaFayette



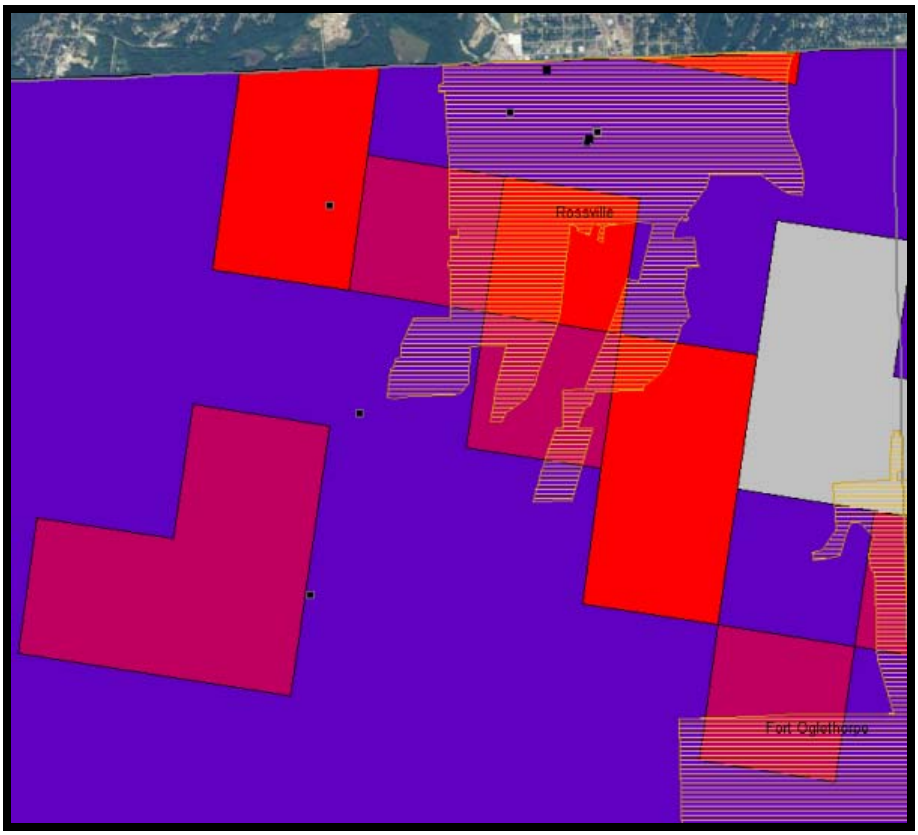
City of Lookout Mountain



City of Chickamauga



City of Rossville



Most portions of the County and Cities have been classified under Wildfire Threat Categories 0, 1, or 2, the lowest threats on a scale of 0 to 4. However, one area to the northwest of Chickamauga is classified under Wildfire Threat Category 3 (Moderate Threat) and several areas in and around the City of Rossville are classified under Wildlife Categories 3 (Moderate Threat) and 4 (High Threat).

D. Estimate of Potential Losses – In most of the documented cases of wildfire within Walker County, relatively little information on damages, in terms of dollars, was available. The potential commercial value of the land lost to wildfire cannot be accurately calculated, other than replacement costs of structures and infrastructure. With regard to the land itself, aside from the loss of timber and recreation, the damage is inestimable in terms of land rendered useless by ensuing soil erosion, elimination of wildlife cover and forage, and the loss of water reserves collected by a healthy forest. For available loss estimate information, please refer to the Critical Facilities Database (Appendix A).

E. Multi-Jurisdictional Concerns – Any portion of Walker County has to potential to be impacted by wildfire. One reason for this is the common interface between urban developments and the forest. Most portions of the County and the Cities are located within Wildfire Threat Categories 1 through 3, which are all considered "low" threat categories. However, area in and around the Cities of Chickamauga and Rossville appear particularly vulnerable to wildfire. Any steps taken to mitigate the effects of wildfire should be undertaken on a countywide basis and include the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville.

F. Hazard Summary – Wildfires pose a serious threat to Walker County in terms of property damage, as well as injuries and loss of life. Wildfires are one of the most frequently occurring natural hazards within the County each year. Based on the frequency of this hazard, as well as its ability to inflict devastation most anywhere in the County, the mitigation measures identified in this plan will be aggressively pursued. Specific mitigation actions related to wildfire are identified in Chapter 5.

2.6 Drought

A. Hazard Identification –The term "drought" has various meanings, depending upon context. To a farmer, a drought is a period of moisture deficiency that affects the crops under cultivation (even two weeks without rainfall can stress many crops during certain periods of the growing cycle). To a water manager, a drought is a deficiency in water supply that affects water availability and water quality. To a meteorologist, a drought is a prolonged period when precipitation is less than normal. To a hydrologist, a drought is an extended period of decreased precipitation and streamflow.

Drought is a normal, recurrent feature of climate. It occurs almost everywhere, although its features vary from region to region. Droughts in Georgia historically have severely affected municipal and industrial water supplies, agriculture (including both livestock and crops), stream water quality, recreation at major reservoirs, hydropower generation, navigation, and forest resources. Drought is also a key factor in wildfire development by making natural fuels (grass, brush, trees, dead vegetation) more fire prone.

In Georgia, droughts have been documented at U.S. Geological Survey (USGS) streamflow gaging stations since the 1890's. From 1910 to 1940, about 20 streamflow gaging stations were in operation. Since the early 1950's through the late 1980's, about 100 streamflow gaging stations were in operation. Currently, the USGS streamflow gaging network consists of more than 135 continuous-recording gages. Groundwater levels are currently monitored at 165 wells equipped with continuous recorders.

B. Hazard Profile – The Walker County HMPC reviewed historical data from the National Oceanic and Atmospheric Administration (NOAA), the National Climatic Data Center (NCDC), the U.S. Geological Survey (USGS), the Georgia Department of Natural Resources (GA DNR) and the Georgia Forestry Commission (GFC) in researching drought events of the County and the State. Most historical information related to drought within this Plan has been derived from USGS streamflow data and NOAA precipitation data. Due to the nature of drought to affect large areas of the State simultaneously and the availability of only very limited County-specific drought information, the threat of drought is looked at within this Plan from a statewide perspective. Similarly, due to limited month-by-month information on drought, this hazard will be quantified on an annual basis (either there was a drought or there was not

for any given year within the State). These guidelines are also used in Appendix B and Appendix C with regard to historical hazard information.

In the State of Georgia significant drought events, as identified by USGS, NOAA and other sources, have occurred in 22 of the last 50 years. Walker County was affected to varying degrees in each of those years. According to this information, drought conditions were experienced approximately 44% of the time during this 50-year period. However, when only the past ten-year period is taken into consideration, Walker County experienced significant drought conditions in at least seven of those years, or about 70% of the time. The HMPC has determined that focusing on the past fifty-year period, rather than the more active ten-year period, is likely to provide a more accurate historical perspective.

Note: When researching drought, one term that is frequently used is *recurrence interval*. The recurrence interval is the average time between droughts of a given severity. For instance, in a drought with a 25-year recurrence interval the low streamflows occur, on average, once every 25 years.

Some of the most extreme droughts to affect the State include the following:

1903-1905: According to the USGS, the 1903 to 1905 drought is "the earliest recorded severe drought in Georgia." In 1904, the U.S. Weather Bureau (today's National Weather Service) reported, "Levels in streams and wells were the lowest in several years. Many localities had to conserve water for stock and machinery and many factories were forced to close or operate at half capacity." When the 1903 drought struck, farm jobs dried up as quickly as the fields. The cities attracted many of these workers who migrated to Atlanta.

1924-1927: The drought that struck from 1924 to 1927 affected a wider area than simply north Georgia, affecting the Coosa River and Altamaha Basin as well at the Chattahoochee River. The U.S. Weather Bureau reported the lowest stream levels ever recorded in north Georgia in July-September of 1925, stating that the drought not only affected agricultural operations, but industrial operations as well. The scarcity of water had a profound influence on industrial and agricultural conditions in Georgia. This may have been the first time Georgia media used the term "Drought of the Century". Combined with the ongoing devastation from the boll weevil and technological advances in agriculture that increased efficiency and thereby reduced the number of farm jobs, migration from rural Georgia to urban Georgia increased significantly. The impact of this drought, plus other natural events, helped send the Georgia economy into a depression well before the rest of the United States.

1930-1935: Although the drought of 1930-1935 had little long term impact on north Georgia, it contributed to the ongoing economic problems throughout the state and the United States as a whole. The USGS reports that the severity of this drought "exceeded a 25-year recurrence interval" in central and southwestern Georgia and affected much of the Country. In extreme northern and southeastern Georgia, the recurrence interval was 10–25 years. This period was also referred to as the "Drought of the Century."

Central Georgia - 1936

1938-1944: Many of the same areas that suffered during the 1930 to 1935 drought endured severe drought again from 1938 to 1944. The drought of 1938-1944 struck the upper Coosa River basin and the Chattahoochee River basin. According to USGS the recurrence interval exceeded 50 years in those areas. In extreme northern and southwestern Georgia, the drought had recurrence intervals of 10–25 years. It was this drought that convinced politicians to move towards massive hydroelectric projects that would supply power and keep water available to constituents throughout long dry spells. One of the key supporters of hydroelectric power in the United States was Senator Richard B. Russell, member of the Senate Appropriations Committee. The first such dam in the State, Allatoona, was begun in 1941 and completed after World War II.

1950-1957: A large statewide drought lasted from 1950 to 1957. Most streamflows had recurrence intervals exceeding 25 years according to USGS. The catastrophic drought devastated crops by 1954. This event also earned the title as "Drought of the Century." This drought was most severe in southern Georgia, with most streamflows having recurrence intervals exceeding 25 years. In northeastern Georgia, the drought severity also exceeded the 25-year recurrence interval. The low rainfall affected the length of time it took to fill Lake Lanier for the first time since its creation in 1950 and completion in 1956. In northwestern Georgia, the recurrence interval of the drought was between 10 and 25 years.

1976-1978: According to USGS, beginning in 1976, the weather over southwest Georgia turned towards a persistent pattern of late-summer drought including parts of the Chattahoochee Valley.

1980-1982: The 1980 to 1982 drought resulted in the lowest streamflows since 1954 in most areas, and the lowest streamflows since 1925 in others. Recurrence intervals of 10–25 years were common in most of Georgia. Pool levels at four major reservoirs receded to the lowest levels since first filling. Groundwater levels in many observation wells were lower than previously observed. Nearly continuous declines were recorded in some wells for as long as 20 consecutive months, and water levels remained below previous record lows for as long as nine consecutive months.

1985-1989: Many North Georgia residents remember the drought of 1985 to 1989 that saw Lake Lanier reach its lowest levels since it was filled in 1950. Streamflows touched the lows reached during the 1925 drought. Water-supply shortages occurred in Georgia in 1986. Shortages first occurred in a few Atlanta metropolitan systems, primarily because of large demand and small reservoir storage. As the drought continued, other systems in the southern part of the metropolitan area also had water-supply problems, as did several municipalities in northern and central Georgia. During 1986, the U.S. Army Corps of Engineers significantly decreased the release of water from Lake Lanier, but reservoir levels continued to recede to about 2 feet above the record minimum lake level. Ground-water levels in northern Georgia were significantly less than normal during the 1985 to 1989 drought, and shortages in ground-water supplies from domestic wells occurred in the northern one-third of the State.

1998-2003: From 1998 until 2003, with a brief respite in 2000-2001, North Georgia suffered through a historic drought. The term "historic," in this instance, is used by weathermen to describe a drought of unusually long duration, one of the three measures of a drought. While the regional impact of a long-term drought is massive, in North Georgia's case, the drought's effect was mitigated, simply because of technology, mostly the dams built by the Corps of Engineers and others. Earlier droughts, however, did not have the benefit of these dams and had a "historic" impact on North Georgia. Shortages of surface-water supplies similar to those during 1986 occurred in the 1998 to 2003 drought. Water shortages during the summer of 2000 prompted the Georgia Department of Natural Resources to institute statewide restrictions on outdoor water use.

2006-2009: Beginning in late 2006 another drought struck north Georgia, on the heels of the earlier 5-year drought. River levels plummeted, causing lakes to fill up more slowly when water was released. Georgia politicians battled against the Army Corps of Engineers' continuous flow requirement for Lake Lanier due to the looming water shortages. The Georgia Environmental Protection Division (EPD) declared a level four drought response across the northern third of Georgia, including Walker County, which prohibits most types of outdoor residential water use effective immediately.

Lake Lanier and Lake Allatoona 2007 (L to R)

Lake Hartwell 2008

2011: Drought conditions were experienced once again throughout much of the State.

Agricultural crop damage during periods of drought is difficult to estimate. Water supplies, industries, power generation, agriculture, forests, wetlands, stream water quality, navigation, and recreation for the State of Georgia have been severely impacted over time. Because of the extremely unpredictable nature of drought (to include duration), reliably calculating a recurrence interval is difficult. The Hazard Frequency Table in Appendix C analyzes historical data from the past fifty years to provide a general idea of the frequency of drought within the State.

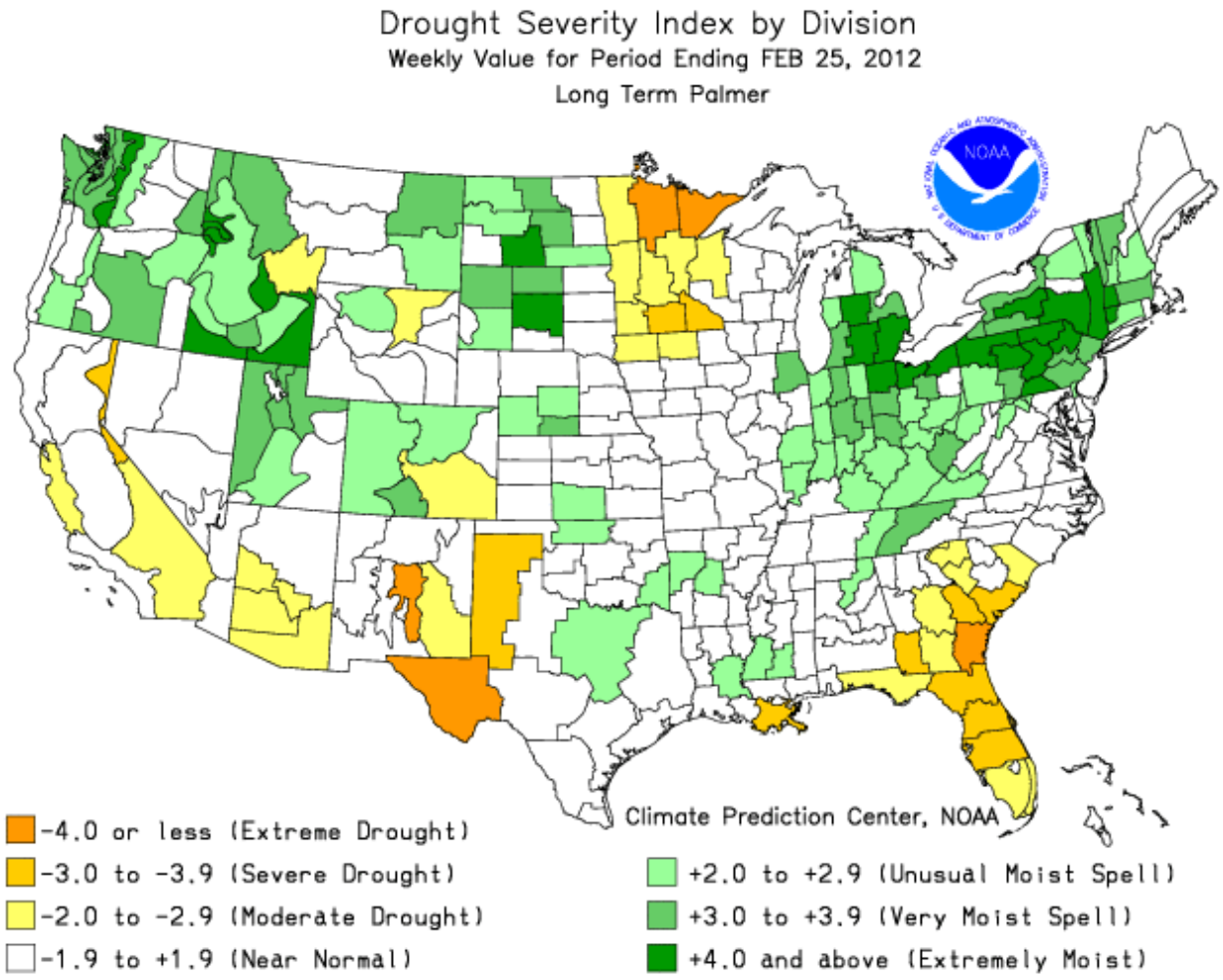
The following four maps represent current and forecasted drought conditions. Each of these maps is updated on a regular basis. Drought conditions can change very rapidly and must be continuously monitored.

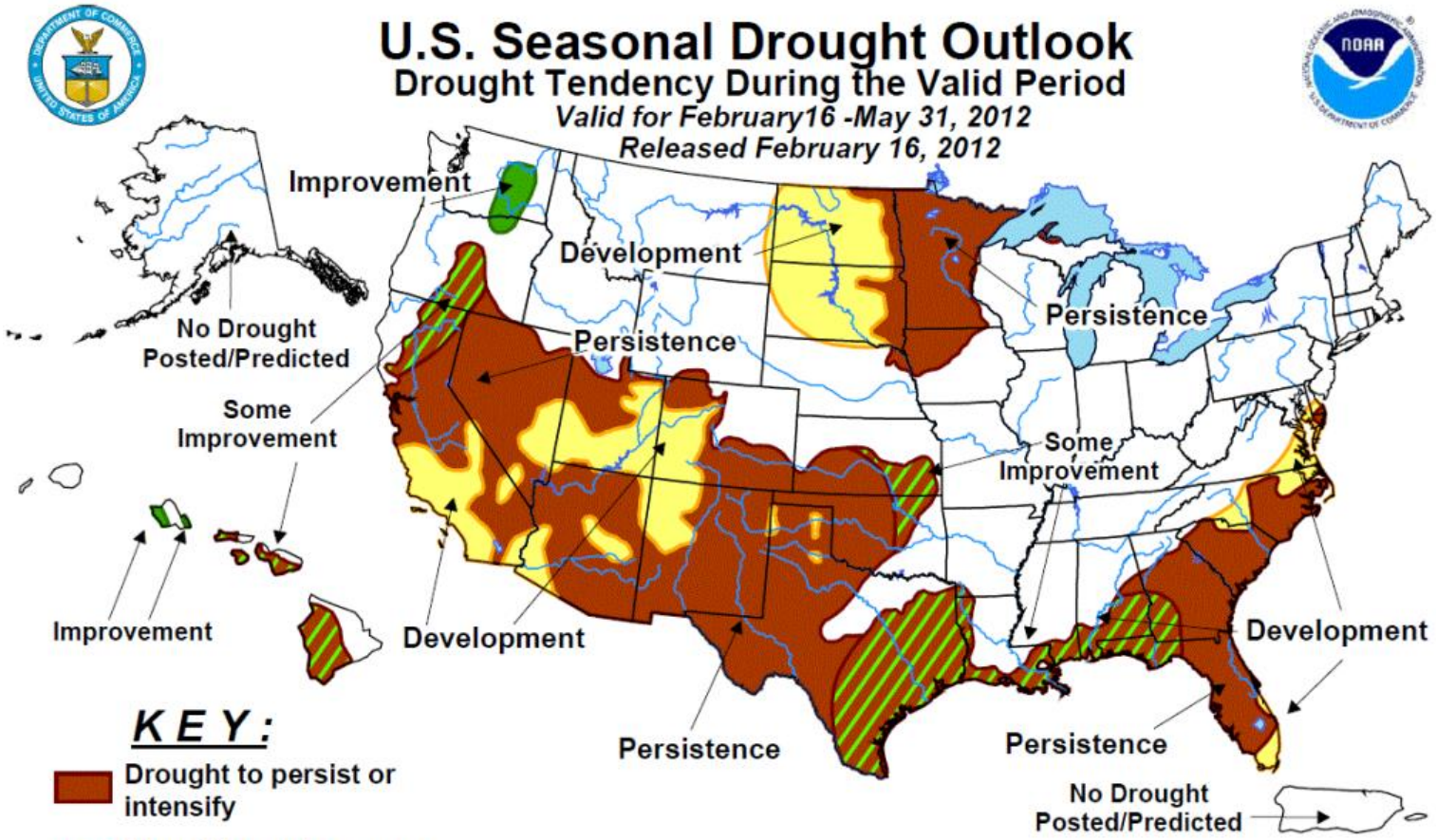
The first map is the Palmer Drought Severity Index map which shows current drought conditions nationwide and is updated weekly. According to the map, the County's current drought status, as of February 25, 2012, is "near normal".

The second map, the U.S. Seasonal Drought Outlook, forecasts likely drought conditions through May 31, 2012 which indicates that drought conditions should not develop in Walker County within this time period.

The third map, U.S. Drought Monitor, indicates that as of February 21, 2012, Walker County is not experiencing drought conditions.

Finally the fourth map, the USGS WaterWatch map, demonstrates below-normal 7-day average streamflow compared to historical streamflow for a particular day of the year (February 21, 2012). The map indicates portions of Walker County are currently experiencing "below normal" streamflows.


Drought Severity Index by Division
Weekly Value for Period Ending FEB 25, 2012
Long Term Palmer
NOAA
Climate Prediction Center, NOAA
-4.0 or less (Extreme Drought)
-3.0 to -3.9 (Severe Drought)
-2.0 to -2.9 (Moderate Drought)
-1.9 to +1.9 (Near Normal)
+2.0 to +2.9 (Unusual Moist Spell)
+3.0 to +3.9 (Very Moist Spell)
+4.0 and above (Extremely Moist)


U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid for February16 -May 31, 2012
Released February 16, 2012
Improvement
Development
Persistence
No Drought
Posted/Predicted
Persistence
Some
Improvement
Some
Improvement
Improvement
Development
Development
Persistence
Persistence
No Drought
Posted/Predicted
KEY:
Drought to persist or intensify
Drought ongoing, some improvement
Drought likely to improve, impacts ease
Drought development likely
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

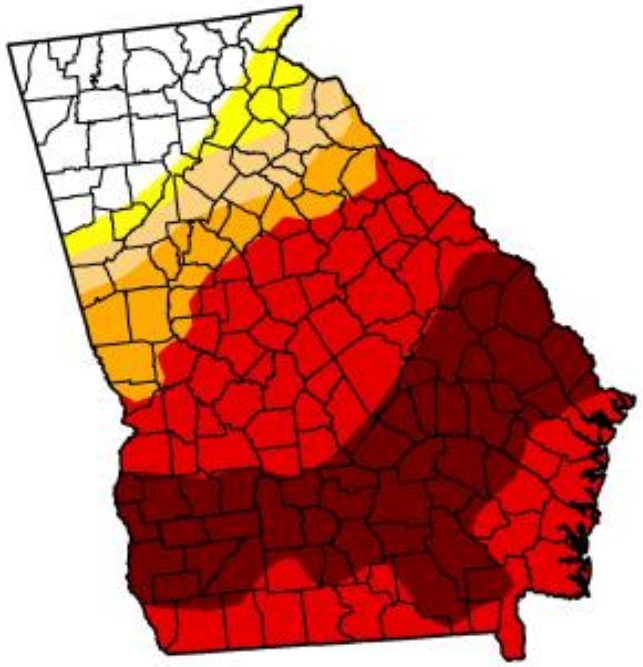
U.S. Drought Monitor

February 21, 2012
Valid 7 a.m. EST

Georgia

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	12.83	87.17	83.12	77.55	69.01	30.35
Last Week (02/14/2012 map)	13.88	86.12	83.12	77.55	69.01	34.06
3 Months Ago (11/22/2011 map)	4.77	95.23	91.50	83.66	64.26	0.00
Start of Calendar Year (12/27/2011 map)	12.07	87.93	85.36	81.00	63.92	0.00
Start of Water Year (09/27/2011 map)	5.62	94.38	90.72	85.56	78.76	0.00
One Year Ago (02/15/2011 map)	0.00	100.00	76.22	21.87	6.18	0.00



Intensity:

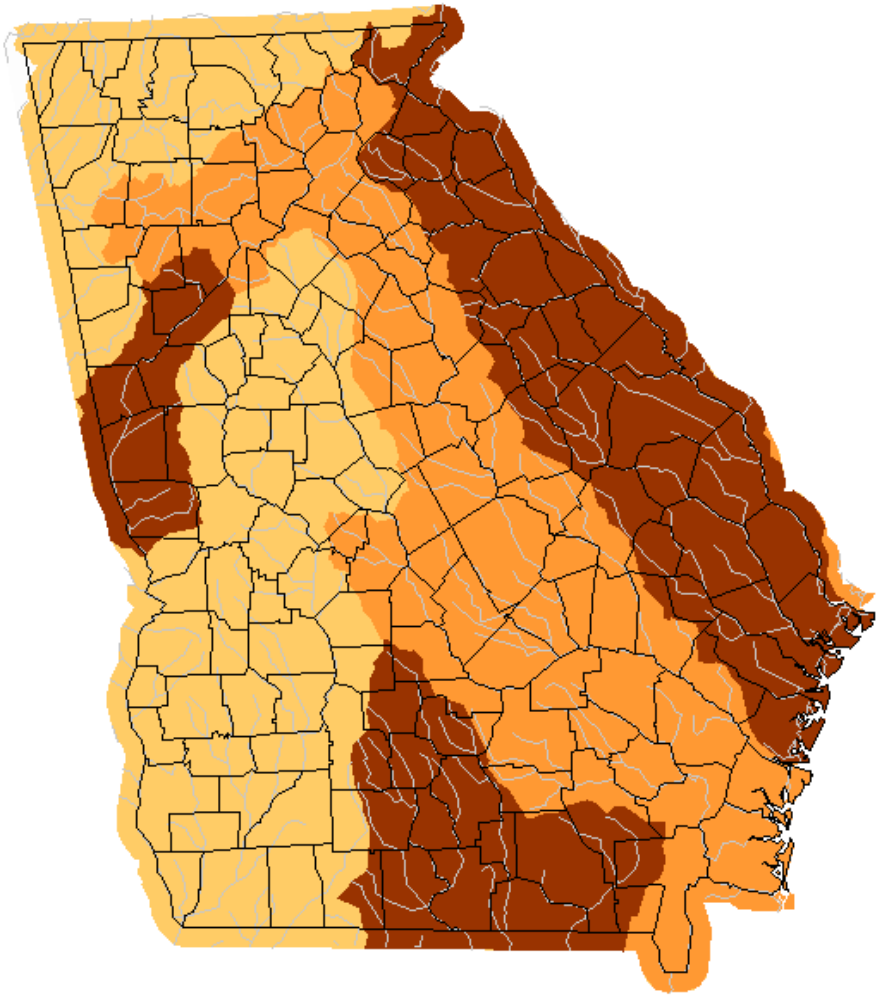
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu

Released Thursday, February 23, 2012
Mark Svoboda, National Drought Mitigation Center

Monday, February 27, 2012



USGS

Explanation - Percentile classes				
Low	<=5	6-9	10-24	Insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

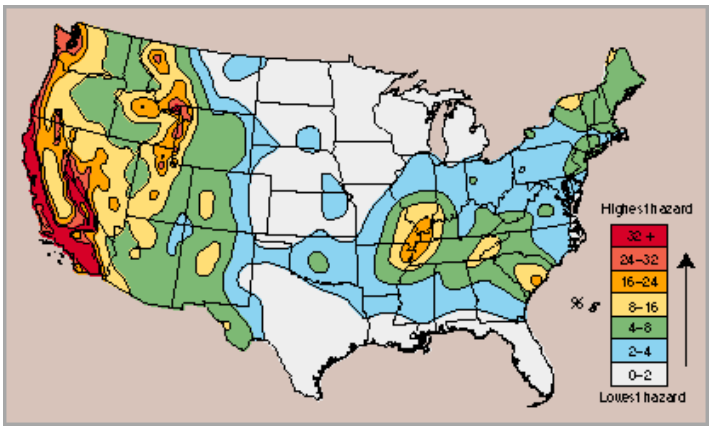
C. Assets Exposed to Hazard – Drought conditions typically pose little threat to structures. However, wildfire can be a direct result of drought and does present a significant threat to a majority of public and private property within the County, including critical facilities. Water resources are also vulnerable during drought conditions including public water supplies.

D. Estimate of Potential Losses – No damage to facilities is anticipated as a result of drought conditions, aside from the threat of wildfire. Crop damage cannot be accurately quantified due to several unknown variables: duration of the drought, temperatures during the drought, severity of the drought, rainfall requirements for specific crops and livestock, and the different growing seasons. There may also be financial losses related to water system shortages. For loss estimate information, please refer to Appendix A, the Critical Facilities Database, and Appendix D, Worksheet 3a, for each jurisdiction.

E. Multi-Jurisdictional Concerns – Agricultural losses associated with drought are more likely to occur in the rural, less concentrated areas of the County. Although the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville may be slightly less likely to experience agricultural-related drought losses than the County, they can be financially impacted by water resource-related drought losses.

F. Hazard Summary – Unlike other hazard events, drought causes damage slowly. A sustained drought can cause severe economic stress to the agricultural interests of the County and even the entire State or Region. The potential negative effects of sustained drought are numerous. In addition to an increased threat of wildfires, drought can affect water supplies, stream-water quality, water recreation facilities, hydropower generation, as well as agricultural and forest resources. The HMPC realized the limitations associated with mitigation actions for drought, but did identify some basic mitigation measures in Chapter 5.

2.7 Earthquakes



A. Hazard Identification – One of the most frightening and destructive natural hazards is a severe earthquake. An earthquake is a sudden movement of the Earth, caused by the abrupt release of strain that has accumulated over a long time. The forces of plate tectonics shape the Earth as the huge plates that form the Earth's surface slowly move over, under, and past each other. Sometimes the movement is gradual. At other times, the plates are locked together, unable to release the accumulating energy. When the accumulated energy grows strong enough, the plates break free. If the earthquake occurs in a populated area, it may cause many deaths, injuries and extensive property damage.

The goal of earthquake prediction is to give warning of potentially damaging earthquakes early enough to allow appropriate response to the disaster, enabling people to minimize loss of life and property. The U.S. Geological Survey conducts and supports research on the likelihood of future earthquakes. This research includes field, laboratory, and theoretical investigations of earthquake mechanisms and fault zones. A primary goal of earthquake research is to increase the reliability of earthquake probability estimates. Ultimately, scientists would like to be able to specify a high probability for a specific earthquake on a particular fault within a particular year. Scientists estimate earthquake probabilities in two ways: by studying the history of large earthquakes in a specific area and the rate at which strain accumulates in the rock.

Scientists study the past frequency of large earthquakes in order to determine the future likelihood of similar large shocks. For example, if a region has experienced four magnitude 7 or larger earthquakes during 200 years of recorded history, and if these shocks occurred randomly in time, then scientists would assign a 50 percent probability (that is, just as likely to happen as not to happen) to the occurrence of another magnitude 7 or larger quake in the region during the next 50 years. But in many places, the assumption of random occurrence with time may not be true, because when strain is released along one part of the fault system, it may actually increase on another part.

Another way to estimate the likelihood of future earthquakes is to study how fast strain accumulates. When plate movements build the strain in rocks to a critical level, like pulling a rubber band too tight, the rocks will suddenly break and slip to a new position. Scientists measure how much strain accumulates along a fault segment each year, how much time has passed since the last earthquake along the segment, and how much strain was released in the last earthquake. This information is then used to calculate the time required for the accumulating strain to build to the levels that result in an earthquake. This simple model is complicated by the fact that such detailed information about faults is rare. In the United States, only the San Andreas Fault system has adequate records for using this prediction method.

Magnitude and intensity measure different characteristics of earthquakes. Magnitude measures the energy released at the source of the earthquake and is determined from measurements on seismographs. Intensity measures the strength of shaking produced by the earthquake at a certain location and is determined from effects on people, human structures, and the natural environment. The following two tables describe the Abbreviated Modified Mercalli Intensity Scale, and show intensities that are typically observed at locations near the epicenter of earthquakes of different magnitudes.

Magnitude / Intensity Comparison

Magnitude	Typical Maximum Modified Mercalli Intensity
1.0 - 3.0	**I**
3.0 - 3.9	**II - III**
4.0 - 4.9	**IV - V**
5.0 - 5.9	**VI - VII**
6.0 - 6.9	**VII - IX**
7.0 and higher	**VIII** or higher

Abbreviated Modified Mercalli Intensity Scale

I. Not felt except by a very few under especially favorable conditions.

II. Felt only by a few persons at rest, especially on upper floors of buildings.

III. 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. 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. Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.

VI. Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.

VII. 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. Damage slight in specially designed 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.

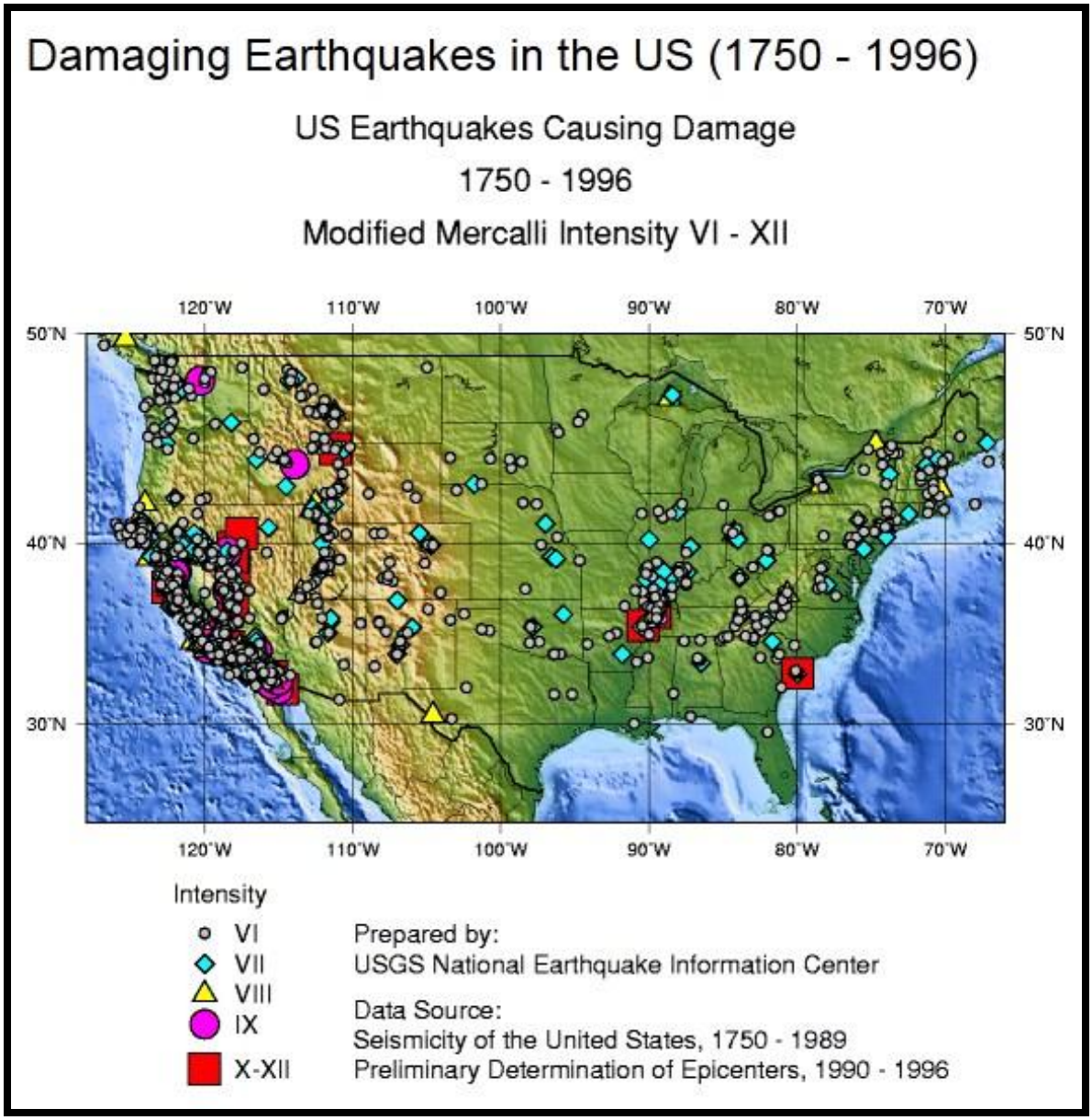
IX. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.

X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.

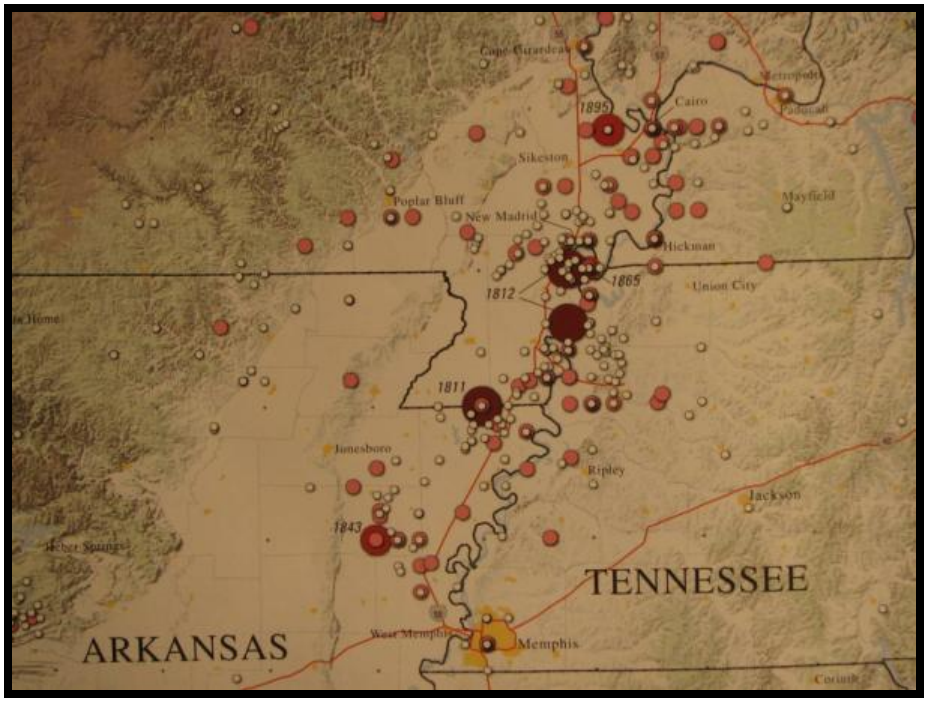
XI. Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.

XII. Damage total. Lines of sight and level are distorted. Objects thrown into the air.

The following USGS map shows earthquakes that caused damage within the United States from 1750 to 1996.



B. Hazard Profile – The first earthquakes recorded as being felt in Georgia were the great New Madrid earthquakes of 1811-1812 (also known as the Mississippi River Valley earthquakes) centered in northeast Arkansas and New Madrid, Missouri. There were hundreds of earthquakes during the two month period between December 16, 1811 and February 7, 1812. On the basis of the large area of damage (600,000 square kilometers), the widespread area of perceptibility (5,000,000 square kilometers), and the complex physiographic changes that occurred, this series of earthquakes rank as some of the largest in the United States since its settlement by Europeans. The area of strong shaking associated with these shocks is two to three times larger than that of the 1964 Alaska earthquake and 10 times larger than that of the 1906 San Francisco earthquake. The first three major earthquakes occurred in northeast Arkansas on December 16, 1811 (three shocks - Mfa 7.2/MSn 8.5; Mfa 7.0/MSn 8.0; and MSn 8.0). There were six aftershocks on December 16th and 17th alone in the range of M5.5 to M6.3 (Note: aftershocks actually *are* earthquakes). The fourth earthquake occurred in Missouri on January 23, 1812 (Mfa 7.1/MSn 8.4). The fifth earthquake occurred in New Madrid, Missouri on February 7, 1812 (Mfa 7.4/ MSn 8.8). This is the earthquake that created Reelfoot Lake, located in northwest Tennessee. It was reported to have been formed as the Mississippi River flowed backward for 10–24 hours to fill the lake. As a result of this earthquake, the original town of New Madrid now lies under the Mississippi River. This makes a total of five earthquakes of magnitude MSn 8.0 or higher occurring in a period of 54 days. The first earthquake caused only slight damage to man-made structures, mainly because the region was so sparsely populated. However, as the earthquakes continued, they began to open deep cracks in the ground, created landslides on the steeper bluffs and hillsides, large areas of land were uplifted, and sizable sink areas were created. These five main earthquakes, and several aftershocks, were felt over almost all of the eastern United States including the State of Georgia. In Georgia this series of earthquakes was strong enough to have shaken bricks from chimneys and other minor damage.



The great Charleston, South Carolina, earthquake of 1886 killed approximately 60 people. The magnitude 7.3 earthquake is the most damaging earthquake to occur in the Southeast United States and one of the largest historic shocks in Eastern North America. It damaged or destroyed many buildings in the old city of Charleston. Property damage was estimated at $5-$6 million. Structural damage was reported several hundred

kilometers from Charleston including in the State of Georgia. On August 31, 1886 at 9:25 pm, preceded by a low rumble, the shock waves reached Savannah. People had difficulty remaining standing. One woman died of fright as the shaking cracked walls, felled chimneys, and broke windows. Panic at a revival service left two injured and two more were injured in leaping from upper story windows. Several more were injured by falling bricks. Ten buildings in Savannah were damaged beyond repair and at least 240 chimneys damaged. People spent the night outside. At Tybee Island light station the 134 foot lighthouse was cracked near the middle where the walls were six feet thick, and the one-ton lens moved an inch and a half to the northeast. In Augusta the shaking was the most severe (VIII on the Modified Mercalli scale) in the State. An estimated 1000 chimneys and many buildings were damaged. The business and social life was paralyzed for two days. Brunswick and Darien were affected as well.

June 17, 1872: An earthquake on June 17, 1872 in Milledgeville, GA and had an intensity of at least V on the Modified Mercalli scale, the lowest intensity in which some damage may occur. It was reported as a sharp shock, jarring brick buildings and rattling windows.

November 1, 1875: On November 1, 1875, at 9:55 in the evening, an intensity VI earthquake occurred near the South Carolina border. It was felt from Spartanburg and Columbia, South Carolina, to Atlanta and Macon, Georgia, from Gainesville to Augusta, and generally over an area of 25,000 square miles.

October 18, 1902: A more local event occurred on October 18, 1902, with a sharp shock felt along the east face of Rocky Face Mountain, just west of Dalton, GA with intensity VI and at LaFayette, GA with intensity V. The earthquake was felt over an area of about 1500 square miles including Chattanooga, Tennessee.

January 23, 1903: The Savannah, GA area was shaken with an intensity VI earthquake on January 23, 1903. Centering near Tybee Island, it was felt over an area of 10,000 square miles including Savannah (intensity VI), Augusta (intensity III), Charleston (intensity IV-V), and Columbia (intensity III-IV). Houses were strongly shaken.

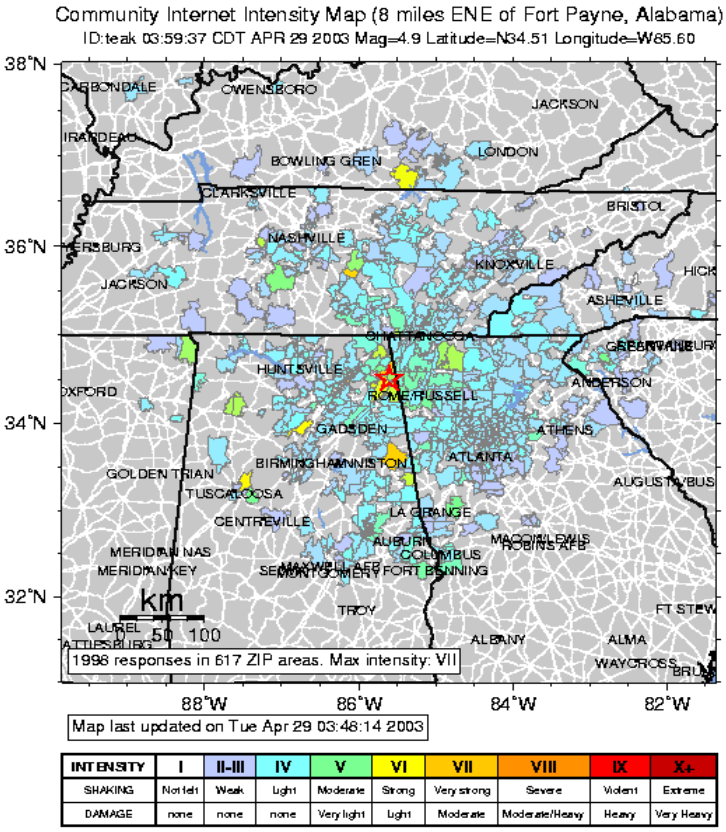
June 20, 1912: Another shock was felt on June 20, 1912, at Savannah with intensity V.

March 5, 1914: According to USGS, Georgia experienced another earthquake on March 5, 1914. Magnitude 4.5.

March 5, 1916: On March 5, 1916, an earthquake centered 30 miles southeast of Atlanta was felt over an area of 50,000 square miles, as far as Cherokee County, North Carolina, by several people in Raleigh, and in parts of Alabama and Tennessee.

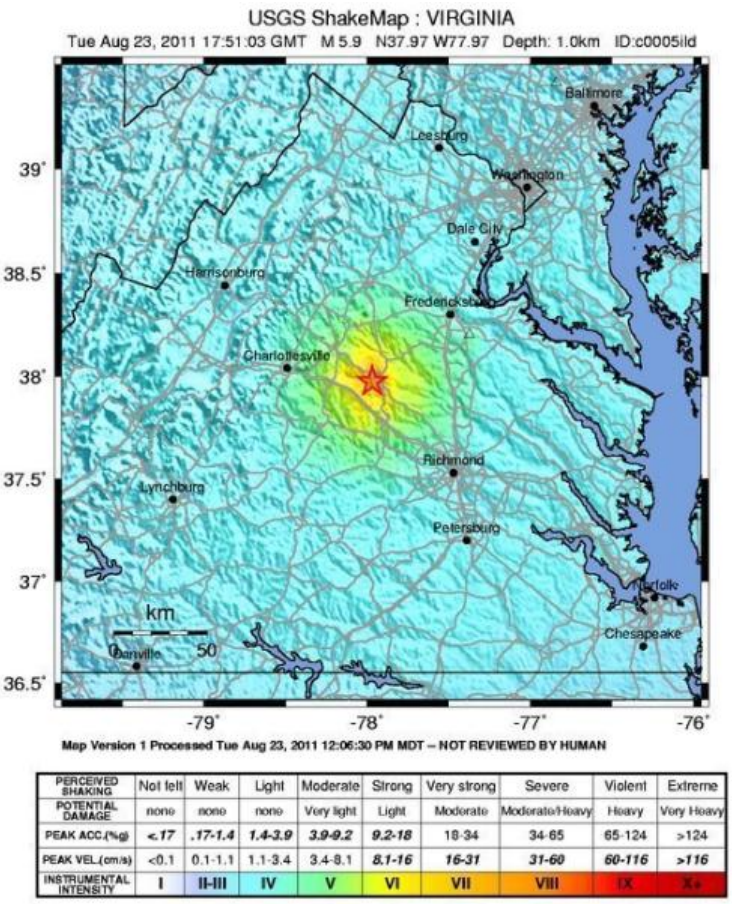
March 12, 1964: An earthquake of intensity V or over occurred on March 12, 1964, centered near Haddock, GA less than 20 miles northeast of Macon. Intensity V was recorded at Haddock while shaking was felt in four counties over a 400-square-mile area.

April 29, 2003: On April 29, 2003 just before 5:00 a.m. a moderate earthquake, rated 4.9 on the Richter Scale, shook most of the northwest corner of Georgia, south to Atlanta. The epicenter was located in Menlo, GA, about 37 miles south of Chattanooga. See map to right.



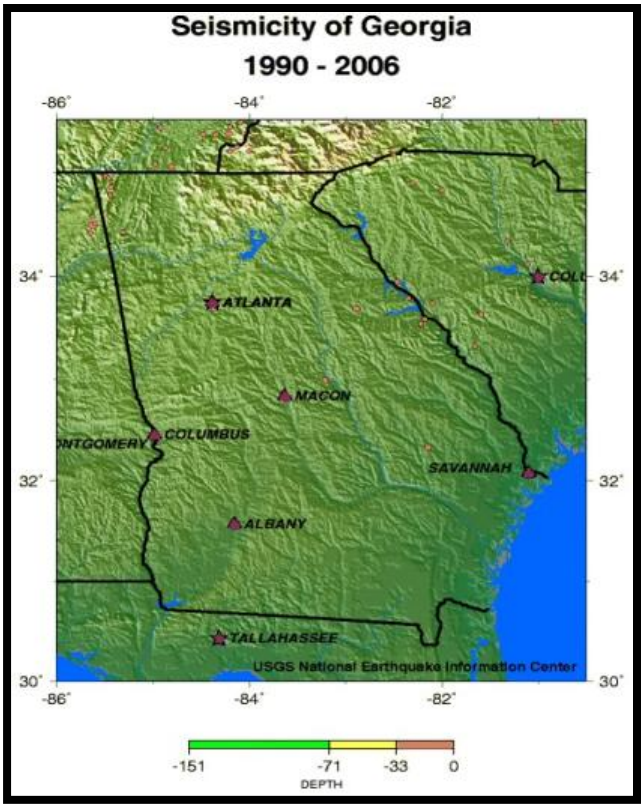
INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+
SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy

August 23, 2011: On August 23, 2011 at 1:51pm, a 5.8 magnitude earthquake originated near Louisa and Mineral, Virginia. It struck Washington DC (about 100 miles away from epicenter) causing moderate shaking and potentially significant damage. The earthquake was recorded all along the Appalachians, from Georgia to New England. The earthquake was felt so widely because it was a shallow earthquake, and geologic conditions in the eastern U.S. allow the effects of earthquakes to propagate and spread much more efficiently than in the western United States. Only mild movement was felt in Walker County. See map to the right.

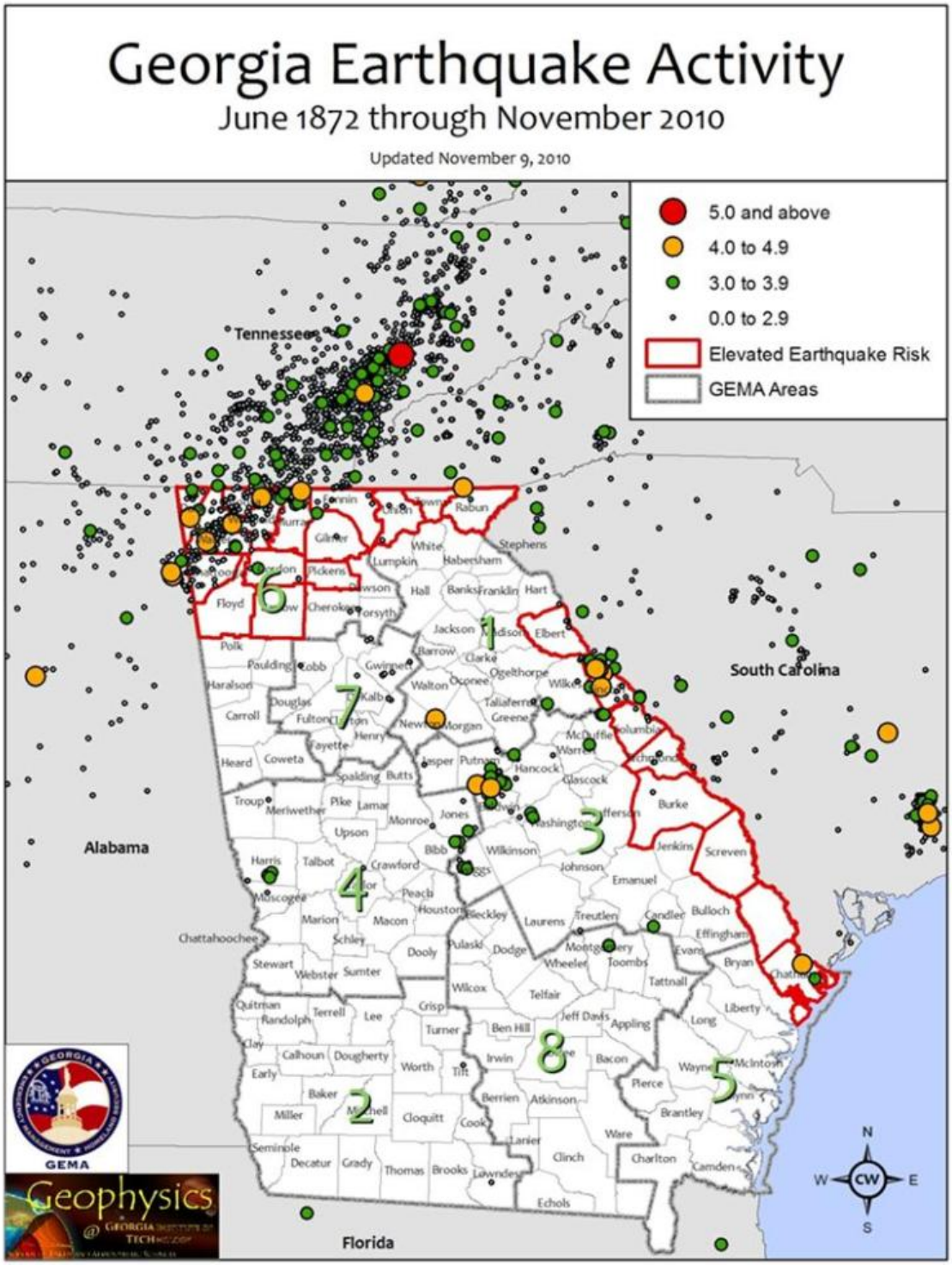


PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<.17	.17-1.4	1.4-3.9	3.9-9.2	9.2-18	18-34	34-65	65-124	>124
PEAK VEL.(cm/s)	<0.1	0.1-1.1	1.1-3.4	3.4-8.1	8.1-16	16-31	31-60	60-116	>116
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

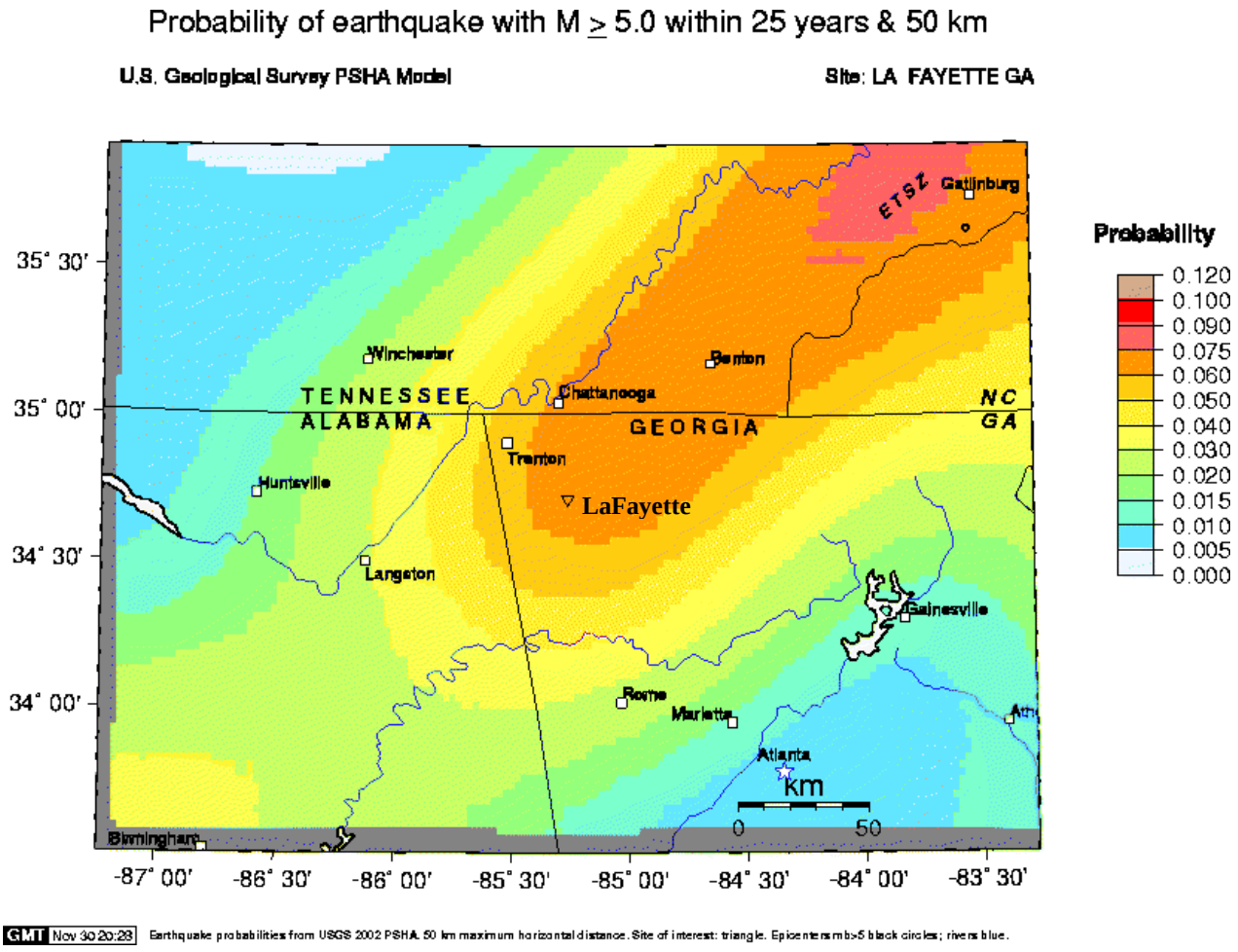
To a large extent, the HMPC was unable to determine which of these earthquakes affected Walker County and, if so, to what degree. Nevertheless, the HMPC has determined that most of the earthquakes documented above would have been strong enough or would have occurred close enough to Walker County to merit consideration. Three of these earthquakes occurred within the 50-year study period and are included in the hazard history of this Plan. The threat of earthquakes in Walker County may be more significant than the documented earthquake history would seem to indicate. Fairly recent seismic activity for the State of Georgia is shown on the following map for the period 1990 to 2006.



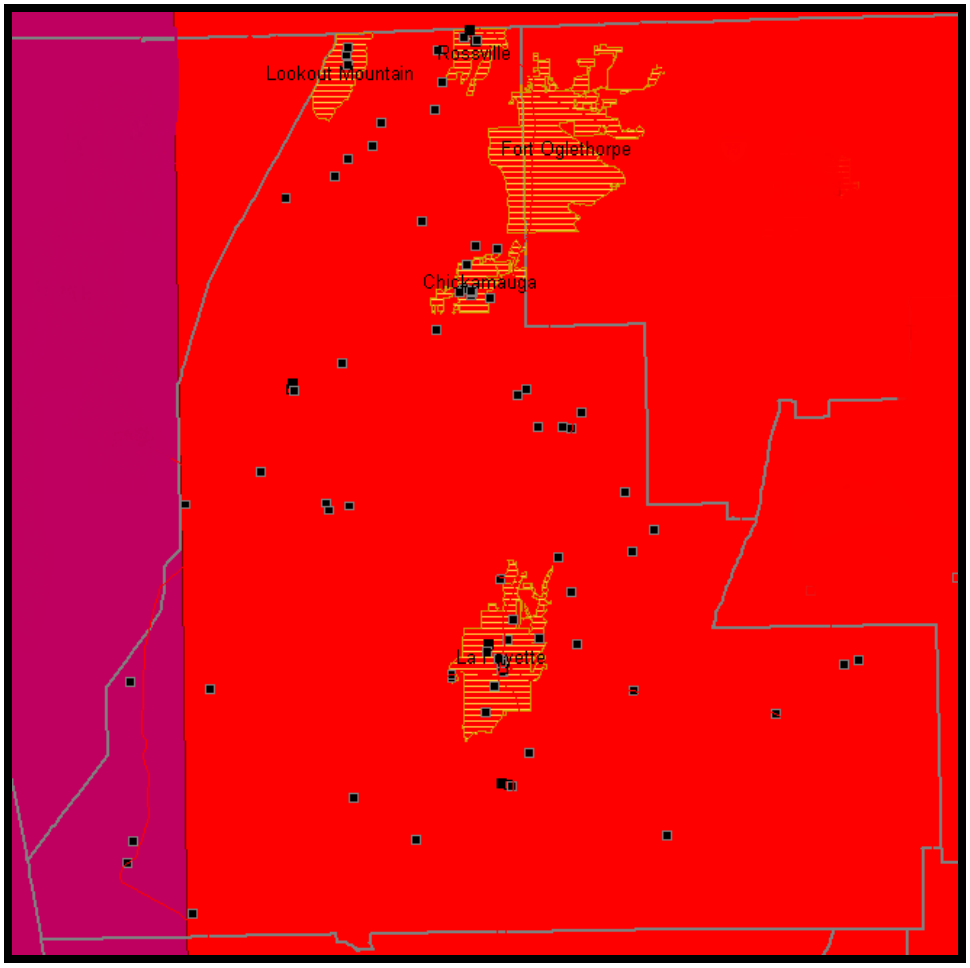
A more detailed account of historical seismic activity from 1872 to 2010 is shown on the following GEMA/GA Tech map. Based on this map, Walker County is most certainly at an elevated risk for earthquakes when compared to the State as a whole.



Based on U.S. Geological Survey estimations using the earthquake frequency method described in the section above, the probability of an earthquake of Magnitude 5.0 or more occurring within Walker County over the next 25 years is between 5% and 7.5% (see map below). As discussed above, such predictions are based on limited information, and cannot necessarily be relied upon for their precision. However, they do help demonstrate that the threat of earthquakes cannot be overlooked even in a relatively inactive geographic area such as Walker County.

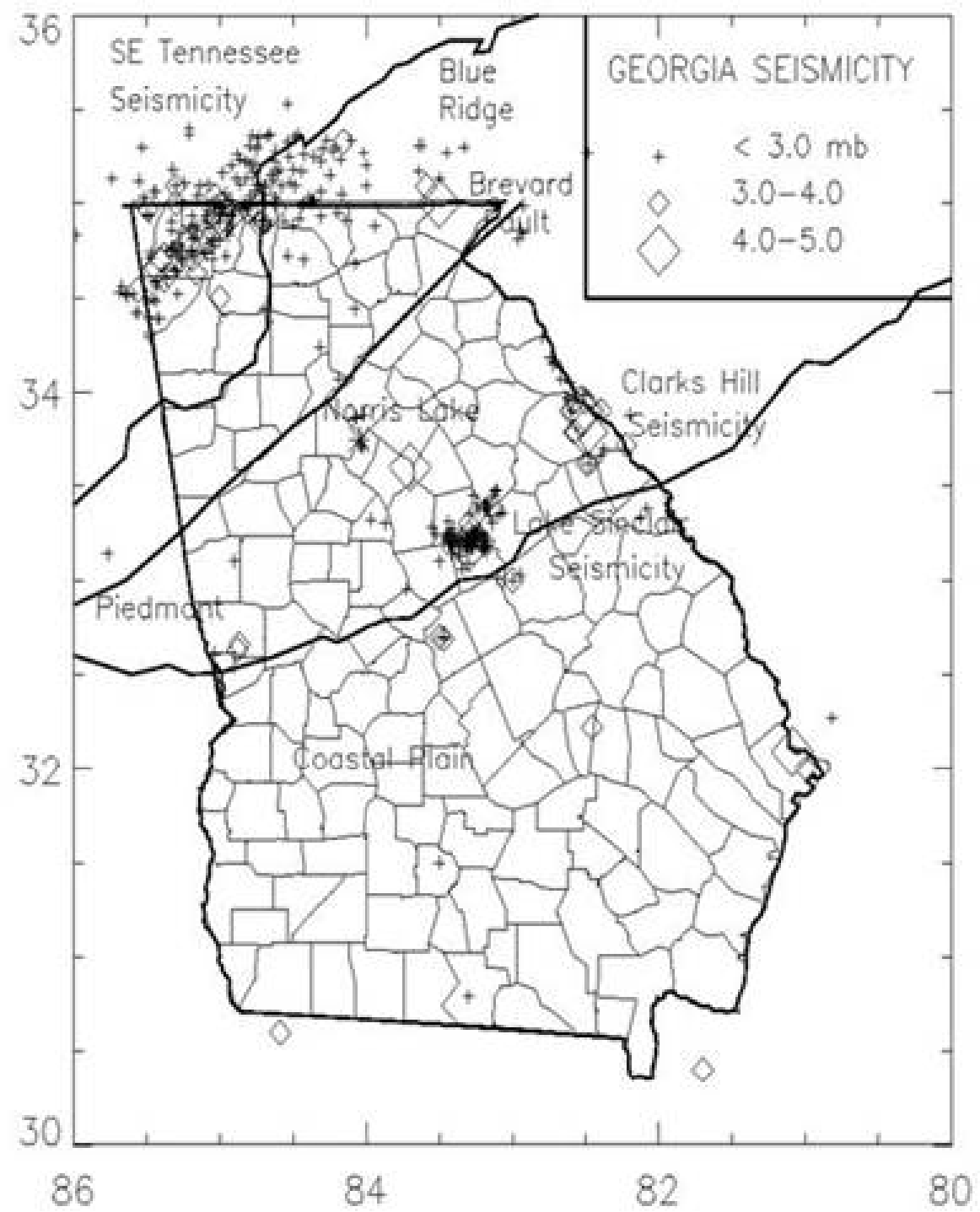


C. Assets Exposed to Hazard - All structures and facilities within Walker County are susceptible to earthquake damage since they can occur in any portion of the County or City. Although the likelihood of a severe earthquake is slim, it may be just slightly higher in the northwest corner of the County. The seismic hazard layer below is based on the USGS Probabilistic Seismic Hazard Map, showing the percentage of gravity that the area has a 2 percent probability of exceedance in 50 years. The score classification reflects that used by the IRC Seismic Design Categories. The horizontal positional accuracy is unknown for this layer.



Score	Original Value	Description
4	D1	50-83% gravity (highest threat)
3	C	33-50% gravity (moderate to high threat)
2	B	17-33% gravity (low to moderate threat)
1	A	0-17% gravity (lowest threat)

Georgia has a few large faults, including the Blue Ridge fault. The Blue Ridge fault extends from Alabama through Georgia and into Tennessee. The fault runs across the northwest corner of Georgia. This region of Georgia is the most seismically active in the State.



D. Estimate of Potential Losses – For loss estimate information, please refer to Appendix A, the Critical Facilities Database, and Appendix D, Worksheet 3a, for each jurisdiction.

E. Multi-Jurisdictional Concerns – All of Walker County has the potential to be affected by earthquakes. The threat appears to be no greater within the Cities than it is within the County. Any steps taken to mitigate the effects of earthquake will be undertaken on a countywide basis and include the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville.

F. Hazard Summary – Scientific understanding of earthquakes is of vital importance to the Nation. As the population increases, expanding urban development and construction works encroach upon areas susceptible to earthquakes. With a greater understanding of the causes and effects of earthquakes, we may be able to reduce damage and loss of life from this destructive phenomenon. The HMPC was limited in its ability to develop mitigation measures associated with earthquakes, but did provide some guidance in Chapter 5.

Chapter 3
Local Technological Hazard, Risk and Vulnerability (HRV) Summary

In accordance with FEMA guidelines, the Walker County Hazard Mitigation Planning Committee (HMPC) also included information relating to technological or "human-caused" hazards into this plan. The term, "technological hazard" refers to incidents resulting from human activities such as the manufacture, transportation, storage, and use of hazardous materials. This plan assumes that hazards resulting from technological sources are accidental, and that their consequences are unintended. Unfortunately, the information relating to technological hazards is much more limited, due largely to the very limited historical data available. This causes a greater level of uncertainty with regard to mitigation measures. However, enough information has been gathered to provide a basic look at technological hazards within Walker County.

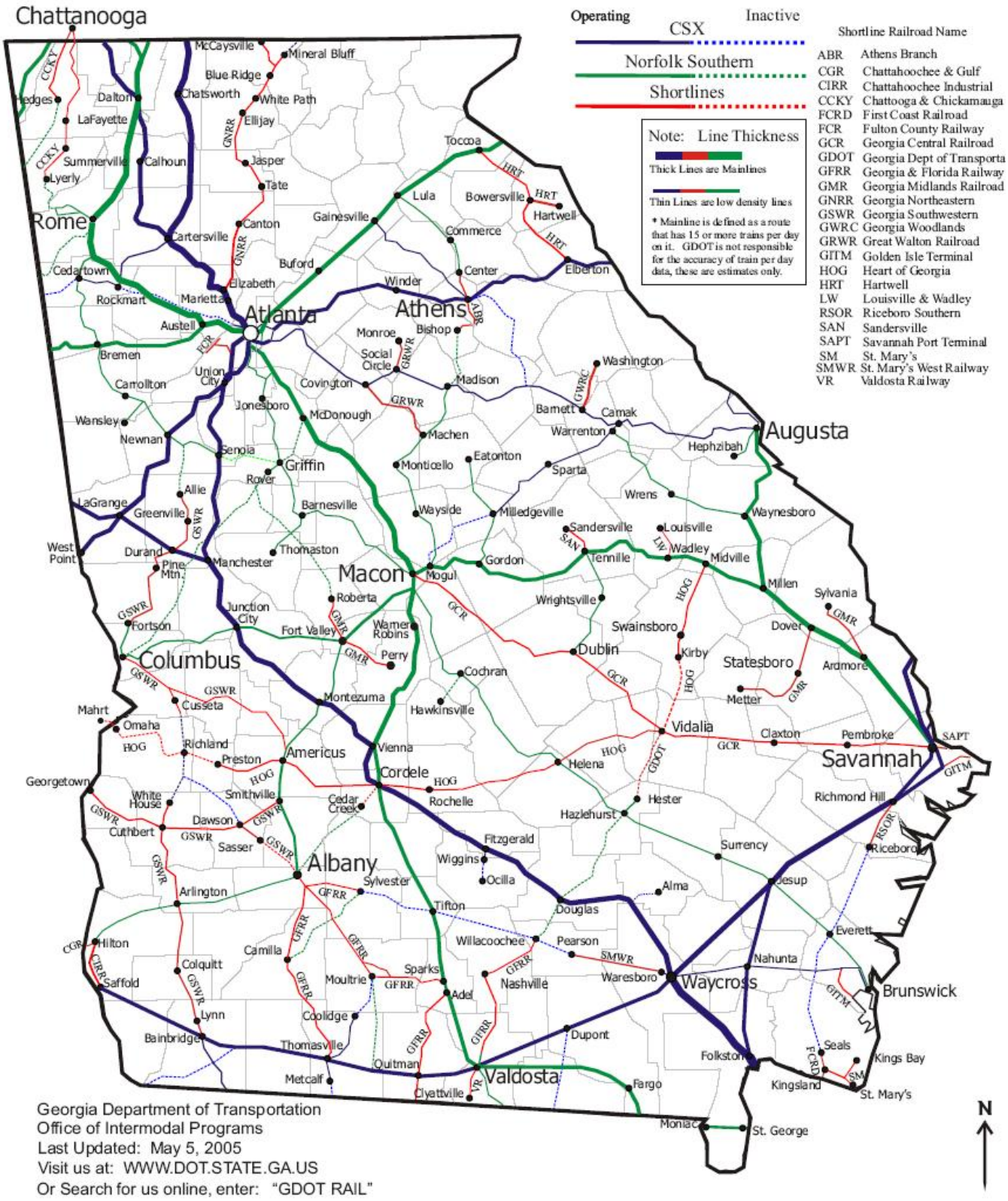
3.1 Hazardous Materials Release

A. Hazard Identification – Hazardous materials (hazmat) refers to any material that, because of its quantity, concentration, or physical or chemical characteristics, may pose a real hazard to human health or the environment if it is released. Hazmat includes flammable and combustible materials, toxic materials, corrosive materials, oxidizers, aerosols, and compressed gases. Specific examples of hazmat are gasoline, bulk fuels, propane, propellants, mercury, asbestos, ammunition, medical waste, sewage, and chemical, biological, radiological, nuclear, and explosive (CBRNE) threat agents. Specific federal and state guidelines exist on transport and shipping hazardous materials. Research institutes, industrial plants, individual households, and government agencies all generate chemical waste. Approximately one percent is classified as hazardous.

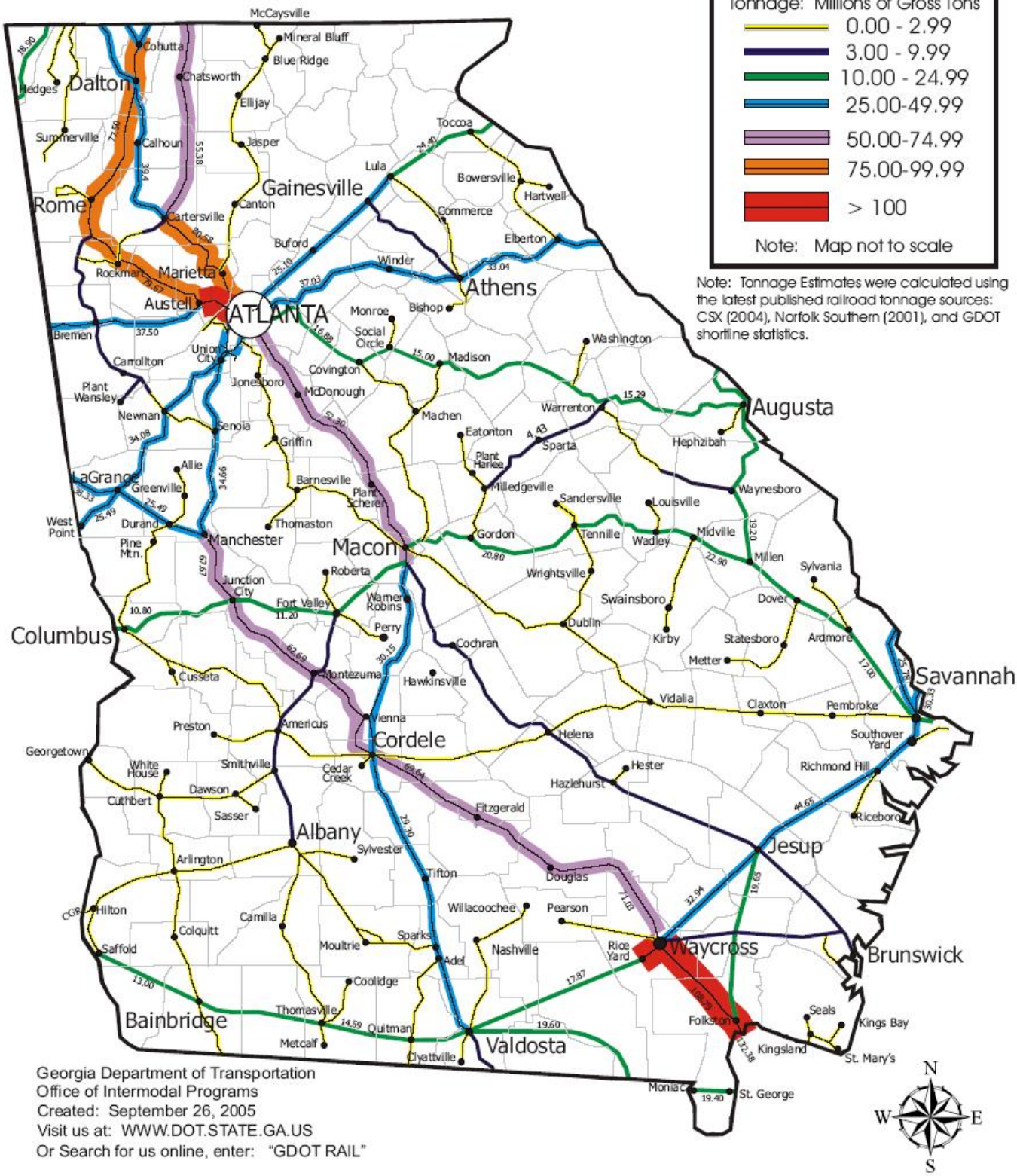
A hazmat spill or release occurs when hazardous material or waste gets into the environment in an uncontrolled fashion. Many manufacturing processes use hazardous materials or generate hazardous waste, but a hazardous spill doesn't always come from a chemical plant or a factory. Any substance in the wrong place at the wrong time in too large an amount can cause harm to the environment. The response to a spill depends on the situation. When the emergency response team is notified of a spill, it must quickly decide what sort of danger is likely. Members of the team collect appropriate clothing and equipment and travel to the scene. There they try to contain the spill, sometimes testing a sample to identify it. If necessary, they decontaminate themselves before leaving the area. Once material has been identified, other personnel arrive to remove it.

B. Hazard Profile – The Walker County HMPC reviewed historical data from the Environmental Protection Division (EPD) of the Georgia Department of Natural Resources (DNR) and County records in their research involving hazardous materials (hazmat) releases, or hazmat spills, within Walker County Hazmat spills are usually categorized as either fixed releases, which occur when hazmat is released on the site of a facility or industry that stores or manufactures hazmat, or transportation-related releases, which occur when hazmat is released during transport from one place to another. Both fixed and transportation-related hazmat spills represent tremendous threats to Walker County. The County's industries are one of the main threats with regard to fixed hazmat spills. Another serious concern comes from transportation-related hazmat spills. Various railroad lines run through the County. The Georgia Department of Transportation (GDOT) rail maps on the following two pages provide locations of the rail lines running through Walker County, as well as information relating to tonnage.

Georgia Rail System



Georgia Rail Tonnage



Georgia Department of Transportation
Office of Intermodal Programs
Created: September 26, 2005
Visit us at: WWW.DOT.STATE.GA.US
Or Search for us online, enter: "GDOT RAIL"

COX

During the past fifty-year period, documentation of 248 hazmat spills was found. Based on this entire fifty-year period, there is a 496% chance per year that such events will occur in Walker County, or about five events per year. When only the past ten-year period is taken into consideration, the likelihood of a hazmat spill in Walker County remains constant at a 500% chance per year.

C. Assets Exposed to Hazard – The environment is especially vulnerable to hazardous materials releases. Waterways are at greatest risk of contamination. Over the past fifteen years or so, the Georgia EPD has tracked information on waterways within Walker County that have been contaminated to varying degrees due to hazmat spills. These incidents include contamination to Chickamauga Creek, Black Creek, Cane Creek, Chattanooga Creek, Mill Creek, Lake Winneopsoka, McFarland Branch, Town Creek, Ponders Creek, as well as unnamed creeks, storm sewers, wells, and drainage ditches. Such releases are also a potential threat to all property and persons within any primary highway corridors of Walker Co. due to the fact that certain hazmat releases can create several square miles of contamination. The same holds true of property and persons located in the vicinity of facilities or industries that produce or handle large amounts of hazardous materials. Historical data indicates that, for the most part, hazmat releases within the County have been relatively minor in nature. The most common hazmat releases include diesel, gasoline, oil, and sewage.

D. Estimate of Potential Losses - It is difficult to determine potential damage to the environment caused by hazardous materials releases. Waterways within Walker County have certainly been impacted to some degree. Such damage is difficult to calculate in dollar figures however, and future problems are almost impossible to estimate. In addition, no recorded information was located that mentioned damage to any critical facilities as a result of hazmat releases. It should be noted however, when either fixed or transportation hazmat releases do occur, there are significant costs incurred relating to emergency response, road closings, evacuations, watershed protection, expended man-hours, and cleanup materials and equipment. Corridors for US Route 27, and State Routes 2, 95, 136, 151, 167, 193, 337, and 341 are most vulnerable to transportation-related releases. However, such releases can occur in virtually any part of the County accessible by road. Fixed location releases are not as likely to affect the more rural areas of the County. For additional loss estimate information, please refer to the Critical Facilities Database (Appendix A).

E. Multi-Jurisdictional Concerns – All of Walker County, including the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville, is vulnerable to both fixed and transportation-related hazardous materials releases.

F. Hazard Summary – Hazardous materials releases are one of the most significant threats to Walker County. Unknown quantities and types of hazmat are transported through the County by truck on a daily basis. The main highways of concern are US Route 27, and State Routes 2, 95, 136, 151, 167, 193, 337, and 341. These hazmat shipments pose a great potential threat to all of Walker County. The fact that the County is unable to track these shipments seriously limits the mitigation measures that can be put

into place. Fixed hazmat releases are also considered to be a major threat to Walker County due to the carpet and other industries located therein. Therefore, the Walker County HMPC has identified specific mitigation actions for hazardous materials releases in Chapter 5.

3.2 Dam Failure

A. Hazard Identification – Georgia law defines a dam as any artificial barrier which impounds or diverts water, is 25 feet or more in height from the natural bed of the stream, or has an impounding capacity at maximum water storage evaluation of 100 acre-feet (equivalent to 100 acres one foot deep) or more. Dams are usually constructed to provide a ready supply of water for drinking, irrigation, recreation and other purposes. They can be made of rock, earth, masonry, or concrete or of combinations of these materials.

Dam failure is a term used to describe the major breach of a dam and subsequent loss of contained water. Dam failure can result in loss of life and damage to structures, roads, utilities, crops, and livestock. Economic losses can 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. National statistics show that overtopping due to inadequate spillway design, debris blockage of spillways, or settlement of the dam crest account for one third of all U.S. dam failures. Foundation defects, including settlement and slope instability, account for another third of all failures. Piping and seepage, and other problems cause the remaining third of national dam failures. This includes internal erosion caused by seepage, seepage and erosion along hydraulic structures, leakage through animal burrows, and cracks in the dam. The increasing age of dams nationwide is a contributing factor to each of the problems above.

B. Hazard Profile – Congress first authorized the US Army Corps of Engineers to inventory dams in the United States with the National Dam Inspection Act (Public Law 92-367) of 1972. The Water Resources Development Act of 1986 (P.L. 99-662) authorized the Corps to maintain and periodically publish an updated National Inventory of Dams (NID), with re-authorization and a dedicated funding source provided under the Water Resources Development Act of 1996 (P.L. 104-3). The Corps also began close collaboration with the Federal Emergency Management Agency (FEMA) and state regulatory offices to obtain more accurate and complete information. The National Dam Safety and Security Act of 2002 (P.L. 107-310) reauthorized the National Dam Safety Program and included the maintenance and update of the NID by the Corps of Engineers. The most recent Dam Safety Act of 2006 reauthorized the maintenance and update of the NID.

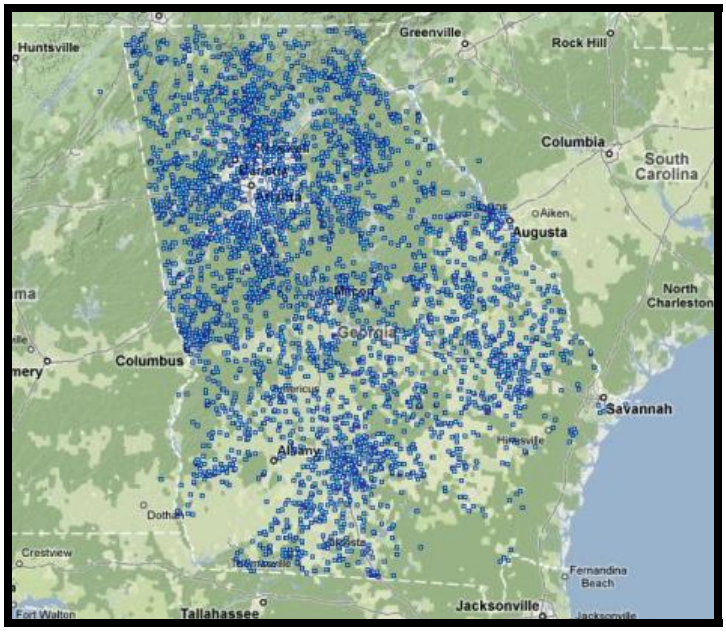
The NID consists of dams meeting at least one of the following criteria:

1) High hazard classification - loss of one human life is likely if the dam fails,
2) Significant hazard classification - possible loss of human life and likely significant property or environmental destruction,
3) Equal or exceed 25 feet in height and exceed 15 acre-feet in storage,
4) Equal or exceed 50 acre-feet storage and exceed 6 feet in height.

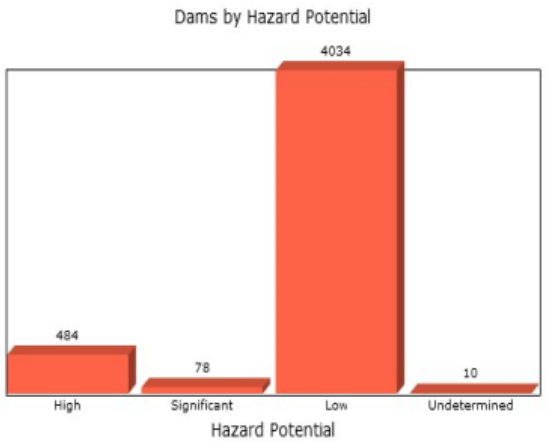
The goal of the NID is to include all dams in the U.S. that meet these criteria, yet in reality, is limited to information that can be gathered and properly interpreted with the given funding. The inventory initially consisted of approximately 45,000 dams, which were gathered from extensive record searches and some feature extraction from aerial imagery. Since continued and methodical updates have been conducted, data collection has been focused on the most reliable data sources, which are the various federal and state government dam construction and regulation offices. In most cases, dams within the NID criteria are regulated (construction permit, inspection, and/or enforcement) by federal or state agencies, who have basic information on the dams within their jurisdiction. Therein lies the biggest challenge, and most of the effort to maintain the NID; periodic collection of dam characteristics from states, territories, and 18 federal offices. Database management software is used by most state agencies to compile and export update information for the NID. With source agencies using such software, the Corps of Engineers receives data that can be parsed and has the proper NID codes. The Corps can then resolve duplicative and conflicting data from the many data sources, which helps obtain the more complete, accurate, and updated NID.

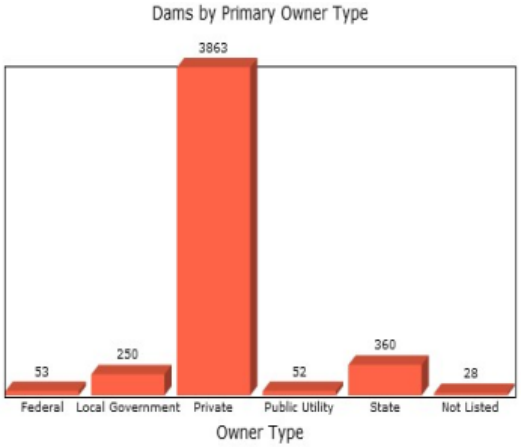
The most recent National Inventory of Dams Map (2009) for the State of Georgia is located below and displays the State's current inventory of 4,606 dams.

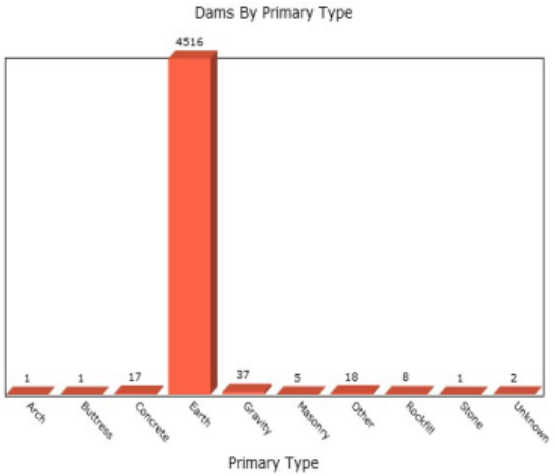
U.S Army Corps of Engineers National Inventory of Dams (GA 2009)

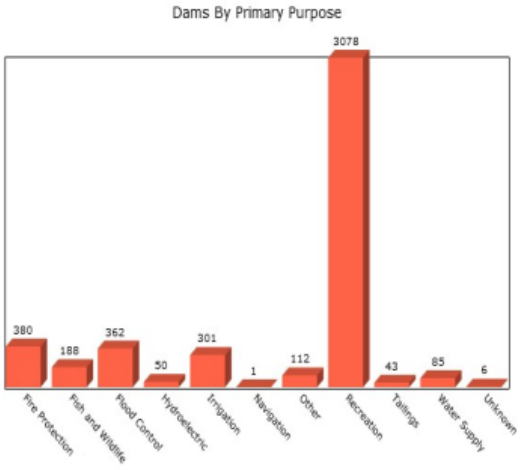


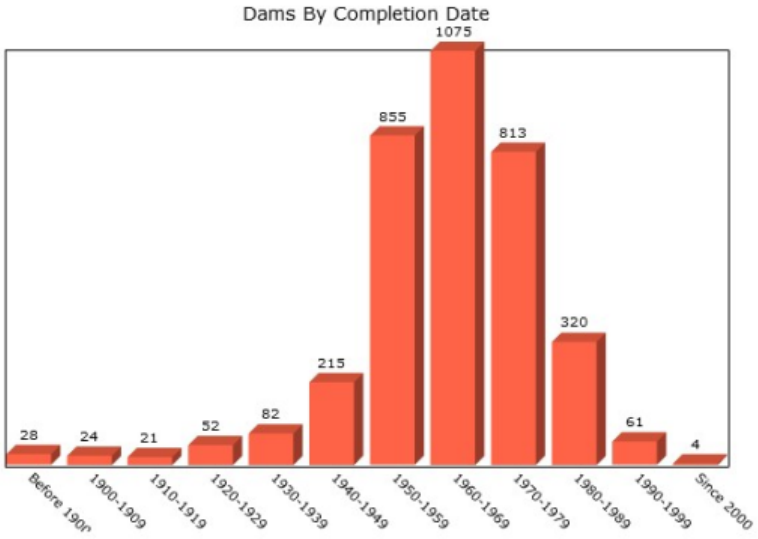
The following five US Army Corps of Engineers charts are derived from NID information and present information related to number, hazard potential, type, ownership, purpose, and age of Georgia dams.











As you can see in the last chart above, most Georgia dams were built during the 1950's through the 1970's. This puts the average age of Georgia dams at close to 50 years old.

The Walker County HMPC reviewed historical data from the US Army Corps of Engineers National Inventory of Dams, the Environmental Protection Division (EPD) within the Georgia Department of Natural Resources (DNR), as well as County records in their research involving dam failure within Walker County. Fortunately, Walker County has never experienced a major dam failure. It is possible that some small private dams have been breached at some point in the past, but no records have been found to indicate any type of emergency response related to such a failure, or even that such a failure has taken place. However, the potential for such a disaster does exist, and the appropriate steps must be taken to minimize such risks. The Georgia Safe Dams Program helps to accomplish that.

The Georgia Safe Dams Act of 1978 established Georgia's Safe Dams Program following the November 6, 1977 failure of the Kelly Barnes Dam in Toccoa, GA, in which 39 people lost their lives when the breached dam, which held back a 45-acre lake, sent a 30-foot-high wall of water sweeping through Toccoa Falls College. The Environmental Protection Division (EPD) within the Georgia Department of Natural Resources (DNR) is responsible for administering the Program. The purpose of the Program is to *provide for the inspection and permitting of certain dams in order to protect the health, safety, and welfare of all citizens of the state by reducing the risk of failure of such dams.* The Program has two main functions: (1) to inventory and classify dams and (2) to regulate and permit high hazard dams.

Structures below the State minimum height and impoundment requirements (25 feet or more in height or an impounding capacity of 100 acre-feet or more) are exempt from regulation by the Georgia Safe Dams Program. The Program checks the flood plain of the dam to determine its hazard classification. Specialized software is used to build a computer model to simulate a dam breach and establish the height of the flood wave in the downstream plain. If the results of the dam breach analysis, also called a flood routing, indicate that a breach of the dam would result in a probable loss of human life, the dam is classified as Category I (high-hazard). As of December 2011, the Program's statewide inventory of dams consisted of 475 Category I dams, 3,410 Category II dams and 1,186 exempt dams. The Program noted that an additional 120 Category II dams needed to be studied for possible reclassification to Category I dams. The Safe Dams Program also approves plans and specifications for construction and repair of all Category I dams. In addition, Category I dams are continuously monitored for safety by Georgia EPD.

To date, the Safe Dam Program has identified two Category I dams within Walker County. These dams are the Abney Lake Dam and Town Creek W/S Structure No. 1. The additional twenty-two classified dams within the County are Category II dams (16) or exempt dams (6). There may be a number of unclassified dams within the County as well. The Program requires all Category II dams to be inventoried at least every five years.

C. Assets Exposed to Hazard – Areas most vulnerable to the physical damages associated with dam failure within Walker County, though such a risk appears to be relatively low, are the low-lying and downstream areas associated with Abney Lake Dam and Town Creek W/S Structure No. 1. Although physical damages associated with dam failure would be limited to certain areas, the damage to the local economy and problems associated with delivery of water and other utilities could be felt Countywide

D. Estimate of Potential Losses - Loss estimation due to dam failure is an approximate effort, at best. Direct loss to infrastructure, critical facilities and businesses in terms of repair and replacement can be roughly estimated. However, estimating indirect costs is less accurate. For additional loss estimate information, please refer to the Critical Facilities Database (Appendix A).

E. Multi-Jurisdictional Concerns – All of Walker County, including the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville, is vulnerable to the negative impact of dam failure.

F. Hazard Summary – A dam failure has never been recorded in Walker County. However, risks associated with dam failure cannot be ignored, especially with regard to Category I dams located within the County. The Walker County HMPC has identified some specific mitigation actions for dam failure in Chapter 5.

Chapter 4
Land Use and Development Trends

Note: Future land use is discussed briefly in this Chapter. All information is derived from the most Walker County Multi-Jurisdictional Comprehensive Plan 2012-2032. For more detailed information relating to future development, please refer to the full version of the Comprehensive Plan.

A key component of the comprehensive planning process is the creation of a Future Development Map that reflects the county's vision for growth and development for the next 20 years. This vision, which was developed with a public visioning process, is expressed in unique "character areas." Character area planning focuses on the way an area looks and how it functions. Tailored development strategies are applied to each area, with the goal of enhancing the existing character/function or promoting a desired character for the future. The character areas shown on the Future Development Map define areas that:

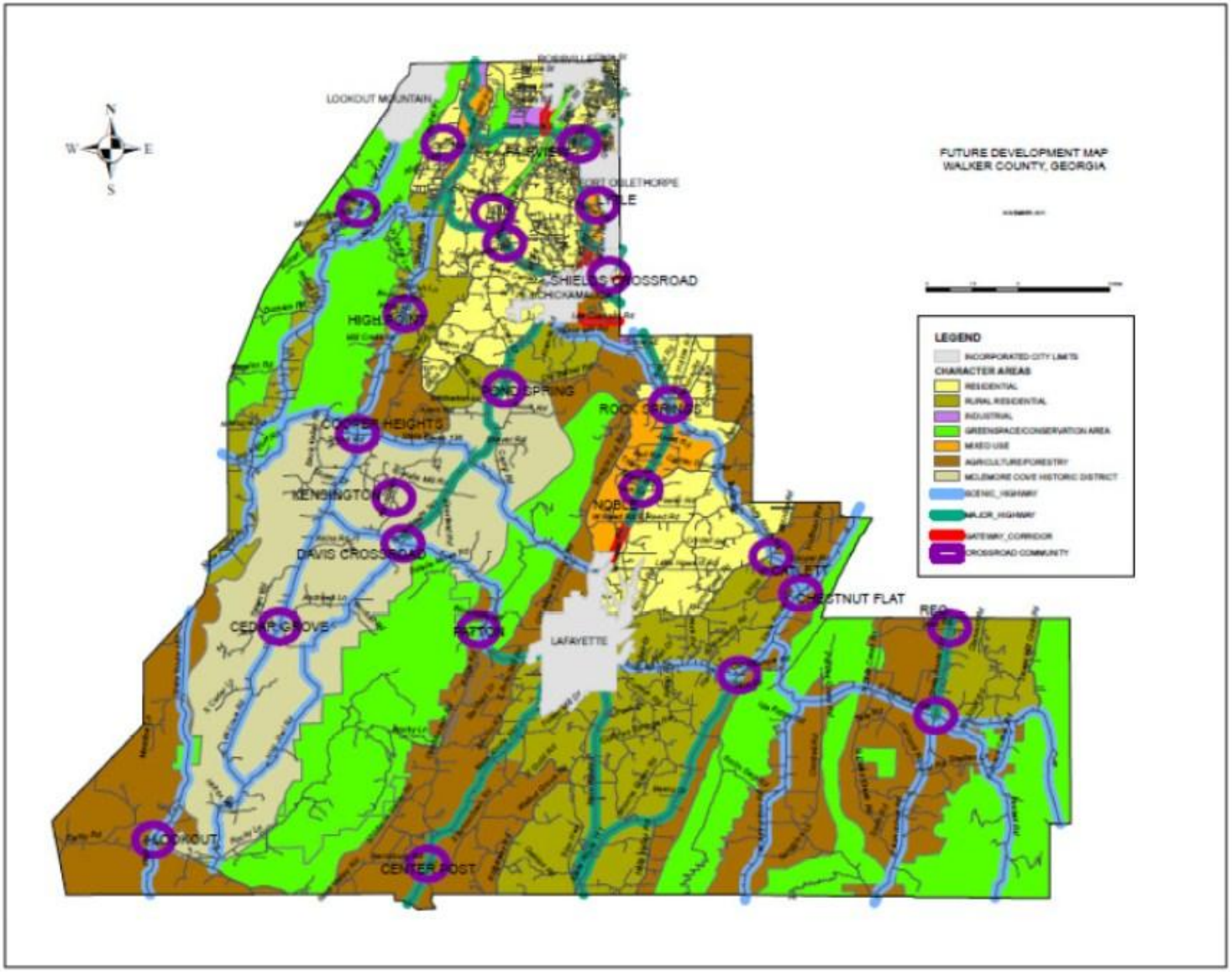
- Presently have unique or special characteristics that need to be preserved
- Have potential to evolve into unique areas
- Require special attention because of unique development issues

The character areas narratives that follow present an overall vision for future growth and development for each character area and include the following information:

- Description
- Land use(s)
- Quality Community Objectives
- Implementation measures

The description is intended to clarify the types, forms, styles, and patterns of development that are to be encouraged in the character area. The land uses are those to be allowed in the character area. The Quality Community Objectives (QCO) identifies the QCOs that will be pursued in the area. These objectives were adopted by the Georgia Department of Community Affairs (DCA) to measure how communities preserve their unique resources while accommodating future development. Finally, the implementation measures identify strategies the county can take to help achieve the desired development patterns for the area.

The following map is the Future Development Map for unincorporated Walker County.


FUTURE DEVELOPMENT MAP
WALKER COUNTY, GEORGIA
LEGEND
INCORPORATED CITY LIMITS
CHARACTER AREAS
RESIDENTIAL
RURAL RESIDENTIAL
INDUSTRIAL
GREENSPACE/CONSERVATION AREA
MIXED USE
AGRICULTURE/FORESTRY
MCLEMORE COVE HISTORIC DISTRICT
SCENIC_HIGHWAY
MAJOR_HIGHWAY
GATEWAY_CORRIDOR
CROSSROAD COMMUNITY
LOOKOUT MOUNTAIN
SHIELDS CROSSROAD
HIGH POINT
KENSINGTON
DAVIS CROSSROAD
CEDAR GROVE
LAFAYETTE
CHESTNUT FLAT
LOOKOUT
CENTER POST
N
S
W
E

Report of Accomplishments

The Report of Accomplishments (ROA) that follows provides a status of each work item identified in the county's 2007-2011 Short Term Work Program. For each activity, the ROA identifies whether it is completed, underway, postponed, or dropped. Reasons are provided for activities that were dropped or postponed.

REPORT OF ACCOMPLISHMENTS WALKER COUNTY 2007-2011 STWP					
Activity	**Completed**	**Currently Underway**	**Postponed**	**Not Accomplished**	**Explanation for Postponed or Unaccomplished Activity**
Community Facilities and Services					
Armuchee Valley [Water Project]		X			
Lookout Mountain [Water Project]		X			
Mountain View Subdivision [Water Project]	X				
West Cove Road [Water Project]	X				
Coke Oven to Chattanooga Valley Contact Water Line				X	The need for this activity was met by other means.
Dry Valley Road [Sewer Project]	X				
Lail Road [Sewer Project]	X				
Evaluate other areas of the County to determine future [sewer] needs and include on the next SPLOST.		X			
New [Sewer] Project TBD and completed	X				
Expand Civic Center (Parking & Storage)				X	With assistance from the North Georgia Animal League, Dog Park was completed instead of this item.
Recreational Facilities	X				
Recreational Facilities – County Sports Complex – Community Center and Athletic	X				
Continue to pursue an Equestrian/Sports Complex at the Old Barwick Mill				X	Barwick Mill is being considered for another use at this time.
Explore opportunities for a new and larger Agricultural Facility in order to expand use.		X			
Walker County Primary Health Care	X				

REPORT OF ACCOMPLISHMENTS WALKER COUNTY 2007-2011 STWP					
Activity	**Completed**	**Currently Underway**	**Postponed**	**Not Accomplished**	**Explanation for Postponed or Unaccomplished Activity**
Road Re-striping Program		X			
County-wide Utility Plan		X			
Explore options for 4 year college programs perhaps using Northwestern Technical College location				X	Northwestern Technical College merged with Coosa Valley Technical College in 2009 as Georgia Northwestern Technical College, operating campuses in four counties; but no four-year programs are offered.
Participate in the Work Force Development Program through the Department of Community Affairs	X				
Implement Hazard Mitigation Plan		X			
Continue to work toward Class 3 ISO Rating		X			
Construction of New East Armuchee Fire Hall and Community Center	X				
Construction of Highway 136 & 157 Fire Hall				X	No agreement could be reached with property owners at this intersection, but negotiations are underway for a nearby location on Hwy 157.
Construction of Old Mineral Springs Rd Fire Hall	X				
Update Communities Facilities Element of Comprehensive Plan		X			
Economic Development					
Increase participation and utilization of economic development services available by participating in the North Georgia Development Authority		X			
Develop standard incentive package to encourage industrial and commercial businesses to locate in Walker County.	X				

REPORT OF ACCOMPLISHMENTS WALKER COUNTY 2007-2011 STWP					
Activity	**Completed**	**Currently Underway**	**Postponed**	**Not Accomplished**	**Explanation for Postponed or Unaccomplished Activity**
Develop an inventory of vacant sites and buildings that are available for new or redevelopment and/or infill development	X				
Develop a business development strategy based on our community's strengths, assets, and weaknesses.	X				
Consider the types of businesses already in our community and our available workforce and create a plan to recruit business/industry that will be compatible.		X			
Using the business plans and participating in the NGJDA, encourage new jobs for skilled and unskilled labor, as well as professional and managerial jobs.		X			
Develop Comprehensive Tourism Plan		X			
Develop Hwy 27 and Hwy 2 Tourism Corridor – including frontage roads		X			
State Park Lodge on Pigeon Mountain with trails				X	Lack of funding
Equestrian Center – redevelopment of brownfields				X	Site targeted for an equestrian center is currently being considered for another use
Industrial Park Development/Re-development in Rossville Area	X				
Ongoing exploration of new industrial development and use of Industrial Revenue Bonds		X			
Embrace and encourage cultural heritage (i.e. artists, writers, etc.) in economic development by hosting art exhibits and other activities.		X			
Downtown re-development Rossville, Chickamauga, and Lafayette				X	County is not involved in downtown development activities in the municipalities
Encourage new development of hotels, bed & breakfast, and other overnight accommodations to allow for overnight tourist to our area		X			
Pursue sit down restaurants to locate in areas of Walker County to add to tourism plan.		X			

REPORT OF ACCOMPLISHMENTS WALKER COUNTY 2007-2011 STWP					
Activity	**Completed**	**Currently Underway**	**Postponed**	**Not Accomplished**	**Explanation for Postponed or Unaccomplished Activity**
Shields Crossroads Hotel and Welcome Center				X	Property targeted for the Welcome Center was sold and developed for other purposes.
Market Walker County as a location for filming for Motion Picture Industry		X			
Pursue opportunities for Broadband in Walker County		X			
Pursue opportunities to locate a sports complex such as YMCA or other similar organization.		X			
Update Economic Development Element of Comprehensive Plan		X			
Housing					
Encourage mixed use developments to meet need of affordable, safe housing for all age groups and family types in communications with potential developers.		X			
Encourage mixed use developments to meet need of affordable, safe housing for all age groups and family types by providing information on the Department of Community Affairs funding opportunities for these types of projects.		X			
Update Housing Element of Comprehensive Plan		X			
Land Use					
Amend Walker County Land Development Regulations to be more comparable to Better Site Design Standards and to better protect existing farmland.		X			
Update County's Official Code Section Manual (Annually)		X			
Have all Land Development Regulations available on CD for sale to the public.			X		Waiting for codes to be updated before providing on CD
Continue to review and update Land Development Regulations as appropriate.		X			

REPORT OF ACCOMPLISHMENTS WALKER COUNTY 2007-2011 STWP					
Activity	**Completed**	**Currently Underway**	**Postponed**	**Not Accomplished**	**Explanation for Postponed or Unaccomplished Activity**
Update Websites on a regular basis for most current information including codes on municode.com, flagshipgis.com and on walker.co.ga.us.		X			
Add additional information to flagshipgis.com as it becomes available (e.g., flood maps, zoning updates, storm drainage structures, etc.).		X			
Rock Spring – Stormwater Management Study and Community Plan including wetland protection project with community park/educational area		X			
Continue to Implement the New Stormwater Management Program		X			
Implement the TMDL Implementation Plan		X			
Explore the Opportunity for an Overlay District in McLemore Cove Area			X		An overlay district ordinance was drafted, but further action has been postponed until district boundary concerns can be resolved.
Updating and developing ordinances to manage growth – including incentives to attract unique housing developments		X			
Make GIS capabilities available in all County offices that can benefit from the system.		X			
Add the Cities' information to the County GIS system and website, including zoning, flood maps, etc.		X			
Update Walker County Comprehensive Plan		X			
Natural and Cultural Resources					
Indian Artifacts Museum at Barwick Mill or other appropriate location.				X	Barwick Mill is being considered for another use, and no other suitable location has been identified.
Civil War Historical Marker Trails	X				

REPORT OF ACCOMPLISHMENTS WALKER COUNTY 2007-2011 STWP					
Activity	**Completed**	**Currently Underway**	**Postponed**	**Not Accomplished**	**Explanation for Postponed or Unaccomplished Activity**
County trails system – extension of greenspace throughout county for connectivity		X			
Publish map of countywide parks and recreation resources		X			
Create and continue to update the Walker County Water Resources Map using our GIS system and use it to help protect our natural resources.		X			
Take steps toward revising the land development regulations in order to protect steep slopes and the bluff.		X			
Work with TVA and other organizations within the Quality Growth Readiness Program.	X				
Historic Preservation Plan for Walker Co.				X	Lack of funding
General Planning					
Update Population Element of Comprehensive Plan		X			
Update computer equipment, software and other technology in all County Offices as needed.		X			
Strategize on incentives for preventing high school drop-out		X			
Participate in the Safe routes to school program		X			

2012-2016 Short Term Work Program (STWP)

The Short-Term Work Program (STWP) identifies specific implementation actions the County government or other entities intend to take during the first five-year timeframe of the planning period. This includes ordinances, administrative systems, community improvements or investments, and financing arrangements or other programs/initiatives to be put in place to implement the comprehensive plan. For each listed activity, the STWP provides the following information:

- Brief description of the activity
- Timeframe for undertaking the activity
- Responsible party for implementing the activity
- Estimated cost (if any) of implementing the activity
- Funding source(s), if applicable

WALKER COUNTY 2012-2016 SHORT TERM WORK PROGRAM								
Activity Description	Timeframe					Responsible Party	Cost Estimate	Funding Source
	2012	2013	2014	2015	2016			
Economic Development								
Increase participation and utilization of economic development services available by participating in the Northwest Georgia Joint Development Authority	X	X	X	X	X	City and County Officials	$1.5/capita/yr.	Participating county governments
Periodically review the standard incentive package used to encourage industrial and commercial businesses to locate in Walker County. Revise as needed.	X	X	X	X	X	Walker County Development Authority (WCDA)	$1,000	Development Authority
Periodically review the inventory of vacant sites and buildings that are available for new or redevelopment and/or infill development. Update regularly.	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, and Northwest Georgia Joint Development Authority (NWGAJDA)	$1,000	Development Authority
Develop a written business development strategy based on our community's strengths, assets, and weaknesses. Consider the types of businesses already in our community and our available workforce and create a plan to recruit business/industry that will be compatible. Using the business plans and participating in the NWGAJDA, encourage new jobs for skilled and unskilled labor, as well as professional and managerial jobs.	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, and NWGAJDA	$5,000	County; WCDA; NWGAJDA
Develop U.S. Hwy 27 Tourism Corridor – including frontage roads. Consider an overlay zoning district for the area to support the plan.	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, NWGAJDA, and U.S. Hwy 27 Association	$1,000	State grants; participating county governments
Develop a written comprehensive tourism plan for all of Walker County in addition to the U.S. Hwy 27 Tourism Corridor. Include in the plan mapping, advertising in print, with billboards, websites, TV, radio, etc.	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, and NWGAJDA	$82,000	Grants, Chamber, county, NWGAJDA
State Park Lodge or Private Hotel/Conference Center on Lookout Mountain or Pigeon Mountain	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, and NWGAJDA	$30 M	State; private funding
Actively participate in encouraging utilization and enhancement of the greenways trail system. Include maps of these trail systems on our GIS system and website.	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, and NWGAJDA – State Agency & Land Trusts	$400,000	Grants, state & local
Continue to pursue the possibility of an equestrian center somewhere in Walker County.	X	X	X	X	X	Walker County Government Officials, WCDA, and NWGAJDA	$5 M	Private
Actively work toward the redevelopment of brownfields as the opportunity arises.	X	X	X	X	X	Walker County Government Officials, WCDA, and NWGAJDA	$1,000	Development Authorities

WALKER COUNTY 2012-2016 SHORT TERM WORK PROGRAM								
Activity Description	Timeframe					Responsible Party	Cost Estimate	Funding Source
	2012	2013	2014	2015	2016			
Pursue redevelopment of the GA Hwy 2 corridor in Walker County, possibly incorporating a frontage road and Wilson Road interchange.	X	X	X	X	X	Walker County Government Officials, WCDA, and NWGAJDA	$1,000	TIA, Private, County
Industrial Park Development on Hwy 27 & West Reed Road	X	X	X	X	X	Walker County Government Officials, WCDA, and NWGAJDA	$12.5 M	Private Investors, ARC, bonds
Ongoing exploration of new industrial development and use of Industrial Revenue Bonds	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, and NWGAJDA	$1,000	County
Embrace and encourage cultural heritage (i.e. artists, writers, etc.) in economic development by hosting art exhibits and other cultural activities.	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, NWGAJDA, Art Guild, and private citizens	$1,000	Cities of Chickamauga and LaFayette, private, Walker County, fundraisers
Encourage new development of hotels, bed & breakfast, and other overnight accommodations to allow for overnight tourist to our area. Possibly a Shields Crossroads Hotel and Welcome Center	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, and NWGAJDA	$1,000 ($31.5 Mfor facility construction)	Development Authorities; Welcome Center: private, public
Actively pursue sit-down restaurants to encourage them to locate in areas of Walker County in an effort to support the tourism plan.	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, and NWGAJDA	$1,000	Development Authorities
Continue to actively market Walker County as a location for filming for Motion Picture Industry	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, and NWGAJDA	$1,000	NWGAJDA
Pursue opportunities for Broadband in Walker County	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, and NWGAJDA	$1,000	Grants
Pursue opportunities to locate a sports complex such as YMCA or other similar organization.	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, and NWGAJDA	$1,000	County Government
Identify intersections with the highest volume of traffic and market those as points of interest for development.	X	X	X	X	X	Walker County Government Officials, Chamber, WCDA, and NWGAJDA	$1,000	County Government
Incorporate a new business license program for the unincorporated area of Walker County.	X	X	X	X	X	Walker County Government	$5,000	County Government
Install a new electronic sign at the Walker County Civic Center to better inform the public of special events at the Civic Center.	X	X	X	X	X	Walker County Government, Walker County Chamber, NWGAJDA	$15,000	County Government, fundraisers, private donations.

WALKER COUNTY 2012-2016 SHORT TERM WORK PROGRAM								
Activity Description	Timeframe					Responsible Party	Cost Estimate	Funding Source
	2012	2013	2014	2015	2016			
Housing								
Encourage mixed use developments to meet needs of affordable, safe housing for all age groups and family types in communications with potential developers. Provide information on the Department of Community Affairs funding opportunities for these types of projects as opportunities arise.	X	X	X	X	X	Walker County Government Officials	$1,000	County
Update and develop ordinances to manage growth – including incentives to attract unique housing developments	X	X	X	X	X	Walker County Government	$1,000	County
Update the County Building Code Ordinances to match the most updated version of the states codes.		X				Walker County Government	$1,000	General Fund
Natural and Cultural Resources								
Find an appropriate location for an Indian Artifacts Museum and take steps toward opening this type of facility.	X	X	X	X	X	County Government	$1,000	County Government
County trails system – extension of greenspace throughout county for connectivity	X	X	X	X	X	County Government and State Agencies	$62,500	County; GDOT TE funding; grants
Publish map of countywide parks and recreation resources on the website and in print.	X					County Development Authority (Larry Brooks)	$60,000	County Development Authority
Create and continue to update the Walker County Water Resources Map using our GIS system and use it to help protect our natural resources.	X	X	X	X	X	County Government	$1,000	General Fund
Update the areas requiring special attention Map and utilize it to help protect our natural resources and critical areas.	X					County Government & RDC	$1,000	RDC CO
Take steps toward revising the land development regulations in order to protect steep slopes and the bluff.	X					County Government	$1,000	County
Develop a countywide Historic Preservation Plan	X	X	X	X	X	Hist. Pres. Comm.	$25,000	County; grants
Amend Walker County Land Development Regulations to be more comparable to Better Site Design Standards and to better protect existing farmland.	X	X	X	X	X	Review as Needed CO.	$1,000	County
Rock Spring – Utilize the Stormwater Management Study to develop a Community Plan, including wetland protection project with community park/educational area.					X	County Government	$100,000+	Grants

WALKER COUNTY 2012-2016 SHORT TERM WORK PROGRAM								
Activity Description	Timeframe					Responsible Party	Cost Estimate	Funding Source
	2012	2013	2014	2015	2016			
Continue to Implement the Stormwater Management Program	X	X	X	X	X	County Government	$125,000	General Fund, user fees, grants
Implement the TMDL Implementation Plan	X	X	X	X	X	County Government	$20,000	General Fund, user fees, grants
Explore the Opportunity for an Overlay District in McLemore Cove Area					X	County Government	$1,000	County
Explore ways to fund hydrology and hydraulic studies in areas where the National Flood Insurance Program's FEMA Flood Maps are incorrect and outdated in order to provide the most accurate information possible with regard to flood damage prevention.	X	X	X	X	X	County Government, FEMA	$500,000	General Fund, user fees, grants, state or federal funding
Participate in the Water Partnership for our Region to continue to find ways to better protect our water resources and still be able to provide affordable water service.	X	X	X	X	X	Northwest Georgia Water Partnership and the Coosa Partnership	$1,000	General Fund, Walker County Water & Sewer Authority.
Find ways to improve the county recycling program and environmental education in an effort to support the state's goal of 25% reduction to our landfills.	X	X	X	X	X	County Government	$10,000	Annual donation from waste haulers.
Develop and implement an "Environmental" Court to address enforcement of certain County ordinances.	X					County Government	$5,000	General Fund, user fees, court costs, etc.
Community Facilities and Services								
Armuchee Valley Water Project	X	X	X			Walker County Water & Sewerage Authority, Walker County Governing Authority	$4 M	SPLOST, grants, and tap fees
Lookout Mountain Water Project					X	Walker County Water & Sewerage Authority, Walker County Governing Authority	$2 M	SPLOST, grants, and tap fees
Evaluate other areas of the County to determine future sewer needs. Include on the next SPLOST	X	X	X	X	X	Walker County Water & Sewerage Authority, Walker County Governing Authority	$1,000	County; Walker County Water & Sewerage Authority
Explore options for expanding the Civic Center Facilities and Parking, and possibilities for the School System since their new property joins the Civic Center property.					X	Walker County	$1,000 (expansion TBD)	SPLOST, grants, General Fund, user fees

WALKER COUNTY 2012-2016 SHORT TERM WORK PROGRAM								
Activity Description	Timeframe					Responsible Party	Cost Estimate	Funding Source
	2012	2013	2014	2015	2016			
Continue to pursue recreational opportunities throughout Walker County to enhance the quality of life. This could include all types of recreation, such as equestrian, sports, agricultural, community centers, athletics, etc.					X	Walker County; unincorporated communities	$1,000 (expansion TBD)	SPLOST, grants, General Fund, user fees
Participate in the Work Force Development Program through the Department of Community Affairs	X	X	X	X	X	Walker County Commissioner	$1,000	General Fund
Implement Hazard Mitigation Plan	X	X	X	X	X	Walker County; Cities of Chickamauga, LaFayette, Lookout Mountain, & Rossville	$1,000	General Fund, grants, Emergency Services fees
Continue to work toward Class 3 ISO Rating	X	X	X	X	X	Walker County	$1,000	Emergency Services fees
Construction of a new Fire Hall on Hwy 157 south Walker County.					X	Walker County	$1.3 M	SPLOST, grants, General Fund, user fees
Construction of a new Fire Hall on Lula Lake Road north Walker County.			X			Walker County	$1.3 M	SPLOST, grants, General Fund, user fees
Update County's Official Code Section Manual (Annually) through municode.- County Website	X	X	X	X	X	Walker County	$5,000/yr	General Fund and fees collected
Have all Land Development Regulations available on CD for sale to the public.	X					Walker County	$1,000	General Fund and fees collected
Continue to review and update Land Development Regulations as appropriate.	X	X	X	X	X	Walker County	$1,000	General Fund and fees collected
Update Websites on a regular basis for most current information including codes on municode.com, mapping data on qpublic.com (www.walkerassessors.com), and on www.walkerga.us.	X	X	X	X	X	Walker County	$10,000	General Fund and fees collected
Add additional information to qpublic.com (www.walkerassessors.com) as it becomes available, example flood maps, zoning updates, storm drainage structures, updated aerial photography, etc.	X	X	X	X	X	Walker County	$10,000	General Fund and fees collected
Make GIS capabilities through the use of the ESRI software available in all County offices that can benefit from the system.	X					Walker County	$30,000	General Fund and fees collected
Add the Cities' information to the County GIS system and website, including zoning, flood maps, etc.		X				Walker County	$2,000	General Fund and fees collected

WALKER COUNTY 2012-2016 SHORT TERM WORK PROGRAM								
Activity Description	Timeframe					Responsible Party	Cost Estimate	Funding Source
	2012	2013	2014	2015	2016			
Update computer equipment, software and other technology in all County Offices as needed.	X	X	X	X	X	Walker County	$100,000	General Fund and fees collected
Annually review fees to ensure that the Planning & Development Office (including the Stormwater Program) and Inspections and Enforcement Offices are self supporting services provided to the citizens.	X	X	X	X	X	Walker County	$1,000	General Fund and fees collected
Continue support of the Walker County Chamber of Commerce	X	X	X	X	X	Walker County	$24,000/yr. + facilities	General Fund and fees collected
Continue to maintain and operate the Walker County Civic Center making improvements as funding becomes available.	X	X	X	X	X	Walker County	$500,000	General Fund and fees collected
Continue to provide Code Enforcement throughout Walker County (including animal control, county police, & building inspection).	X	X	X	X	X	Walker County	$300,000/yr.	General Fund and fees collected
Due to the redistricting of the State, evaluate the location of voting precinct in Walker County and make changes that are for the convenience of the voters in order to increase voter participation.	X	X	X	X	X	Walker County	$1,000	General Fund and fees collected
Intergovernmental Coordination								
Agricultural Services - Ag Center, Department of Agriculture, Etc.	X	X	X	X	X	Walker County; state & federal agencies	$200,000/yr.	General Fund, grants, private donations, user fees
Animal Shelter Improvements				X		Walker County	$50,000	General Fund, grants, private donations, user fees
Archives/Records Updates of Equipment and Maintain Facility	X	X	X	X	X	Walker County	$50,000	General Fund, grants
Beverage Control Board Review of Existing Permits to ensure continued compliance.	X	X	X	X	X	Walker County	TBD	General Fund, fees
Update technology as needed for the E911 center, the Sheriff's Department, and the Fire Department to provide the most effective emergency response possible.	X					Walker County	$1 M	Emergency Services fees, grants, SPLOST, General Fund
Continue to support the cities with services as needed and as available.	X	X	X	X	X	County and Cities	As needed	SPLOST, General Fund

WALKER COUNTY 2012-2016 SHORT TERM WORK PROGRAM								
Activity Description	Timeframe					Responsible Party	Cost Estimate	Funding Source
	2012	2013	2014	2015	2016			
Transportation System								
Update list of all county maintained roads and prioritize the list for improvement purposes in an effort to better maintain the road system.	X	X	X	X	X	Walker County	$1,000	TIA, General Fund, sales tax 1%
Develop standard operating procedures for maintenance of all county owned roads and drainage ways, including scheduled inspections of each.	X					Walker County	$1,000	TIA, General Fund, sales tax 1%
Develop and implement more detailed record keeping procedures for all work scheduled and completed.	X					Walker County	$15,000/yr.	General Fund
Road Re-striping Program	X	X	X	X	X	Walker County	$20,000/yr.	General Fund
Continue to provide public transportation through the Walker County Transit.	X	X	X	X	X	Walker County, State	$300,000	General Fund, grants, state funding, etc.
Implement the Transportation Investment Act of 2010 Projects		X	X	X	X	Walker County	$35.8 M	TIA

Policies

Policies are adopted to provide ongoing guidance and direction to county officials. They provide a basis for making decisions in implementing the comprehensive plan, including achieving the Community Vision and appropriately addressing the Community Issues and Opportunities. The following policies have been adopted by the Walker County government:

Development Patterns

- Our decisions on new development will contribute to, not take away from, our community's character and sense of place.
- We encourage development that is sensitive to the historic context, sense of place, and overall setting of the community.
- We want development whose design, landscaping, lighting, signage, and scale add value to our community.
- Our community will use land efficiently to avoid the costs and problems associated with urban sprawl.
- We will preserve the rural character of our community and provide the opportunity for agricultural and forestry activities to remain a vital part of the community.
- Our gateways and corridors will create a "sense of place" for our community.
- Creation of recreational facilities and set-aside of greenspace are important to our community.
- We are committed to providing pleasant, accessible public gathering places and parks throughout the community.
- We are committed to redeveloping and enhancing existing commercial and industrial areas within our community in preference to new development in Greenfield (previously undeveloped) areas of the community.
- We support appropriate residential and non-residential in-fill development and redevelopment in ways that complement surrounding areas.
- We encourage mixed-use developments that are human-scale and less auto-oriented
- We support increases in residential density in areas where community design standards, environmental constraints and available infrastructure capacities can satisfactorily accommodate the increased density.
- We support new land uses that contribute to protecting the environment and preserving meaningful open space.
- We support new land uses that enhance housing options in our community.
- We will encourage development of a rational network of commercial nodes (villages, or activity centers) to meet the service needs of citizens while avoiding unattractive and inefficient strip development along major roadways.
- We are open to land planning and development concepts that may be new to our area but have been tried successfully in other places.
- We will make decisions that encourage walking, biking, car-pooling, and other alternative transportation choices.

• We will target transportation improvements to support desired development patterns for the community (recognizing that ready availability of transportation creates demand for land development in adjacent areas).
• Our new and reconstructed roadways will be appropriately designed, using context sensitive design considerations, to enhance community aesthetics and to minimize environmental impacts.
• Our new and reconstructed roadways will be designed to accommodate multiple functions, including pedestrian facilities, parking, bicycle routes, public transit (if applicable) as well as local vehicular circulation.
• We will promote connectivity of our road network (such as fostering a grid network of streets, multiple connections between subdivisions).
• We support creation of a community-wide pedestrian/bike path network.
• We will ensure (through traffic calming and other design considerations) that excessive vehicular traffic will not harm the peaceful nature of our residential neighborhoods.
• The protection and conservation of our community's resources will play an important role in the decision-making process when making decisions about future growth and development.
• We will minimize inefficient land consumption and encourage more compact urban development in order to preserve green open space and natural resource areas.
• We will encourage new development to locate in suitable locations in order to protect natural resources, environmentally sensitive areas, or valuable historic, archaeological or cultural resources from encroachment.
• We will factor potential impacts on air and water quality in making decisions on new developments and transportation improvements.
• Infrastructure networks will be developed to steer new development away from sensitive natural resource areas.
• We will promote the protection and maintenance of trees and green open space in all new development.
• We will promote low impact development that preserves the natural topography and existing vegetation of development sites.
• We will work to redirect development pressure away from agricultural areas in order to conserve farmland to protect and preserve this important component of our community.
• We will ensure safe and adequate supplies of water through protection of ground and surface water sources.
• We will promote enhanced solid waste reduction and recycling initiatives.

Community Facilities and Infrastructure

• Our community will make efficient use of existing infrastructure and public facilities in order to minimize the need for costly new/expanded facilities and services.
• We will protect existing infrastructure investments (i.e., already paid for) by encouraging infill redevelopment, and compact development patterns.
• We will ensure that new development does not cause a decline in existing levels of service for the community's residents and employers.

• We will limit development within our community to areas that can be reasonably served by public infrastructure.
• We will ensure that capital improvements needed to accommodate future development are provided concurrent with new development.
• We will coordinate provision of public facilities and services with land use planning to promote more compact urban development.
• The community will use sequential, phased extension of utilities and services to encourage rational expansion of development to areas immediately contiguous to already developed areas of the community.
• Our community will use planned infrastructure expansion to support development in areas identified (in the comprehensive plan) as suitable for such development.
• The community will seek ways for new growth to pay for itself (in terms of public investment in infrastructure and services to support the development) to the maximum extent possible.
• We will invest in parks and open space to enhance the quality of life for our citizens.
• We will work with the local school board to encourage school location decisions that support the community's overall growth and development plans.

Social and Economic Development

• We will support programs for retention, expansion and creation of businesses that are a good fit for our community's economy in terms of job skill requirements and linkages to existing businesses.
• We will target reinvestment to declining, existing neighborhoods, vacant or underutilized sites or buildings in preference to new economic development projects in Greenfield (previously undeveloped) areas of our community.
• We will seek to balance the supply of housing and employment in our community and consider their location in relation to each other.
• We will take into account access to housing and impacts on transportation when considering economic development projects.
• We will take into account impacts on infrastructure and natural resources in our decision making on economic development projects.
• We will consider the employment needs and skill levels of our existing population in making decisions on proposed economic development projects
• We will carefully consider costs as well as benefits in making decisions on proposed economic development projects.
• We will eliminate substandard or dilapidated housing in our community.
• We will stimulate infill housing development in existing neighborhoods.
• We will create affordable housing opportunities to ensure that all those who work in the community have a viable option to live in the community.
• We will encourage development of housing opportunities that enable residents to live close to their places of employment.
• We will accommodate our diverse population by encouraging a compatible mixture of housing types, densities and costs in each neighborhood.

• We will encourage housing policies, choices and patterns that move people upward on the housing ladder from dependence to independence (homeownership).
• We will increase opportunities for low-to-moderate income families to move into affordable owner-occupied housing.
• We support dispersion of assisted housing throughout the community in order to diversify neighborhoods and eliminate pockets of poverty.
• We will foster and preserve public health, safety, comfort and welfare, and aid in the harmonious, orderly, and aesthetically pleasing and socially beneficial development of our county.

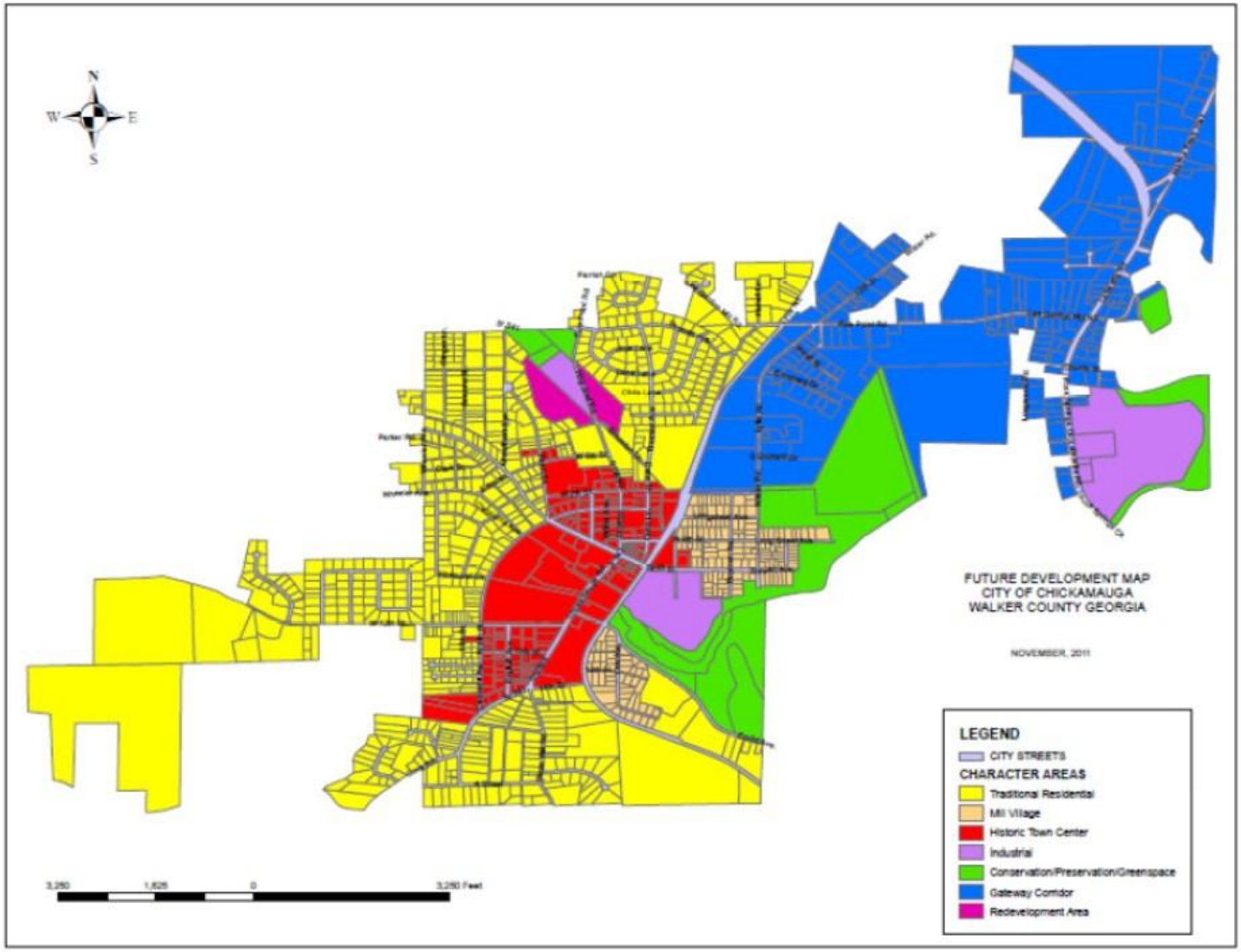
Governmental Relations

• We will seek opportunities to share services and facilities with neighboring jurisdictions when mutually beneficial.
• We will work jointly with neighboring jurisdictions on developing solutions for shared regional issues (such as growth management, watershed protection).
• We will pursue joint processes for collaborative planning and decision-making with neighboring jurisdictions
• We will consult other public entities in our area when making decisions that are likely to impact them.
• We will provide input to other public entities in our area when they are making decision that are likely to have an impact on our community or our plans for future development.
• We will engage in cooperative planning between the local government and local school board in regard to the appropriate location and use of schools as community facilities.

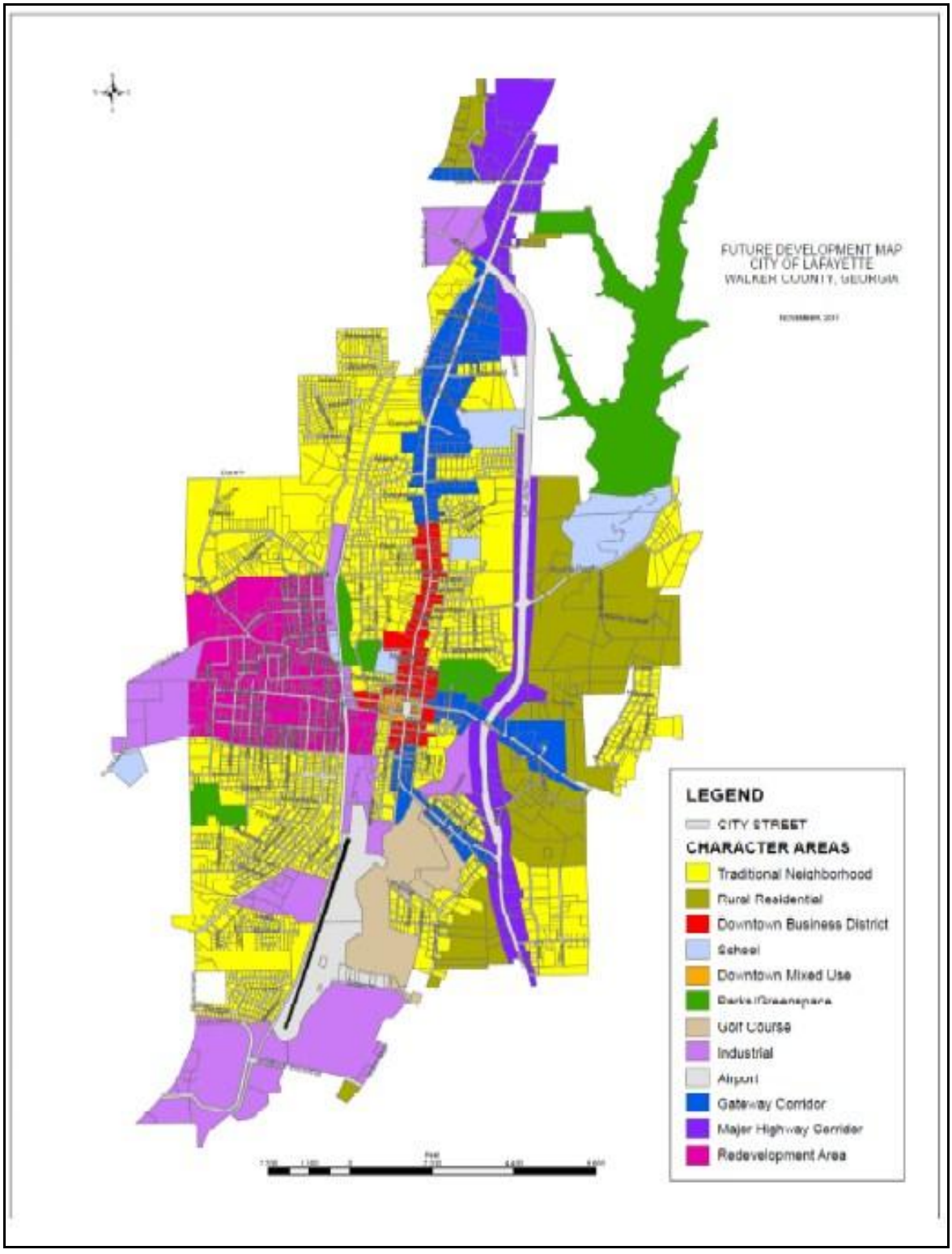
City Future Development Maps

Future development maps for each of the cities within Walker County are found on the pages that follow.

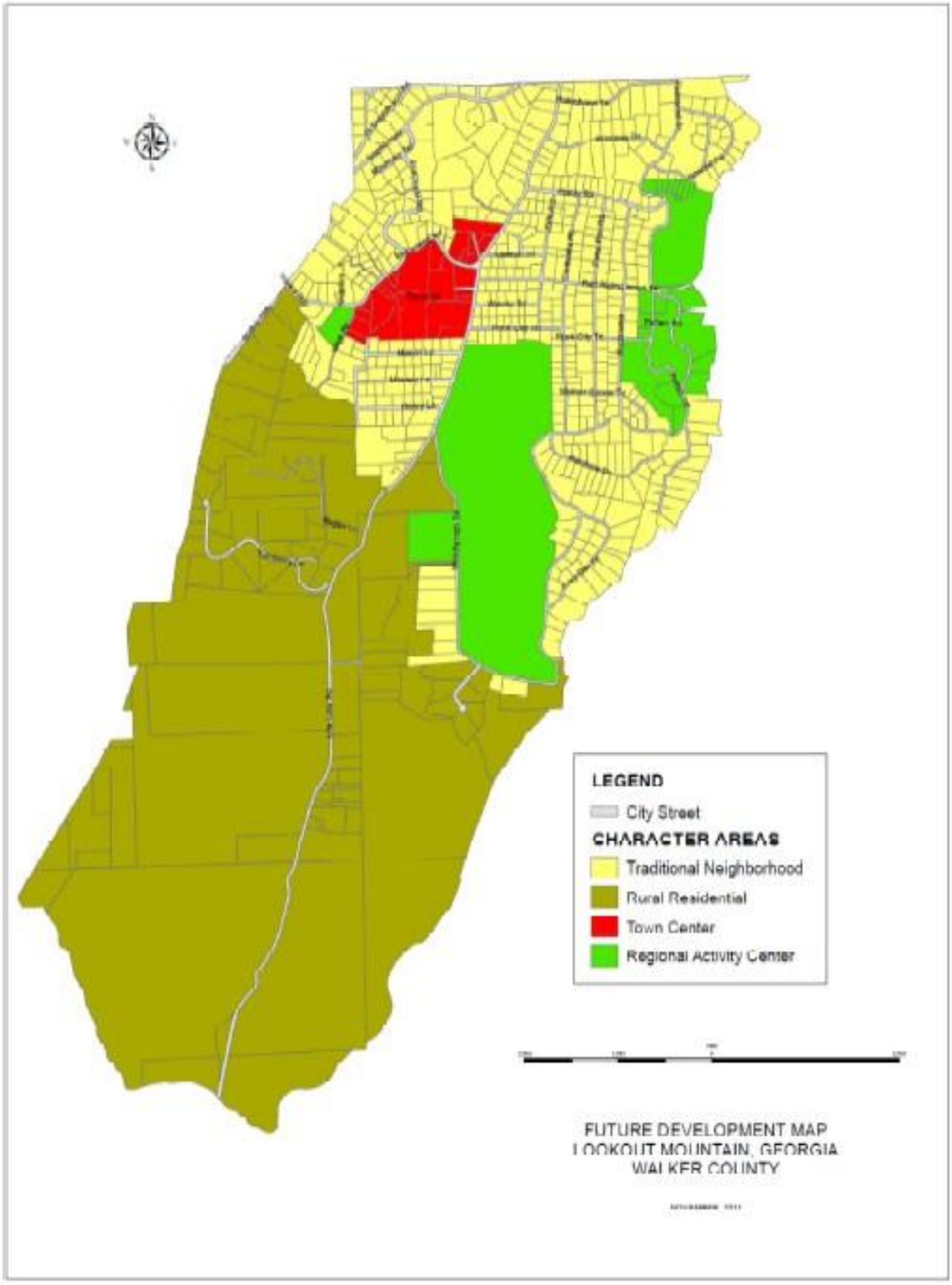
City of Chickamauga Future Development Map



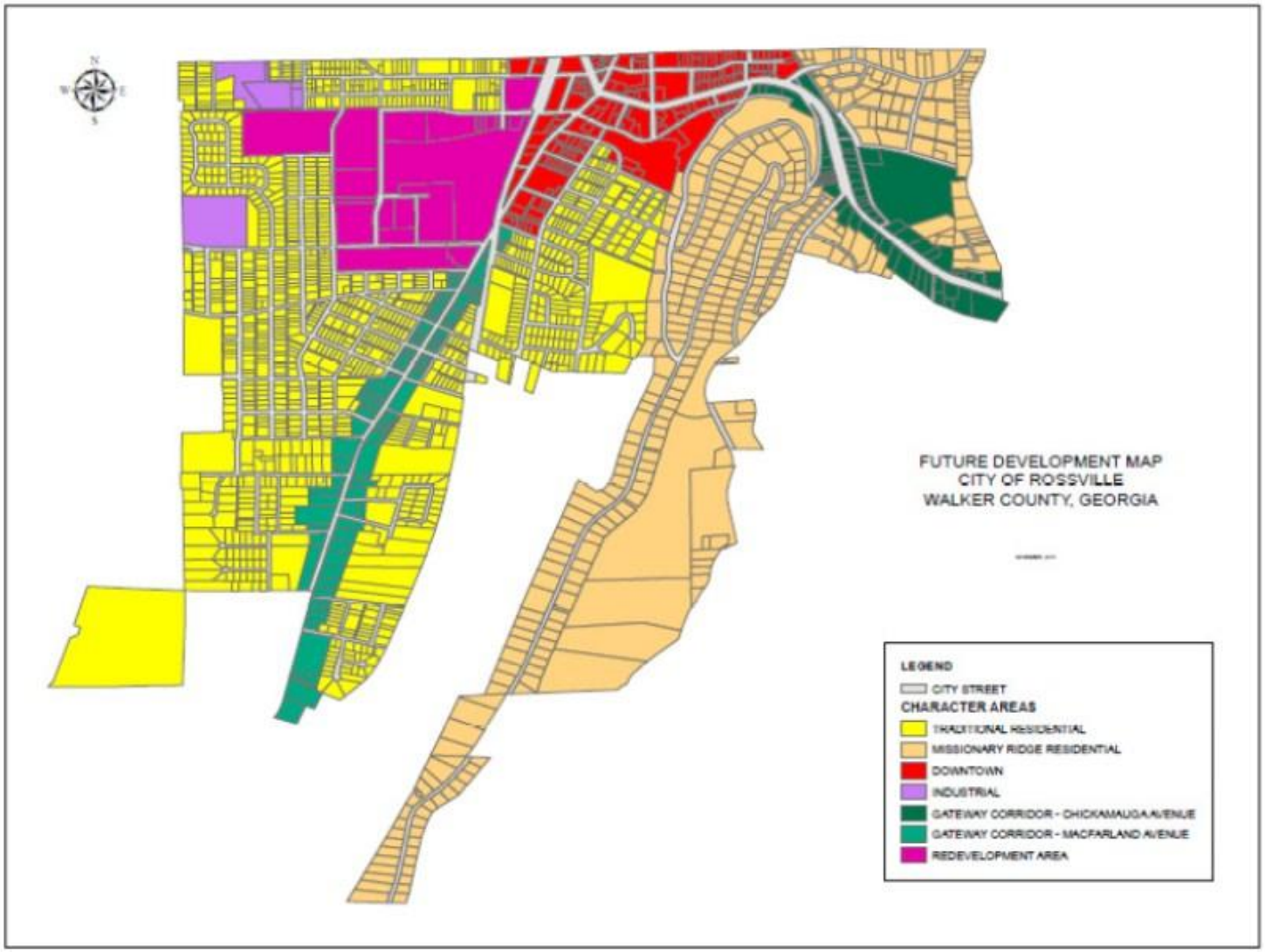
City of LaFayette Future Development Map



City of Lookout Mountain Future Development Map



City of Rossville Future Development Map



Chapter 5
Hazard Mitigation Goals, Objectives, & Actions

When Walker County and the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville begin any large-scale planning effort, it is imperative that the planning process is driven by a clear set of goals and objectives. Goals and objectives are the foundation of an effective Hazard Mitigation Plan. They address the key problems and opportunities to help establish a framework for identifying risks and developing strategies to mitigate those risks. Walker County's multi-jurisdictional Hazard Mitigation Planning Committee (HMPC) reviewed and re-evaluated the four major goals and numerous objectives for the purposes of this Plan and determined that they all remain valid and effective. No changes were recommended.

In order to fully understand the hazard mitigation goals, objectives, and actions, it is necessary to clearly define the terms **"goal"**, **"objective"**, and **"action"**:

A **goal** is a broad-based statement of intent that establishes the direction for the Walker County Hazard Mitigation Plan. Goals can essentially be thought of as the desired "outcomes" of successful implementation of the Plan.
An **objective** is the stated "means" of achieving each goal, or the tasks to be executed in the process of achieving goals.
An **action** is a project-specific strategy to mitigate a particular hazard event within the context of the overarching goals and objectives.

While specific mitigation actions are listed later in this chapter, it is important to note that the actions were selected and evaluated in relation to the overarching hazard mitigation goals and objectives of this plan, which are as follows:

Goal #1. Protect life and minimize loss of property damage.

Objective 1-1. Implement mitigation actions that will assist in protecting lives and property by making homes, businesses, public facilities, and infrastructure more resistant to vulnerable hazards.
Objective 1-2. Review existing ordinances, building codes, and safety inspection procedures to help ensure that they employ the most recent and generally acceptable standards for the protection of buildings.
Objective 1-3. Ensure that public and private facilities and infrastructure meet established building codes and enforce the codes to address any deficiencies.
Objective 1-4. Implement mitigation actions that encourage the protection of the environment.
Objective 1-5. Integrate the recommendations of this plan into existing land use plans and capital improvement programs.
Objective 1-6. Build upon past databases to ensure that vulnerable hazards' risks are accurate.

Goal #2. Increase Public Awareness.

Objective 2-1. Develop and implement additional education and outreach programs to increase public awareness of the risks associated with hazards and on specific preparedness activities available.
Objective 2-2. Encourage homeowners and businesses to take preventative actions and purchase hazard insurance.

Goal #3. Encourage Partnerships.

Objective 3-1. Strengthen inter-jurisdictional and inter-agency communication, coordination, and partnerships to foster hazard mitigation actions designed to benefit multiple jurisdictions.
Objective 3-2. Identify and implement ways to engage public agencies with individual citizens, nonprofit organizations, business, and industry to implement mitigation activities more effectively.

Goal #4. Provide for Emergency Services.

Objective 4-1. Where appropriate, coordinate and integrate hazard mitigation actions with existing emergency operations plans.
Objective 4-2. Identify the need for, and acquire, any special emergency services and equipment to enhance response capabilities for specific hazards.
Objective 4-3. Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions designed to benefit critical facilities, critical services, and emergency traffic routes.

Format Utilized to Develop Mitigation Actions

The HMPC reviewed each jurisdiction's annual budget, multiyear work programs, and comprehensive plans to determine existing mitigation actions that met the goals and objectives of this Plan. The committee then developed a list of tentative mitigation actions based on committee members' personal knowledge, interviews with other officials of each jurisdiction, and knowledge of successful actions implemented in other communities.

The committee members developed a prioritized list utilizing the GEMA recommended STAPLEE prioritization methodology, with special emphasis on the following:

1. Cost effectiveness (and when potential federal projects are anticipated, cost-benefit reviews will be conducted prior to application);
2. Comprehensiveness, i.e. addresses a specific goal and objective;
3. Addresses reducing effects of hazards on new and existing buildings and infrastructure;
4. Addresses reducing effects of hazards on critical facilities where necessary; and,
5. Identification of future public buildings and infrastructure (Note: recognizing that the Plan may be modified and evaluated during the monitoring and evaluation period, and will definitely be completely updated within the federally mandated five year approval cycle, future development including future buildings will only include the five year period from Plan completion).

All rankings were composited to represent the consensus of the HMPC.

Members of the HMPC prioritized the potential mitigation measures identified in this Plan. A list of mitigation goals, objectives and related action items was compiled from the inputs of the HMPC, as well as from others within the community. The subcommittee prioritized the potential mitigation measures based on what they considered most beneficial to the community. Several criteria were established to assist HMPC members in the prioritization of these suggested mitigation actions. Criteria included perceived cost benefit or cost effectiveness, availability of potential funding sources, overall technical feasibility, measurable milestones, multiple objectives, determination of public and political support for the proposed actions, and the STAPLEE method described above. Through this prioritization process, several projects emerged as being a greater priority than others. Some of the projects involved expending considerable amounts of funds to initiate the required actions. Most projects allowed the community to pursue completion of the project using potential grant funding. Still others required no significant financial commitment by the community. All proposed mitigation actions were evaluated to determine the degree to which the County would benefit in relation to the project costs. After review by the HMPC, the prioritized list of mitigation measures, as presented within this Plan, was determined.

This same method of prioritization was utilized for the prior update to this Plan. Additionally, it was reviewed by the HMPC during the current plan update process and approved for continued use due to its effectiveness. No changes were recommended.

Mitigation Actions

Each mitigation action is presented by jurisdiction, or in the case of joint actions by multiple jurisdictions, or by independent public bodies (such as School System), or by private nonprofits (such as the Medical Center), in priority order (objective), by best estimate of cost, if applicable, by potential funding source if other than operating budgets, by department or agency that will administer the action, and by timeframe. Timeframes do not begin until funding is obtained for any particular project unless otherwise indicated.

Each mitigation action that follows may be supported by one or more jurisdictions below, as indicated by letters A) through E).

A) Walker County (unincorporated)
B) City of Chickamauga
C) City of LaFayette
D) City of Lookout Mountain
E) City of Rossville

Each mitigation action that follows is designed to mitigate one or more hazards discussed in this Plan. Those specific hazards are listed for each mitigation action at the end of each mitigation action description. The term "All" as used in the mitigation action section below refers to all hazards discussed in this Plan (severe thunderstorm, winter storm, flooding, tornado, wildfire, drought, earthquake, hazardous materials release, and dam failure).

Each mitigation action that follows mitigates the effects of hazards on existing structures/infrastructure, future structures/infrastructure, or both, as indicated.

In addition, the status of each mitigation action that follows is indicated by one of the following three terms:

PRELIMINARY – unfunded projects or projects in planning stages.
IN PROGRESS – funded projects that have begun but aren't completed.
ONGOING – continuous projects that are never truly completed; may be funded or unfunded at any given time but are expected to continue unless removed from Plan.

**Note: fully completed or deleted projects are not found below, but in Appendix D.*

1. National Flood Insurance Program (NFIP): The HMPC recommends that measures be taken as soon as possible to meet the necessary requirements for the City of Lookout Mountain to join the NFIP. Specific recommendations for such

measures will come from local planning officials with final approval coming from the appropriate City government officials. The costs associated with this project will consist primarily of municipal planning costs. Jurisdictional participants include: D. Goals and objectives represented by this mitigation action include: 1-1, 1-2, 1-3, 1-5, 2-2, 4-3. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

2. Warning Sirens: Although the terrain of Walker County is not particularly conducive to warning sirens, they do provide some degree of increased protection from severe weather events. This project is for the installation of outdoor emergency warning sirens throughout Walker Co. with the goal of obtaining near 100 percent coverage. Presently, there are only two total sirens in the County: one in LaFayette, and one in Chickamauga. Each jurisdiction controls its own sirens. This practice may need to be altered to allow Walker County EMA to activate all existing sirens. Local activation of the sirens upon issuance of a severe thunderstorm or tornado watch or warning by the National Weather Service could alert some individuals, who might have otherwise been caught unaware, to seek shelter. Also, emergency warning alarms could be installed inside structures housing large numbers of people, such as schools, factories, large stores/shopping malls, recreational facilities, etc. This effort will most likely be coordinated by Walker Co. EMA. Both private and governmental grants will be pursued in order to fund this effort. Final approval of this project or any potential use of matching local government funds will come from the appropriate County or City government officials. The estimated cost of this project, based on 24 outdoor ten-cell emergency warning sirens and 24 indoor emergency warning alarms, will be approximately $800,000. An initial study will have to be done to determine the exact number of outdoor emergency warning sirens and indoor emergency warning alarms needed. An increase in the number of sirens/alarms needed will obviously increase the cost estimate. Project design and construction is estimated at 12 months. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 4-2. Project status: PRELIMINARY. Hazards mitigated: Severe Thunderstorm, Tornado. Structures/infrastructure impacted: Existing and Future.

3. Severe Weather Alerts: At this time Walker County has no means to alert the public of impending severe weather. The only warnings the public receives at this time are very limited and are from the news media. This is a problem due to the fact that news coverage for the north end of the County is dominated by Chattanooga, TN. The County receives occasional notifications, but nothing on a consistent basis. On the south end of our County, news coverage is out of Atlanta, GA which rarely considers counties as far north as Walker County. There are two solutions to this problem. The first solution is to create a Mass Alert System (MAS). This system will be available to all residents of Walker County. It will allow our Local Emergency Services to give instructions to the public before, during, and after a disaster. Walker County EMA will select a vendor to supply the MAS, work with the vendor to convert our 911 database over to the new

system, provide training for the 911 Staff on the new software, put together standard operating procedures, select a Kick-off Date to implement the use of the system, and start and promote an educational program for the public on how to sign up and use the MAS. The total estimated project cost is $519,530. Once funded, this project can be implemented in approximately 14 months. The second solution is to provide severe weather radios to the citizens of Walker County. The initial supply of severe weather radios will be approximately 10,000. This will allow most households and businesses to have a method of receiving alerts from the NWS. The total estimated project cost is $29,682.50. Once funded, this project can be implemented in approximately one year. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 4-2. Project status: PRELIMINARY. Hazards mitigated: All. Structures/infrastructure impacted: Existing and Future.

4. Elderly Population: Ensure elderly populations have access to adequate storm shelter. If adequate storm shelter is not available at a nursing home, assisted living facility, or other similar facility, work to create safe room(s) within existing structures or construct separate storm shelter(s) if necessary. Funding for such an effort will be uncertain and probably will have to be obtained incrementally. Attempts will be made to obtain appropriate funding from the respective nursing homes/assisted living facilities, the American Red Cross and various other private and governmental grants. Walker Co. EMA will most likely coordinate this effort. Final approval of this project or any potential use of local government funds will come from the appropriate County or City government officials. It is not possible at this point to determine an estimated project cost because there has been no determination made as to how many safe rooms and shelters will need to be constructed. Project duration is estimated at eight years. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 4-2. Project status: PRELIMINARY. Hazards mitigated: Severe Thunderstorm, Tornado. Structures/infrastructure impacted: Existing.

5. Construction Standards and Techniques: This mitigation action has been completed since the last update to this plan. In 2005, Walker County began an inspection program which has greatly improved construction standards within the County. Presently, only homes are inspected; however, in the near future commercial structures will also be inspected and finally industrial properties. It should be noted that the Fire Marshall inspects all structures at this time. This program will continue indefinitely and is funded with general funds. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 1-1, 1-2, 1-3. Project status: ONGOING. Hazards mitigated: All. Structures/infrastructure impacted: Existing and Future.

6. Road Maintenance: Unlike other portions of the United States, Walker Co. does not possess certain equipment and supplies that are necessary to combat treacherous winter storm conditions. Fortunately a better prepared Georgia Department of Transportation (GDOT) is responsible for the maintenance of many of the major highways within the County including US Route 27, and State Routes 2, 95, 136, 151, 167, 193, 337, and 341. However, many secondary roads are left to the County to maintain. These efforts could be improved by adding to existing road maintenance capabilities. Since the last update to this plan, Walker County has modified 13 county trucks to make them "snow plow capable". These upgrades were made with general funds at a cost of approximately $208,000. The cost of the remaining upgrades will be provided once a complete list of required equipment is completed. The County Public Works Dept will likely be responsible for coordination of this effort, with final approval of the project or any potential use of matching local government funds coming from the appropriate County or City government officials.. If approved, all equipment purchased could be completed within 6 months. Funding for this project will be sought from various public and private grant sources. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 4-2. Project status: ONGOING. Hazards mitigated: Winter Storm. Structures/infrastructure impacted: Existing and Future.

7. Generators: Power loss is a common result of winter storms within the County. Generators will be considered for many critical facilities, including emergency response facilities and designated shelters. This can result in a continuation of services that would otherwise not be possible. An accurate accounting of existing generators should first be conducted, followed by recommendations for adding generators to critical facilities. Specific recommendations for such measures will originate from Walker Co. EMA, with final approval coming from the appropriate County or City government officials. Funding for this project will be sought from various public and private grant sources. If approved, the purchase and installation of any given generator could be accomplished within 3 months. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 4-2. Project status: ONGOING. Hazards mitigated: All. Structures/infrastructure impacted: Existing.

8. Catlett Area Flooding: Flooding is a problem in the vicinity of Boxes 91-95 on McIntyre Rd, as well as approximately 100 yards west of McIntyre Rd on Colbert Hollow Rd. Multiple residences and farms are affected. Homes in the area may not be accessible by emergency response when these roads are flooded. To resolve this situation, approximately 500 ft of McIntyre Rd and 1000ft of Colbert Hollow Rd need to be elevated to an appropriate level. Large culverts, boxes, and other drainage structures are also needed to assist with stormwater runoff. The estimated cost of this project is $199,180. The lead agency responsible for pursuing this project is Walker Co. Road Dept and Stormwater Management. Funding for this project will be sought through private and public grants. Final approval of this project and/or any local matching funds will come from the

appropriate County or City government officials. The entire scope of the measures listed above will take approximately 18 months to complete. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

9. Cedar Grove Area Flooding: Flooding over roadways in the Cedar Grove area prevents or limits access to Andrews Lane, Crow Gap Rd south of Tatum, and from W. Cove Rd to Hog Jowl Rd. This affects multiple residences, dairy farms, DNR properties, and a poultry farm. In most of these flood-prone areas, access to blocked residences is obtained through Akins Rd and the intersection of Hog Jowl Rd and West Cove Rd, which requires many additional miles of travel for emergency services. Several improvements need to be made to correct these problems. A new span bridge is needed west of the intersection of Hog Jowl and Capt. Wood Rd. Approximately 800 feet of the road should also be elevated approximately 18 inches. A study should also be conducted to determine what additional courses of action will be the most appropriate and cost-effective. In the case of Crow Gap Rd, the road will be elevated to a level above the flood stage starting at the intersection and continuing 100 feet beyond the bridge (approximately 2000 feet total). Box culverts should also be installed to increase stormwater capacity. The estimated cost of this project is $432,113. The lead agency responsible for pursuing this project is Walker Co. Road Dept and Stormwater Management. Funding for this project will be sought through private and public grants. Final approval of this project and/or any local matching funds will come from the appropriate County or City government officials. The entire scope of the measures listed above will take approximately 18 months to complete. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

10. City of Chickamauga Flooding: Flooding is a serious threat to the City of Chickamauga and surrounding areas. When several locations in and around the City flood due to heavy rains, the City takes on the characteristics of an island, potentially isolating 2600 residents (and others in the area at the time) from emergency services. Other less serious flooding problems also exist in and around the City. Projects addressing the main flooding problems associated with Chickamauga and surrounding areas are detailed below:

    Lee Clarkston Rd - The elevation of Lee Clarkston Rd by three feet from just south of Lookout Mountain Community Services building to just south of Lee Street (approximately 3000 linear feet) will help with the potential isolation of the City. Additional roadway height will also act as a dam to protect nearby residential structures. A culvert tile should also be added for water directional control. The estimated cost of this project is

approximately $319,125.

Johnson Rd/Five Points Rd Area - Rapid development of the Johnson Rd / Five Points Rd area has increased flooding concerns. Many properties flood on a regular basis now, and a few actually remain underwater for several weeks at a time. Stormwater ditches and structures were not designed to meet such a large capacity of water. Isolation from emergency services is a key concern. There are several options to help mitigate this flooding concern. These include land acquisition, construction projects, rerouting of drainage system, community stormwater detention facility, constructed wetlands, and the restriction of future growth. The estimated cost of these project options is $575,000. One additional option is to elevate this intersection by 18 inches (approximately 1000 linear feet) and install a box culvert under Parrish Circle and 60 inch culvert tile. Parrish Circle will also be elevated (approximately 2000 linear feet) and traffic control devices installed. This particular option is estimated to cost approximately $264,500.

Mill Village Area - The Mill Village area experiences severe flooding. Crittenden at West 7th, 8th and 9th Streets and the area of Longwood can potentially be isolated from emergency services. This is a residential area. Some hazard mitigation projects have already been completed here when flood-prone homes were purchased and demolished in order to build a playground and ball field. However, the flooding remains a problem to other residents and can still isolate this entire area. An engineering study will be conducted to determine the best course(s) of action in this area. This study will include the area of Longwood (off Lee and Gordon Mill Rd, behind McDonald's). The estimated cost of this project is approximately $92,000.

Oakwood Baptist Church – This property is not in the City limits, but it has a City of Chickamauga address. Oakwood Baptist Church experiences flooding due to uncontrolled stormwater runoff. Since the last update to this plan, the Church did install a pump system, but it has proven inadequate. The solution to this problem is to construct detention ponds to hold the stormwater that accumulates around the Church. An alternative plan is to acquire additional land near the Church and create a better pumping system to move water onto the new property and away from the Church. The estimated cost of this project is approximately $79,350.

Coke Ovens - The land around the Coke Ovens at Highway 341 is prone to flooding. A pump station, multiple residences, and commercial properties are located in this area. A large box culvert will be installed to increase the stormwater capacity. The estimated cost of this project is approximately $54,050.

N. Longhollow and Davis - Flooding due to uncontrolled stormwater runoff is a problem at Lytle between N. Longhollow and Davis. Multiple residences can be potentially affected. An engineering study will be conducted to determine what course of action will be most appropriate and cost effective. The estimated cost of this project is $34,500.

Chestnut Hills Trailer Park - A study will be conducted concerning flooding at the Chestnut Hills Trailer Park to determine the best course of action. The estimated cost of such a study is approximately $34,500.

Villanow Area Flooding: The Villanow area experiences flooding in three primary areas, although more minor flooding does occur as well. These three locations include multiple residences that lose access to emergency services during periods of flooding. The first of these primary locations is Villanow Mill Creek Rd between Clements Rd and Bill Scott Rd. This location experiences deep flooding of approximately four feet after moderate to heavy rains. This location can remain flooded for extended periods of time. The second location is Clements Rd at Smith, Green Lake, and Morgan Rd. This location experiences similar flooding of about four feet in depth after moderate to heavy rains. This location may also stay flooded for some time after rains cease. Finally, the third primary location in this area is Lower Mill Creek Rd. This road is almost "in" the creek. As a result, the road easily floods after moderate to heavy rains. In each of these three cases, an engineering study will be conducted to determine the best course of action. The estimated cost of this project is $104,938. The lead agency for pursuing the projects detailed above is Walker County Road Dept and Stormwater Management. Funding will be sought through private and public grants. Final approval of projects and/or any local matching funds will come from the appropriate County or City government officials. The entire scope of the measures listed above will take approximately 12 months to complete.

The responsibility of pursuing the projects detailed above will be shared by Walker County and the City of Chickamauga. Funding for these projects will be sought through private and public grants. Final approval of projects and/or any local matching funds will come from the appropriate County or City government officials. The entire scope of the measures listed above will take approximately three years to complete. Jurisdictional participants include: B. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

11. Fairview Area Flooding: Two main flood-prone areas exist within the Fairview area. The first is McFarland Avenue at Jenkins Rd. Flooding here is caused by uncontrolled stormwater runoff. It is a heavily traveled intersection and very important from an emergency services standpoint. This problem can be mitigated

by constructing a storm drainage system capable of containing the stormwater runoff in the area. This will include installation of a 10 ft by 10 ft box culvert, increasing capacity of the ditch, and other associated measures. The estimated cost of this project is $1.5 million. The second issue within the Fairview area is flooding in the 400 to 800 block of Schmitt Rd. In this location, the existing ditches must be increased in size, or new ditches added, and culverts, curb, and gutter must be installed to guide stormwater runoff. Water directional flow will be split via concrete tile. The estimated cost of this project is $142,313. The lead agency for pursuing the projects detailed above is Walker County Road Dept and Stormwater Management. Funding will be sought through private and public grants. Final approval of projects and/or any local matching funds will come from the appropriate County or City government officials. The entire scope of the measures listed above will take approximately two years to complete. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

12. Chamberlain Rd Area Flooding: Flooding near the 3700 block of Chamberlain Rd. blocks residences thereby cutting them off from public safety services during periods of heavy rains. Dangerous rapids are created in some cases. Several private residences are affected and essentially cut-off from emergency services. Presently, access to the property can only be made during flood periods by crossing the property on the northeast side by foot. An engineering study will initially be conducted to determine the best course of action with regard to this problem. The estimated cost of this project is $31,625. The lead agency for pursuing the projects detailed above is Walker County. Funding will be sought through private and public grants. Final approval of projects and/or any local matching funds will come from the appropriate City or County government officials. The entire scope of the measures listed above will take approximately three years to complete. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

13. City of Lafayette Flooding: The City of Lafayette has numerous flooding problems throughout the City that could be resolved by upgrading or replacing existing drainage structures where necessary. This includes East Villanow St (GA SR 136) at Town Creek, Rocky Lane off of Chamberlain Rd (flooding blocks access to the area from the south and west), and areas along Spring Creek in the West Patton St area (Brookwood Shopping Center and businesses to the north towards West Villanow St, many of which are located within the 100-year floodplain). Initially, an engineering study will be conducted to determine the most appropriate mitigation actions to be taken with regard to flooding in these areas. A combination of additional spillways, drainage basins, paving/elevation, and maintenance may be needed to correct the flooding problems. The estimated

cost of this project is $2.5 million. The lead agency for pursuing the projects detailed above is GDOT, with support from the City of LaFayette. Funding will be sought through private and public grants, and via the GDOT budget. Final approval of projects and/or any local matching funds will come from the appropriate State, City or County government officials. The entire scope of the measures listed above will take approximately four years to complete. Jurisdictional participants include: C. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

14. Flintstone Area Flooding: Two main flood problems were documented in the Flintstone area. Both result from uncontrolled stormwater runoff. The first problem is Wilson Rd at Crestview Drive. This is an emergency services corridor and includes access to a school zone. Wilson Rd will be elevated approximately three feet between Cherokee Trail and Crestview Drive (approximately 1000 linear feet). A ditch will be constructed on the west side of Wilson Rd to collect and direct stormwater. The lead agency for pursing this project is Walker Co. Road Department and Stormwater Management. The second problem in this area is at Rock Creek Rd, including Shadow Rd. Approximately 32 residential structures are affected by this problem (as well as an unknown number of residences on Shadow Rd). Two main waterways off of Lookout Mountain make this area accessible only by boat in times of heavy rain. During the storms that followed Hurricane Ivan, multiple residents had to be evacuated by swift-water boats. The solution to this problem is to purchase the residences in this area and return it to a natural wetland. It might be turned over to Lula Lake Land Trust for all future maintenance of the area. The estimated cost of this potential project is $6.44 million. Walker County will be responsible for pursuing this project if the decision was made to do so. Funding will be sought through private and public grants. Final approval of projects and/or any local matching funds will come from the appropriate County or City government officials. The entire scope of the measures listed above will take approximately ten years to complete. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

15. Kensington Area Flooding: Flooding due to uncontrolled stormwater runoff causes problems in at least two locations in the Kensington area. Many residences are located in the vicinity of both of the problem areas and emergency services access is a primary concern. The first problem is found at Kendrick's Switch between Phillip Hollow and the railroad tracks. One mitigation action is to elevate the roadway by two feet (approximately 1000 linear feet, 28 feet wide) in order to bring it above the floodplain. The estimated cost of this project is $83,375. The second problem is found in the vicinity of Boss Rd at Bonds Rd. Water will be diverted from the pasture into the existing ditch. Presently, water is

not directed in such a manner and makes its way over the roadway. A small area of private property will be purchased to make room for an expanded 300 ft ditch. The estimated cost of this project, including land acquisition, is $20,183. Walker Co. Road Dept. and Stormwater Management could pursue either, or both, of these projects. Funding will be sought through private and public grants. Final approval of projects and/or any local matching funds will come from the appropriate County or City government officials. The entire scope of the measures listed above will take approximately 18 months to two years to complete. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

16. Naomi Area Flooding: Flooding occurs at two primary locations in the Naomi area. The first is Smith Gap Rd off of Hwy 151. Access by emergency vehicles to this residential area is impossible during periods of flooding. Access must be made off of East Hwy 136. A potential solution to this problem is the elevation and widening of the existing bridge to an elevation above the flood level, including raising the roadway on both sides of the bridge (300 linear feet total). The estimated cost of this project is $247,825. A second problem area located in the same vicinity is East Hwy 136 near Abby Drive. This flooding involves the loss of access to several residences and churches. The area can only be accessed during flooding via Kemp Rd on foot. However, Kemp Rd floods as well. Many miles must be traveled to access these residences and churches that are cut off from emergency services by flooding. An engineering study will be conducted to determine the best course of action to pursue in this instance. The estimated cost of this project is $32,200. Walker County and the State of Georgia will most likely be involved the projects described above. Funding will be sought through private and public grants. Final approval of projects and/or any local matching funds will come from the appropriate State, County, or City government officials. The entire scope of the measures listed above will take approximately two years to complete. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

17. Rock Spring Area Flooding: Increased development has exponentially increased the flooding problems in the Rock Spring area. Many properties flood on a regular basis now, and a few actually remain underwater for long periods of time. Stormwater ditches and structures were not designed to meet such a large capacity of water. Isolation from emergency services is a key concern. In addition, water and sewer lines were not designed to withstand underwater pressures. There are several options to mitigate this flooding concern. These include land acquisition, construction projects, rerouting of drainage system, community stormwater detention facility, constructed wetlands, and the restriction of future growth. The County has recently paid for and received an engineering study to look at these

various flooding issues. The study was completed for approximately $50,000. Projects addressing the main flooding problems associated with the Rock Spring areas are detailed below:

Kay Conley Rd - Flooding blocks access to several residences and a poultry farm near the 2200 to 2300 block of Kay Conley Rd. These residences may only be accessed by alternate route, which involves five additional miles of travel via Hwy 95 to Beaumont. Kay Conley Rd will be elevated by approximately 2 feet (2000 linear feet) and the existing bridge needs to be replaced. The estimated cost of this project is $566,375. Kay Conley Rd, east of the Dollar General store, also experiences flooding on a regular basis. This flooding effectively severs access to many residences, churches, and farms. Access to the areas beyond this blockage is delayed while emergency vehicles travel an additional eight miles by way of Twin Cedars to Longhollow, and back to Kay Conley Rd. Kay Conley Rd will be elevated approximately two feet (850 linear feet), box culverts will be installed to increase stormwater capacity, and a drainage system will be developed in this area. The estimated cost of this project is $169,050.

Straight Gut Rd - Straight Gut Rd, south of Kevin Ln at the bridge, is blocked during periods of flooding. This cuts off access to many residences as well as a State Prison. Emergency vehicles cannot access this area from the south. Station 11 units will have to reroute to Hwy 27 and enter from Old LaFayette Rd, an increase in travel by approximately five miles. Straight Gut Rd will be elevated along a stretch of about 570 linear feet, and the existing bridge will be replaced. The estimated cost of this project is $221,145.

The lead agency for pursuing the projects detailed above is Walker County Road Dept and Stormwater Management. Funding will be sought through private and public grants. Final approval of projects and/or any local matching funds will come from the appropriate County or City government officials. The entire scope of the measures listed above will take approximately three years to complete. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

18. City of Rossville Flooding: Two main problem areas exist within the City of Rossville with regard to flooding. Each involves residential areas with the primary concern being lack of access to emergency response during periods of flooding. The first area is Glentana at West Maple. Multiple residences are involved in this location. The roadway needs to be elevated by approximately three feet along a 4000 ft stretch of roadway. The existing box culvert should also be replaced. The estimated cost of this project is $463,450. The second area

involves flooding of several municipal facilities including the City Maintenance Barn, equipment and vehicles, City recreational facilities, as well as residential areas. Some potential mitigation projects to help alleviate these flooding concerns include relocation of the City Maintenance Barn, upgrading storm drainage systems to help protect the recreational facilities and residential areas, updated flood plain mapping, drainage system maintenance, and better disclosures from real estate agents. The estimated cost of these measures is $575,000. The lead agency for pursuing the projects detailed above is the City of Rossville. Funding will be sought through private and public grants. Final approval of projects and/or any local matching funds will come from the appropriate City or County government officials. The entire scope of the measures listed above will take approximately two years to complete. Jurisdictional participants include: E. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELINIMARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

19. West Armuchee Area Flooding: The West Armuchee area experiences flooding primarily in two locations. The first location is Smith Gap at Forestry Rd. Flooding here can isolate residents from emergency services. An engineering study will be completed to determine the best course of action to take with regard to mitigating the flooding threat to this location. The estimated cost of this study is $31,625. Walker County will be the entity responsible for pursuit of this project. The second location is Forestry Rd 227 off of the 3500 block of Manning Mill Rd. Flooding here affects outdoor recreational facilities including campgrounds and hiking trails. Slightly redirecting the roadway and building a bridge over the creek could correct this problem. The U.S Forest Service will be responsible for pursuit of this project, since it is located on Forestry lands. The estimated cost of this project is $332,350. Funding for these projects will likely be sought through private and public grants. Final approval of projects and/or any local matching funds will come from the appropriate Federal, State, or County government officials. The entire scope of the measures listed above will take approximately two years to complete. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

20. City of Lookout Mountain Flooding: The City of Lookout Mountain experiences moderate to severe flooding in several locations. However, an engineering study of the entire City needs to be conducted to identify the worst problem areas and to determine the best course of action to help mitigate these flooding problems. The estimated cost of this project is $115,000. The City of Lookout Mountain will be responsible for pursuing this project. Funding for this project will likely be sought through private and public grants. Final approval of projects and/or any local matching funds will come from the appropriate Count or City government officials. The entire scope of the measures listed above will take approximately 18 to 24 months to complete. Jurisdictional participants include: D. Goals and

objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing and Future.

21. National Historic Register: Ensure all structures within the County and Cities on the National Historic Register are protected from flooding. Presently these include Ashland Farm, Cavender's Store, Chattooga Academy, Chickamauga and Chattanooga National Military Park, Gordon-Lee House, Lane House, Lee and Gordon Mill, Lookout Mountain Fairyland Club, McLemore Cove Historic District, Miller Brothers Farm, John Ross House, Main U.S. Post Office – Rossville, and Walker County Courthouse. Flooding occurs practically every year at Lee and Gordon Mill. Steps may need to be taken to protect any of these historic structures that have flooded in the past. Specific recommendations for such measures will come from the Walker Co. Historic Preservation Commission and local planning officials with final approval coming from the appropriate County or City government officials. A time frame and cost estimate for such improvements cannot be determined until an initial assessment of historic structures' vulnerabilities is made. The assessment itself will take approximately 12 to 24 months to complete. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 1-4. Project status: . Hazards mitigated: Flooding. Structures/infrastructure impacted: Existing.

22. Roads: Roads are not only essential to everyday life but also to emergency operations during flooding or other hazards. Therefore keeping roads open is a top priority. There are various construction and placement factors to consider when building new roads. To maintain dry access, roads will be elevated above the base flood elevation. At the same time, if a road creates a barrier it can cause water to pond. Where ponding is problematic, drainage and flow may be addressed by making changes to culvert size and placement. In situations where floodwaters tend to wash roads out, construction, reconstruction, or repair can include attention to drainage and stabilization or armoring of vulnerable shoulders and embankments. Improvements could also be made to roadside ditches where necessary by dredging and enlarging driveway culverts. These and other road improvements will be given consideration. Since the last update to this plan, some upgrades have been made with regard to roads. However, much more work is required to complete this project. Specific recommendations for such measures will come from local public works and road departments with final approval coming from the appropriate County or City government officials. A time frame and cost estimate for such improvements cannot be determined until an initial assessment of roads is made. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 4-3. Project status: ONGOING. Hazards mitigated: Flooding, Winter Storm. Structures/infrastructure impacted: Existing and Future.

23. Manufactured Homes: To the greatest extent possible, identify all owners of inadequately installed manufactured homes within the County and offer a financial incentive to retrofit them with an appropriate level of anchoring and support. Set specific guidelines for the improvements, and have the new work inspected upon completion. This may be only one of a few methods to accomplish this goal since the homeowners may be under no obligation to make improvements. The level and method of financial incentive will have to be determined by the appropriate local government officials. Fortunately, the County has recently passed a new ordinance that requires conformance to current codes prior to any electrical service being turned on. In addition, manufactured homes 1976 or older must also have an electrical contractor certify the home as having copper wiring vs. aluminum wiring. Public and private grants should also be pursued to help fund this project. Specific recommendations for such measures will come from local planning officials with final approval coming from the appropriate County or City government officials. Funding for this project will be sought from various public and private grant sources. If approved, substantial project completion is estimated at ten years. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 1-1, 3-2. Project status: PRELIMINARY. Hazards mitigated: Severe Thunderstorm, Tornado. Structures/infrastructure impacted: Existing.

24. Public Awareness: Public awareness campaign efforts will be continued countywide on a regular basis in order to educate the public on the various natural and technological threats to the County. This will primarily focus on weather-related events but may also include a focus on hazardous materials spills, earthquakes, and dam failure. Another focus will be on the dangers of mobile homes during severe weather. Some public awareness efforts have been conducted since the last update to this plan. These efforts have included various newspaper articles and radio announcements related to severe weather preparedness. Additional campaign efforts will include additional public service announcements, community forums, and flyers and mailings. Special efforts will be made to target special needs citizens and vulnerable populations. The estimated cost of this campaign is $10,000 per year. The project will be coordinated by Walker Co. EMA in conjunction with the municipalities. Assistance may also be provided by the Red Cross. Funding for this project will be sought from various public and private grant sources, including possible use of local funds. Final approval of the project or any potential use of matching local government funds will come from the appropriate County or City government officials. If the project is approved and funding secured, this campaign could be organized within six months. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 2-1, 2-2, 3-1, 3-2. Project status: PRELIMINARY. Hazards mitigated: All. Structures/infrastructure impacted: Existing and Future.

25. Fire Protection Upgrades: The HMPC recommends that all public schools within the County be brought up to current fire codes and any aging fire protection systems replaced. Sprinkler installation will also be considered on a case-by-case basis. Progress made since the last update to this plan includes more hydrants installed around schools (300 county wide), and relocation of Chattanooga Valley Middle School and Rossville Middle School to new buildings. Other school buildings remain at risk. School officials, in conjunction with Walker Co. Fire Dept are responsible for conducting this effort. Walker Co. School System will be the lead agency on this project. A cost and project completion estimate will not be available until an assessment has been made of the current fire protection situation in the schools. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 1-1, 1-2, 1-3. Project status: IN PROGRESS. Hazards mitigated: Wildfire. Structures/infrastructure impacted: Existing.

26. Power Line Maintenance: Local power companies can help prevent or alleviate wildfires by proper maintenance and separation of power lines, as well as efficient response to fallen power lines. The increased costs associated with these measures are difficult to estimate, but will be the responsibility of the local power companies including Chickamauga and LaFayette who are actually utility providers. Specific recommendations for such measures will originate from local planning officials, with final approval coming from the appropriate County or City government officials. If approved, the initial stages of the project are estimated to take approximately 24 months. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 1-1, 1-3. Project status: ONGOING. Hazards mitigated: Wildfire. Structures/infrastructure impacted: Existing and Future.

27. Water Use Ordinances: Communities can adopt ordinances to prioritize and limit outside water use. This is done to extend the water supply for citizens and to provide water in emergency situations, such as firefighting. Special accommodations, including possibly a permitting system, could be made for farmers pulling water out of bodies of water for crop irrigation. The costs associated with these measures will include increased planning and inspection costs for local government. Walker County has passed the state-mandated water use ordinance. In addition, there are eight water companies that serve Walker County. City water utilities also operate within the County. Each of these entities are bound by the County water use ordinance. Specific recommendations for such measures will originate from local planning officials, with final approval coming from the appropriate County or City government officials. If approved, the project is estimated to take approximately 24 months. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 3-1. Project status: ONGOING. Hazards mitigated: Drought. Structures/infrastructure impacted: Existing and Future.

28. Extreme Heat/Drought: Summertime weather conditions in Georgia consistently include hot temperatures and drought-related conditions. Although the temperatures in Walker County tend to be more moderate that the central and southern portions of the State, the threat of extreme heat is something that must be considered. Extreme heat can adversely affect people, animals, property, and resources. Public education of the effects of heat and drought-related emergencies will be beneficial. However, if there were large numbers of heat-related illnesses, many shelters will be needed to help keep people cool and provide water. A combination of portable inflatable tents with cooling units and retrofitting all fire stations within the County with central air conditioning will provide people with a temporary emergency shelter. The estimated cost of this project is approximately $500,000. This is obviously a lower priority that other mitigation measures listed in this Plan. Funding for this program will be sought through private and public grants. Final approval of this project and/or any local matching funds will come from the appropriate County or City government officials. The implementation of this program will take between approximately five and ten years. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 4-2. Project status: PRELIMINARY. Hazards mitigated: Drought. Structures/infrastructure impacted: Existing.

29. Loss Estimation Studies: After seismic hazards have been identified, planners can create an earthquake scenario to estimate potential loss of life and injuries, the types of potential damage, and existing vulnerabilities within a community. Scenarios can be particularly useful in predicting lifeline performance, i.e., the sustainability of critical public services or systems such as electricity, water, or roadways. This knowledge can be used to develop earthquake mitigation priorities. The lead agency for this project will be Walker Co. EMA. No cost estimates are available for this planning effort. Funding for this project will be sought from various public and private grant sources. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 1-6. Project status: PRELIMINARY. Hazards mitigated: Earthquake. Structures/infrastructure impacted: Existing and Future.

30. Emergency Shelter/Critical Facilities Upgrades: Due to Walker Co.'s positioning near a large fault line, the threat of earthquakes is taken seriously. The HMPC recommends that emergency shelters and other critical facilities be retrofitted in order to withstand the forces of a moderate to severe earthquake. These facilities are to be prioritized by the Local Emergency Planning Committee (LEPC). To date since the last update to this plan, two shelters have been created with backup generators. One of these two shelters has a 40,000 gallon water tank which was installed at a cost of $100,000. A 20,000 gallon water tank should also be included at each of the remaining shelters. These tanks are estimated to cost $50,000 each. The lead agency for this project will be Walker Co. EMA. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 1-1, 1-2, 1-3, 1-4, 3-1, 4-1, 4-3. Project status: PRELIMINARY. Hazards mitigated: Earthquake.

Structures/infrastructure impacted: Existing.

31. Building Collapse: Walker Co.'s earthquake threat makes it necessary to consider the purchase of building collapse machinery and equipment. This will include a heavy rescue vehicle with crane capable of lifting heavy debris. Shoring equipment and air bags should also be purchased to equip this vehicle. The lead agency responsible for pursuing this project is Walker Co. Emergency Services. Some equipment has been purchased since the last update to this plan. The purchased equipment includes a crane and airbags, but not the heavier equipment. The estimated cost of the remaining items needed is $1.5 million. Funding for this project will be sought from various public and private grant sources. Should funding become available, the vehicle could be purchased and operational within six to nine months. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 4-2. Project status: PRELIMINARY. Hazards mitigated: Earthquake. Structures/infrastructure impacted: Existing and Future.

32. Structural Reinforcement: A) Fire Stations 4 and 18 serve Walker Co. upon Lookout Mountain. These two stations serve a vital purpose since the next closest stations will come from valley areas. To ensure that fire station facilities and enclosed equipment will endure a moderate to severe earthquake, structural reinforcement and earthquake construction measures will be completed. However, it will be more cost effective to rebuild these fire stations than to retrofit. B) Residential homes, especially along the bluffs, should have earthquake improvements to structures as well as barrier protection to prevent homes from sliding off of the mountain. It will also serve the City and County to have ordinances preventing developers from building so close to the bluff of the mountain. C) Many natural geo-structures (caves) are registered as recreational spelunking sites with Walker Co. Due to the large number of tourists and caving occupants, this becomes very dangerous in the event of an earthquake. A combination of public education with regard to spelunking and an inspection frequency by certified geological experts will be put into place. The estimated cost for the three related projects above are A) $200,000, B) $50,000 for studies on residential homes, and C) $50,000 for cave studies. The lead agency for these projects is the City of Lookout Mountain. This project will take between five and ten years to complete. Funding for this project will be sought from various public and private grant sources. Jurisdictional participants include: A, D. Goals and objectives represented by this mitigation action include: 1-1, 1-2, 1-3, 1-6, 3-1. Project status: PRELIMINARY. Hazards mitigated: Earthquake. Structures/infrastructure impacted: Existing and Future.

33. GEMA School Safety Plan: Schools are critical facilities not only because of the special populations they accommodate, but also because they are often identified as shelter sites for a community. Legislation signed into law in Georgia in 1999 directs the Georgia Emergency Management Agency to provide training and technical assistance on the issues of school safety to the education, emergency

management and public safety communities of Georgia. These services are provided through the staff of the School Safety Unit. Senate Bill 74 mandates all public schools to develop a safety plan addressing natural disasters, hazardous materials, transportation concerns, weapons and potential terrorist activities. These plans must include students, parents, law enforcement, fire and emergency medical services. School systems for Walker County and the City of Chickamauga do currently have an approved School Safety Plan. The HMPC recommends this plan be updated as required to ensure compliance with the state laws and to ensure the safety of those working in or attending schools within the County. The primary entities for this project will be Walker County Public Schools and Chickamauga Public Schools. No cost estimates are available for this planning effort. Funding for this project will be sought from various public and private grant sources. Jurisdictional participants include: A, B. Goals and objectives represented by this mitigation action include: 1-1, 1-2, 1-3, 4-1, 4-3. Project status: ONGOING. Hazards mitigated: All. Structures/infrastructure impacted: Existing and Future.

34. Hazmat Rescue Team: A well-trained and properly equipped emergency response team is necessary to successfully respond to hazardous material release incidents. Currently, the County must rely on the Regional or State HAZMAT Team to arrive for a response to a major hazardous materials spill, with a call-to-scene time of approximately 30 minutes to one hour. The HMPC proposes the development of a six-man Hazmat Rescue Team to respond to Walker Co. hazmat events. This will require training, supplies, equipment, and transportation for quick community response to spills in order to rescue close proximity victims and enhance community survivability. Since the last update to this plan, the County has purchased a decon trailer and an operational hazmat truck to house hazmat supplies and equipment. These vehicles were purchased via a federal grant. Training, equipment (including suits), and supplies are still needed. The source of funding for this project will come from both public and private grants and other state or federal funding. The estimated cost of this project is $200,000. The lead agencies involved in this project will be the Walker Co. Fire Dept. Final approval for the project, and any potential local matching funds, will come from the appropriate County or City government officials. If approved, the team could be trained and in place within approximately 18 months. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 4-2. Project status: IN PROGRESS. Hazards mitigated: Hazardous Materials Release. Structures/infrastructure impacted: Existing and Future.

35. Walker County Groundwater/Surface Water Contamination: The County has experienced problems related to groundwater and surface water contamination due to breaks and leaks in water and sewer lines in the past. This affects water and sewer systems, drinking water, creeks and streams, and groundwater. Fortunately some progress in this regard has been made since the last update to this plan. EPA is in the process of completing a review of water quality based on discharge. Additional progress includes passage of a Wellhead Protection

Ordinance, completion of aerial photography of the entire County completed in 2011 ($60,000), smoke testing of lines by Rossville, and a large amount of maintenance work completed by two water companies: Walker County Water Authority and City of LaFayette. In addition, the Walker County Water Authority, Chickamauga, LaFayette, and Rossville each use cameras to locate potential problems in lines. Further efforts may be needed to continue to mitigate these problems. The estimated cost of further measures is $100,000 The Walker Co. Water & Sewerage Authority and Environmental Management will most likely be responsible for pursuit of this project. Funding for this program will be sought through private and public grants. Final approval of this project and/or any local matching funds, will come from the appropriate County or City government officials. This program will take approximately 18 to 24 months to complete. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 1-4, 4-2. Project status: IN PROGRESS. Hazards mitigated: Hazardous Materials Release. Structures/infrastructure impacted: Existing.

36. City of Rossville Stormwater Infiltration: The City of Rossville experiences problems with elicit discharges involving the citywide sewer system. These problems must be addressed in order to protect the quality of the City's groundwater and water and sewer systems. Methods needed to help prevent these problems include infrared monitoring, cameras, and other detection measures. Since the last update to this plan, some progress has been made with these problems. The City of Rossville has been smoke testing their lines to find potential problems and making repairs as needed. Further efforts are needed at an estimated cost of $75,000. This project will be the responsibility of the City of Rossville to pursue. Funding for this program will be sought through private and public grants. Final approval of this project and/or any local matching funds, will come from the appropriate City government officials. This program will take approximately 12 months to complete. Jurisdictional participants include: E. Goals and objectives represented by this mitigation action include: 1-4, 4-2. Project status: PRELIMINARY. Hazards mitigated: Hazardous Materials Release. Structures/infrastructure impacted: Existing.

37. Local Emergency Planning Committee: To address the possibility of hazardous material incidents, communities are required under Federal law (SARA Title III), to maintain an active and viable Local Emergency Planning Committee (LEPC) to develop a Local Emergency Operations Plan (LEOP) for preparing for and responding to chemical emergencies, such as spills, leaks, explosions, or other hazardous materials releases. The LEPC is required to review, test, and update the plan each year. The community's LEOP must include the following: identification of local facilities and transportation routes where hazardous materials are present; procedures for immediate response in case of an accident, including a community-wide evacuation plan; a plan for notifying the public that an incident has occurred; names of response coordinators at local facilities; and a plan for conducting simulation exercises that test the plan. The LEPC and LEOP

should continue to be utilized and will be supported fully by the County and City. There may be no additional costs associated with this recommendation. At this time, the 911 Board serves unofficially as the LEPC. Walker County is in the process of creating an official LEPC in the near future. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 2-1, 3-1, 4-1, 4-3. Project status: ONGOING. Hazards mitigated: Hazardous Materials Release. Structures/infrastructure impacted: Existing and Future.

38. Hazardous Materials Related to Methamphetamine Production: Walker County has a serious problem with methamphetamine production. Although the problem involves dangers to children from drug production, distribution, and abuse, the scope of this Plan limits this proposed mitigation measure to addressing only the actual drug production and distribution, and this is viewed from a hazardous materials standpoint. Although many valiant efforts are being made by the County and Cities to reduce this problem, one additional tool that may be considered is the adoption of the DEC (Drug Endangered Children) Program. This will potentially involve establishing a DEC Response Team. The DEC Response Team, which includes social workers, trained fire department and hazmat personnel, public health nurses, and Drug Task Force personnel, is called upon to treat and care for the children found at methamphetamine lab sites, and to assist with the criminal investigation. The Team receives specialized training regarding methamphetamine production and the circumstances specific to drug-endangered children. All personnel also receive training in evidence collection. The estimated cost of implementing such a program, along with the required training, is approximately $20,000. Walker County will be the most suitable candidate for pursuit of this project. Funding for this program will be sought through private and public grants. Final approval of this project and/or any local matching funds, will come from the appropriate County or City government officials. This program will take approximately 18 to 24 months to implement. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 3-1, 4-2. Project status: PRELIMINARY. Hazards mitigated: Hazardous Materials Release. Structures/infrastructure impacted: Existing and Future.

39. Safety Procedures, Policies, and Plans: Many safety procedures, policies and plans are essential to protecting Walker County from the threat of hazardous materials. The Emergency Planning and Community Right-to-Know Act (EPCRA), also known as SARA Title III, provides an infrastructure at the state and local levels to plan for chemical emergencies. Regulations require training in and compliance with all safety procedures and systems related to the manufacture, storage, transport, use, and disposal of hazardous materials. Facilities that store, use, or release certain chemicals may also be subject to reporting requirements. Reported information is publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. Employers must also communicate the hazards of workplace chemicals and ensure that

workers receive education and training. The U.S. Environmental Protection Agency (EPA) also places requirements on sites that manufacture, store, or handle hazardous materials. EPA regulations require development of Chemical Accident Prevention and Risk Management Plans. The EPA also regulates disposal of hazardous waste, as required by the Federal Resource Conservation and Recovery Act (RCRA) with the goal of: 1) protecting us from the hazards of waste disposal; 5) conserving energy and natural resources by recycling and recovery; 3) reducing or eliminating waste; and 4) cleaning up waste that may have spilled, leaked, or been disposed of improperly. Another important safety program is the U.S. Department of Transportation's (USDOT) labeling and placarding system for identifying the types of hazardous materials that are transported along the nation's highways, railways, and waterways. This system enables local emergency officials to identify the nature and potential health threat of chemicals being transported. If an accident were to occur, local emergency officials will be able to determine the proper emergency response procedures for the situation. Local law enforcement and other emergency officials should be well versed in compliance with and enforcement of USDOT and state regulations regarding hazardous material and hazardous waste transportation. These are only some of the safety procedures, policies, and plans in place. An increased effort to ensure compliance with all applicable safety rules and regulations, including reporting requirements, relating to hazardous materials will be made by the County and Cities. The costs associated with these measures may include increased planning and inspection costs for local government. Additional planning and inspections alone are estimated at approximately $50,000 per year. Specific recommendations for any related planning or inspections will come from Walker County EMA with final approval coming from the appropriate County or City government officials. If approved, planning efforts and adoption of any changes is estimated to take approximately 24 months. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 3-1, 4-2. Project status: ONGOING. Hazards mitigated: Hazardous Materials Release. Structures/infrastructure impacted: Existing and Future.

40. Queen City Lake Dam: Flooding occurs after heavy rains at the Queen City Lake Dam. Extensive grading and channeling below the dam is necessary to help accommodate the excess stormwater runoff that occurs when the dam overflows. This work will be preceded by an appropriate engineering study. The estimated cost of this project is $250,000. The City of LaFayette will be responsible for the pursuit of the project detailed above. Funding for this project will be sought through private and public grants. Final approval of this project and/or any local matching funds, will come from the appropriate State, County, or City government officials. The estimated timeline for this project is approximately two years. Jurisdictional participants include: C. Goals and objectives represented by this mitigation action include: 1-1, 1-3. Project status: PRELIMINARY. Hazards mitigated: Dam Failure, Flooding. Structures/infrastructure impacted: Existing.

41. Sound Design and Planning: National statistics show that overtopping due to inadequate spillway design, debris blockage of spillways, or settlement of the dam crest account for one third of all U.S. dam failures. Foundation defects, including settlement and slope instability, account for another third of all failures. Thus the initial design and placement of a dam is the most important phase of dam construction. Any potential problems must be taken into consideration prior to actual construction. Planning for dam breaks may also be considered, and may include constructing emergency access roads, automating pump and flood gate operation, or other emergency measures. Consideration should also be given to restriction of development in a dam's hydraulic shadow, where flooding would occur if there were a severe dam failure. This program should comply with the guidelines of the Georgia Safe Dams Act of 1978. Specific recommendations for any design review procedures will originate from County and City Public Works and Planning Departments, with final approval coming from the appropriate County or City government officials. The creation of such a review process will take approximately 12 months. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 1-1, 1-2, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Dam Failure, Flooding. Structures/infrastructure impacted: Future.

42. Comprehensive Inspection: Piping and seepage, and other problems cause the remaining third of national dam failures. This includes internal erosion caused by seepage, seepage and erosion along hydraulic structures, leakage through animal burrows, and cracks in the dam. A comprehensive inspection, maintenance, and enforcement program may be established to search for these problems before they can cause irreversible damage to the structures and great danger to the community abroad. This process will include guidelines for timely repairs. The increased costs associated with these measures will include a vehicle ($30,000), personnel ($65,000 per year), and training ($20,000). Funding for this project will be sought through private and public grants. This program should comply with the guidelines of the Georgia Safe Dams Act of 1978. Specific recommendations for such measures will originate from County and City Public Works Departments, with final approval coming from the appropriate County or City government officials. The creation of such a program will take between 12 and 24 months. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 1-1, 1-2, 1-3, 1-4. Project status: PRELIMINARY. Hazards mitigated: Dam Failure, Flooding. Structures/infrastructure impacted: Existing and Future.

43. Fire Station Shelters – Communities rely on the public safety sector and County/City services to provide them with response protection in times of emergencies or disasters. It is when the local governments and agencies are overwhelmed with displaced residents that we seek other means to shelter them. Traditionally, public schools are used to provide this function. Unfortunately this would only benefit a small portion of the population of Walker County due to the large geographical area. The fire stations throughout the County, including all

City Fire Stations, cover all residents within five road miles. This applies for 98% of the total landmass of Walker County. Fire Stations throughout the County and Cities can be modified and stocked to support this sheltering function that the public schools are unable to provide alone. The project will eventually encompass all fire stations, but will begin with the key County fire stations and all City fire stations (for a total of eight). The next phase will involve eight additional stations, with a final stage including the final six stations. The estimated cost of this project is approximately $30,000 per station. With a total of 22 fire stations, at the time of the creation of this Plan, the grand total will be approximately $660,000. Walker County in conjunction with each of the Municipalities will work in conjunction on this project. Funding for this program will be sought through private and public grants. Final approval of this project and/or any local matching funds, will come from the appropriate County or City government officials. The implementation of this program will take approximately five years to complete. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 1-1, 3-1, 4-2, 4-3. Project status: PRELIMINARY. Hazards mitigated: All. Structures/infrastructure impacted: Existing and Future.

44. Emergency Generators – Public Schools: The HMPC recommends that a generator be purchased and installed for each public school in the County and Cities, each capable of powering the gymnasiums and cafeteria areas at a minimum. The generators will be 3-phase. Not only will this help protect the children of the community, but it will allow our schools to be utilized as designated emergency shelters. The cost of this project is estimated at $1.2 million. The lead agency responsible for pursuing this project will be Walker Co. School System. Funding for this program will be sought through private and public grants. Final approval of this project and/or any local matching funds, will come from the appropriate County or City government officials. The implementation of this program will take between approximately nine to twelve months. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 4-2. Project status: PRELIMINARY. Hazards mitigated: All. Structures/infrastructure impacted: Existing.

45. Emergency Generators – Walker Co. Civic Center & Agricultural Center: The Walker County Civic Center and Agricultural Center are both available as shelters in the event of an emergency. Both facilities have full kitchens and adequate restrooms. The Walker Co. Road Department/Shop is in full operation during most emergencies to deploy road clearing crews, tree trimming crews, and/or salt and sand trucks. As these facilities are each of extreme importance during an emergency, they need to be outfitted with generators to keep them up and running. The generators need to be equipped for automatic switching powered by LP gas. The estimated cost of this project is $300,000. Funding for this program will be sought through private and public grants. Final approval of this project and/or any local matching funds will come from the appropriate County government officials. The implementation of this program will take approximately one year to

complete. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 4-2. Project status: PRELIMINARY. Hazards mitigated: All. Structures/infrastructure impacted: Existing.

46. Emergency Generators – Lookout Mountain: The HMPC recommends that generators be purchased and installed at the Lookout Mountain City Hall, Fire, and Police Departments. With limited resources, the City must have these critical facilities functioning during winter storms, severe thunderstorms, or other emergencies involving power outages. The cost of this project is estimated at $50,000. The lead agency responsible for pursuing this project will be the City of Lookout Mountain. Funding for this program will be sought through private and public grants. Final approval of this project and/or any local matching funds, will come from the appropriate City government officials. The purchase and installation of this equipment will take approximately three to six months. Jurisdictional participants include: D. Goals and objectives represented by this mitigation action include: 4-2. Project status: PRELIMINARY. Hazards mitigated: All. Structures/infrastructure impacted: Existing.

47. Emergency Generators – Medical: The HMPC recommends that three portable generators and one large pull-behind generator be purchased to assist with medical emergencies. The portable generators could be used to assist homebound citizens who are dependent on various medical equipment (oxygen, monitors, etc.) or to supplement other generators used throughout the County. The large pull-behind generator could be towed throughout the Count to assist wherever needed. The cost of this project is estimated at $100,000. The lead agency responsible for pursuing this project will be Walker Co. Emergency Services. Funding for this program will be sought through private and public grants. Final approval of this project and/or any local matching funds, will come from the appropriate County or City government officials. The purchase and installation of this equipment will take approximately three to six months. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 4-2. Project status: PRELIMINARY. Hazards mitigated: All. Structures/infrastructure impacted: Existing and Future.

48. City of LaFayette Physical Security and Backup Power: The City of LaFayette needs additional physical security upgrades and backup power for several facilities including water and wastewater treatment facilities, pump stations, lift stations, high pressure regulator and metering stations for the natural gas pipeline, the Public Safety Building, Recreation Center and Gymnasium. The needs of each of these stations or facilities is detailed individually below:

    Big Springs Water Treatment Facility – The perimeter of this facility will be fenced off with an electronic security gate. Hardened locks are needed on all access hatches. Security cameras and an alarm system are necessary as well. The estimated cost of this project is $90,000.

Lee School Rd Water Treatment Facility - The perimeter of this facility will be fenced off with an electronic security gate. Hardened locks are needed on all access hatches. Security cameras and an alarm system are necessary as well. In addition to these security measures, a 100kw generator and 75kw generator will be installed as a backup power source for the facility and raw water pumps, respectively. The estimated cost of this project is $85,000.

Wastewater Treatment Facility - The perimeter of this facility will be fenced off with an electronic security gate. Hardened locks are needed on all access hatches. Security cameras and an alarm system are necessary as well. In addition to these security measures, a 1200kw generator and 75kw generator will be installed as a backup power source for the facility and lab/office, respectively. The estimated cost of this project is $275,000.

State Route 193 and Ronile Lift Stations – The perimeter of these facilities will be fenced off and locked. In addition, one 100kw generator for each of the two lift stations will be installed as a backup power source. The estimated cost of this project is $56,000.

McCarter Rd, Warren Rd, and Hillsdale Rd Lift Stations - The perimeter of these facilities will be fenced off and locked. In addition, one 100kw backup power generator for McCarter Rd Lift Station, one 30kw backup power generator for Warren Rd Lift Station, and one 30kw backup power generator for Hillsdale Rd Lift Station will be installed as backup power sources. The estimated cost of this project is $77,000.

Shattuck Industrial Blvd, Moore Ave, and Alpine Drive Lift Stations - The perimeter of these facilities will be fenced off and locked. In addition, one 200kw backup power generator for Shattuck Industrial Blvd Station, one 30kw backup power generator for Moore Ave Lift Station, and one 30kw backup power generator for Alpine Drive Lift Station will be installed as backup power sources. The estimated cost of this project is $100,500.

Shattuck Industrial Blvd Substation – The perimeter of this facility will be fenced off with an electronic security gate. Security cameras and an alarm system are necessary as well. The estimated cost of this project is $37,500.

State Route 136 Power Substation – Security cameras and an alarm system will be installed at this facility. The estimated cost of this project is $37,500.

Shattuck Industrial Blvd and SR 136 Power Substations – A portable substation will be purchased to be used in the event that one of these two substations is severely damaged or destroyed. Extra circuit breakers and

regulators should also be purchased to be used as spares at these two facilities in the event existing equipment is damaged. The estimated cost of this project is $3,075,000.

Bicentennial Estates Booster Station – The perimeter of this station will be fenced off and locked. In addition, one 100kw generator will be installed as a backup power source. The estimated cost of this project is $31,000.

West Reed Rd Booster Station – The perimeter of this station will be fenced off and locked. In addition, one 41kw generator will be installed as a backup power source. The estimated cost of this project is $22,500.

York Rd Booster Station – One 100kw generator will be installed as a backup power source. The estimated cost of this project is $29,500.

Rabbit Rd Pump Station - One 200kw generator will be installed as a backup power source. The estimated cost of this project is $48,500.

West McCarter Rd Pump Station – The perimeter of this station will be fenced off and locked. In addition, one 400kw generator will be installed as a backup power source. The estimated cost of this project is $70,000.

Skyline Heights Pump Station - One 40kw generator will be installed as a backup power source. The estimated cost of this project is $21,000.

Natural Gas Metering Station - Security cameras and an alarm system will be installed at this high-pressure gas metering station. The estimated cost of this project is $27,500.

High Pressure Regulator Station - Security cameras and an alarm system will be installed at this high-pressure regulator station for the City of LaFayette's natural gas supply pipeline. The estimated cost of this project is $25,000.

Public Safety Building - One generator will be installed as a backup power source. The estimated cost of this project is $15,000.

Recreation Center and Gymnasium - One generator will be installed as a backup power source. The estimated cost of this project is $50,000.

Jurisdictional participants include: C. Goals and objectives represented by this mitigation action include: 4-2. Project status: PRELIMINARY. Hazards mitigated: All. Structures/infrastructure impacted: Existing.

49. Barwick-LaFayette Airport: The Barwick-LaFayette Airport is in need of additional security and safety measures in order to properly protect both people and property. First, the perimeter of this facility will be fenced off with an electronic security gate. Security cameras and an alarm system are necessary as well. In addition, the F.B.O. Building will be extended up to the edge of the tarmac to provide an unobstructed view of the entire runway. Finally, a new building is also needed to house the fire truck. The security fence portion of this project will span over the next several years. One half of the fencing is being installed this year at a cost of $79,590. Funding has been secured for this portion of the project. The estimated cost of the remaining portions of this project is approximately $215,000. The City of LaFayette will be responsible for the pursuit of this project. Funding will be sought through private and public grants. Final approval of this project and/or any local matching funds, will come from the appropriate government officials. The estimated timeline for this project is approximately two years. Jurisdictional participants include: C. Goals and objectives represented by this mitigation action include: 1-1, 1-3, 4-2. Project status: IN PROGRESS. Hazards mitigated: All. Structures/infrastructure impacted: Existing.

50. Emergency Notification System: Due to concerns over maintenance and utility costs, old technology, ineffectiveness, and delays in activation, the mitigation action for emergency notification developed in 2006 for this plan has been altered significantly. An internet-based emergency notification system (such as Code Red, First Call, or Hyper Reach) is required by the County to notify residents of the various threats affecting the County and municipalities. This is an internet-based emergency notification system that provides emergency notification to the public via phone, text, and email. This system is a more cost-effective and practical method of emergency notification for the County and is a more effective way of notifying the public of potential threats. There are no servers to maintain and the services can be ratcheted up or down from time to time to meet the needs of the County. The package costs approximately $25,000 to $40,000 per year with weather notification capabilities. Funding for this project will be sought from various public and private grant sources, including possible use of local funds. Specific recommendations for this project will come from Walker Co. EMA. Final approval of this project or any potential use of local government funds will come from the appropriate County or City government officials. The project timeline is one year. Jurisdictional participants include: A, B, C, D, E. Goals and objectives represented by this mitigation action include: 2-1, 4-2. Project status: PRELIMINARY. Hazards mitigated: All. Structures/infrastructure impacted: Existing and Future.

51. City of LaFayette Preparedness: Some important precautions need to be taken in order to help the City of LaFayette be prepared for a wide variety of disasters or emergencies. These specific projects are detailed below.

    Portable Fuel Storage Facility and Pumps – Purchase portable fuel storage tanks with pumps to be available if an existing site becomes contaminated or compromised. The estimated cost of this project is $100,000.

    Housing and Storage Facility – Build and stock building to serve as living quarters for relief workers in the event of a disaster. This will also serve as storage for parts and equipment needed for any recovery effort. The estimated cost of this project is $750,000.

    Distribution Feeder Circuits – Trees need to be cleared to establish clear zones on distribution feeder circuits. The estimated cost of this project is $250,000.

    Medical Park and Downtown Facilities – Underground circuit feeders will be installed underground to service the Medical Park and Downtown facilities. The estimated cost of this project is $2 million.

    The City of LaFayette will be responsible for the pursuit of each of the projects detailed above. Funding for these projects will be sought through private and public grants. Final approval of this project and/or any local matching funds, will come from the appropriate City government officials. The estimated timeline for each of the projects listed above is between one and three years. Jurisdictional participants include: C. Goals and objectives represented by this mitigation action include: 4-2. Project status: PRELIMINARY. Hazards mitigated: All. Structures/infrastructure impacted: Existing and Future.

52. Citizen Emergency Response Team (CERT): Walker County is now registered as a Citizens Corps Council member with the Federal Government. By doing so, we pledged to start and maintain community CERT programs. This program will be continued by training and equipping multiple groups of citizens to respond and assist neighbors during emergencies or disasters when public safety agencies are either overwhelmed or otherwise unable to respond. This is an ongoing endeavor with refresher training and equipment replenishment required. CERT classes are held a couple of times each year plus training every month. The Walker Co. Emergency Services will be the administrator, and each CERT group will have established leadership for ongoing meetings and drills. This project has an annual cost of approximately $20,000. The Walker Co. Emergency Services will be responsible for the pursuit of the project detailed above. Funding for this project will be sought through private and public grants. Final approval of this project and/or any local matching funds, will come from the appropriate County or City government officials. The estimated timeline for this project to become fully implemented is approximately three years. Jurisdictional participants include: A,

B, C, D, E. Goals and objectives represented by this mitigation action include: 2-1, 3-1, 3-2. Project status: ONGOING. Hazards mitigated: All. Structures/infrastructure impacted: Existing and Future.

53. Emergency Services Apparatus on Waterford Lane/Rio Road: Due to the extremely sharp turn from Waterford Lane on to Rio Road, emergency services apparatus will need to respond from Hwy 201, even though the shortest route is from North Dick's Creek Rd. Emergency services apparatus will be unable to make the necessary turn. A study will be conducted of the area to determine the best course of action with regard to this issue. The Walker Co. Emergency Services will be responsible for the pursuit of the project detailed above. Funding for this project will be sought through private and public grants. Final approval of this project and/or any local matching funds, will come from the appropriate County or City government officials. The estimated timeline for this project is approximately one year. Jurisdictional participants include: A. Goals and objectives represented by this mitigation action include: 1-1, 4-2. Project status: PRELIMINARY. Hazards mitigated: All. Structures/infrastructure impacted: Existing.

Chapter 6
Executing the Plan

6.1 – Action Plan Implementation

The hazard mitigation planning process was overseen by the Walker County Emergency Management Agency. Facilitation of the planning process was conducted by North Georgia Consulting Group, LLC. Once GEMA completes its initial review of this Plan, it will be presented to the Walker Board of Commissioners for consideration. Once adopted, the Walker County EMA Director shall assume responsibility for the maintenance of the Plan. It shall be the responsibility of the EMA Director to ensure that this Plan is utilized as a guide for initiating the identified mitigation measures within the community. The EMA Director shall be authorized to convene a committee to review and update this Plan annually. The Plan will also have to be updated and resubmitted once every five years. Through this Plan updating process, the EMA Director shall identify projects that have been successfully undertaken in initiating mitigation measures within the community. These projects shall be noted within the planning document to indicate their completion. Additionally, the committee called together by the EMA Director shall help to identify any new mitigation projects that can be undertaken in the community.

Members of the HMPC prioritized the potential mitigation measures identified in this Plan. A list of mitigation goals, objectives and related action items was compiled from the inputs of the HMPC, as well as from others within the community. The subcommittee prioritized the potential mitigation measures based on what they considered most beneficial to the community. Several criteria were established to assist HMPC members in the prioritization of these suggested mitigation actions. Criteria included perceived cost benefit or cost effectiveness, availability of potential funding sources, overall feasibility, measurable milestones, multiple objectives, and both public and political support for the proposed actions. Through this prioritization process, several projects emerged as being a greater priority than others. Some of the projects involved expending considerable amounts of funds to initiate the required actions. Most projects allowed the community to pursue completion of the project using potential grant funding. Still others required no significant financial commitment by the community.
All proposed mitigation actions were evaluated to determine the degree to which the County will benefit in relation to the project costs. After review by the HMPC, the prioritized list of mitigation measures, as presented within this Plan, was determined.

6.2 – Evaluation

As previously stated, the Walker County EMA Director will be charged with ensuring that this plan is monitored and updated at least annually or more often if deemed necessary. The method of evaluation will consist of utilizing a checklist to determine what mitigation actions were undertaken, the completion date of these actions, the cost associated with each completed action, and whether actions were deemed to be successful. A committee, perhaps with much of the same membership as the existing HMPC, will convene in order to accomplish the annual plan evaluation. Additionally, the EMA Director is encouraged to maintain a schedule of regular meetings, either quarterly or semiannually to preserve continuity throughout the continuing process. These meetings will provide an opportunity to discuss the progress of the action items and maintain the partnerships that are essential for the sustainability of the HMP. The EMA Director will ensure the results of the evaluation(s) are reported to the Walker County Board of Commissioners, as well as to any agencies or organizations having an interest in the hazard mitigation activities identified in the plan.

6.3 – Multi-Jurisdictional Strategy and Considerations

As set forth by Georgia House Bill 489, the Emergency Management Agency is the overall implementing agency for projects such as hazard mitigation. Walker County will work in the best interests of the County as well as the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville. Each of these four municipalities played an active role in the planning process. Participation from each jurisdiction was solicited and received by Walker County EMA. As a result, a truly multi-jurisdictional plan was created for Walker County and the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville, with ideas and viewpoints of all participants included.

6.4 – Plan Update and Maintenance

According to the requirements set forth in the Disaster Mitigation Act of 2000, Walker County is required to update and revise the Hazard Mitigation Plan every five years. However, the Hazard Mitigation Planning Committee will meet on the plan approval anniversary date of every year, or within 30 days of said date as determined and scheduled by the EMA Director, to complete a review of the Hazard Mitigation Plan. At each such meeting, the HMPC will review the main facets of the HMP including the vulnerability assessment, critical facilities inventory, and mitigation goals, objectives, and actions. All revisions will be posted to the County website for public review and comment. Further revisions may take place based upon public comments received.

It is during this review process that the mitigation strategies and other information contained within the Hazard Mitigation Plan are considered for incorporation into other planning mechanisms as appropriate. Opportunities to integrate the requirements of this HMP into other local planning mechanisms will continue to be identified through future meetings of the HMPC on an annual basis.

The HMPC recognizes the need to integrate other plans, codes, regulations, procedures and programs into future Hazard Mitigation Plan (HMP) updates. This plan is multi-jurisdictional; therefore the mechanism for implementation of various mitigation plan items may vary by jurisdiction. This includes reviewing other local planning documents, processes or mechanisms for possible integration with the HMP.

To Be Reviewed in Future Update

Existing planning mechanisms	Method of use in Hazard Mitigation Plan
Comprehensive Plan (multi-jurisdictional)	Development trends
Local Emergency Operations Plan	Identifying hazards; Assessing vulnerabilities
Storm Water Management / Flood Damage Protection Ordinance	Mitigation strategies
Building and Zoning Codes and Ordinances	Development trends; Future growth
Mutual Aid Agreements	Assessing vulnerabilities
State Hazard Mitigation Plan	Risk assessment
Land Use Maps	Assessing vulnerabilities; Development trends; Future growth
Critical Facilities Maps	Locations
Community Wildfire Protection Plan	Mitigation strategies

It will be the responsibility of each participating jurisdiction to determine additional implementation procedures when appropriate.

During the planning process for new and updated local planning documents such as a comprehensive plan or Local Emergency Operations Plan, the EMA Director will provide a copy of the HMP to the appropriate parties. It will be recommended that all goals and strategies of new and updated local planning documents be consistent with, and support the goals of, the HMP and will not contribute to increased hazards in the affected jurisdiction(s).

Although it is recognized that there are many benefits to integrating components of this plan into other local planning mechanisms, and that components are actively integrated into other planning mechanisms when appropriate, the development and maintenance of this stand-alone HMP is deemed by the committee to be the most effective method to ensure implementation of local hazard mitigation actions at this time. Therefore, the review and incorporation efforts made in this update and the last, which consisted of a simple review of the documents listed in the chart above by various members of the HMPC, are considered successful by the HMPC and will likely be utilized in future updates.

The County's EMA is committed to incorporating hazard mitigation planning into its Local Emergency Operations Plan and other public emergency management activities. As the EMA Director becomes aware of updates to other County or City plans, codes, regulations, procedures and programs, the Director will continue to look for opportunities to include hazard mitigation into these mechanisms.

The Walker County HMPC will reconvene not later than the fourth anniversary of the plan approval anniversary date, as determined and scheduled by the EMA Director, to begin planning for the formal Hazard Mitigation Plan revision process. The revision process will include a clear schedule and timeline, and identify any agencies or organizations participating in the plan revision. The committee will review the mitigation goals, objectives and actions to determine their relevance to changing situations within the different jurisdictions, as well as changes in State or Federal policy, and to ensure current and expected conditions are being addressed. The HMPC will also review the prior vulnerability assessments to determine if this information should be updated or modified, given any new available data.

Walker County is dedicated to involving the public directly in reviews and updates of the HMP. During the plan revision process, the committee will conduct, at a minimum, two public hearings during the revision process. These public hearings will provide the public a forum for which they can express their concerns, opinions, or ideas about the Plan. Additionally, if persons from the community express interest in participation in the planning process, they will be provided the opportunity to suggest possible mitigation measures for the community. Documentation will be maintained to indicate all efforts at continued public involvement. All relevant information will be forwarded to GEMA and FEMA as a product of the proposed plan revision. Public involvement activities will continue throughout the 5 year planning cycle and will be evaluated for effectiveness by the HMPC next planning cycle.

The EMA Director will ensure the revised plan is presented to the governing body of each jurisdiction for formal adoption. In addition, all holders of the HMP will be notified of affected changes. The EMA Director shall submit a revised Hazard Mitigation Plan not later than the five-year anniversary of the most recently updated HMP to the Georgia Emergency Management Agency for review and subsequent submittal to the Federal Emergency Management Agency for ultimate approval.

Once approved by FEMA, copies of the Walker County Hazard Mitigation Plan will be provided by the EMA Director to the appropriate governmental jurisdictions, agencies, and/or departments for review and possible inclusion into plans and programs. The HMP will be distributed by the EMA Director to the appropriate officials to allow them to review the Plan and determine to what extent the Plan should be integrated into, or referenced by, other plans and programs. Limitations may be placed on certain sensitive information by the EMA Director.

Chapter 7
Conclusion

7.1 – Summary

Walker County has gained a great deal of knowledge relating to the County's disaster history and future potential for disaster as a result of the hazard mitigation planning process. This includes an extensive hazard history of recorded hazard events from the past fifty years, a detailed critical facilities database with valuable information on some of most critical county and city structures, as well as some valuable ideas from the community abroad concerning measures that should be considered for future hazard mitigation. Community involvement has been at the heart of this effort. Not only did the planning process include the creation of a Hazard Mitigation Planning Committee with representatives from all walks of life, but two public hearings were conducted to provide all Walker County citizens with the opportunity to comment on, and offer suggestions concerning potential hazard mitigation measures within the community. Walker County, the Cities of Chickamauga, LaFayette, Lookout Mountain, and Rossville all worked in concert to ensure a broad range of citizens were represented. Elected officials, local government employees, public safety officials, Red Cross representatives, GA Forestry representatives, businesspersons, media, and other volunteers and interested parties provided important varying viewpoints to create a workable Plan. GEMA and NGCG provided valuable assistance as well. These efforts have all had the effect of better protecting our Community from the threats of nature and technology. While it would be naïve to believe this Plan provides complete protection to Walker County and its residents, it is the hope of all parties involved in this planning process that the recommended mitigation measures contained within the Plan will provide some level of increased preparedness as well as spur further discussion and planning related to the important subject of Hazard Mitigation.

7.2 – References

Numerous sources were utilized to ensure the most complete planning document could be assembled:

Publications/Documents:
The Disaster Mitigation Act of 2000
Robert T. Stafford Disaster Relief and Emergency Assistance Act
FEMA Pre-Disaster Mitigation *How-to Guides #1, 2, 3, 7*
GEMA Supplements to FEMA Pre-Disaster Mitigation How-to Guides
Georgia Tornado Database 1808 – 2002 (Westbrook)
Earthquake Information Bulletin, Volume 3, Number 6, November-December 1971
Walker County Local Emergency Operation Plan
Walker County Hazard Mitigation Plan

Web Sites:
www.fema.gov (FEMA)
www.usfa.fema.gov (USFA)
www.fs.fed.us (USFS Fire Danger Class)
www.cpc.ncep-noaa.gov (Drought Severity Index)
www.ncdc.noaa.gov (National Climatic Data Center)
http://eqint.cr.usgs.gov (USGS Earthquake Probability Maps)
http://roadsidegeorgia.com/nrhp/Walker (National Register of Historic Places)
www.tornadoproject.com (Tornado Project Online)
www.disastercenter.com (The Disaster Center)
www.gema.state.ga.us (GEMA)
www.gfc.state.ga.us (GFC)
www.georgiadrought.org (Drought in Georgia)
www.walkerga.us (Walker County Official Website)

Other Sources:
American Red Cross
American Society of Civil Engineers
Walker County
Walker County Chamber of Commerce
City of Chickamauga
City of LaFayette
City of Lookout Mountain
City of Rossville
Federal Emergency Management Agency
Georgia Department of Natural Resources
Georgia Emergency Management Agency
Georgia Forestry Commission
Georgia Safe Dams Program
National Climatic Data Center

National Oceanic & Atmospheric Administration
National Weather Service
U.S. Army Corps of Engineers
U.S. Census Bureau
U.S. Fire Administration
U.S. Forest Service
U.S. Geological Survey

Appendices

Appendix A – Critical Facilities Database

Appendix B – Hazard History Database

Appendix C – Hazard Frequency Table

Appendix D – Other Planning Documents

Appendix E - Glossary