NORTHWEST ALABAMA MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

A HAZARD MITIGATION PLAN FOR NORTHWEST ALABAMA COUNTIES
COLBERT, FRANKIN, MARION AND WINSTON AND ELIGIBLE JURISDICTIONS

Revised DRAFT for AEMA/FEMA Review
October 6, 2014

APPENDIX A:
LOCAL MITIGATION PLAN REVIEW TOOL

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA's evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan's strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of the each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

Jurisdiction: Colbert, Franklin, Marion, and Winston Counties and eligible local jurisdictions	**Title of Plan: Northwest Alabama Regional Hazard Mitigation Plan**	**Date of Plan: February 28, 2014**
Local Point of Contact: Nathan Willingham	**Address: P.O. Box 2603 Muscle Shoals, AL 35662**	
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State Reviewer: Robert Baylis (for Ashley Kelley)	**Title: Emergency Management Planner**	**Date: August 4, 2014**
**FEMA Reviewer: Brenda Stirrup (Elements A, D and E) Cindy Bailey (Elements B & C) **Linda L. Byers (QC: Elements A,D,E)	**Title: Planning Specialist HM Program Analyst **R4 Sr. Lead planning Specialist	**Date: September 9, 2014 August 19, 2014 **September 12,2014(QC: Elements A,D,E) September 17,2014 (B&C)
Date Received in FEMA Region IV	**August 13, 2014**	
Plan Not Approved	September 17,2014	
Plan Approvable Pending Adoption		
Plan Approved		

SECTION 1:

REGULATION CHECKLIST

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been 'Met' or 'Not Met.' The 'Required Revisions' summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is 'Not Met.' Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan (section and/or page number)**	**Met**	**Not Met**
ELEMENT A. PLANNING PROCESS			
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	Process and Participants- Section 3 (pg. 10-17); Appendices provide backup for participant information.		X
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	Section 3.2 (pg. 10) and Appendices Section 3.4 (p.16) Section 3.2 (p. 10); and Appendix A; Section 3.4 (p. 16)	X	
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Section 3.4 (pg. 16) and Appendices		X
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Section 3.5. (pg. 17) Pp. , 17, 20-21, 61	X	
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	Section 6.4. (pg. 143-144)	X	
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	Section 6.1 and Section 6.2 (pg. 142-143)	X	

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
ELEMENT A: REQUIRED REVISIONS A1. The plan did not include who was involved in the process for each jurisdiction. Based on sign-in sheets and participant contact forms, documentation was provided for all but 11 jurisdictions, districts or authorities (noted in yellow on Jurisdiction Summary Sheet below). Documentation has been provided for missing jurisdictions. The plan must identify who represented each jurisdiction. The Plan must provide, at a minimum, the jurisdiction represented and the person's position or title and agency within the jurisdiction. For each jurisdiction seeking plan approval, the plan must document how they were involved in the planning process. For example, the plan may document meetings attended, data provided, or stakeholder and public involvement activities offered. Section 3.2 has been updated to include a list of representatives from each participating jurisdiction has been included in the plan. The list includes the person's name, the jurisdiction represented, the person's position and agency, and the means by which they participated. A3. The Plan did not document how the public was involved in the planning process prior to Plan approval/adoption. The opportunity for participation must occur during the Plan development, which is prior to the comment period on the final Plan, and prior to the Plan approval/adoption. *For more information, please see "Element A: Planning Process", in the Local Mitigation Plan Review Guide, dated October 1, 2011, Pages 14-17.* Eight public hearings were conducted during the draft stages of the plan. The draft plan has been updated to reflect the opportunity for public comments during the planning process (Section 3.4)			
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT			
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	Section 4.1 (p. 18--37) Section 4.3 (p. 39-44)		X
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	Probability- Section 4.2 (pg.38) and 4.6 (pg. 51) and Table 4.6.1 (pg. 51); Past occurrences - Section 4.4 (pg. 44-45).		X
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Impact- Section 4.5 (pg. 45); Vulnerability- Section 4.7 (pg. 54).	X	

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	RL & SRL properties- Section 4.8 (pg. 71)	X	

ELEMENT B: REQUIRED REVISIONS

B1: The new regional plan noted that dam failure, flooding, landslide, and sinkholes would be assessed on a local scale. *Location* means the geographic areas in all of the planning areas that are affected by the hazard. The new plan must describe the location of all natural hazards that can affect each jurisdiction.

- The new plan noted that 42 high risk dams are located in Northwest Alabama; however, the plan did not link the dam locations with the individual jurisdictions. A map of special flood hazard areas was included in the plan, but it did not identify the individual jurisdictions associated with the flood hazard areas.
- The new plan noted that 120 flood events affected Northwest Alabama from 1996 to 2013 according to NOAA. However, the plan did not link the flood locations with the individual jurisdictions. A map of high hazard dams was included in the plan, but it did not identify the individual jurisdictions associated with the dam locations.
- The new plan noted that the Geographical Survey of Alabama reported 17 historic landslides in Northwest Alabama. However, the plan did not link the landslide locations with the individual jurisdictions.
- The new regional plan noted that much of the Northwest Alabama region is susceptible to active sinkholes or sinkhole risk; however, the plan did not link sinkhole risk with the individual jurisdictions.

Section 4.1 has been updated to reference Table 4.7.3, which has an approximate land area vulnerable to each hazard type. The narrative description of each hazard has been updated to contain a list of jurisdictions that are affected by particular hazard types. Section 3.2 now clarifies that local jurisdictions were assessed on a community level and that hazards identified and assessed for a local governmental jurisdiction also affect other jurisdictions, for example, a hazard affecting a city also potentially impacts a school district or utility within that city.

Local risk assessments need to be accurate, current, and relevant.

- The new plan noted that 74 drought events were reported by NOAA between 2006 and 2012. However, the U.S. Drought Monitor map included in the plan was dated June 2007. The outdated map must be updated. The map provided illustrates the worst recent drought, which took place in summer of 2007. The narrative has been updated to reflect this in order to clarify the purpose of the map. The drought assessment utilizes the most up to date data from 2006 to 2012.
- A landslide overview map dated 1982 was included in the plan. The outdated map must be updated. The landlside maps reflect the most recent data from the USGS provided by the National Atlas for geological conditions related to landslide incidence. The map captions have been updated to reflect the source and date of the data and maps.
- The landslide incidence map and karst map that were included in the new plan are not dated. Any accompanying maps should contain legend keys and other relevant source data and dates so that they can be readily understood and deemed current. Date and source have been added to these maps.

The new plan did not describe the extent for landslide, lightning, and sinkholes. "Extent" is a measure of the magnitude or severity of potential hazard events – how bad can a single occurrence of the hazard be. Extent is not solely based on previous (historical) occurrences, but is an estimate of how bad could an event of the hazard be. Extent can be expressed in terms of scientific scales or quantitative measurements for a single event, such as cubic yards of earth moved, area shifted, or how far it shifted for landslide; lightning strikes per minute for lightning; and dimensions of hole for sinkhole. Section 4.3 and Table 4.3.1 have been updated to include extent of lightning, landslides, and land subsidence (sinkholes) in quantitative terms.

NOTE: The intent of Element B1 is to understand the potential and chronic hazards affecting all of the planning areas in order to identify which hazard risks are most significant and which jurisdictions or locations are most adversely affected.

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
B2: The new plan describes probability in terms of "major damage" in a given period of time. If general descriptors such as "major damage" are used, then they must be defined in the plan. Updated to include $100,000 threshold for "major damage". *For more information, please see "Element B: Hazard Identification and Risk Assessment", in the Local Mitigation Plan Review Guide, dated October 1, 2011, pages 18-21.*			
ELEMENT C. MITIGATION STRATEGY			
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Section 5.4 (pg. 89-92) Section 5.5 (p. 92--141) Pages 81 – 82		X
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	Section 4.1 (pg. 26-28) and Table 4.1.3	X	
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Section 5.2 (pg. 74-76) Section 5.3 (p. 76)	X	
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	Section 5.3 (pg. 76-89) and Section 5.5 (pg. 92-141).	X	
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	Section 5.5.2 (pg. 109-118) 6.3 (pg. 143). Page 92-141		X
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	Section 5.4 (pg 89-92) Section 6.3 (pg. 143).		X

ELEMENT C: REQUIRED REVISIONS

C1: The new plan noted, in general, that existing authority, policy, programs, and resources are very limited for most jurisdictions in the planning area. However, the plan did not describe each jurisdiction's existing capabilities. The plan must document each jurisdiction's existing authorities, policies, programs, and resources and its ability to expand on and improve these existing policies and programs.

Section 5.4 of the plan has been revised to include an assessment of each jurisdiction's authority, policy, programs, and resources for implementation. The narrative now reflects each jurisdiction's existing capabilities and ability to expand on these policies.

NOTE: The intent of Element C1 is to ensure that each jurisdiction evaluates its capabilities to accomplish hazard mitigation actions through existing mechanisms. This is especially useful for multi-jurisdictional plans where local capability varies widely.

C5: The new plan must demonstrate when prioritizing hazard mitigation actions that the local jurisdictions considered the benefits that would result from the hazard mitigation actions versus the cost of those actions. The requirement is met as long as the economic considerations are summarized in the plan as part of the community's analysis. However, the economic considerations of mitigation actions were not included as part of each community's analysis.

Section 5.5.2 has been revised to evaluate each mitigation action endorsed by each jurisdiction in terms of seven criteria of cost and benefit, including a weighted score for economic cost-benefit.

The new plan noted that, in all cases, timelines for implementation are immediate and intended to take place as soon as possible within the next 5 years, as opportunities for mitigating hazards become available. However, the plan did not identify the position, office, department, or agency responsible for implementing and administering mitigation actions for each jurisdiction.

Section 5.5.3 describes the personnel involved in the implementation of hazard mitigation actions for each jurisdiction. The narrative has been expanded to include all jurisdictions including those that are not traditional units of county or local municipal government that are plan participants. Appendix C lists the current name and contact information for the responsible personnel.

NOTE: The intent of Element C5 is to identify how the plan will directly lead to implementation of the hazard mitigation actions. As opportunities arise for actions or projects to be implemented, the responsible entity will be able to take action towards completion of the activities.

C6: The new plan did not identify the individual local planning mechanisms where hazard mitigation information and actions may be incorporated. A multi-jurisdictional plan must describe each participating jurisdiction's individual process for integrating hazard mitigation actions applicable to their community into other planning mechanisms.

Section 5.4 of the plan has been revised to include an assessment of each jurisdiction's local planning mechanisms and how hazard mitigation planning will be incorporated into other planning actions.

NOTE: The intent of Element C6 is to assist communities in capitalizing on all available mechanisms that they have at their disposal to accomplish hazard mitigation and reduce risk.

For more information, please see "Element C: Mitigation Strategy", in the Local Mitigation Plan Review Guide, dated October 1, 2011, pages 22-25.

ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Section 2.5 (pg. 6)		N/A
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Section 5.5.2 (pg. 96)		N/A
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Section 5.5.1 (pg. 83)		N/A
ELEMENT D: REQUIRED REVISIONS This is a new regional plan.			
ELEMENT E. PLAN ADOPTION			
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	Pending approval of draft Plan will be adopted upon FEMA approval		X
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	Pending approval of draft Plan will be adopted upon FEMA approval		X
ELEMENT E: REQUIRED REVISIONS E1: The Plan must include documentation of Plan adoption, usually a resolution by the governing body or other authority. E2: Each jurisdiction that is included in the Plan must have its governing body adopt the Plan prior to FEMA approval, even when a regional agency has the authority to prepare such Plans. At least one participating jurisdiction must formally adopt the Plan within one calendar year of FEMA's designation of the Plan as "Approvable Pending Adoption." *For additional information, please see Element E, Plan Adoption, in the 'Local Mitigation Plan Review Guide', October 1, 2011, Pages 28-29.*			
ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)			
F1.			
F2.			
ELEMENT F: REQUIRED REVISIONS			

SECTION 2:
PLAN ASSESSMENT

INSTRUCTIONS: The purpose of the Plan Assessment is to offer the local community more comprehensive feedback to the community on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA. The Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically RiskMAP and Hazard Mitigation Assistance programs. The Plan Assessment is divided into two sections:

1. Plan Strengths and Opportunities for Improvement
2. Resources for Implementing Your Approved Plan

Plan Strengths and Opportunities for Improvement is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item, and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature, and should be open-ended and to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

Resources for Implementing Your Approved Plan provides a place for FEMA to offer information, data sources and general suggestions on the overall plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

Plan Strengths

The Northwest Alabama Multi-jurisdictional Regional Plan was developed to incorporate the following counties: Colbert, Franklin, Marion and Winston Counties. This was due to the rural environment of these counties and to gain improved participation of the communities in the hazard mitigation planning process. Many of these communities did not previously participate in mitigation plans. Through new and inclusive outreach activities, the plan represents a better organization of their resources. The plan included numerous and diverse opportunities for the involvement of stakeholders, including, but not limited to, advertising in four local publications, posting to the Northwest Alabama Council of Local Governments website, and invitations by mail and e-mail and community assessment of their ricks to natural hazards. The county emergency management agencies (EMA), county commissions, local governments, and stakeholders were instrumental in the development of this re-organized plan. This increased the opportunities for a wide ranging and inclusive planning process. Examples of stakeholders were jurisdictions' housing authorities, Bevill State Community College, Northwest-Shoals Community College (several campuses), utility companies, school superintendents in each of the counties, and surrounding local governments and emergency management agencies. The FEMA review of this new plan recognized the concerted efforts for these counties to become more resilient and representative of the interests of the whole community concept. The plan documented how previous plans were reviewed for historical information for the development of mitigation strategies.

Supporting documentation of the planning process such as numerous sign-in sheets, e-mails, and public meeting notes were included in the plan.

Opportunity for Improvement

The plan lists the jurisdictions that participated in the plan as an attachment to the plan in Appendix B. It is recommended that a list of plan participants that seek approval of the plan be included in the body of the plan. It is also recommended that a listing of participants by county and jurisdiction be included for purposes of the next plan update to determine changes, deletions, or additions to the planning committee representing the counties and for future outreach initiatives. Personnel involved has been included in the body of the plan.

When including hyperlinks in the plan that include supplemental information to the plan, ensure that they are active (e. g. see February 13, 2014 letter to Colbert, Franklin, Marion and Winston counties). Include an active hyperlink in the February 13, 2014 letter. Links have been included that are active, where available.

Element B: Hazard Identification and Risk Assessment

Plan Strengths

The new Northwest Alabama regional plan used tables to document the area's risk to natural hazards that had impacted the counties and jurisdictions. These tables demonstrated and described the extent, probability, and impact of hazard events, and summarized the vulnerability for each jurisdiction. The plan also described vulnerability in terms of current land uses and future development trends, and the types, numbers, and potential dollar losses for existing vulnerable structures located in the identified hazard areas. These descriptions can be used when considering mitigation options and mitigation strategies for future building codes, ordinances and land use for future construction or funding for protection decisions.

The new regional plan included a description of the methodology used to prepare the vulnerability estimates. This information can be used as a guideline during the preparation of future plan updates as well as decisions for applications for community mitigation funding opportunities from various sources.

Opportunities for Improvement
Including photographs in the plan to document historic hazard events would be a good way to communicate risk on people and property to the public and help them understand potential impacts to the community based on past hazard events. Consider using new and other current data from the various websites. Use of national maps was available but it is expected that maps of the local planning area be integrated into the plan. There should be more information for each county that was available from previous plans. This information would greatly improve the quality of the new plan and also be helpful to new members of the planning committee. In an effort to be brief, this information was limited in scope and it is recommended that in the five year life cycle of this plan, efforts to gather better quality information should be considered.

As Risk MAP products such as depth grids, Flood Risk Reports, Changes Since Last FIRM, and Areas of Mitigation Interests become more available, consider using these projects and incorporating them into the next update. This information can be used when considering mitigation options in future land use decisions.

Element C: Mitigation Strategy

Plan Strengths
The new regional plan included a comprehensive listing of mitigation actions for each identified hazard and each jurisdiction. Each jurisdiction reviewed a comprehensive range of hazard mitigation strategies prior to developing an action plan for mitigation activities to be attempted in the future. A summary of the strategies reviewed was included in the new plan. The selected mitigation strategies served as a blueprint for reducing potential losses and reflect an understanding of mitigation principles.

Opportunities for Improvement:
Provide a detail of previous strategies from the previous plans and discuss how these were incorporated into the new plan. Some of these strategies may still be valid and it would be a starting point to determine what has worked and needs to be included for future considerations of making the counties more resilient. All prior strategies were reviewed and integrated into the proposed new regional plan (see sec. 3.5). Current and ongoing activities were reviewed for each jurisdiction (Sec 5.5.3).

Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*)

This is a new regional plan.

B. Resources for Implementing Your Approved Plan

Please refer to the following information for resources that can be of benefit in updating the Plan:

Local Mitigation Planning Handbook

This Handbook provides guidance to local governments on developing or updating hazard mitigation plans to meet the requirements under the Code of Federal Regulations (CFR) Title 44 – Emergency Management and Assistance §201.6.
http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=7209

Integrating Mitigation Strategies with Local Planning

This resource provides practical guidance on how to incorporate risk reduction strategies into existing local Plans, policies, codes, and programs that guide community development or redevelopment patterns.
http://www.fema.gov/library/viewRecord.do?id=7130

Risk Mapping, Assessment, and Planning (Risk MAP)

Risk MAP is the Federal Emergency Management Agency (FEMA) Program that provides communities with flood information and tools they can use to enhance their mitigation Plans and take action to better protect their citizens. Through more precise flood mapping products, risk assessment tools, and planning and outreach support, Risk MAP strengthens local ability to make informed decisions about reducing risk.
http://www.fema.gov/risk-mapping-assessment-Planning

Mitigation Ideas

Communities can use this resource to identify and evaluate a range of potential mitigation actions for reducing risk to natural hazards and disasters.
http://www.fema.gov/media-library/assets/documents/30627?id=6938

SECTION 3:
MULTI-JURISDICTION SUMMARY SHEET (OPTIONAL)

INSTRUCTIONS: For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were 'Met' or 'Not Met,' and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

MULTI-JURISDICTION SUMMARY SHEET													
#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Require-ments
1	Colbert County	County					N	N	N	N/A	N	
2	Cherokee	Municipality					N	N	N	N/A	N	
3	Leighton	Municipality					N	N	N	N/A	N	
4	Littleville	Municipality					N	N	N	N/A	N	
5	Muscle Shoals	Municipality					N	N	N	N/A	N	
6	Sheffield	Municipality					N	N	N	N/A	N	
7	Tuscumbia	Municipality					N	N	N	N/A	N	
8	Franklin County	County					N	N	N	N/A	N	
9	Hodges	Municipality					N	N	N	N/A	N	

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Require-ments
10	Phil Campbell	Municipality					N	N	N	N/A	N	
11	Red Bay	Municipality					N	N	N	N/A	N	
12	Russellville	Municipality					N	N	N	N/A	N	
13	Vina	Municipality					N	N	N	N/A	N	
14	Marion County	County					N	N	N	N/A	N	
15	Bear Creek	Municipality					N	N	N	N/A	N	
16	Brilliant	Municipality					N	N	N	N/A	N	
17	Guin	Municipality					N	N	N	N/A	N	
18	Gu-Win	Municipality					N	N	N	N/A	N	
19	Hackleburg	Municipality					N	N	N	N/A	N	
20	Hamilton	Municipality					N	N	N	N/A	N	
21	Twin	Municipality					N	N	N	N/A	N	
22	Winfield	Municipality					N	N	N	N/A	N	
23	Winston County	County					N	N	N	N/A	N	

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Require-ments
24	Addison	Municipality					N	N	N	N/A	N	
25	Arley	Municipality					N	N	N	N/A	N	
26	Double Springs	Municipality					N	N	N	N/A	N	
27	Haleyville	Municipality					N	N	N	N/A	N	
28	Lynn	Municipality					N	N	N	N/A	N	
29	Natural Bridge	Municipality					N	N	N	N/A	N	
30	Phil Campbell Water Works and Sewer Board	Utility Board					N	N	N	N/A	N	
31	Cherokee Waterworks and Gas Board	Utility Board					N	N	N	N/A	N	
32	Bear Creek Water Works	Utility Board					N	N	N	N/A	N	
33	Guin Water and Sewer Board	Utility Board					N	N	N	N/A	N	
34	Twin Water Authority	Utility Board					N	N	N	N/A	N	
35	Winston County Schools	School Board					N	N	N	N/A	N	

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Require-ments
36	Sheffield Utilities	Utility Board					N	N	N	N/A	N	
37	Russellville City Schools	School Board					N	N	N	N/A	N	
38	Colbert County School System	School Board					N	N	N	N/A	N	
39	Muscle Shoals City Schools	School Board					N	N	N	N/A	N	
40	Sheffield City School System	School Board					N	N	N	N/A	N	
41	Tuscumbia City Schools	School Board					N	N	N	N/A	N	
42	Franklin County Water Authority	Utility Board					N	N	N	N/A	N	
43	Franklin County Schools	School Board					N	N	N	N/A	N	

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Section 1 – Hazard Mitigation Plan Background

Section Contents

1.1 Introduction

The Northwest Alabama Multi-Jurisdictional Hazard Mitigation Plan is a multi-jurisdictional plan that details natural hazards that threaten local jurisdictions in several northwest Alabama, specifically Colbert, Franklin, Marion and Winston counties and the municipalities and other jurisdictions found therein. This plan fulfills the requirements set forth by the Disaster Mitigation Act of 2000 (DMA 2000). DMA 2000 requires jurisdictions to create a hazard mitigation plan in order to be eligible for mitigation grants made available by the Federal Emergency Management Agency (FEMA).

Although the northwest Alabama region is diverse in terms of development and physical geography, the hazard profiles of the counties are very similar. Counties with higher population may face greater vulnerability, but the risk of impact is largely the same. Communities in each county must contend with localized threats from flooding, wildfire or landslides as well as those events with no geographic limitations such as winter storms and tornadoes. Likewise, the goals and mitigation strategies of urban and rural areas have not differed greatly. Additionally, the local emergency management agencies of the counties in the region have responsibility for both urban and rural areas of varying population density. Whether an urbanized county or a rural one: the hazard and risk profiles and mitigation techniques are very similar for each community across the region. Due to these similarities, a multi-jurisdictional approach has significant advantages for hazard mitigation planning processes, local mitigation strategies, and plan implementation.

1.2 Authority

Section 409 of the Robert T. Stafford Disaster Relief and Emergency Management Assistance Act (Public Law 93-228, as amended), Title 44 Code of Federal Regulations, as

amended by Part 201 of the Disaster Mitigation Act of 2000, requires that all state and local jurisdictions develop a hazard mitigation plan as a condition of receiving federal disaster assistance. These plans must be approved by FEMA and updated every five years.

1.3 Funding

Funding for the Northwest Alabama Multi-Jurisdictional Hazard Mitigation Plan was made available through the Hazard Mitigation Grant Program (HMGP), under the President's Disaster Recovery Declaration 1971 (DR 1971). Supplemental funding was supplied by the county commissions of Colbert County, Franklin County, Marion County, and Winston County, and the Northwest Alabama Council of Local Governments.

1.4 Scope

The Northwest Alabama Multi-Jurisdictional Hazard Mitigation Plan is a mitigation framework for all incorporated and unincorporated counties in the multi-jurisdictional planning area of Northwest Alabama, which includes Colbert, Franklin, Marion, and Winston Counties. The plan addresses all natural hazards that are identified by FEMA, and hazards that may affect the northwest Alabama region are analyzed for all jurisdictions. Short and long term goals for mitigation are developed for Colbert, Franklin, Marion, and Winston Counties and mitigation strategies are identified for participating jurisdictions. Responsibility for implementation of strategies is discussed and possible funding sources are identified.

1.5 Purpose

The Northwest Alabama Multi-Jurisdictional Hazard Mitigation Plan is an effort to evaluate and identify all natural hazards which may affect the region. It presents mitigation strategies that address the hazards identified and is one of many steps that local jurisdictions will take to provide a safer environment for residents.

Section 2 – Northwest Alabama Regional Profile

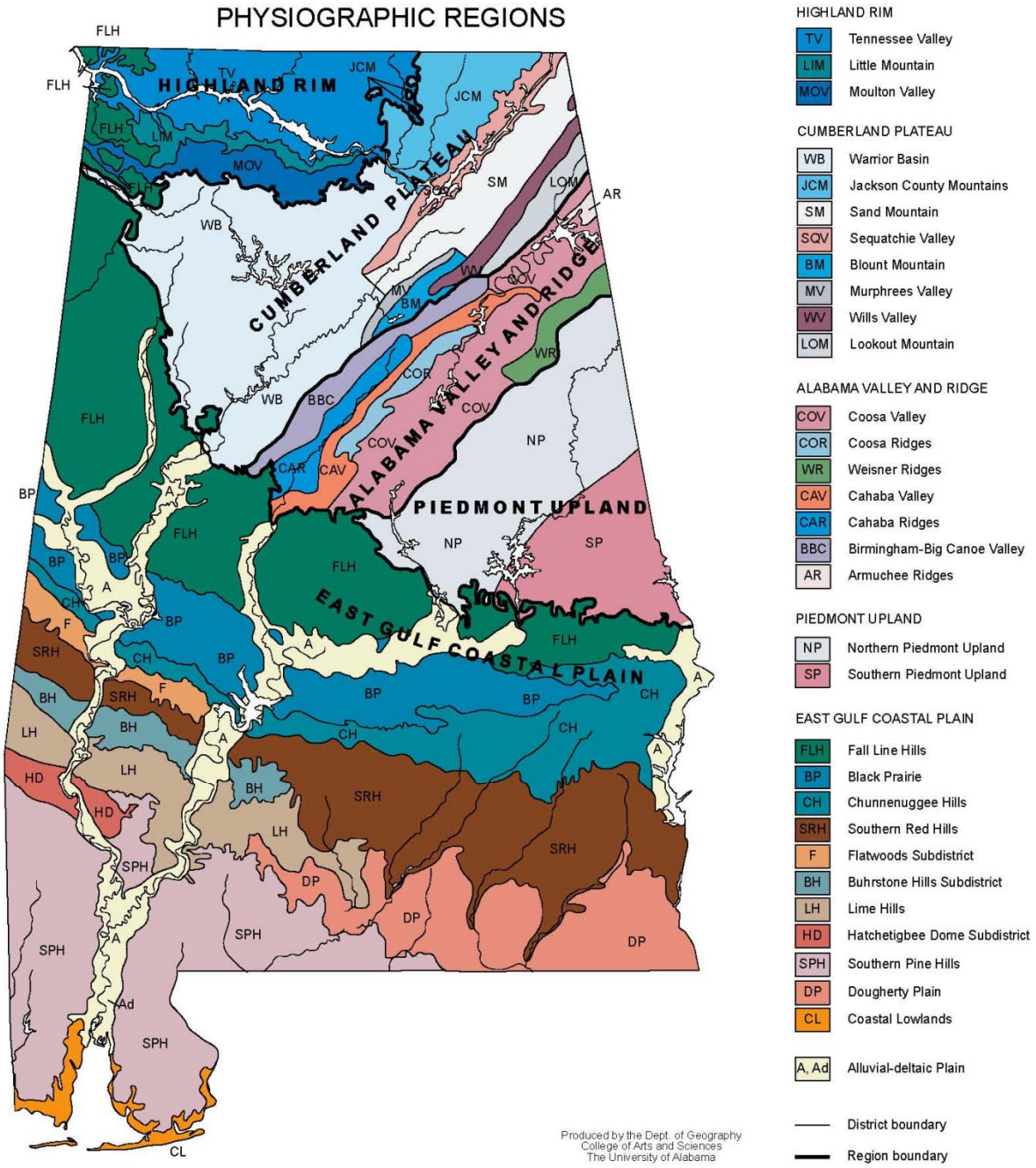
Section Contents

2.1 Geology

Geology describes the rock formations that are essential to the characteristics of a place. Geology is a central feature in determining the types and quantities of soils in an area, the topography of the location, and the amount of ground and surface water. In turn, these factors influence the geology of the location, as they affect changes in the structure of rock formations. The State of Alabama is divided into five geologic provinces- the Coastal Plan, Piedmont, Valley and Range, Cumberland Plateau, and Highland Rim. These provinces are determined by the characteristics of their underlying rock formations such as rock types, geologic structure, physiography and water bearing properties.

Most of Colbert County is located in the Highland Rim province, but areas northwest and southwest in these counties are in the Eastern Coastal Plain province. The Highland Rim is characterized by Mississippian era limestone, which is subject to dissolution potentially creating cracks, fissures and sinkholes. Franklin County is divided between three provinces, the Highland Plain in the northeast, and Cumberland Plateau and East Gulf Coastal Plain. The underlying limestone of the Highland Plain is susceptible to dissolution. Marion County is divided between East Gulf Coastal Plain in the west and Cumberland Plateau in the east. Winston County rests entirely within the Cumberland Plateau. Geologic conditions and drainage patterns largely

determine susceptibility to sinkholes.



2.2 Transportation

Northwest Alabama is connected to the rest of the State, the Southeastern United States, and the nation by a series of major roadways. The transportation network centers on the system of highway connections to the nation's interstate highway system. Interstate 22 crosses diagonally east to west from Birmingham to Olive Branch, Mississippi southeast of Memphis. Interstate 65 runs east of the region north to south and is connected to the region by I-22 in Birmingham (an interchange that is under construction) and Highway 157 from the Shoals to Cullman, Alabama. Highway 72 is another important route, entering the state in from Mississippi at the Colbert County line and continuing north across the Tennessee River in the Shoals before travelling east to Athens and I-65. U.S. Highway 43 is a major north to south connection between the Tennessee state line and the Marion County line in Winfield. Highway 43 touches on more communities in northwest Alabama than any other highway. Meanwhile, smaller highways cross it east to west or branch off to form major collectors and rural arterials. These include Highway 13, which connects Phil Campbell to Haleyville to I-22 in Walker County and Highway 278 from Hamilton to Double Springs and I-65.

The region is also home to several airports. The Muscle Shoals Regional Airport is the largest airport and the only one to offer commercial flights daily. Hamilton, Russellville, and Haleyville each have airports offering hangar service and private flights. Several private airports and landing strips are also found in the region.

Railroads carrying freight across the region traverse north and south as well as east and west. A Norfolk Southern line enters Colbert County from Mississippi parallel to the Tennessee River and continues east through the Shoals, where it branches south and eventually connects to Birmingham, and east to Decatur, where it branches north and south, east and west. The north-south Norfolk Southern line from the Shoals travels through each county of the region before merging into an east-west line of the Burlington Santa Fe Railroad and connecting to Birmingham. The Burlington Santa Fe Railroad enters the state in Lamar County and sweeps through the southern edge of Marion County near Guin and Winfield. Finally, minor lines serve the Port of Florence (Tennessee Southern Railroad) and the City of Red Bay (Belmont Railroad). The region lacks passenger rail transportation.

2.3 Social and Economic Characteristics

Although the region is interconnected, the population and economy is best described at the county level. The total population for the region is approximately 141,000 people. Population by jurisdiction is provided in Section 4, Table 4.7.2. The majority of regional employment is found in manufacturing, educational services, health services, and social assistance, and retail trade. Most residents, over 80% in each county, had resided in the same county in the region for at least one year. Median family incomes ranged from about $31,000 to $37,000 per family. Around 16% of each counties' families were below poverty level. Among residents over 25 years of age, high school dropout rates ranged from 17.4% to 29.4% in counties of the region.

2.4 Utilities

Utility service in northwest Alabama varies by location in urban and rural areas of the region. Each county has complete utility coverage in one or more incorporated areas, however, coverage varies in smaller towns and rural areas. Electricity and telephone service are close to universally available, followed by water service, which is provided to all but the most remote rural areas. Sewer is available in most incorporated areas, although several are lacking centralized wastewater collection and treatment. Natural gas is likewise available in most incorporated towns and their near vicinity, but its availability is more limited beyond. Internet and wireless telephone service are limited in the rural areas of the region.

2.5 Current and Future Development Trends

Northwest Alabama is made of three general categories of land use- 1) cities and towns of varying sizes, 2) sparsely settle low mountains and hills, and 3) flat to moderately rolling acreages. First, there are urban areas that range from moderately dense to very small town. The largest of these is in Colbert County, where the cities of Muscle Shoals, Tuscumbia, and Sheffield make up part of the urban area that, along with the City of Florence to the north in Lauderdale County, are known as the Shoals Metropolitan Area. These three cities in Colbert County account for approximately 30,000 of the northwest Alabama region's total population of 141,000 residents. Outside of the Shoals, there are central cities of greater than 5,000 population. The cities of Russellville and Hamilton fall into this category of small cities. Ten smaller cities with populations from 1,000 to 5,000 are located throughout the region: Cherokee, Littleville, Phil Campbell, Red Bay, Bear Creek, Guin, Hackleburg, Winfield, Double Springs, and Haleyville. Small towns with less than 1,000 population are the equally numerous in the region,

with 10 towns including Leighton, Hodges, Vina, Brilliant, Gu-Win, Twin, Addison, Arley, Lynn, and Natural Bridge. These cities have a mix of residential, commercial and industrial uses. Those located nearest to major transportation infrastructure have witnessed the greatest growth in industry, while those farther removed have struggled to retain businesses and industries. Population growth in the region is uneven; between 2000 and 2010 Censuses regional growth varied greatly but overall growth rates were slight (+/- 1.5%).

Colbert County is bordered by the Tennessee River and is crossed by two of the region's major highways. The major east-west highway, US Highway 72, passes through Muscle Shoals, connecting to Huntsville and Memphis and points beyond. Colbert County is the most populous county of the region and has the largest urbanized area. However, there are still largely rural areas, including flat to rolling agricultural parcels and low mountains and hills. These are each sparsely developed. Most of the populous lives in the urban cluster that is made up of Sheffield, Tuscumbia, and Muscle Shoals, which forms half of the Shoals Metropolitan Area. These three cities each have the typical small city mix of residential (mostly single family detached), commercial, institutional and industrial uses. Tuscumbia and Sheffield are now predominantly residential, with only light commercial and little industrial use. Muscle Shoals is a developing middle income city with a growing commercial and industrial sector and some older heavy industries. The northwest Alabama regional airport is located immediately east of Muscle Shoals, adjacent to a growing industrial park. The mountains and hills in the southwestern part of the county comprise close to one-fourth of the total land area. Aside from scattered single-family homes and a few small lumber-related enterprises, this quadrant of the county is mostly undeveloped. A wildlife management area occupies much of this area. In eastern Colbert from immediately south of the Tennessee River to the foothills of south of SR 157 lie thousands of acres of old river bottomlands that for two centuries have been highly productive cotton, soybean and cattle farms. Many are still in large agricultural tracts. The small town of Leighton is located in this section. Other than the slow growth of the urban cluster, which expands by 1-2% each decade, development patterns have changed little in the past 30 years.

Franklin County is predominantly rural, with the City of Russellville being the only place with a population over 5,000. Russellville is the largest city and county seat and is located at the intersection the county's two major highways, Alabama 24 and U.S. Highway 43. Two smaller communities are located at major highway linkages in the county. Red Bay is located on

Alabama 24 to the west, and Phil Campbell is located on Highway 43 to the south. Hodges and Vina are more remotely located in the southern-central section of the county. The predominant land uses are agriculture and woodlands, which provide as much as 90% of the land cover. In the 1960s the Tennessee Valley Authority created a series of lakes, now managed as a public resource by the Bear Creek Development Authority. Economic activities are centered in Russellville, Red Bay, and about 10 miles east of Russellville where a poultry processing plant employs almost 2,000 people. Like other predominantly rural counties in Alabama, there is sporadic residential development throughout, primarily along the major highway routes such as US 43 and AL 24, which is being improved to four lanes and bisects the county, running east and west. Future land development will probably follow the established pattern of relatively slow growth. Most economic development is likely to occur adjacent to major highways in Russellville, Red Bay, and Phil Campbell. The Town of Phil Campbell and the unincorporated community of East Franklin were struck by tornadoes on April 27, 2011 and are struggling to regain vitality in the post-disaster recovery process. The Town of Hodges has developed over 25 miles of recreational trails and has recently begun heavy promotions to attract outdoor recreation to the county.

Marion County is a predominantly rural county, but it has more urban potential than many counties of similar size in Alabama. A substantial portion of the population of Marion County is located within the three largest cities of Hamilton, Winfield, and Guin. These are found along the county's traditional highway corridor, U.S. Highway 43. In addition, the recent opening of a new interstate through Marion County offers significant potential for each of the communities adjacent to it, which includes Hamilton, Guin, Brilliant, and Winfield. Proximity to the interstate will likely improve growth opportunities for other towns in southern Marion County as well. The county has suffered significant economic losses over the past two decades, with a once strong manufacturing base declining significantly. Manufactured housing struggles to remain viable in Marion County, while textiles have largely disappeared from the county. The county also has a long history of coal mining centered around the Town of Brilliant. Much of the county is rural and mountainous with sporadic residential and agricultural land uses. The unincorporated community of Shottsville and the Town of Hackleburg were hard hit by the April 27, 2011 tornadoes and are now struggling to recover.

Winston County is among the most rural counties in Alabama. It is the smallest and least populous county of the northwest Alabama region. The largest category of land use in Winston County is forestland, which is primarily located in the Bankhead National Forest, which encompasses close to half of the county's land area. The largest city in Winston County is Haleyville, which has about seventeen percent of the county's total population. Haleyville was struck by the tornadoes of April 27, 2011 and lost a number of houses and businesses as a result. Haleyville's recovery efforts continue. Most of the county's industry and commerce are centered on Haleyville. However, the Winston County Cooperative District Industrial Park, located south of Lynn on Highway 13, is prepared to receive future industrial growth. Smith Lake is located in southeastern Winston County and provides recreation and residential development along the lakefront. This area is expected to grow in coming years as a result of lakefront development. In keeping with recent countywide trends, however, growth rates are expected to be slight for Winston County as a whole.

Section 3 – Planning Process

Section Contents

3.1 Multi-Jurisdictional Plan Adoption

Participating jurisdictions will adopt the plan when it is deemed "approvable pending adoption" by the Alabama Emergency Management Agency (AEMA). Eligible jurisdictions include local governing bodies such as elected city councils, county commissions, school districts, and utility boards.

3.2 Multi-Jurisdictional Plan Participation[1]

Each eligible local jurisdiction in Colbert, Franklin, Marion, and Winston Counties participated in the development of the plan. Participants included local governments as well as local school boards and public utilities with separately elected or appointed governing boards. These were largely absent from past county-level hazard mitigation plans and were involved in the updated hazard mitigation planning process. Assessments were distributed to the participant stakeholders along with requests for feedback identifying hazards, risks, vulnerabilities, and strategies. A list of targeted stakeholders and plan participants is included in Appendix A. Each participating jurisdiction was represented by personnel that performed a variety of functions including review of the plan at various stages during its drafting, attending meetings and updates on plan progress and contents, and providing feedback, comments, and consultation during the plan's drafting stages. The following table summarizes the jurisdictions involved, the representatives of each jurisdiction involved in the plan, and the means by which the jurisdictions were involved. Throughout the plan, threats are assessed at the community level for each jurisdiction such that hazards affecting a local governmental jurisdiction are considered to have an equal impact or potential impact on other jurisdictions located in that community, e.g. a

[1] This section has been thoroughly reviewed and modified to describe plan participation for each jurisdiction.

hazard affecting a particular city is assumed to have similar impact on school systems and utilities located in that community.

Jurisdiction?	Who was involved?	Position or title?	Agency?	How were they involved? Reviewed Plan	Attended meetings	Provided written comments	Provided concurre-nce/POC form
Addison	Marsha Pigg	Mayor	Town of Addison	X			X
Arley	Christopher Tyree	Mayor	Town of Arley	X			X
Arley	Tammi Farley	Town Clerk	Town of Arley	X			X
Bear Creek	Connie Morrison	Mayor	City of Bear Creek	X	X		
Bear Creek Water	Connie Morrison	Mayor	Bear Creek Water	X			
Bear Creek Water	Robert Taylor	Manager	Bear Creek Water	X		X	X
Brilliant	Perry Franks	Mayor	City of Brilliant	X			
Cherokee	Terry Cosby	Mayor	Town of Cherokee	X			X
Cherokee Water Works and Gas Board	Anna Glover	Chairman	Cherokee Water Works and Gas Board	X			X
Colbert County	Mike Melton	Director	Colbert County Commission/E MA	X	X	X	
Colbert County	Lance Young	Assistant Director	Colbert County Commission/E MA	X	X	X	
Colbert County	Lawrence Huffman	Grant Manager	Colbert County Commission/E MA	X	X		
Colbert County	Emmitt Jamar	Chairman	Colbert County Commission	X	X		
Colbert County	John Bedford	County Engineer	Colbert County Commission	X			X

Colbert County Schools	Mr. Anthony Jay Olivis	Superintendent	Colbert County Schools	X		X	X
Double Springs	Elmo Robinson	Mayor	City of Double Springs	X	X		
Franklin County	Roy Gober	Director	Franklin County Commission/EMA	X	X	X	
Franklin County	Barry Moore	Chairman/Judge	Franklin County Commission	X	X		
Franklin County	Crista Madden	County Administrator	Franklin County Commission		X		
Franklin County	Mandi Willis	Human Resources Director	Franklin County Commission		X		
Franklin County	Leah Mansell	Accountant	Franklin County Commission		X		
Franklin County	Frank Cohen	IT Director	Franklin County Commission		X		
Franklin County	Michael Hughes	GIS Coordinator	Franklin County Commission		X		
Franklin County	Phillip Wilson	Solid Waste Director	Franklin County Commission		X		
Franklin County	Jessica Thompson	Accountant	Franklin County Commission		X		
Franklin County	Rayburn Massey	Commissioner	Franklin County Commission		X		
Franklin County Schools	Mr. Gary Williams	Superintendent	Franklin County Schools	X	X		
Franklin County Schools	Mr. Donald Borden	Assistant Superintendent	Franklin County Schools		X		
Franklin County Water	Roy Gober	Board Member	Franklin County Water	X			X
Franklin County Water	Beverly Scott Hargett	Franklin County Water Service Authority	Franklin County Water	X			X

Guin	Phil Segraves	Mayor	City of Guin	X	X		
Guin	Philip Garrison	Councilman	City of Guin				
Guin Water	Tommy Aston	Director/Manager	Guin Water	X			X
Gu-Win	Brandon Webster	Mayor	Town of Gu-Win	X			X
Hackleburg	Waymon "Whitey" Cochran	Mayor	City of Hackleburg	X			X
Haleyville	Ken Sunseri	Mayor	City of Haleyville	X	X		
Haleyville City Schools	Dr. Alan Miller	Superintendent	Haleyville City Schools	X			
Hamilton	Wade Williams	Mayor	City of Hamilton	X	X		
Hodges	Ed Crouch	Mayor	Town of Hodges	X	X		
Hodges	Mike Franklin	Police Chief	Town of Hodges	X			X
Leighton	John Landers	Mayor	Town of Leighton	X	X		
Littleville	Kenneth Copeland	Mayor	City of Littleville	X			
Littleville	Ronald Barry	Councilman	City of Littleville		X		
Lynn	Jeff Stokes	Mayor	Town of Lynn	X			X
Marion County	Jimmy Mills	Director	Marion County Commission/EMA	X	X	X	
Marion County	Erica Warren	911 Coordinator	Marion County Commission/EMA		X		
Marion County	Don Barnwell	Chairman	Marion County Commission	X	X		
Marion County	Kevin williams	Sherriff	Marion County Sherriff's Department		X		
Marion County Schools	Mr. Ryan Hollingsworth	Superintendent	Marion County Schools	X			
Muscle Shoals	Bill Howard	City Planner	City of Muscle Shoals	X	X		

Muscle Shoals City Schools	Dr. Brian Lindsey	Superintendent	Muscle Shoals City Schools	X			X
Natural Bridge	Pete Parrish	Mayor	Town of Natural Bridge	X			X
Northwest Alabama Council of Local Governments	Keith Jones	Executive Director	NACOLG		X		
Northwest Alabama Council of Local Governments	Nathan Willingham	Director of Planning	NACOLG	X	X	X	
Northwest Alabama Council of Local Governments	Beau Cooper	GIS Coordinator	NACOLG	X	X	X	
Phil Campbell	Steve Bell	Mayor	City of Phil Campbell	X			X
Phil Campbell Water	Darren Stewart	Superintendent	Phil Campbell Water	X			X
Red Bay	Mike Shewbart	Operations Manager	City of Red Bay	X	X		
Russellville	Chris Hargett	Chief	Russellville Police	X	X		
Russellville	Joe Mansell	Manager	Russellville Fire Department		X		
Russellville	John Harris	Emergency Manager	City of Russellville		X		
Russellville City Schools	Mr. Rex Mayfield	Superintendent	Russellville City Schools	X			X
Sheffield	Ian Sanford	Mayor	City of Sheffield	X	X		
Sheffield City Schools	Dr. Timothy J. Morgan	Superintendent	Sheffield City Schools	X			X
Tuscumbia	Bill Shoemaker	Mayor	City of Tuscumbia	X	X		
Tuscumbia City Schools	Mrs. Mary Kate Smith	Superintendent	Tuscumbia City Schools	X			X
Twin	Charles Baccus	Mayor	Town of Twin	X			X
Twin Water Authority	Jim Hollis	Director/Manager	Twin Water Authority	X			X
Vina	D.W. Franklin	Mayor	Town of Vina	X			

Winfield	Randy Price	Mayor	City of Winfield	X	X		
Winfield	Mike Watkins	Park Director	City of Winfield		X		
Winfield City Schools	Dr. James Keith Davis	Superintendent	Winfield City Schools	X			
Winston County	James Burnett	Director	Winston County Commission/EMA	X	X	X	
Winston County	Roger Hayes	Chairman	Winston County Commission	X			
Winston County Schools	Mr. Gregory Pendley	Superintendent	Winston County Schools	X			X
Winston County Schools	Mr. Danny Springer	Assistant superintendent	Winston County Schools	X			X

3.3 Hazard Mitigation Planning Process

The Northwest Alabama Multi-Jurisdictional Hazard Mitigation Plan was developed through cooperation of the Colbert County Emergency Management Agency (EMA), Franklin County EMA, Marion County EMA, and Winston County EMA, the county commissions and local governments of these counties, local school districts, local utility boards, and the Northwest Alabama Council of Local Governments (NACOLG). Stakeholders participated and helped facilitate the planning process by

- Attending meetings,
- Representing interests of their sponsoring entity and jurisdiction,
- Collecting and reviewing information on their jurisdiction's conditions and resources,
- Facilitating the development of a comprehensive range of mitigation alternatives
- Recommending selected alternatives for action, and
- Facilitating information exchange among participating jurisdictions, acting as liaisons to eligible entities of each jurisdiction.

The Northwest Alabama Council of Local Governments (NACOLG) facilitated the planning process. Threatening natural hazards were identified from previous county-level plans and presented to stakeholders and participating jurisdictions for review and approval. Hazard

profiles for these hazards were updated to reflect the most current information available regarding the frequency and intensity of events. Risk analysis was conducted using historical data estimates of magnitude and extent of damage from events. Results were presented to stakeholders and participating jurisdictions in print format, electronically and in hard copy, and were reviewed in a series of local meetings. Meetings were held periodically throughout the planning process. Documentation of public meetings and stakeholder involvement is provided in Appendix B.

3.4 Public and Other Stakeholder Involvement[2]

Eight local public hearings were held during the planning process as the plan was developed. Each meeting was advertised in the local newspaper, and public involvement was encouraged at each meeting. Meetings were advertised in local publications throughout the region, including *The Colbert County Reporter*, *The Franklin County Times*, *The Marion County Journal Record*, and *The Northwest Alabamian*. In addition, a draft of the plan was advertised for public comment and posted to the website of the Northwest Alabama Council of Local Governments on January 15, 2014. Public comments were invited by email, fax, or mail. Neighboring EMAs were contacted by email or by mail to request comments and participation in the plan. Copies of the final version of the plan were placed in town halls, county commission offices, public libraries, and public utility offices throughout the region. Electronic copies of the final draft version were sent to Chambers of Commerce.

On January 15, 2014, *The Franklin County Times* published notice of a public hearing to occur on January 22, 2014. Nineteen stakeholders and members of the public were in attendance. On January 15, 2014, T*he Northwest Alabamian* advertised a public hearing to take place on January 28, 2014 to provide an opportunity for public review and comment of the plan while it was being drafted. Only 3 individuals attended the meeting, which was held at the Double Springs Municipal Building in Winston County. On January 15, 2014, *The Marion County Journal Record* carried an advertisement for a public hearing to take place on January 29, 2014 to afford opportunity for public comment on the plan's contents and mitigation strategies. Four individuals were in attendance at this meeting. On January 24, 2014, *The Colbert County Reporter* provided notice of a public hearing to occur on January 31, 2014, which was attended by four individuals. Following this series of public hearings to receive comments, a second round

[2] This section has been thoroughly reviewed and modified to describe opportunities for public involvement during the planning process prior to the final plan approval.

of public hearings was announced in each local paper on February 12, 2014, which took place between February 19 and February 21, 2014. These eight hearings, advertised in local papers with circulation throughout the participating jurisdictions, afforded opportunity for public participation throughout the planning process, during the drafting stages of the plan, and prior to adoption.

A final series of public hearings was conducted _____, following review of the plan by Alabama Emergency Management Agency and the Federal Emergency Management Agency to review the final draft version of the plan prior to adoption by local jurisdictions. Public comments were solicited at this time, prior to final plan adoption.

3.5 Integration with Existing Plans

Existing plans were consulted in order to integrate the results into the hazard profiles and planning process of the Northwest Alabama Multi-Jurisdictional Hazard Mitigation Plan. Plans that were consulted included:

- Previously adopted local hazard mitigation plans, which are to be superseded by this regional multi-jurisdictional plan
- Alabama State Hazard Mitigation Plan (2010)
- Colbert County Threat Hazard Identification and Risk Assessment (2013 Update)
- Alabama Forestry Commission Fire Readiness Plans
- Alabama Drought Management Plan (May 22, 2013)
- In addition, the plans and resources described in Table 4.1.1 below were incorporated throughout.

Section 4 – Risk Assessment

Section Contents

4.1 Hazard Identification and Description[3]

Northwest Alabama is susceptible to various natural hazards to varying degrees. These natural hazards were identified through the hazard mitigation planning process through input from stakeholders, assessments of local jurisdictions, empirical data from historic records, and research into the geographic location of natural hazards in the participating jurisdictions. This information was used to analyze the risk factors for communities in the region from various natural hazards, assess the extent of damage potential from various natural hazards, and determine the probability of future events and potential losses from such events.

Northwest Alabama is susceptible to a variety of natural hazards throughout the year due to its geographic location. The region is vulnerable to some degree to twelve natural hazards that are included in this plan and the Alabama State Hazard Mitigation Plan. Natural hazards that do not have applicability to northwest Alabama include avalanche, coastal erosion, tsunamis, and volcanoes. Although northwest Alabama has little direct impact from hurricanes and coastal storms, the region suffers effects as these storms move inland and produce severe thunderstorm and wind events; therefore, without dismissing the potential impact of hurricanes, the impact of these storms assessed and planned for mitigation in the plan under the categories of severe storm effects (hail, high winds, flooding, lightening, etc.). The natural hazards that potentially affect northwest Alabama include the following:

[3] This section has been thoroughly reviewed and modified to include a list of each jurisdiction affected by each hazard.

- **Dam Failure**
- **Drought**
- **Earthquake**
- **Extreme Temperatures**
- **Flooding (Riverine and Flash)**
- **Hail**
- **High Winds (Tornadoes, Microburst, and Windstorms)**
- **Landslides**
- **Land Subsidence (Sinkholes)**
- **Lightening**
- **Wildfire**
- **Winter Storms**

Since many of these hazards are interrelated, some are grouped for data collection and presentation purposes. For example, High Winds are the combined impact of Hurricanes, Tornadoes, and Windstorms, which require similar preparation and mitigation techniques. General descriptions and historical occurrences of each natural hazard provide a hazard profile of each, which is important for understanding the risk and vulnerability of populations and properties to natural hazards. Additionally, since different hazards affect different geographic areas, with some presenting a consistent regional threat and others creating risk only to a local area, the hazards are assed at different scales. For those with broad geographic risk, historical occurrences are aggregated across the region. For those threats with localized geographic risk, historical occurrences are examined in a local context. Table 4.1.1 shows each hazard identified and assessed in the hazard mitigation plan, provides planning resources incorporated into the plan and used to assess the threat, describes the nature of the threat and why it was examined, and describes the scale at which each hazard was assessed as a threat to life and property. Table 4.7.3 displays an approximate land area of each jurisdiction that is vulnerable to each hazard shown as having a local scale; descriptions of the location affected are also included in the hazard descriptions that follow.

Table 4.1.1 Northwest Alabama Hazards and Data Sources for Incorporation

Hazard	Source Used to Identify Hazard	Why Hazard was Identified	Scale Assessed
Dam Failure	USACE National Inventory of Dams (http://geo.usace.army.mil/pgis/f?p=397:3:0::NO::P3_STATES:AL), State Hazard Mitigation Plan, AEMA (Sept. 2010; http://ema.alabama.gov/filelibrary/AL%20Standard%20State%20Mitigation%20Plan.pdf)	Vulnerable populations and structures below dams; flooding concerns	Local
Drought	NOAA National Climate Data Center (http://www.ncdc.noaa.gov/stormevents/)	Historic record of damage	Region
Earthquake	USGA 2009 earthquake Probability Mapping (https://geohazards.usgs.gov/eqprob/2009/index.php); USGS Geologic Hazards Science Center (https://geohazards.usgs.gov/hazards/apps/cmaps/)	Proximity to New Madrid and Southern Appalachian Seismic Zones	Region
Extreme Cold	NOAA National Climate Data Center (http://www.ncdc.noaa.gov/stormevents/)	Historic record of damage	Region
Extreme Heat	NOAA National Climate Data Center (http://www.ncdc.noaa.gov/stormevents/)	Historic record of damage	Region
Flooding	NOAA National Climate Data Center (http://www.ncdc.noaa.gov/stormevents/); ADECA Severe Repetitive Loss Records, FEMA Flood Hazard Maps	Historic record of damage; location of identified flood hazard areas	Local
Hail	NOAA National Climate Data Center (http://www.ncdc.noaa.gov/stormevents/)	Historic record of damage	Region
High Winds	NOAA National Climate Data Center (http://www.ncdc.noaa.gov/stormevents/); Alabama Tornado Occurrences, National Weather Service (http://www.srh.noaa.gov/bmx/?n=tornadodb_main); Wind Zones in the United States, FEMA (http://www.fema.gov/safe-rooms/wind-zones-united-states), Index of Tropical Storms, National Weather Service (http://www.hpc.ncep.noaa.gov/tropical/)	Historic record of damage from high winds during storms and tornadoes	Region
Landslides	USGS Landslides Hazards Map, National Atlas (http://www.nationalatlas.gov/mapmaker?AppCmd=CUSTOM&LayerList=lslide&visCats=CAT-geo), Landslides, Geological Survey of Alabama (http://gsa.state.al.us/gsa/geologichazards/Landslides.htm#AlabamaLandslides), Landslides Poster, Geological Survey of Alabama (http://gsa.state.al.us/gsa/geologichazards/Landslides_Poster_AdobeReduced.pdf)	Known location of areas of landslide hazard	Local
Land Subsidence	USGS Karst, Engineering Aspects, National Atlas (http://www.nationalatlas.gov/mapmaker?AppCmd=CUSTOM&LayerList=lslide&visCats=CAT-geo), Land Subsidence, USGS (http://water.usgs.gov/ogw/subsidence.html)	Known location of areas of land subsidence	Local

Lightening	NOAA National Climate Data Center (http://www.ncdc.noaa.gov/stormevents/)	Historic record of damage	Region
Wildfire	Fire Risk Assessment Maps, Alabama Forestry Commission (http://www.forestry.state.al.us/fireriskassessmentmaps.aspx?bv=1&s=4), Federal Wildland Fire Occurrence Center (http://wildfire.cr.usgs.gov/firehistory/data.html), NOAA National Climate Data Center (http://www.ncdc.noaa.gov/stormevents/)	Historic record of damage; known location of areas of wildfire risk	Region
Winter Storms	NOAA National Climate Data Center (http://www.ncdc.noaa.gov/stormevents/)	Historic record of damage	Region

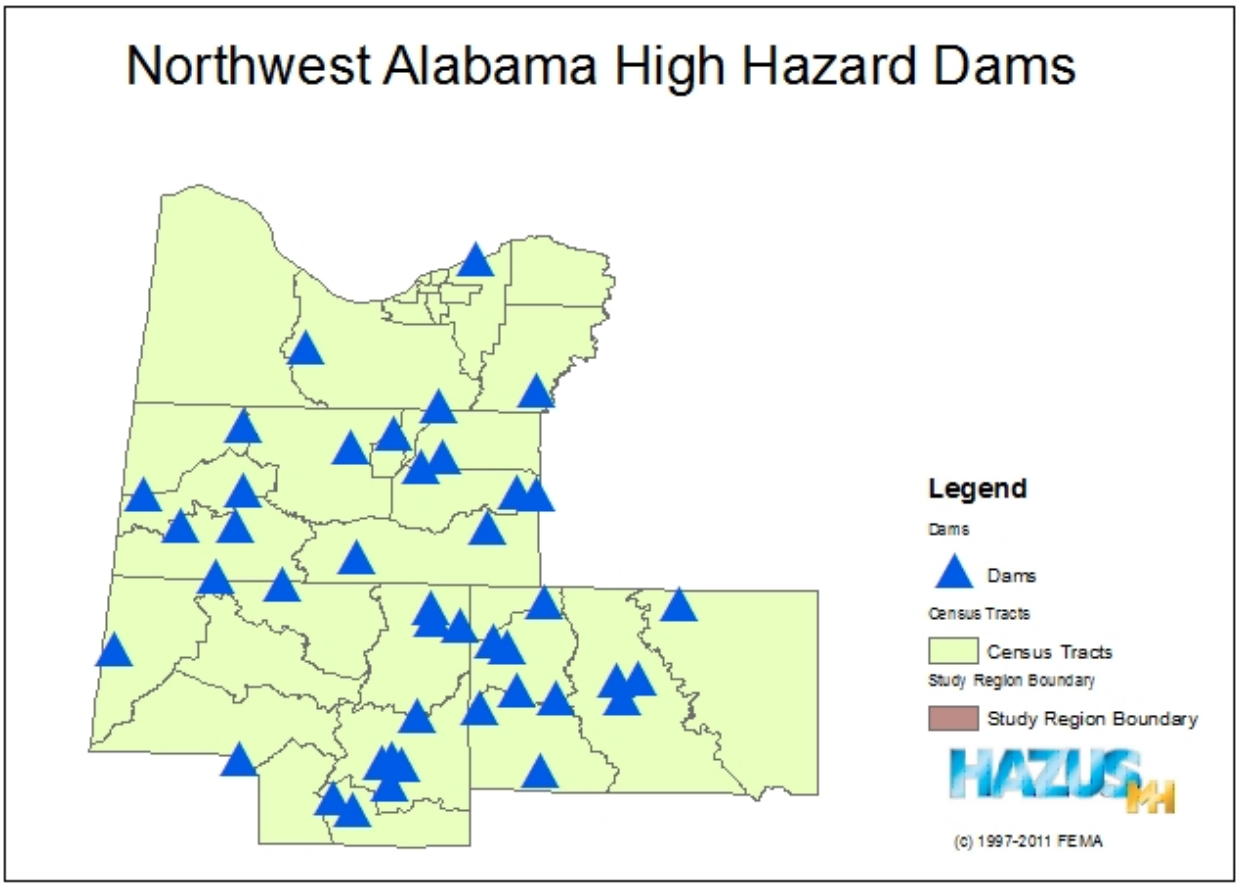
These natural hazards have affected or threaten to affect communities in northwest Alabama. Many of them have been the cause of emergency and disaster declarations as shown in Table 4.1.2. As shown, several hurricanes have affected the region to an extent that necessitated including counties of the region in a declared disaster. These effects were assessed in the hazard profiles and strategies of related events such as high wind and flooding.

Table 4.1.2: Emergency and Disaster Declarations Affecting Northwest Alabama

Date	Incident Description	Declaration Type
4/28/2011	Severe Storms, Tornadoes, Straight-line Winds, and Flooding	Major Disaster Declaration
4/27/2011	Severe Storms, Tornadoes, and Straight-line Winds	Emergency Declaration
8/30/2008	Hurricane Gustav	Emergency Declaration
9/10/2005	Hurricane Katrina Evacuation	Emergency Declaration
8/29/2005	Hurricane Katrina	Major Disaster Declaration
9/15/2004	Hurricane Ivan	Major Disaster Declaration
5/12/2003	Severe Storms, Tornadoes and Flooding	Major Disaster Declaration
11/14/2002	Severe Storms and Tornadoes	Major Disaster Declaration
12/7/2001	Severe Storms and Tornadoes	Major Disaster Declaration
3/5/2001	Severe Storms & Flooding	Major Disaster Declaration
9/18/1999	Russellville Fire	Fire Management Assistance Declaration
1/15/1999	Freezing Rain and Ice Storm	Major Disaster Declaration
9/28/1998	Hurricane Georges	Emergency Declaration
2/23/1996	Storms/Flooding	Major Disaster Declaration
4/21/1995	Severe Storm, Tornadoes, Flooding	Major Disaster Declaration
3/30/1994	Severe Storm, Flooding, Tornado	Major Disaster Declaration
3/3/1994	Winter Storm, Severe Storm, Freezing, Flooding	Major Disaster Declaration
3/15/1993	Severe Snowfall, Winter Storm	Emergency Declaration
1/4/1991	Flooding, Severe Storm	Major Disaster Declaration
7/20/1977	Drought	Emergency Declaration
3/14/1975	SEVERE STORMS, FLOODING	Major Disaster Declaration
4/4/1974	TORNADOES	Major Disaster Declaration
3/27/1973	TORNADOES, FLOODING	Major Disaster Declaration

Dam Failure

Dams provide communities with benefits including water for drinking and agricultural purposes, recreation, flood control, and power generation. However, a malfunctioning dam can create large problems for an area that is downstream. The volume of energy in the water stored behind a dam can cause casualties and property damage should a dam fail and release its capacity uncontrolled.



Northwest Alabama has eight dams that are considered high risk by the Army Corp of Engineers. FEMA's HAZUSZ MH contains a list of 42 facilities considered high risk. High risk dams are those with the capacity to cause both property and casualties in the downstream areas should the dam fail. At least one high risk dam is located in each of the counties of the mitigation planning jurisdiction. Damage to downstream structures and possible loss of life would most likely occur in the event of a catastrophic earthquake or in conjunction with a catastrophic flood event. Both scenarios are highly unlikely. More likely, dams could be undermined by leakage

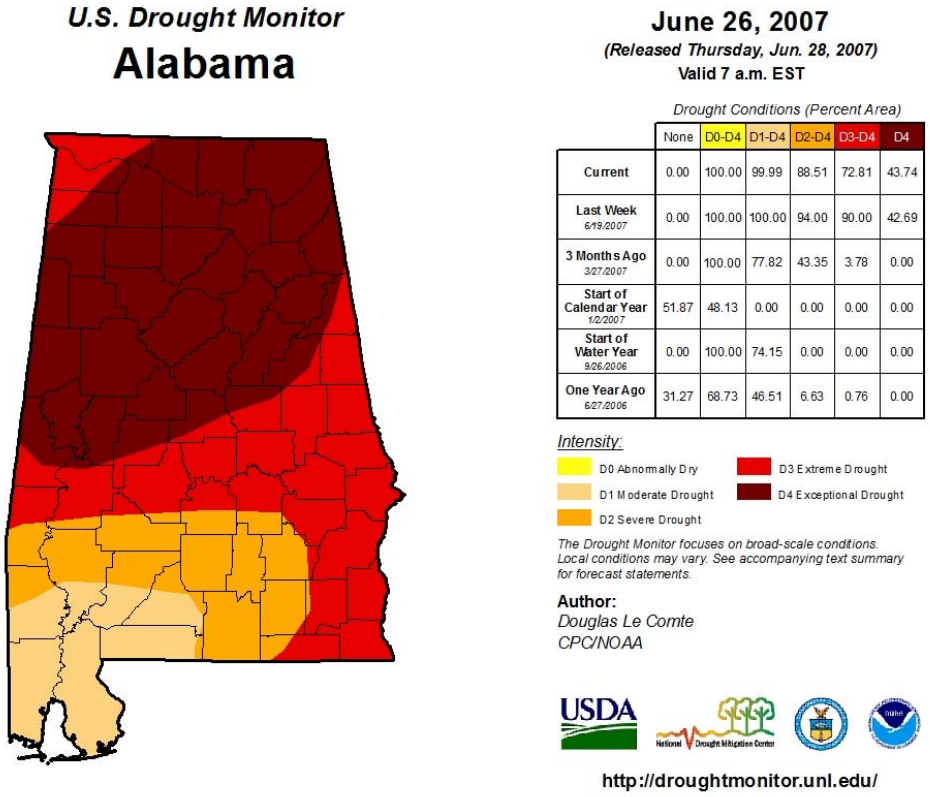
due to karst topography. Water may move beneath a structure during seasonal rainfall events or as headwaters are backed up to higher elevations behind the dam. Slow and continuous leakage may undermine structural integrity. Earthen dams would be most susceptible. Concrete structures with spillways and controls would be less susceptible. Larger dams operated by the Tennessee Valley Authority are guided by Emergency Management Plans that address conditions of dam failure.

Dam failure potentially affects local jurisdictions in the region to the extent they are downstream from these structures. Colbert County, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Franklin County, Red Bay, and Russellville are the local jurisdictions that are potentially affected by dam failures. Northwest Alabama does not have a history of dam failure. Dam failure would result in extreme property damage and risk of lost life downstream. Fortunately, dam failure is extremely rare and poses little overall risk.

Drought

A drought occurs when periods of low precipitation extend over a lengthy period of time. Drought affects crop productivity, water quality, and water quantity in way that can result in shortages of food or water for drinking, irrigation, or other purposes. Extended drought conditions can be dangerous to economic prosperity, agricultural productivity, and human health and welfare. Water shortages can lead to rationing or worse crises in extreme conditions.

Northwest Alabama is susceptible to drought during long periods without precipitation. Drought conditions are not easily predicted, and the effects of prolonged drought are not readily quantifiable. However, moderate drought conditions have prompted concern about vulnerability to extended or severe droughts in northwest Alabama. Seventy-four drought events were reported by NOAA between 2006 and 2012 with no deaths or losses of property or crops. The worst of these droughts was recorded in summer of 2007, when 100 percent of the State of Alabama was in some stage of drought and over 40% was classified as suffering from the worst stage, or Exceptional Drought (See U.S. Drought Monitor Map, June 26, 2007).

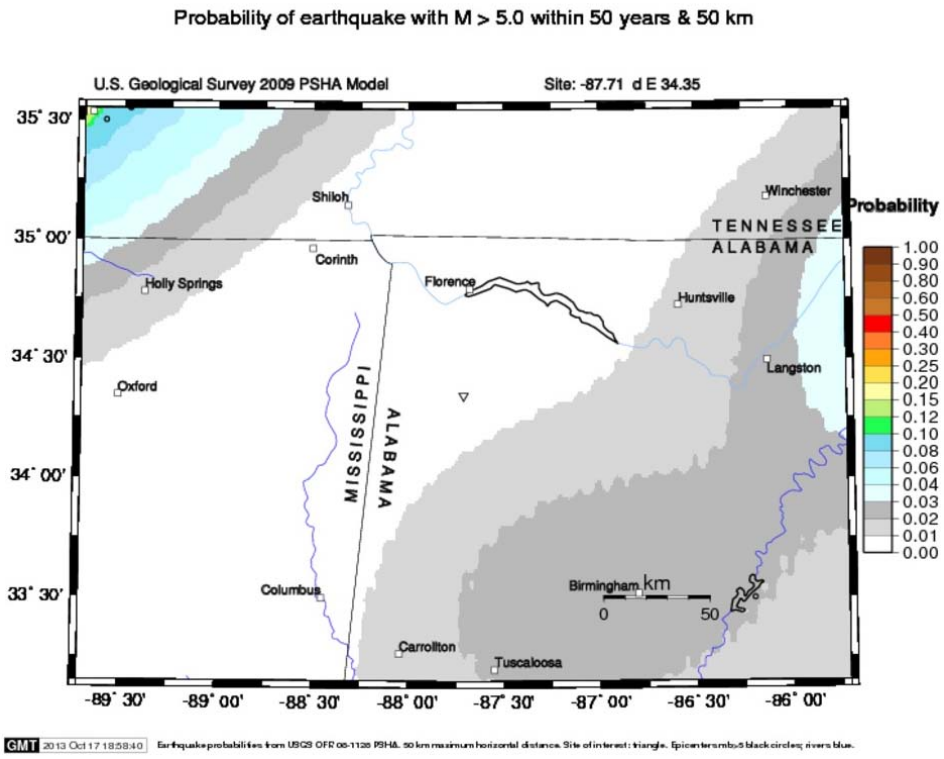


The summer 2007 drought was the worst in recent history to affect the State of Alabama and northwest Alabama.

Earthquake

An earthquake is the sudden movement of the earth as energy stored between plates in the earth's landforms erupts along fault lines. Earthquakes are most frequent along fault lines, or cracks in the earth's landforms that can be at or near the surface or buried deep beneath the surface. Earthquakes that occur underwater in the ocean can cause tsunamis or tidal waves that can also be devastating. The northwest Alabama region is susceptible to earthquakes due to proximity to two major seismic zones. The New Madrid Seismic Zone lies north and west of the region and was the source of the 1811-1812 earthquakes, which caused little structural damage due to sparse settlement but were violent enough to create Reelfoot Lake in Tennessee and Kentucky. The Southern Appalachian Seismic Zone is located east and north of the region and is less active, with only infrequent earthquakes of small intensity and moderate earthquakes every few hundred years. Large quakes of magnitude 7 or higher on the Richter scale are possible in both fault zones. However, according to the USGS, the probability of a moderate or large earthquake is very low in the northwest Alabama region, with the probability of an earthquake

greater than 5 magnitude being less than 3 percent in 50 years across the region.



Therefore, while damage from a major earthquake could be catastrophic, the risks are very low in northwest Alabama. There has been one recorded earthquake in the region since 1973, which occurred in 1989 near Littleville in Colbert County and caused slight damage (cracked windows and plaster). Earthquakes with epicenters outside of the region have been slightly more frequent, but they have not caused damage.

Extreme Temperatures

Extreme temperatures are abnormally high or low temperatures that result from atmospheric and weather events. Extreme temperatures may cause disruptions to agriculture and may present dangers to human health and safety. Extreme weather may occur in conjunction with or separate from other events such as droughts and winter storms. Temperature may be related to crop loss or health hazards such as frostbite or heat stroke. The subtropical climate of northwest Alabama is not prone to extended exposure to extremes of either heat or cold. However, certain days of the year and certain weather patterns may produce dangerous temperatures, particularly for vulnerable populations and those who are exposed to the weather due to job conditions or a lack of resources to pay for climate control systems in the home. This

is true especially of low income individuals and seniors. Twelve extreme temperature events were reported between 1996 and 2013 by NOAA. Three were extreme cold temperature events and eight were excessive heat events, including one event leading to the treatment of twelve individuals for injuries related to the weather in Colbert County in 2009.

Flooding (Riverine and Flash)

Flooding occurs when water cannot flow rapidly enough from upper elevations to lower elevations to prevent accumulation and inundation. Flooding is most often caused by precipitation but it can also be related to manmade activities such as dam failures and ruptured water mains. Rainfall and storm water are the most frequent causes of flooding in northwest Alabama. Flooding that occurs when a stream overflows is known as riverine flooding. Often riverine floods are caused by an excess of rainfall for the natural channel to accommodate, but they may also be caused by blockages in the natural channel. Flash floods occur when water accumulates rapidly, within six hours of an event but often much faster. Floods are among the most destructive natural disasters in the United States and in the northwest Alabama region. Flooding depends on localized characteristics such as soils, slopes, and drainage features, as well as climate and weather patterns. Flood hazards are mapped by the Federal Emergency Management Agency (FEMA) as part of the National Flood Insurance Program (NFIP).

All of the jurisdictions in the region are included in FEMA Flood Hazard Mapping. Maps were updated between 2009 and 2011 as part of the FEMA Map Modernization Program. Table 4.1.3 contains information on participating jurisdictions and map effective dates for the northwest Alabama region.

Table 4.1.3

Federal Emergency Management Agency
Community Status Book Report
ALABAMA

Communities Participating in the National Flood Insurance Program

Community Name	County	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Regular-Emergency Entry Date
ADDISON, TOWN OF	WINSTON COUNTY		8/18/09	09/16/11(M)	4/1/13
CHEROKEE, CITY OF	COLBERT COUNTY	6/28/74	3/14/80	2/17/10	9/28/79
COLBERT COUNTY	COLBERT COUNTY	2/24/78	6/15/81	2/17/10	7/9/81

FRANKLIN COUNTY	FRANKLIN COUNTY	1/20/78	1/20/82	9/29/10	1/18/91
GUIN, CITY OF	MARION COUNTY	6/14/74	9/28/79	10/19/10	9/28/79
HAYLEVILLE, CITY OF	WINSTON COUNTY	2/21/75	6/25/76	09/16/11(M)	6/25/76
HAMILTON, CITY OF	MARION COUNTY	5/31/74	1/16/80	10/19/10	1/16/80
HODGES, TOWN OF	FRANKLIN COUNTY		9/29/10	09/29/10(M)	9/29/10
LEIGHTON, CITY OF	COLBERT COUNTY	6/14/74	8/19/85	2/17/10	8/19/85
LITTLEVILLE, TOWN OF	COLBERT COUNTY	6/18/76	11/24/78	2/17/10	11/24/78
MARION COUNTY	MARION COUNTY	10/18/74	12/4/79	10/19/10	12/4/79
MUSCLE SHOALS, CITY OF	COLBERT COUNTY	3/8/74	12/15/77	12/17/10	12/15/77
PHIL CAMPBELL, TOWN OF	FRANKLIN COUNTY	10/29/76	9/29/10	09/29/10(M)	9/29/10
RED BAY, CITY OF	FRANKLIN COUNTY	12/10/76	1/20/82	9/29/10	3/1/06
RUSSELLVILLE, CITY OF	FRANKLIN COUNTY	6/25/76	8/1/79	9/29/10	8/1/79
SHEFFIELD, CITY OF	COLBERT COUNTY	3/22/74	12/15/77	2/17/10	12/15/77
TUSCUMBIA, CITY OF	COLBERT COUNTY	3/8/74	12/1/77	2/17/10	12/1/77
TWIN, TOWN OF	MARION COUNTY		10/19/10	10/19/10	4/2/13
VINA, TOWN OF	FRANKLIN COUNTY	12/16/77	9/29/10	09/29/10(M)	3/8/13
WINFIELD, CITY OF	MARION COUNTY	5/10/74	11/1/79	10/19/10	11/1/79
WINSTON, TOWN OF		2/17/78	9/1/91	09/16/11(M)	9/1/91
Summary:					
Total in Flood Program			21		
Total in Emergency Program			0		
Total in Regular Program			21		
Total in Regular Program w/ No Special Flood Hazard			0		
Total in Regular Program But Minimally Flood Prone			6		

Communities Not Participating in the National Flood Insurance Program

Community Name	County	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Regular-Emergency Entry Date
BEAR CREEK, TOWN OF	MARION COUNTY	6/18/1976	10/19/2010	10/19/2010	6/18/1977

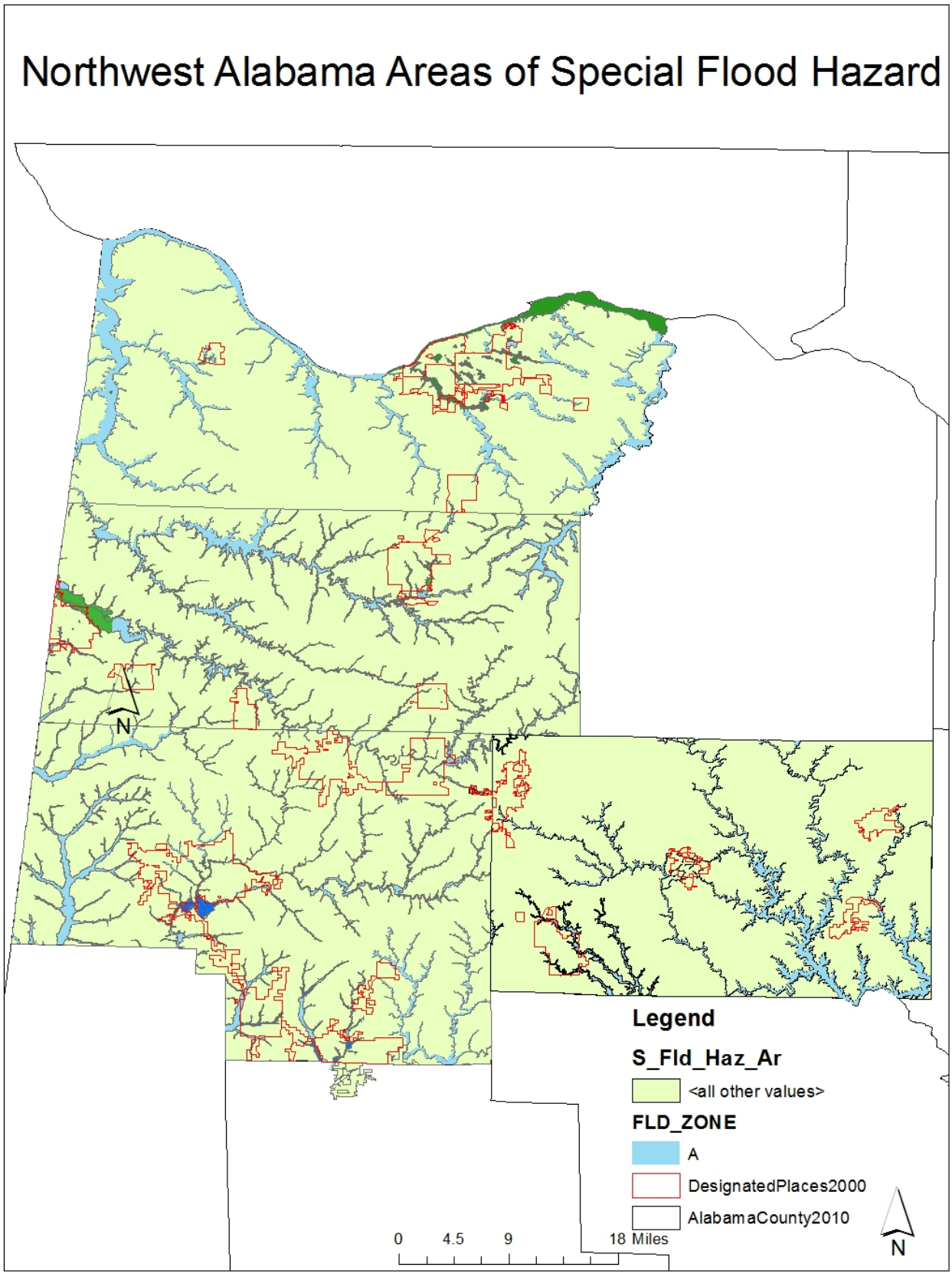
BRILLIANT, TOWN OF	MARION COUNTY	7/15/1977	10/19/2010	10/19/2010	7/15/1978
GU-WIN, TOWN OF	MARION COUNTY		10/19/2010	10/19/2010	10/19/2011
HACKLEBURG, TOWN OF	MARION COUNTY		10/19/2010	10/19/2010	10/19/2011
LYNN, TOWN OF	WINSTON COUNTY		8/18/2009	8/18/2009	8/18/2010
Summary:					
Total Not in Flood Program			5		
Total Suspended from Emergency Program			0		
Total Suspended from Regular Program			0		
Total Withdrawn Communities Not In Program			0		
Total Not in Program With Hazard Area Identified			5		
Total Not in Regular Program With Hazard Area Identified <1 Year			0		

Legend:

(E)	Indicates Entry In Emergency Program
NSFHA	No Special Flood Hazard Area - All Zone C
(>)	Date of Current Effective Map is after the Date of This Report
N/A	Not Applicable At This Time
(S)	Suspended Community
(W)	Withdrawn Community
(M)	No Elevation Determined - All Zone A, C and X
(L)	Original FIRM by Letter - All Zone A, C and X

Flooding affects local jurisdictions to the extent that they are located near surface waters susceptible to floods. Colbert County, Cherokee, Leighton, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Franklin County, Phil Campbell, Red Bay, Russellville, Vina, Marion County, Bear Creek, Guin, Hamilton, Winfield, Winston County, Double Springs, Haleyville, and Lynn are the jurisdictions that are potentially affected by flooding in northwest Alabama. One hundred twenty flood events, including flash flooding, affected northwest Alabama from 1996 to 2013, according to NOAA. Flooding led to $1,319,000 in property damage and $24,000 in crop damage. No injuries or fatalities were reported from flooding.

Northwest Alabama Areas of Special Flood Hazard



Hail

Hail occurs when falling precipitation passes from colder upper atmospheric regions, where it freezes, through layers of moisture and freezing temperatures gaining additional frozen mass as it falls to earth. As ice accumulates, and the mass of the hail stone increases, its damage potential increases. The largest hailstone ever reported was approximately 8 inches in diameter, but stones of much smaller diameter have the potential to cause property damage. The largest hailstone reported in northwest Alabama was from a 1996 storm in Hackleburg in Marion County, which deposited at least one stone of 4.5 inches during an event that caused about $20,000 in property damage and $8,000 in crop damage. Other reported storms deposited stones from three-quarter inch and larger. Three hundred sixty-four hail events were reported by NOAA in northwest Alabama counties between 1996 and 2013, resulting in no deaths or injuries but $758, 000 in property damage and $127,000 in crop damage.

High Winds (Tornadoes, Microburst, and Windstorms)

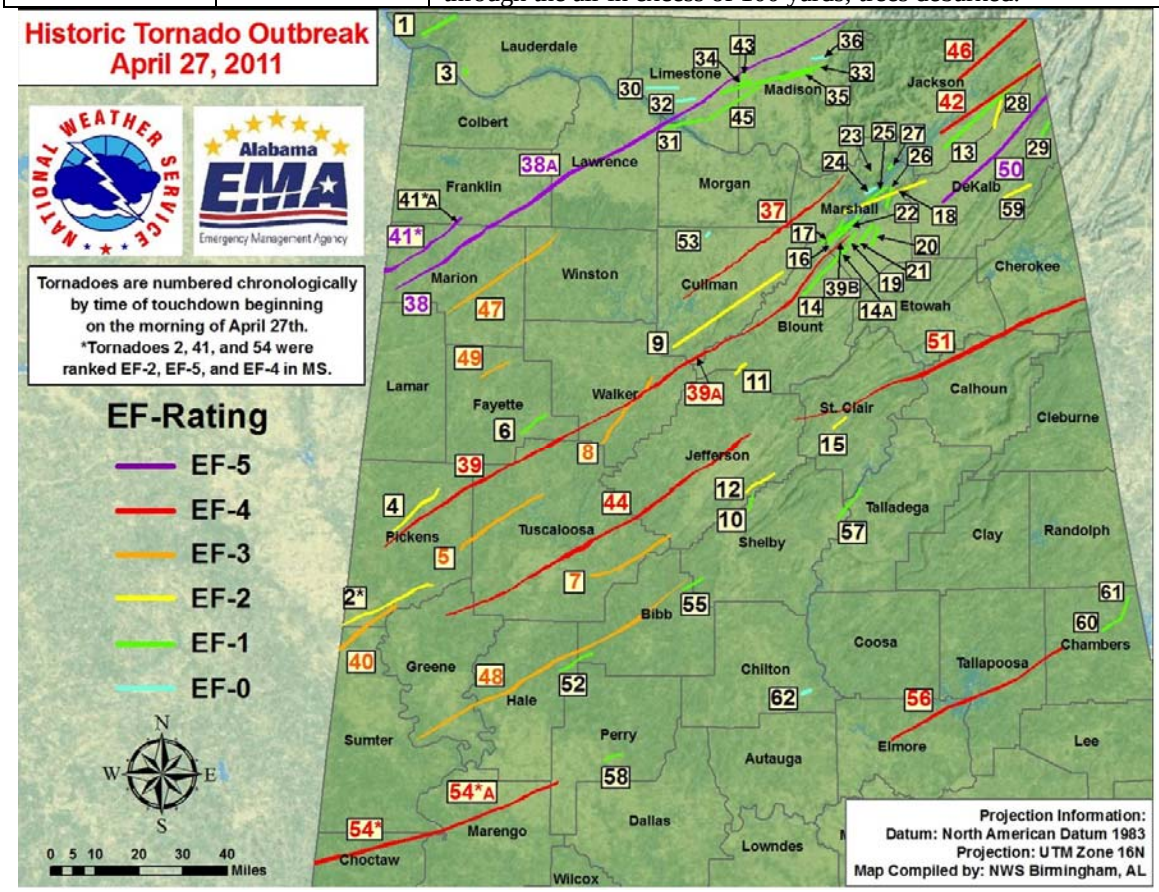
High winds are normally the result of thunderstorms and tornadoes in northwest Alabama. These may result from large storm fronts generally moving from west to east across the region or they may be caused by fronts moving north from the Gulf Coast during hurricanes. Hurricane season in the Atlantic Basin is from June 1 to November 30, during which time coastal hurricanes are most likely to affect the region. Severe thunderstorms may occur any time but they are most likely in summer months and are most damaging in the spring. Tornado season is in the spring. The region is in the southern area of strong tornado occurrences known as tornado alley, and incredibly violent outbreaks are possible as occurred in April 1974 and April 2011. Tornados are classified based on the Enhanced Fujita (EF) Scale, which was implemented in February 2007 to update the previous Fujita Scale. The EF Scale is a wind estimate indicator based on three-second gusts and the levels of damage likely to occur in a tornado. Table 4.1.4 provides a description of Enhanced Fujita Scale measures of wind speed and damage.

High winds, thunderstorm winds, and tornadoes were reported 766 times in northwest Alabama between 1996 and 2013. High wind events were the most numerous and costly of events in northwest Alabama. High winds resulted in 56 fatalities, 269 injuries, $126,000 in crop damage, and $532,919,000 in property damage. The worst event was the outbreak of tornadoes on April 27, 2011 which caused an estimated $492,688,000 of property damage across three

counties in northwest Alabama. Worse, the storm claimed the lives of 52 individuals in northwest Alabama.

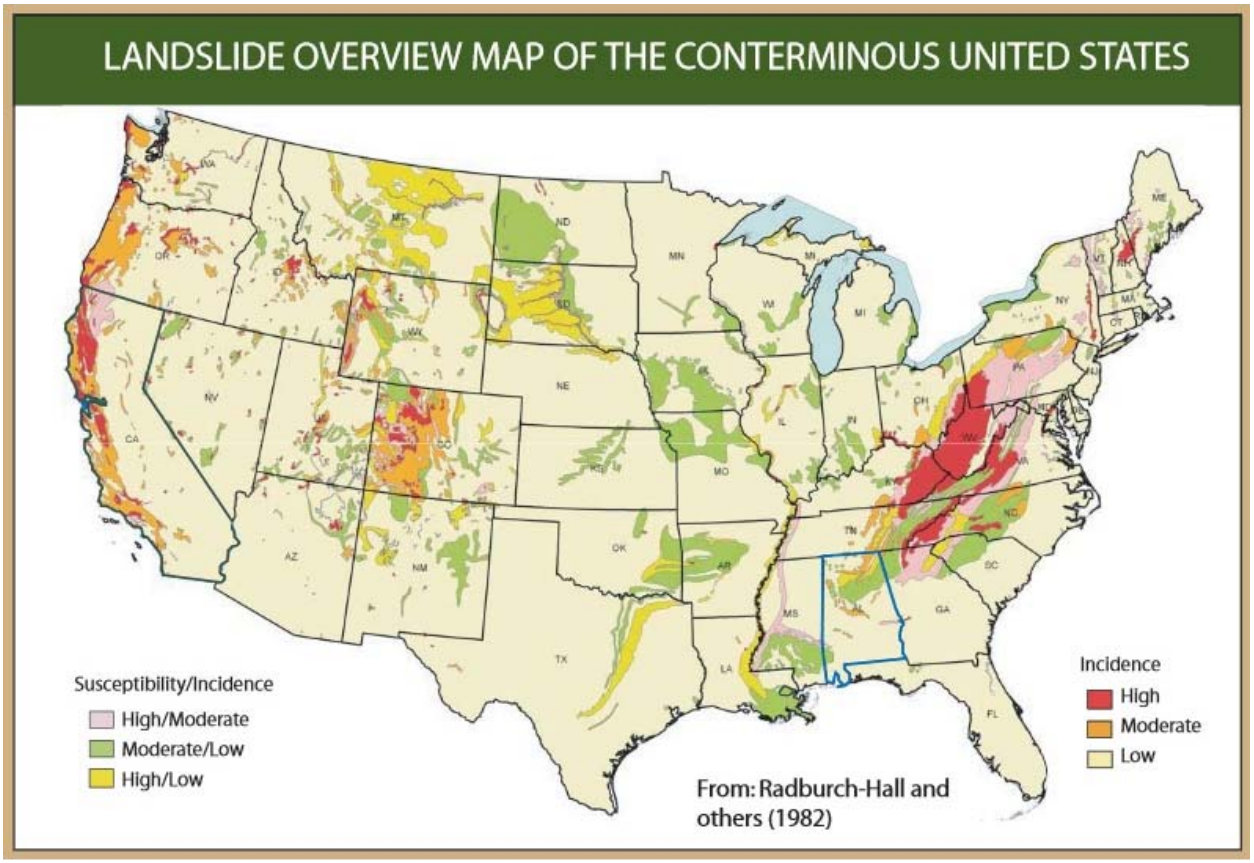
Table 4.1.4

ENHANCED FUJITA SCALE		
EF Number	3 Second Gust (mph)	Damage Description
0	65-85	LIGHT DAMAGE: Some damage to chimneys; tree branches broken off; shallow-rooted trees pushed over; sign boards damaged.
1	86-110	MODERATE DAMAGE: The lower limit is the beginning of hurricane wind speed. Roof surfaces peeled off; mobile homes pushed off foundations or overturned; moving autos pushed off roads.
2	111-135	CONSDIRABLE DAMAGE: Roofs torn off from houses; mobile homes demolished; box cars pushed over; large trees snapped or uprooted; light-object missiles generated.
3	136-165	SEVERE DAMAGE: Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown.
4	166-200	DEVASTATING DAMAGE: Well- constructed houses levelled; structures with weak foundations blown off some distance; cars thrown; large missiles generated.
5	Over 200	INCREDIBLE DAMAGE: Strong framed houses lifted off foundations and carried considerable distances to disintegrate; automobile-sized missiles fly through the air in excess of 100 yards; trees debarked.



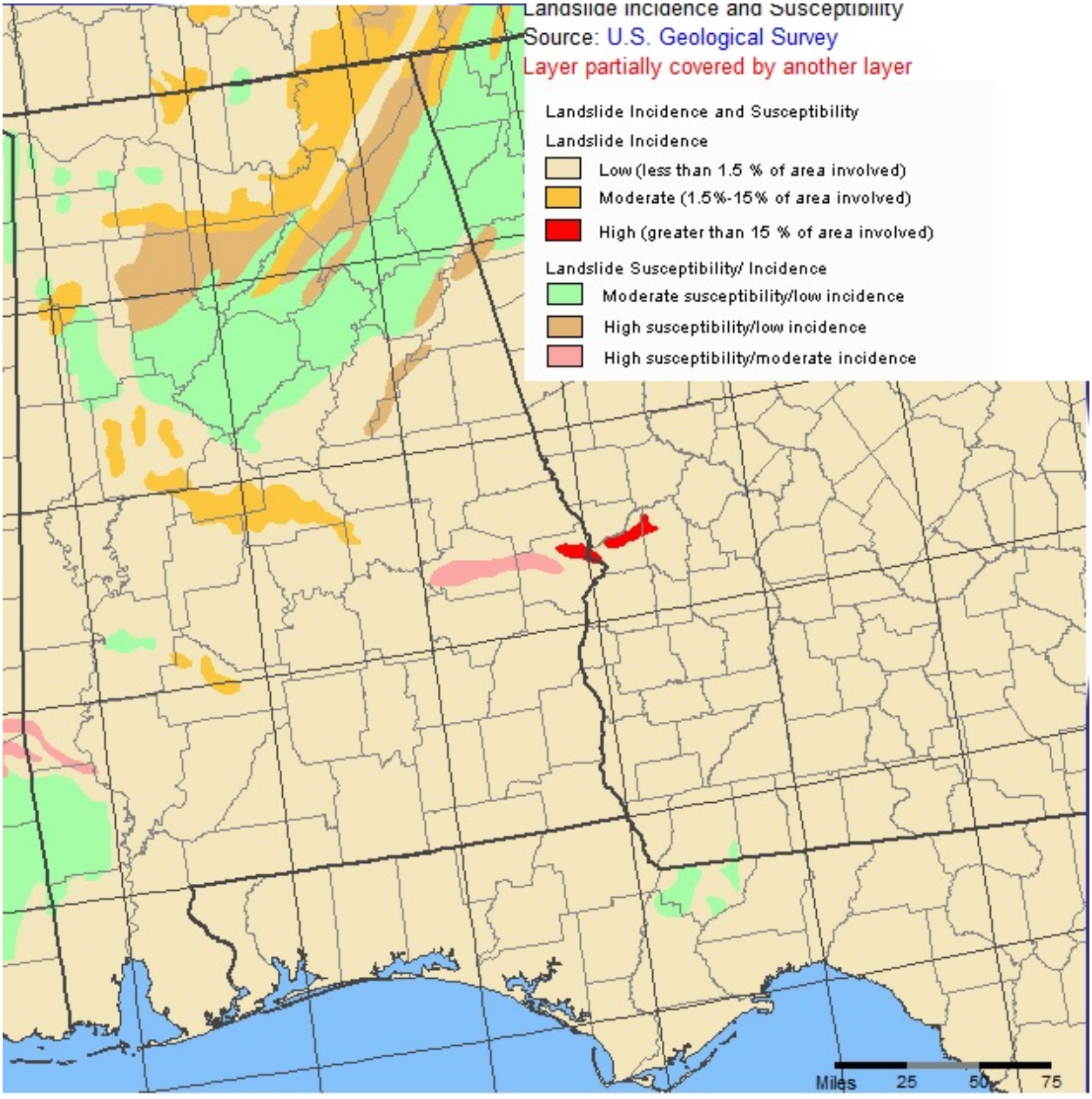
Landslides

Landslides occur when eroded slopes give way to the force of gravity and soil, rock, and other debris collapse downward along slopes. Landslides can be caused by or aided by both human and natural phenomenon. Landslides are commonly caused by changes to surface slopes that create instability, often due to changes in water runoff patterns from development, naturally occurring periods of excessive rain, or gradual erosion. Once conditions for a landslide form, the event usually happens rapidly and can cause high damage to property, endangering the lives of individuals at the top, bottom, and throughout the slopes. Counties in the northwest Alabama region assessed by the Geological Survey of Alabama had low incidence and low to moderate susceptibility to landslides. This means that while there is little land area involved in landslides, there is moderate potential in some isolated locations.



Landslide overview of the United States. Source: Ebersole, Driskell, and Tavis. 2011. Susceptibility to Landslides in Alabama.

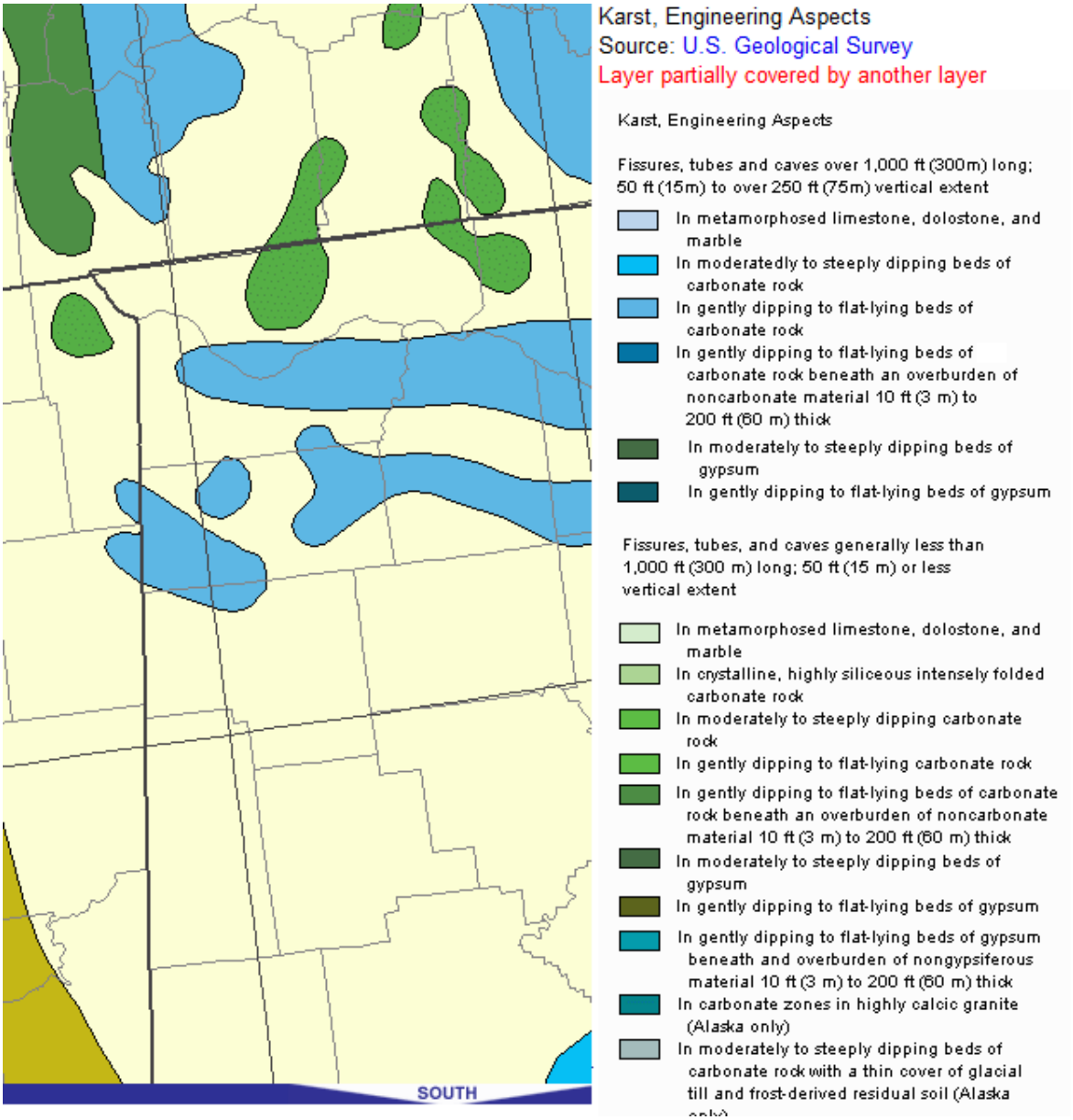
Landslide hazard is determined locally by slopes and strength of underlying rock formations. Locations for which landslide is a potential hazard include the jurisdictions of Colbert County, Franklin County, Red Bay, Marion County, Brilliant, Guin, Gu-Win, Hamilton, Twin, Winfield, Winston County, Addison, Arely, Double Springs, Haleyville, and Lynn. The Geological Survey of Alabama noted 17 historic landslides in northwest Alabama.



Landslide incidence and susceptibility. Source: National Atlas and USGS. Retrieved 12-16-2013.

Land Subsidence (Sinkholes)

Land subsidence, or a sinkhole, is the collapse of ground surface due to hollowing of the subsurface geographic landscape from erosion. Land forms that are erodible or that dissolve in water can create underground caverns. Eventually, the weight of materials resting above may cause the surface to become unstable and to collapse into the vault or cavern below. When this occurs, a sinkhole is formed and development above is placed in jeopardy. Sinkholes are often caused by changes in water patterns including water runoff and water table levels. These can be due to natural occurrences or manmade causes. Increased development in karst areas may also



Karst landforms susceptible to sinkholes. Source: National Atlas and USGS. Retrieved 12-16-2013.

increase the weight load on cavern ceilings and increase the likelihood of a collapse. Much of the northwest Alabama region is located in areas with carbonate rocks, which are susceptible to dissolution by water activity. Therefore, much of the northwest Alabama region is also in areas of active sinkhole or sinkhole risk. Local jurisdictions for which land subsidence or sinkholes are a hazard include Colbert County, Cherokee, Leighton, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Franklin County, Hodges, Phil Campbell, Red Bay, Russellville, Vina, Marion County, and Hackleburg.

Lightening

Lightening, which is normally a byproduct of thunderstorms, is a risk to life and property. Lightening is a risk to any area of the northwest Alabama region at any time, particularly during thunderstorms. Lightening is extremely frequent throughout the year, especially during severe thunderstorms, and accounts for many of the small damage incidents in northwest Alabama. Although individual damage is not as extreme as that resulting from some other natural disasters such as tornados, lightening is a significant risk to residents and their property. Lightening is often of greatest hazard risk for individuals and small businesses due to the frequent loss of property, particularly electronics, and resultant disruptions.

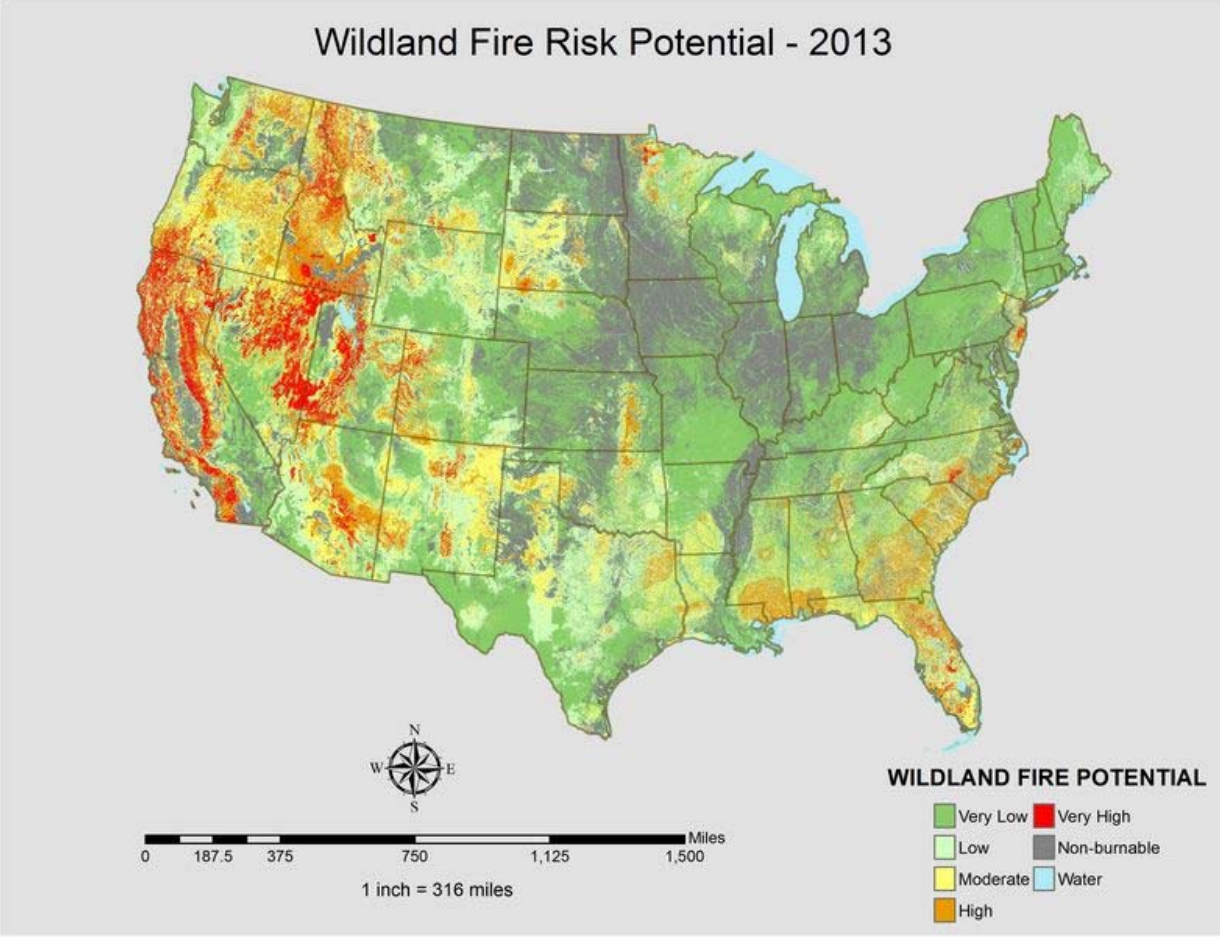
Only 56 lightening events were reported by NOAA, although the actual number is likely to be much higher. Lightening has reportedly caused 4 fatalities, 12 injuries, and $557,750 of property damage.

Wildfire

Wildfires are caused by combustible materials catching fire in areas of wilderness or where wilderness is adjacent to developed areas, known as the wildland-urban interface (WUI). Although wildfires in the wilderness can destroy valuable resources such as natural habitat and forestry resources, fires in the WUI are the most dangerous to life and property because of their proximity to assets and human populations. Fires are caused when fuel sources such as brush and undergrowth remain on the ground and combust. Fires of this nature are often devastating to homes and other natural resources. Lightening and drought often contribute to wildfires, but a large number are caused by human error in extinguishing combustible materials like camp fires and burning cigarettes. Much of the region is at risk from wildfires both due to the heavily

forested nature of the region, which leads to wildfire susceptibility, as well as the historical record of fires in the region.

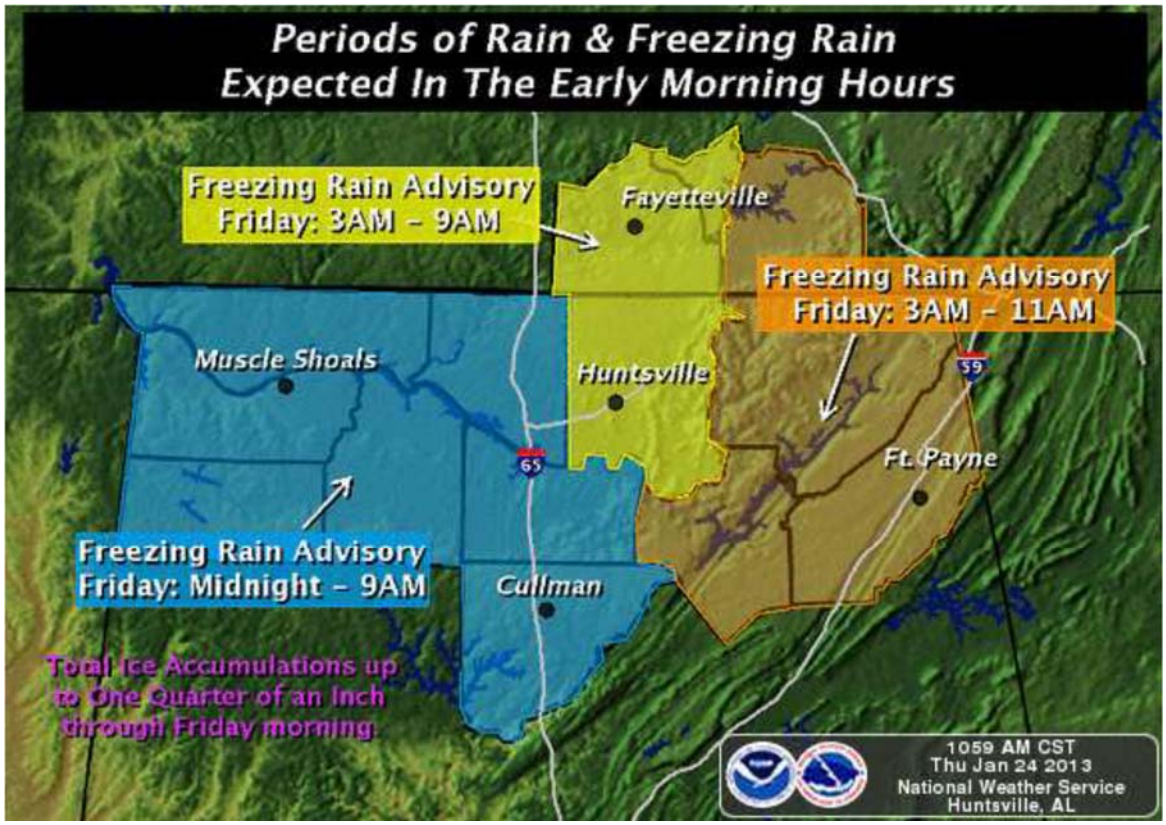
Wildfire risk is imposed on areas with significant forestland adjacent to developed lands. Local communities susceptible to wildfire hazard include Colbert County, Cherokee, Leighton, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Franklin County, Hodges, Phil Campbell, Red Bay, Russellville, Vina, Marion County, Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, twin, Winfield, Winston County, Addison, Arley, Double Springs, Haleyville, Lynn, and Natural Bridge. Six hundred fifty four fires were reported by various agencies between 1980 and 2012. Twenty three of these were larger than 100 acres in affected area. Three wildfires were reported by NOAA from 1996 to 2013. No fatalities or injuries were reported, but the fires caused approximately $103,000 in property damage.



Winter Storms

Winter storms cause heavy frozen precipitation, snow and ice, to accumulate on roads, bridges, trees, rooftops, and other structures. The threat of winter storms stems from both the extreme temperatures involved and the potential for accidents, power outages, and disruption of transportation, which leads to individuals being cut off from required emergency and non-emergency services. The duration of a storm and the duration of its negative results can vary greatly, but when the weight of ice and snow causes road closures, power outages, downed trees, or collapsed roofs, then the winter storm can prove among the most disruptive and damaging of natural hazards. The entirety of northwest Alabama is susceptible to winter storms due to the climate history, temperatures, precipitation, and historical record of the region.

One hundred two winter weather events were reported by NOAA between 1996 and 2013. Winter weather was not attributed as a cause of injury or death, but it did result in approximately $3,712,100 in property damage and $4,000 in crop damage. The worst single event occurred on December 23, 1998 and resulted in $1,200,000 in property damage in Colbert County.



4.2 Probability of Future Hazards[4]

Table 4.2.1 summarizes the planning area's probability to experience effects from future hazards. Probability is the overall likelihood of experiencing a future event. Many of the hazards have equal potential probability across all of northwest Alabama, while others are more localized due to geographic profiles and features that are particular to a specific location. Each hazard type was reviewed according to the level of impact most appropriate to understanding its threat to each jurisdiction. Each threat was given a probability rating at the appropriate scale. Probability was classified based on a comprehensive overview of available data, including risk mapping in GIS where available and records of damages.

Probability was classified as High, Medium, Low, or Very Low based on the following quantitative scale:

- **High:** Probable major damage in excess of $100,000 in a 1-10 year period
- **Medium:** Probable major damage in excess of $100,000 in a 10-50 year period
- **Low:** Probable major damage in excess of $100,000 in a 100 year period
- **Very Low:** No probable major damage in excess of $100,000; possible major damage in excess of $100,000 in a very long (100+ year) period

Table 4.2.1

Hazard	Probability(All jurisdictions)
Drought	Low
Earthquake	Very Low
Extreme Temperature	Low
Hail	Low
High Winds	High
Lightening	Low
Winter Storms	High

Local Jurisdiction	Probability (Localized hazards)				
	Dam failure	Flooding	Landslide	Land Subsidence	Wildfire
Colbert County	Very Low	Medium	Very Low	Very Low	Very Low
Cherokee	None	Medium	Very Low	Very Low	Very Low
Leighton	None	Medium	Very Low	Very Low	Very Low
Littleville	None	Medium	Very Low	Very Low	Very Low
Muscle Shoals	Very Low	Medium	Very Low	Very Low	Very Low
Sheffield	Very Low	Medium	Very Low	Very Low	Very Low

[4] This section was thoroughly reviewed and modified to reflect a quantitative scale for 'major damage'.

Tuscumbia	Very Low	Medium	Very Low	Very Low	Very Low
Franklin County	Very Low	Medium	Very Low	Very Low	Very Low
Hodges	None	Medium	Very Low	Very Low	Very Low
Phil Campbell	None	Medium	Very Low	Very Low	Very Low
Red Bay	None	Medium	Very Low	Very Low	Very Low
Russellville	Very Low	Medium	Very Low	Very Low	Very Low
Vina	None	Medium	Very Low	Very Low	Very Low
Marion County	None	Medium	Very Low	Very Low	Very Low
Bear Creek	None	Medium	Very Low	Very Low	Very Low
Brilliant	None	Medium	Very Low	Very Low	Very Low
Guin	None	Medium	Very Low	Very Low	Very Low
Gu-Win	None	Medium	Very Low	Very Low	Very Low
Hackleburg	None	Medium	Very Low	Very Low	Very Low
Hamilton	None	Medium	Very Low	Very Low	Very Low
Twin	None	Medium	Very Low	Very Low	Very Low
Winfield	None	Medium	Very Low	Very Low	Very Low
Winston County	None	Medium	Very Low	Very Low	Very Low
Addison	None	Medium	Very Low	Very Low	Very Low
Arley	None	Medium	Very Low	Very Low	Very Low
Double Springs	None	Medium	Very Low	Very Low	Very Low
Haleyville	None	Medium	Very Low	Very Low	Very Low
Lynn	None	Medium	Very Low	Very Low	Very Low
Natural Bridge	None	Medium	Very Low	Very Low	Very Low

4.3 Extent of Hazards by Jurisdiction[5]

Table 4.3.1 describes the extent of natural hazards in the region. Extent is used to define how severe or intense a natural hazard can be in order to provide a foundation for planning to mitigate damages from natural hazards. As with other aspects of natural hazards, the extent of natural hazards varies by jurisdiction, with some local areas being more likely to have intense effects than others due to geographic considerations. Meanwhile, other hazards have equally likely extent, damage or potential impact across all areas of the region.

[5] This section was thoroughly reviewed and modified to include quantitative extent for each hazard.

Table 4.3.1 Extent of Natural Hazards

Hazard	Extent (All jurisdictions)
Drought	D4: Exceptional Drought. Exceptional and widespread crop/pasture losses; shortages of water in reservoirs, streams, and wells creating water emergencies.
Earthquake	Magnitude 7.0 on Richter scale. Potentially serious damage to structures.
Extreme Temperature	Extreme highs above 100 deg. F increase risk of injury from exposure and drought risk. Low temperature extremes around 0 deg. F for several days at a time causing water shortages and injury.
Hail	Large size hail (2-3 inch diameter) resulting in property damage.
High Winds	EF-5 strength tornados (winds in excess of 200 mph), and strong straight line winds (greater than 60 mph) and down bursts (greater than 100 mph) causing catastrophic damage.
Lightening	Concentrated property damage in excess of one million dollars resulting from fire at a critical facility.
Winter Storms	Six (or more) inches of ice and snow causing damage to roofs and utilities, road closures, and business losses.

Local Jurisdiction	Extent (Localized hazards)				
	Dam failure	Flooding	Landslide	Land Subsidence	Wildfire
Colbert County	Flooding to depths of several feet affecting agriculture and some structures along lakefront	Flooding to depths from 1 to 10 feet affecting structures and agriculture.	Movement of land beneath several acres affecting multiple homes and businesses	Movement of land beneath less than one acre affecting multiple homes and businesses	Property and timber damage over large acreage (100+)
Cherokee	No potential damage	Flooding to depths from 1 to several feet affecting ±2 dozen structures and open space/agricultural land	No potential damage	Movement of land beneath less than one acre affecting multiple homes and businesses	Property and timber damage over very small acreage (5+)
Leighton	No potential damage	Flooding to depths from 1 to several feet affecting ± 45 structures and open space/agricultural land	No potential damage	Movement of land beneath less than one acre affecting multiple homes and	Property and timber damage over very small acreage (5+)

				businesses	
Littleville	No potential damage	Flooding to depths from 1 to several feet affecting ±15 structures and open space/agricultural land	No potential damage	Movement of land beneath less than one acre affecting multiple homes and businesses	Property and timber damage over very small acreage (5+)
Muscle Shoals	Flooding to depths of several feet small number of structures	Flooding to depths from 1 to several feet affecting ± 115 structures and open space/agricultural land	No potential damage	Movement of land beneath less than one acre affecting multiple homes and businesses	Property and timber damage over very small acreage (5+)
Sheffield	Flooding to depths of several feet small number of structures	Flooding to depths from 1 to several feet affecting ± 65 structures and open space/agricultural land	No potential damage	Movement of land beneath less than one acre affecting multiple homes and businesses	Property and timber damage over very small acreage (5+)
Tuscumbia	No potential damage	Flooding to depths from 1 to several feet affecting ±35 structures and open space/agricultural land	No potential damage	Movement of land beneath less than one acre affecting multiple homes and businesses	Property and timber damage over very small acreage (5+)
Franklin County	Flooding to depths of several feet affecting agriculture and some structures along lakefront	Flooding to depths from 1 to 10 feet affecting structures and agriculture.	Movement of land beneath several acres affecting multiple homes and businesses	Movement of land beneath less than one acre affecting multiple homes and businesses	Property and timber damage over large acreage (100+)
Hodges	No potential damage	Flooding to depths from 1 to several feet affecting agricultural land	No potential damage	Movement of land beneath less than one acre affecting multiple homes and businesses	Property and timber damage over moderate acreage (50+)
Phil Campbell	No potential damage	Flooding to depths from 1 to several feet affecting agricultural land	No potential damage	Movement of land beneath less than one acre affecting multiple homes and businesses	Property and timber damage over moderate acreage (50+)
Red Bay	No potential damage	Flooding to depths from 1 to several feet affecting ±15 structures and open space/agricultural land	Movement of land beneath several acres affecting multiple	Movement of land beneath less than one acre affecting multiple	Property and timber damage over very small acreage (5+)

			homes and businesses	homes and businesses	
Russellville	No potential damage	Flooding to depths from 1 to several feet affecting ±50 structures and open space/agricultural land	No potential damage	Movement of land beneath less than one acre affecting multiple homes and businesses	Property and timber damage over very small acreage (5+)
Vina	No potential damage	Flooding to depths from 1 to several feet affecting agricultural land	No potential damage	Movement of land beneath less than one acre affecting multiple homes and businesses	Property and timber damage over moderate acreage (50+)
Marion County	No potential damage	Flooding to depths from 1 to 10 feet affecting structures and agriculture.	Movement of land beneath several acres affecting multiple homes and businesses	Movement of land beneath less than one acre affecting multiple homes and businesses	Property and timber damage over large acreage (100+)
Bear Creek	No potential damage	Flooding to depths from 1 to several feet affecting ±10 structures and open space/agricultural land	No potential damage	No potential damage	Property and timber damage over moderate acreage (50+)
Brilliant	No potential damage	Flooding to depths from 1 to several feet affecting agricultural land	Movement of land beneath several acres affecting multiple homes and businesses	No potential damage	Property and timber damage over moderate acreage (50+)
Guin	No potential damage	Flooding to depths from 1 to several feet affecting ±10 structures and open space/agricultural land	Movement of land beneath several acres affecting multiple homes and businesses	No potential damage	Property and timber damage over very small acreage (5+)
Gu-Win	No potential damage	Minor flooding, several inches to one foot with little impact	Movement of land beneath several acres affecting multiple homes and businesses	No potential damage	Property and timber damage over very small acreage (5+)
Hackleburg	No potential damage	Flooding to depths from 1 to several feet affecting agricultural land	No potential damage	Movement of land beneath less than one acre affecting multiple homes and	Property and timber damage over moderate acreage (50+)

				businesses	
Hamilton	No potential damage	Flooding to depths from 1 to several feet affecting ±20 structures and open space/agricultural land	Movement of land beneath several acres affecting multiple homes and businesses	No potential damage	Property and timber damage over moderate acreage (50+)
Twin	No potential damage	Flooding to depths from 1 to several feet affecting agricultural land	Movement of land beneath several acres affecting multiple homes and businesses	No potential damage	Property and timber damage over moderate acreage (50+)
Winfield	No potential damage	Flooding to depths from 1 to several feet affecting ±10 structures and open space/agricultural land	Movement of land beneath several acres affecting multiple homes and businesses	No potential damage	Property and timber damage over very small acreage (5+)
Winston County	Flooding to depths of several feet affecting agriculture and some structures along lakefront	Flooding to depths from 1 to 10 feet affecting structures and agriculture.	Movement of land beneath several acres affecting multiple homes and businesses	No potential damage	Property and timber damage over large acreage (100+)
Addison	No potential damage	Minor flooding, several inches to one foot with little impact	Movement of land beneath several acres affecting multiple homes and businesses	No potential damage	Property and timber damage over moderate acreage (50+)
Arley	No potential damage	Minor flooding, several inches to one foot with little impact	Movement of land beneath several acres affecting multiple homes and businesses	No potential damage	Property and timber damage over moderate acreage (50+)
Double Springs	No potential damage	Minor flooding, several inches to one foot with little impact	Movement of land beneath several acres affecting multiple homes and businesses	No potential damage	Property and timber damage over moderate acreage (50+)
Haleyville	No potential damage	Flooding to depths from 1 to several feet affecting ±10 structures and open space/agricultural land	Movement of land beneath several acres affecting multiple	No potential damage	Property and timber damage over moderate acreage (50+)

			homes and businesses		
Lynn	No potential damage	Flooding to depths from 1 to several feet affecting agricultural land	Movement of land beneath several acres affecting multiple homes and businesses	No potential damage	Property and timber damage over moderate acreage (50+)
Natural Bridge	No potential damage	Minor flooding, several inches to one foot with little impact	No potential damage	No potential damage	Property and timber damage over moderate acreage (50+)

4.4 Previous Occurrences

One predictor of the risk associated with a natural hazard is the historical record of the event as it has affected an area. Although the past is not a perfect source of information to consider future risk, it provides some guidance as to which hazards have been historically the most frequent and intense. Table 4.4.1 summarizes the historical records of natural disasters and related events in northwest Alabama. No record can be completely accurate; however, the most up to date sources were used to compile the information below. A list of sources is provided in Table 4.1.1.

The most numerous incidents were high winds, which were also the most damaging across the region. Wildfire was next most frequent but significantly less damaging, causing isolated property damage. Most reported fires were in the Bankhead National Forest. Hail was also very frequent but caused only small, isolated property damage. Flooding was well behind wind, wildfire, and hail in frequency, but it was second most damaging. Flooding was largely isolated to areas with identified flood hazard. The City of Tuscumbia in Colbert County suffered the most frequent recorded flooding. Together, High Wind, Wildfire, Hail, and Flooding accounted for the majority of the recorded natural hazard events in northwest Alabama.

Table 4.4.1

Hazard	Previous Occurrences (All jurisdictions)
Drought	74
Earthquake	1
Extreme Temperature	11
Hail	364
High Winds	776
Lightening	56
Winter Storms	102

Local Jurisdiction	Susceptibility (Localized hazards)				
	Dam failure	Flooding	Landslide	Land Subsidence	Wildfire
Colbert County	0	25	0	0	97
Cherokee	0	6	0	0	0
Leighton	0	4	0	0	0
Littleville	0	2	0	0	0
Muscle Shoals	0	6	0	0	0
Sheffield	0	1	0	0	0
Tuscumbia	0	15	0	0	0
Franklin County	0	12	5	0	6
Hodges	0	0	0	0	0
Phil Campbell	0	0	0	0	0
Red Bay	0	5	0	0	0
Russellville	0	4	0	0	0
Vina	0	0	0	0	0
Marion County	0	17	12	0	0
Bear Creek	0	0	0	0	0
Brilliant	0	0	0	0	0
Guin	0	1	0	0	0
Gu-Win	0	0	0	0	0
Hackleburg	0	2	0	0	0
Hamilton	0	2	0	0	0
Twin	0	0	0	0	0
Winfield	0	2	0	0	0
Winston County	0	7	0	0	549
Addison	0	0	0	0	1
Arley	0	0	0	0	0
Double Springs	0	1	0	0	0
Haleyville	0	6	0	0	0
Lynn	0	1	0	0	1
Natural Bridge	0	0	0	0	0

4.5 Impact of Hazards by Jurisdiction

Table 4.5.1 describes the impact of natural hazards in the region. Impact is used to define how severe or intense a natural hazard has been in the past in order to provide a foundation for planning to mitigate damages from natural hazards in the future. The most significant or damaging past event provides a description of a hazard's impact potential. Where no record

exists, relevant examples are examined from other areas of the State to provide an impact analysis. The impact of natural hazards varies by jurisdiction, with some local areas being more likely to have experienced intense effects than others due to geographic considerations. Impact from hazards in one jurisdiction provide a baseline for evaluating future risk in that jurisdiction as well as others with similar characteristics and susceptibility to one or more natural hazards.

Hazard	Impact (All jurisdictions)
Drought	The most significant drought on record began in Spring 2007 and continued through Summer 2008. During this time, monthly records from NOAA reported extreme drought conditions for counties in northwest Alabama. Crop failure and heightened risk of fire were cited as impacts of the drought, which began in March 2007 and subsided in August 2008. Drought was reported 18 consecutive months. Crop losses were in the millions.
Earthquake	The known seismic history of Alabama spans about 100 years for local earthquakes. For shocks outside the State borders that caused damaged to cities in Alabama, the history can be traced to 1811 - 1812, when three great (estimated magnitude 8 or greater on the Richter scale) earthquakes centered in Missouri may have reached intensity VII in the northern and/or central sections. These gigantic earthquakes were comparable to the San Francisco shock in 1906 and were felt over 2 million square miles, more than half of the total area of the United States. Historical records indicate the first earthquake of consequence in Alabama shook residents of Sumter and Marengo Counties, located in the western part of the State, on February 4, 1886. A similar shock occurred nine days later, on February 13. Both were reported felt at communities along the Tombigbee River, but caused no damage. Only six months later, the destructive Charleston, South Carolina, shock that was felt in cities all over the Eastern United States occurred. This shock, located about 400 miles east of Alabama's border, caused minor damage in the northeastern part of the State. In 1916 on October 18, a strong earthquake occurred on an unnamed fault east of Birmingham. It was apparently most strong at Easonville. Near the epicenter, chimneys were knocked down, windows broken, and frame buildings "badly shaken." It was noted by residents in seven States and covered 100,000 square miles. Another tremor that damaged the Birmingham area occurred on April 23, 1957. Centered near the Tennessee River below Guntersville Dam, the earthquake shook residents in southern Tennessee, western Georgia, and most of northern and central Alabama. Earthquake records for that year state: "Felt by, awakened, and alarmed many. Minor damage to several chimneys; one report of cement steps cracked in two; and several small cracks in walls. Table-top items tumbled to the floor." A shock centered in the Huntsville area on August 12, 1959. Though felt over a small area of southern Tennessee and northern Alabama, it shook bricks from chimneys at Hazel Green; damaged one chimney and a newly constructed concrete block building at Meridianville; shook violently the buildings at New Sharon, knocking canned goods from shelves and sending frightened residents fleeing from their homes; and cracked plaster and knocked groceries from shelves at Huntsville. Additional earthquakes (intensity V category) listed for this State that were minor and caused no damage centered near Rosemary, western Alabama, in June 1917; in the Scottsboro area northeast of Huntsville in June 1927; at Cullman, northern Alabama, in May 1931; and in the Anniston area in May 1939. A strong earthquake in southern Illinois in November 1968 caused intensity V effects in several

	localities in northern Alabama. The shock was the strongest in Illinois since 1895, and was felt over a half-million square miles in 23 States. 1989 Aug 20 00:03 3.9M Intensity VI Near Littleville, Alabama (34.736N 87.6450W) A Colbert County official reported that, south of Florence between Littleville and Russellville, a basement wall collapsed beneath a house. Only slight damage was reported north of the epicenter at Florence, where windows were cracked and hairline cracks formed in plaster. Also felt in Lauderdale, Lawrence, and Morgan Counties in northwest Alabama and Lawrence County in south-central Tennessee.
Extreme Temperature	Daytime high temperatures reached the middle to upper 90s during this period. In combination with humid air, heat index values climbed into the 100 to 105 degree range across northwest Alabama, including the Shoals. A newspaper reported that at least 12 people were treated for heat illness at a Florence hospital. Newspapers from January 2014 reported frozen water lines leading to leaks, necessitating conservation warnings from local water systems.
Hail	March 26, 2011: Hail the size of golf balls caused widespread damage to vehicles and buildings in the city of Haleyville. Estimated damage of $100,000 to individual properties in Winston Co. and $1.76 million statewide.
High Winds	A powerful storm system roared across the Southeast United States on Wednesday, April 27, 2011. In the wake of this system, hundreds of people were left injured and/or homeless, along with approximately 100 people who lost their lives in the northern Alabama area alone. Some of the devastation was literally unimaginable with countless homes, neighborhoods and even portions of cities or towns either partially or completely destroyed. This storm system would be responsible for one of the largest and deadliest tornado outbreaks to ever impact much of the southeastern region. The powerful storm system that affected the National Weather Service, Huntsville service area would actually occur in three separate waves of severe weather that day. The first occurred during the early morning hours of April 27, 2011 roughly between the hours of 2 AM and 8 AM CDT, while the second occurred during the late-morning to early afternoon period. The third and most devastating wave occurred during the afternoon hours on Wednesday, with some of the most violent and destructive tornadoes to affect the central Tennessee Valley area in recent decades. The worst areas impacted by these storms included the towns of Phil Campbell and Oak Grove in eastern Franklin County Alabama, Mt. Hope in western Lawrence County and the Tanner Community in eastern Limestone County. Along a line connecting these areas tracked an EF5 tornado with peak winds around 210 mph, the strongest and most violent on the Enhanced Fujita Scale. Other areas impacted by the storms include the city of Cullman, where extensive damage occurred to buildings in the downtown area, and to the town of Fairview, both of which are located in Cullman County. Downstream, further significant damage occurred to the Ruth and Oak Grove communities in Marshall County. In addition, the communities of Rainsville and Sylvania along with the towns of Henagar and Ider in DeKalb County were severely impacted. Fatalities in DeKalb County alone numbered at least 33 people. Furthermore, the towns of Flat Rock, Higdon and Pisgah in Jackson County sustained incredible damage. The tornadoes that affected these areas were rated as an EF4 with maximum winds near 190 mph. In most of these areas alone, numerous people lost their lives. These represent just several of the communities and towns impacted by the events of April 27, 2011. While the majority of the analysis and survey work conducted by the National Weather Service, Huntsville and its partners have been completed, there will undoubtedly be countless research studies conducted by both academia and operational personnel in order to further evaluate and understand the complex processes associated with this near unprecedented severe weather outbreak. A tornado initially touched down west of Hamilton in southwest Marion County and moved

	northeast where it caused devastating damage to the city of Hackleburg. The tornado continued into Franklin County and tracked through Lawrence, Morgan, Limestone, and Madison Counties in Alabama. The tornado continued into Lincoln County Tennessee and finally dissipated in Franklin County Tennessee (See Storm Data Huntsville). The average path width of the tornado while in Marion County was 0.5 mile (880 yards). The tornado touched down west of AL Hwy 19 near Sipsey Creek and moved northeast and crossed Corridor X/Future Interstate 22. Here it caused significant tree damage. The tornado strengthened north of Hamilton and caused roof damage to at least one home. The storm strengthened further as it approached US Hwy 43, southwest of Hackleburg, to a violent EF4 rating with winds estimated at 170 mph. The tornado tracked parallel to US Hwy 43 toward Hackleburg and strengthened more to an EF5 with winds up to 210 mph, as its path widened to 0.75 mile (1320 yards). Several subdivisions and businesses, Hackleburg High School, Middle School, and Elementary School, and the Wrangler Plant were destroyed. Vehicles were tossed up to 200 yards. One well-built home with 4 brick sides was completely leveled and the debris from the home was tossed over 40 yards to the north. The tornado moved northeast of Hackleburg and continued to parallel US Hwy 43. It crossed into Franklin County just east of the highway. Along the damage path in Marion County, thousands of trees were downed, several hundred structures were damaged, and at least 100 of these structures were completely destroyed as many homes were leveled. Eighteen fatalities are attributed to this tornado in Marion County, as well as numerous injuries. A violent long track tornado continued its path from Marion County into southern Franklin County north of Hackleburg. Significant devastation occurred throughout the city of Phil Campbell. Prolific damage was noted from the intersection of CR 51 and Alabama Highway 237, to the intersection of CR 81 and CR 75. Within a two mile corridor of either side of the railroad tracks the damage was significant. Within this corridor, several well-constructed houses were destroyed. Along Bonner Street, multiple block homes were leveled to the ground with the block foundations destroyed. A twenty-five foot section of pavement was sucked up and scattered. Chunks of the pavement were found in a home over 1/3 of a mile down the road. The damage in this area was consistent with EF-5 damage. In addition, at least three churches along the path sustained significant damage. One church in Phil Campbell was completely destroyed with only the slab remaining. Multiple mobile homes throughout the path were completely destroyed, and their mangled frames were tossed 25 to 50 yards. Cars were tossed and destroyed throughout the path of the tornado, with one car wrapped around a debarked tree in Phil Campbell. All along the path length, thousands of hardwood and softwood trees were snapped. Hundreds of trees were also debarked and twisted, and had only stubs of the largest branches remaining. EF-5 damage continued similarly northeast from Phil Campbell, roughly along County Roads 81 and 82 toward the community of Oak Grove. In Oak Grove, the tornado may have reached a relative maximum in intensity well into the EF-5 category as the damage was slightly more intense and the path width was at a maximum of greater than one mile. A large swath of complete devastation was noted in Oak Grove along County Roads 38 and Smith Lane. A large well-constructed home with extensive anchoring was razed with debris carried well away from the site. A Corvette sports car was mangled and thrown 641 feet (measured). A block home next door was also disintegrated. Along Smith Lane a block home was wiped out and the only remains of a nearby chicken house was a small piece of a metal truss. In this same area, the tree damage was significant and a large percentage of trees were stripped bare. A long track violent tornado touched down in Monroe County (See Storm Data Memphis) Mississippi, southwest of Smithville where it caused damage associated with an EF5 rating. The tornado moved northeast through Itawamba County before it crossed into Marion County, Alabama at a point near CR 93, southwest of Bexar. The tornado weakened to an EF1 rating as it entered Alabama, with winds of 110 mph . As the tornado tracked south of Bexar, a few mobile homes and outbuildings were damaged and numerous trees were snapped off and uprooted. The tornado moved across Corridor X/Future Interstate 22, near CR 33. As the tornado approached AL Hwy 19, 4 miles

	east southeast of Shottsville, it strengthened to an EF3 rating with winds of 160 mph, and destroyed several homes. This resulted in 6 fatalities. The tornado continued northeastward where it destroyed several single family homes and mobile homes along CR 20 and AL Hwy 187, 9 miles north of Hamilton. As the tornado approached the Marion/Franklin County line, several more houses were damaged and at least one chicken house destroyed near AL Hwy 187. Along the Alabama portion of the tornado path, hundreds of trees were downed, and at least 25 homes, mobile homes, and outbuildings were damaged or destroyed. The average path width of the Alabama portion of the tornado path was 0.5 mile (880 yards). The tornado continued into Franklin County Alabama (See Storm Data Huntsville), dissipating near Old Line Rd. The April 27, 2011 storms caused 2.6 billion in damage, claimed 240 lives, and caused 2,200 injuries in Alabama.
Lightening	A thunderstorm became severe moving across the city of Cherokee in western Colbert County. The thunderstorm produced 1 inch hail and downed a number of trees across the town. Lightning also struck at least two houses causing fires that did damage to two houses. The lightning strikes caused approximately $25,000 in property damage.
Winter Storms	A winter storm brought a mixture of freezing rain...sleet...and rain to the northern half of Alabama. The northwestern quarter of Alabama was especially hard hit. The precipitation began in a narrow band across Fayette, Walker, Cullman, and Marshall counties around 2 am and then around 5am in the rest of the counties and lasted until early afternoon on the 24th. The northwestern quarter of the state saw temperatures at or below freezing for the majority of the event. Liquid equivalent precipitation ranged from one to three inches. Significant ice accumulations of one half to one inch were common across the area. Numerous trees were down across every county. Significant power outages were encountered in all counties and many locations did not return to service until the 26th or 27th. The National Guard was activated in a few northwestern counties to help with the cleanup duties. Numerous roads were closed during the event which included Interstate 65 and 565 in the Huntsville area. One fatality occurred in Huntsville when a homeless man died of exposure. Numerous multiple vehicle and single automobile accidents occurred due to the icy road conditions. These accidents resulted in at least 5 fatalities and numerous minor injuries. One fatality occurred during the cleanup effort when the worker came into contact with a live electrical wire. Damage was estimated to be $2.7 million in northwest Alabama counties and $14.4 million statewide.
Dam failure	Historic U.S. Dam Failures At 7:20 a.m. on May 16, 1874, the 43-foot-high Mill River Dam above Williamsburg, Massachusetts failed, killing 138 people, including 43 children under the age of ten. This failure was the worst in U.S. history, up to that time. Fifteen years later, on May 31, 1889, this tragedy was replayed on a larger scale in Pennsylvania. Over 2,200 people - more than one in five residents of Johnstown - perished in the flood caused by the failure of South Fork Dam, nine miles upstream. Many more failures - in Arizona, Tennessee, Oregon, North Carolina, Texas, Virginia, West Virginia, and elsewhere across the U.S. - occurred around the turn of the century, and some early state dam safety legislation was passed. The failure of St. Francis Dam, in March 1928, was a landmark event in the history of state dam safety legislation, spurring legislation not only in California, but in neighboring states as well. However, most states had no substantive dam safety laws prior to a series of dam failures and incidents that occurred in the 1970s: **February 26, 1972 - Buffalo Creek Valley, West Virginia** The failure of a coal-waste impoundment at the valley's head took 125 lives, and caused more than

	$400 million in damages, including destruction of over 500 homes. **June 9, 1972 – Rapid City, South Dakota** The Canyon Lake Dam failure took an undetermined number of lives (estimates range from 33 to 237). Damages, including destruction of 1,335 homes, totaled more than $60 million. **June 5, 1976 – Teton, Idaho** Eleven people perished when Teton Dam failed. The failure caused an unprecedented amount of property damage totaling more than $1 billion. **July 19-20, 1977 – Laurel Run, Pennsylvania** Laurel Run Dam failed, killing over 40 people and causing $5.3 million in damages. **November 5, 1977 – Toccoa Falls, Georgia** Kelly Barnes Dam failed, killing 39 students and college staff and causing about $2.5 million in damages.
Flooding	A quasi-linear convective system dropped south from Tennessee into northern Alabama just after sunrise. The storms dumped very heavy rainfall in far northwest Alabama as a secondary system moved east and merged with the southward moving system. This enabled some areas to receive rainfall amounts of 3 to 5 inches in portions of Lauderdale and Colbert Counties. Flash flooding resulted at many notorious low water crossings and poor drainage locations in urban areas of the Quad Cities. In addition, the lines of storms produced damaging winds of 50 to 60 mph. Flash flooding was reported at the intersection of Highway 133 and Avalon Road. Numerous other low lying locations in Muscle Shoals experienced flash flooding. Damage was estimated at $500,000 for this event.
Landslide	In 1998, a landslide in DeKalb County wiped out a portion of County Highway 81 on Lookout Mountain (above). The slide moved 117,527 cubic yards of rock and cost $1.7 million to repair. Other slides on Highway 35 between Rainsville and Fort Payne and on Highways 146 and 71 in Jackson County have cost between $1 and $2 million each to repair.
Land Subsidence	Trussville provides a prime example of the impact sinkholes can have on a growing community where land and ground water are both in great demand. Sinkholes first formed beneath and around the Trussville Middle School, forcing closure and rebuilding of the school at another site. Sinkholes continued to develop in a nearby park and neighborhood and emptied a pond. Damage has been estimated to be millions of dollars.
Wildfire	A period of very dry and hot weather led to numerous mostly small grass fires across north Alabama. One of these grass fires became larger on the weekend of the 18th - 20th in Franklin county charring between 250 and 300 acres of land alone. Another fire burned several acres in the Gurley area as well. One large grass fire developed in Franklin county on the east side of CR 83 and jumped to the west side of the highway on Saturday, September 18th, 2010. It then continued onward for another 9 to 10 hours, burning through timberland and farmland. Three structures were lost to the flames before Volunteer firefighters were able to put the fire out. Officials estimate between 250 and 300 acres of land were damaged by this blaze. Another smaller grass fire developed at 3 pm on Tuesday, September 21st. It damaged at least another 75 acres before it was contained. This fire caused $100,000 in property damage.

4.6 Probability of Future Occurrence by Jurisdiction

Table 4.6.1 estimates the probability of a hazard event occurring based on the past record of events. The future probability of a hazard event is critical for estimating potential losses and risk associated with the hazard. While past events are not guaranteed predictors of future hazard events, calculated probability provides some estimate of potential and allows those events with the greatest frequency or damages to be assessed and explored in greater detail. FEMA's cost benefit calculations for injuries ($12,500) and deaths ($2.2 million) are used to provide a standardized estimate of probable damages. Events per Year is equal to the number of occurrences divided by the period observed in years. Average Damages per Event is equal to damages observed divided by the number of occurrences. The Annual Risk Factor is equal to Probability multiplied by Average Damages per Year and is a standard, monetized estimate of the probable losses for each hazard in a one year period.

Table 4.6.1 Natural Hazard Probability and Damage from Historical Records

Hazard	Occurrences	Time Period Observed (Years)	Damages recorded	Events per Year	Average Damages per Event	Annual Risk Factor
Drought	74	1996-2012 (17 years)	$0	4.35	NA	NA
Earthquake[1]	1	50	$0	0.02	NA	NA
Extreme Temperature	12	1996-2012 (17 years)	$150,000	0.71	$12,500.00	$8,824
Hail	364	1996-2012 (17 years)	$885,000	21.41	$2,431.32	$52,059
High Winds	776	1996-2012 (17 years)	$659,608,300	45.65	$850,010.70	$38,800,488
Lightening	56	1996-2012 (17 years)	$9,511,750	3.29	$169,852.68	$559,515
Winter Storms	102	1996-2012 (17 years)	$3,716,200	6	$36,433.33	$218,600
Dam failure[1]	0	50	$0	NA	NA	NA
Flooding	120	1996-2012 (17 years)	$1,343,000	7.06	$11,192	$79,000
Landslide[1]	17	50	$0	0.34	NA	NA
Land Subsidence	0	50	$0	NA	NA	NA
Wildfire[2]	3	1996-2012 (17 years)	$103,000	0.18	$34,333	$6,059

[1]Estimated due to a lack of concise records. Actual risk may be considerably higher than reported.
[2]Only 3 wildfires were reported by NOAA. USGS data indicates hundreds of fires but contains no estimate of losses. Actual risk from fire may be considerably higher than reported.
NA- unable to calculate based on historical record due to a zero value. No prior occurrences or prior damage.

Dam Failure: NA- the risk of losses due to dam failure is not calculable based on historic record since no dam failures or damages from dam failure have been recorded in northwest Alabama. This evidence does not dismiss the risk associated with dam failure, rather, it adds vital information to the risk assessment. Dam failure could be potentially devastating for communities and structures downstream from large dams in Colbert and Franklin Counties.

Drought: NA- the risk of losses due to drought is not calculable based on historic record since no damages from drought have been recorded in northwest Alabama. This evidence does not dismiss the risk associated with drought, since qualitative records exist to show evidence of significant crop losses and risk to public water supply during drought. Drought could be potentially damaging to local agriculture and could place the public at risk through water shortages in all jurisdictions in northwest Alabama.

Earthquake: NA- the risk of losses due to earthquakes is not calculable based on historic record since no earthquakes or damages from earthquakes have been recorded in northwest Alabama. This evidence does not dismiss the risk associated with earthquake since qualitative descriptions of major earthquakes in the past, particularly those of 1811, show major impact potential in surrounding communities. Although the probability of losses in northwest Alabama is very low, preparation for impact to adjacent communities is important in northwest Alabama.

Extreme Temperatures: Twelve extreme temperature events in a seventeen year period injured 12 individuals, resulting in an average impact of $12,500 per occurrence and an event frequency of 0.71 events per year. The annual risk of losses for extreme temperatures based on the historical record was $8,824 of damages per year, sixth highest (and second lowest) among the hazard events for which data allowed calculations.

Flooding (Riverine and Flash): One hundred twenty flooding events in a seventeen year period caused an estimated $1,343,000 in damages, resulting in an average impact of $11,192 per occurrence and an event frequency of 7.06 events per year. The annual risk of losses for floods based on the historical record was $79,000 of damages per year, fourth highest (and fourth lowest) among hazard events for which data allows calculations.

Hail: Three hundred sixty four hail events in a seventeen year period caused an estimated $885,000 in damages, resulting in an average impact of $2,431 per occurrence and an event frequency of 21.41 events per year. The annual risk of losses for hail damage based on the

historical record was $52,059 of damages per year, fifth highest among hazard events for which data allows calculations.

High Winds (Tornadoes, Microburst, and Windstorms): Seven hundred seventy six high wind events in a seventeen year period caused an estimated $659,608,300 in damages, resulting in an average impact of $850,011 per occurrence and an event frequency of 45.65 events per year. The annual risk of losses for wind damage based on the historical record was $38,800,444 of damages per year, highest among hazard events for which data allows calculations by an exceptional margin. The staggering losses from tornadoes, particularly the loss of lives and property on April 27, 2011, provide clear evidence of the intensity of impact and risk associated with severe weather, wind and tornadoes in northwest Alabama.

Landslides: NA- the risk of losses due to landslides is not calculable based on historic record since no damages from landslides have been recorded in northwest Alabama. This evidence does not dismiss the risk associated with landslides, since evidence exists to show potential losses from landslides in isolated areas of northwest Alabama.

Land Subsidence (Sinkholes): NA- the risk of losses due to land subsidence and sinkholes is not calculable based on historic record since no damages from land subsidence and sinkholes have been recorded in northwest Alabama. This evidence does not dismiss the risk associated with land subsidence and sinkholes, since evidence exists to show potential losses from land subsidence and sinkholes in areas of karst, soluble rock formations in northwest Alabama.

Lightening: Fifty six lightening events in a seventeen year period caused an estimated $9,511,750 in damages, resulting in an average impact of $169,853 per occurrence and an event frequency of 3.29 events per year. The annual risk of losses for lightening damage based on the historical record was $169,853 of damages per year, second highest (and sixth lowest) among hazard events for which data allows calculations.

Wildfire: Three wildfires in a seventeen year period caused an estimated $103,000 in damages, resulting in an average impact of $34,333 per occurrence and an event frequency of 0.18 events per year. The annual risk of losses for wildfire damage based on the historical record was $6,059 of damages per year, seventh highest (and the lowest) among hazard events for which data allows calculations.

Winter Storms: One hundred two winter storm events in a seventeen year period caused an estimated $3,716,200 in damages, resulting in an average impact of $36,433 per occurrence and an event frequency of 6 events per year. The annual risk of losses for winter storms damage based on the historical record was $218,600 of damages per year, third highest (and fifth lowest) among hazard events for which data allows calculations.

4.7 Vulnerability Overview

Vulnerability is the susceptibility of people and their valuables to loss from natural hazards. Vulnerability can be personal, material, social, political, environmental, or economic. Whenever a natural hazard threatens an individual, or a thing or institution that is valued by individuals, then vulnerability exists. Vulnerability exists at many scales in northwest Alabama. Each individual within an area susceptible to a particular hazard is vulnerable to that hazard and should bear some responsibility for mitigating that vulnerability. When vulnerability exists across a wider scale, or at a community level or regional level, then the local jurisdictions may develop assessments and strategies for mitigating those vulnerabilities. A hazard mitigation planning process with mitigation strategies may target ways to assist individuals to identify vulnerabilities and provide an assessment of individual and community vulnerability, but the responsibility for implementing the strategies is shared between individuals and local jurisdictions.

Vulnerability can be assessed in terms of population at risk, area of the jurisdiction at risk, buildings at risk, and critical facilities in the planning jurisdiction that are at risk. In addition, some populations are more susceptible to natural hazards due to social or economic conditions. In particular, low income and elderly individuals are at greater risk for losses during natural hazards because of diminished financial and physical capabilities to weather the effects of a natural disaster. Finally, vulnerability is not uniform across the region because some hazards are more localized than others. Tables 4.7.1- 4.7.9 summarizes vulnerability for each natural hazard by particular aspects of vulnerability and the appropriate scale of potential impact.

Table 4.7.1 Vulnerable Population describes the total populace of each jurisdiction that is susceptible to particular hazards. The total population of the region is susceptible to several natural hazards equally, while local areas are more or less susceptible to others. Total population is provided based on population estimates from the 2010 Decennial Census, which is included in Table 4. 7.2. Local area population that is vulnerable to a particular hazard is estimated based on

the percentage of the land area that is exposed to a given natural disaster (found in Table 4.7.3) and assumes that the population is evenly distributed across the jurisdiction. While this method is flawed since population may be unevenly distributed, especially near particularly vulnerable sites such as waterfronts and areas of steep slope or known karst erosion, it provides a useful baseline for assessing overall impact of natural hazards. Additionally, it should be recalled that vulnerability to hazards is not uniform across jurisdictions and that the overall susceptibility or incidence of a hazard may differ from the population that is exposed to risk from a particular hazard. Therefore, vulnerable population is useful only as part of an overall vulnerability analysis.

Table 4.7.1 Vulnerable Population

Hazard	Vulnerable Population (All jurisdictions)
Drought	Colbert-54,000 Franklin- 32,000 Marion- 31,000 Winston- 24,000 Total: 141,000
Earthquake	Colbert-54,000 Franklin- 32,000 Marion- 31,000 Winston- 24,000 Total: 141,000
Extreme Temperature	Colbert-54,000 Franklin- 32,000 Marion- 31,000 Winston- 24,000 Total: 141,000
Hail	Colbert-54,000 Franklin- 32,000 Marion- 31,000 Winston- 24,000 Total: 141,000
High Winds	Colbert-54,000 Franklin- 32,000 Marion- 31,000 Winston- 24,000 Total: 141,000
Lightening	Colbert-54,000 Franklin- 32,000 Marion- 31,000 Winston- 24,000 Total: 141,000
Winter Storms	Colbert-54,000 Franklin- 32,000 Marion- 31,000 Winston- 24,000 Total: 141,000

Local Jurisdiction	Vulnerable Population (Localized hazards)				
	Dam failure	Flooding	Landslide	Land Subsidence	Wildfire
Colbert County	8,164	8,164	27,214	21,771	10,866
Cherokee	0	105	0	996	52
Leighton	0	22	0	729	7
Littleville	30	30	0	960	10
Muscle Shoals	657	657	0	13,146	131
Sheffield	452	452	0	9,039	90
Tuscumbia	421	421	0	8,423	84
Franklin County	6,341	6,381	3,170	15,852	6,341
Hodges	0	0	0	288	101
Phil Campbell	0	11	0	172	34
Red Bay	95	95	32	3,158	32
Russellville	492	492	0	2,458	1,475
Vina	0	4	0	358	125
Marion County	0	6,155	7,694	1,539	12,310
Bear Creek	0	32	0	0	268
Brilliant	0	0	0	0	135
Guin	0	119	1,188	0	71
Gu-Win	0	0	88	0	9
Hackleburg	0	0	0	227	379
Hamilton	0	344	3,443	0	2,754
Twin	0	0	200	0	60
Winfield	0	142	2,359	0	943
Winston County	0	3,673	0	0	11,018
Addison	0	0	758	0	190
Arley	0	0	357	0	89
Double Springs	0	11	1,083	0	921
Haleyville	0	42	209	0	1,043
Lynn	0	20	330	0	264
Natural Bridge	0	0	0	0	0

Table 4.7.2: 2010 Census Demographics for Population Estimates

Local Jurisdiction	Total Population	Number of Housing Units	Percent of County Housing Units	Percent of Population in Poverty	Population over 65	Population Under 18
Colbert County	54,428	25,758	100%	16.5%	9,463	12,732
Cherokee	1,048	529	2.05%	18.2%	227	234
Leighton	729	419	1.63%	30.7%	160	151
Littleville	1,011	459	1.78%	13.0%	182	250
Muscle Shoals	13,146	5,643	21.91%	10.6%	2,106	3,291
Sheffield	9,039	4,692	18.22%	21.9%	1,630	2,107
Tuscumbia	8,423	4,120	16.00%	19.3%	1,678	1,915
Franklin County	31,704	14,022	100%	20.1%	4,825	8,328
Hodges	288	131	0.93%	10.2%	42	69
Phil Campbell	1,148	580	4.14%	21.1%	202	264
Red Bay	3,158	1,508	10.75%	28.6%	579	779
Russellville	9,830	4,086	29.14%	26.6%	1,535	2,789
Vina	358	161	1.15%	38.4%	57	104
Marion County	30,776	14,737	100%	20.3%	5,645	7,050
Bear Creek	1,070	502	3.41%	30.6%	167	257
Brilliant	900	512	3.47%	25.0%	181	204
Guin	2,376	1,119	7.59%	21.8%	497	564
Gu-Win	176	87	0.59%	26.5%	20	38
Hackleburg	1,516	769	5.22%	33.5%	320	336
Hamilton	6,885	3,096	21.01%	25.6%	1,310	1,428
Twin	399	181	1.23%	15.4%	100	91
Winfield	4,717	2,289	15.53%	17.7%	951	1,073
Winston County	24,484	13,469	100%	21.2%	4,333	5,618
Addison	758	351	2.61%	28.9%	143	193
Arley	357	174	1.29%	17.2%	78	92
Double Springs	1,083	461	3.42%	21.0%	260	228
Haleyville	4,173	2,073	15.39%	30.9%	867	998
Lynn	659	336	2.49%	20.8%	127	149
Natural Bridge	37	41	0.30%	0.0%	10	6

Table 4.7.3 Vulnerable Land Area displays estimates of land area exposed or vulnerable to particular hazards by jurisdiction and for all areas within the northwest Alabama planning area. Land area estimates are based on a visual assessment of natural hazard GIS resources. Land area is presented in percentages of total area of each jurisdiction that is at least moderately threatened by a natural hazard. Analysis of land area proves important for estimating vulnerable population and for determining the number of structures that may be vulnerable to particular natural hazard risks.

Table 4.7.3 Vulnerable Land Area

Hazard	Vulnerable Land Area (All jurisdictions)
Drought	Colbert- 100% of 624 sq. miles (399,360 acres) Franklin- 100% of 647 sq. miles (414,080 acres) Marion- 100% of 744 sq. miles (476,160 acres) Winston- 100% of 632 sq. miles (404,480 acres) Total: 100% of 2,647 sq. miles (1,694,080 acres)
Earthquake	Colbert- 100% of 624 sq. miles (399,360 acres) Franklin- 100% of 647 sq. miles (414,080 acres) Marion- 100% of 744 sq. miles (476,160 acres) Winston- 100% of 632 sq. miles (404,480 acres) Total: 100% of 2,647 sq. miles (1,694,080 acres)
Extreme Temperature	Colbert- 100% of 624 sq. miles (399,360 acres) Franklin- 100% of 647 sq. miles (414,080 acres) Marion- 100% of 744 sq. miles (476,160 acres) Winston- 100% of 632 sq. miles (404,480 acres) Total: 100% of 2,647 sq. miles (1,694,080 acres)
Hail	Colbert- 100% of 624 sq. miles (399,360 acres) Franklin- 100% of 647 sq. miles (414,080 acres) Marion- 100% of 744 sq. miles (476,160 acres) Winston- 100% of 632 sq. miles (404,480 acres) Total: 100% of 2,647 sq. miles (1,694,080 acres)
High Winds	Colbert- 100% of 624 sq. miles (399,360 acres) Franklin- 100% of 647 sq. miles (414,080 acres) Marion- 100% of 744 sq. miles (476,160 acres) Winston- 100% of 632 sq. miles (404,480 acres) Total: 100% of 2,647 sq. miles (1,694,080 acres)
Lightening	Colbert- 100% of 624 sq. miles (399,360 acres) Franklin- 100% of 647 sq. miles (414,080 acres) Marion- 100% of 744 sq. miles (476,160 acres) Winston- 100% of 632 sq. miles (404,480 acres) Total: 100% of 2,647 sq. miles (1,694,080 acres)
Winter Storms	Colbert- 100% of 624 sq. miles (399,360 acres) Franklin- 100% of 647 sq. miles (414,080 acres) Marion- 100% of 744 sq. miles (476,160 acres) Winston- 100% of 632 sq. miles (404,480 acres) Total: 100% of 2,647 sq. miles (1,694,080 acres)

Local Jurisdiction	Vulnerable Land Area (Percent of jurisdiction's land area)* (Localized hazards)				
	Dam failure	Flooding	Landslide	Land Subsidence	Wildfire
Colbert County	15%	15%	50%	40%	20%
Cherokee	0%	10%	0%	95%	5%
Leighton	0%	3%	0%	100%	1%
Littleville	3%	3%	0%	95%	1%
Muscle Shoals	5%	5%	0%	100%	1%
Sheffield	5%	5%	0%	100%	1%
Tuscumbia	5%	5%	0%	100%	1%
Franklin County	20%	20%	10%	50%	20%
Hodges	0%	0%	0%	100%	35%
Phil Campbell	0%	1%	0%	15%	3%
Red Bay	3%	3%	1%	100%	1%
Russellville	5%	5%	0%	25%	15%
Vina	0%	1%	0%	100%	35%
Marion County	0%	20%	25%	5%	40%
Bear Creek	0%	3%	0%	0%	25%
Brilliant	0%	0%	10%	0%	15%
Guin	0%	5%	50%	0%	3%
Gu-Win	0%	0%	50%	0%	5%
Hackleburg	0%	0%	0%	15%	25%
Hamilton	0%	5%	50%	0%	40%
Twin	0%	0%	50%	0%	15%
Winfield	0%	3%	50%	0%	20%
Winston County	0%	15%	80%	0%	45%
Addison	0%	0%	100%	0%	25%
Arley	0%	0%	100%	0%	25%
Double Springs	0%	1%	100%	0%	85%
Haleyville	0%	1%	5%	0%	25%
Lynn	0%	3%	50%	0%	40%
Natural Bridge	0%	0%	0%	0%	45%
*Percentages are approximate and based on visual assessment of hazard risk data.					

Table 4.7.4 Vulnerable Buildings, Total by Jurisdiction

Vulnerable Buildings, Total Number of Buildings and Total Number of Residential, Commercial, and Industrial Buildings, estimated*				
	Total	Residential	Commercial	Industrial
Northwest Alabama Region	77,426	72,430	3,253	972
Colbert County	28,753	26,656	1,388	395
Cherokee	591	547	29	8
Leighton	468	434	23	6
Littleville	512	475	25	7
Muscle Shoals	6299	5840	304	87
Sheffield	5238	4856	253	72
Tuscumbia	4599	4264	222	63
Franklin County	16,291	15,293	655	182
Hodges	152	143	6	2
Phil Campbell	674	633	27	8
Red Bay	1752	1645	70	20
Russellville	4747	4456	191	53
Vina	187	176	8	2
Marion County	18,139	17,095	685	184
Bear Creek	618	582	23	6
Brilliant	630	594	24	6
Guin	1377	1298	52	14
Gu-Win	107	101	4	1
Hackleburg	947	892	36	10
Hamilton	3811	3591	144	39
Twin	223	210	8	2
Winfield	2817	2655	106	29
Winston County	14,243	13,386	525	211
Addison	371	349	14	5
Arley	184	173	7	3
Double Springs	487	458	18	7
Haleyville	2192	2060	81	32
Lynn	355	334	13	5
Natural Bridge	43	41	2	1
*Building count for each county supplied by HAZUS MH-2. Count for local governments calculated based on ratio of housing units in jurisdiction to housing units in county from 2010 U.S. Census, calculated from Table 4.7.2, and multiplied by county building counts from HAZUS.				

Table 4.7.5 Vulnerable Buildings by Hazard Type and Jurisdiction

Hazard	Vulnerable Buildings (All jurisdictions)
Drought	77,426
Earthquake	77,426
Extreme Temperature	77,426
Hail	77,426
High Winds	77,426
Lightening	77,426
Winter Storms	77,426

Local Jurisdiction	Vulnerable Buildings* (Localized Hazards, Total Number of Buildings, All Building Types, estimated)				
	Dam failure	Flooding	Landslide	Land Subsidence	Wildfire
Northwest Alabama Region	7571	13355	31935	20554	22674
Colbert County	4313	4313	14377	11501	5751
Cherokee	0	59	0	561	30
Leighton	0	14	0	468	5
Littleville	15	15	0	486	5
Muscle Shoals	315	315	0	6299	63
Sheffield	262	262	0	5238	52
Tuscumbia	230	230	0	4599	46
Franklin County	3258	3258	1628	8146	3258
Hodges	0	0	0	152	53
Phil Campbell	0	7	0	101	20
Red Bay	53	53	18	1752	18
Russellville	237	237	0	1187	712
Vina	0	2	0	187	35
Marion County	0	3628	4535	907	7256
Bear Creek	0	19	0	0	155
Brilliant	0	0	63	0	95
Guin	0	69	689	0	41
Gu-Win	0	0	54	0	5
Hackleburg	0	0	0	142	237
Hamilton	0	191	1906	0	1524
Twin	0	0	112	0	33
Winfield	0	85	1409	0	563
Winston County	0	2136	11394	0	6409
Addison	0	0	371	0	93
Arley	0	0	184	0	46
Double Springs	0	5	487	0	414
Haleyville	0	22	110	0	548
Lynn	0	11	178	0	142
Natural Bridge	0	0	0	0	19

*Number of buildings vulnerable to each hazard equals estimated number of buildings in each jurisdiction multiplied by the land area affected from Table 4.7.3

4.7.6 Vulnerable Buildings, Total Values by Jurisdiction

Vulnerable Building Values, Total Value of Buildings and Total Value of Residential, Commercial, and Industrial Buildings, 1000s of dollars, estimated*				
	Total	Residential	Commercial	Industrial
Northwest Alabama Region	8006904	5537178	1335237	752949
Colbert County	3462962	2380309	627573	291423
Cherokee	71120	48885	12889	5985
Leighton	56331	38720	10209	4741
Littleville	61709	42416	11183	5193
Muscle Shoals	758657	521472	137487	63844
Sheffield	630803	433590	114317	53085
Tuscumbia	553902	380731	100380	46613
Franklin County	1538065	1089896	246386	113086
Hodges	14369	10182	2302	1057
Phil Campbell	63620	45082	10191	4678
Red Bay	165412	117213	26498	12162
Russellville	448191	317595	71797	32953
Vina	17660	12514	2829	1298
Marion County	1584396	1079259	289398	142182
Bear Creek	53971	36764	9858	4843
Brilliant	55046	37496	10054	4940
Guin	120305	81950	21974	10796
Gu-Win	9353	6371	1708	839
Hackleburg	82676	56317	15101	7419
Hamilton	332855	226734	60798	29870
Twin	19460	13255	3554	1746
Winfield	246094	167634	44950	22084
Winston County	1421481	987714	171880	206258
Addison	37044	25740	4479	5375
Arley	18363	12760	2220	2665
Double Springs	48653	33806	5883	7060
Haleyville	218779	152018	26454	31745
Lynn	35461	24640	4288	5145
Natural Bridge	4327	3007	523	628
*Building count for each county supplied by HAZUS MH-2. Count for local governments calculated based on ratio of housing units in jurisdiction to housing units in county from 2010 U.S. Census, calculated from Table 4.7.2, and multiplied by county building counts from HAZUS.				

Table 4.7.8 Value of Vulnerable Buildings by Hazard Type and Jurisdiction

Hazard	Value of Vulnerable Building (All jurisdictions, $1000s)
Drought	8006904
Earthquake	8006904
Extreme Temperature	8006904
Hail	8006904
High Winds	8006904
Lightening	8006904
Winter Storms	8006904

Local Jurisdiction	Vulnerable Building Values (Localized hazards)				
	Dam failure	Flooding	Landslide	Land Subsidence	Wildfire
Northwest Alabama Region	827057	867503	2086577	2155100	1118012
Colbert County	519444	519444	1731481	1385185	692592
Cherokee	0	7112	0	67564	3556
Leighton	0	1690	0	56331	563
Littleville	1851	1851	0	58624	617
Muscle Shoals	37933	37933	0	758657	7587
Sheffield	31540	31540	0	630803	6308
Tuscumbia	27695	27695	0	553902	5539
Franklin County	307613	307613	153807	769033	307613
Hodges	0	0	0	14369	5029
Phil Campbell	0	636	0	9543	1909
Red Bay	4962	4962	1654	165412	1654
Russellville	0	0	0	0	0
Vina	0	4482	0	448191	156867
Marion County	0	3532	4415	883	7064
Bear Creek	0	47532	0	0	396099
Brilliant	0	0	5397	0	8096
Guin	0	2751	27523	0	1651
Gu-Win	0	0	60153	0	6015
Hackleburg	0	0	0	1403	2338
Hamilton	0	4134	41338	0	33071
Twin	0	0	166428	0	49928
Winfield	0	584	9730	0	3892
Winston County	0	36914	196875	0	110742
Addison	0	0	1424181	0	355370
Arley	0	0	37044	0	9261

Double Springs	0	184	18363	0	15609
Haleyville	0	487	2433	0	12163
Lynn	0	6563	109389	0	87511
Natural Bridge	0	0	0	0	15957
*Value of buildings vulnerable to each hazard equals estimated value of buildings in each jurisdiction multiplied by the land area affected from Table 4.7.3					

Table 4.7.9 Essential Facilities, Jurisdictions, and Building Statistics

Hospital Facilities				
Name	City	Use	Replacement cost (1000s)	Number of Beds
CARRAWAY BURDICK WEST MED CTR	HALEYVILLE	Hospital	$19,915.79	99
MARION REGIONAL MEDICAL CENTER	HAMILTON	Hospital	$22,531.00	112
CARRAWAY NORTHWEST MEDICAL CTR	WINFIELD	Hospital	$11,265.50	56
RUSSELLVILLE HOSPITAL	RUSSELLVILLE	Hospital	$20,116.96	100
RED BAY HOSPITAL	RED BAY	Hospital	$5,029.24	25
HELEN KELLER HOSPITAL	SHEFFIELD	Hospital	$30,376.61	151
SHOALS HOSPITAL	MUSCLE SHOALS	Hospital	$25,749.71	128
		Total	$134,984.81	671

Police Departments	City	Contact	Replacement Cost (thous. $)
Muscle Shoals Police Dept.	Muscle Shoals	Police Departments	$1,260.00
Brilliant Police Dept.	Brilliant	Police Departments	$1,260.00
Winston County Sheriff	Double Springs	Sheriff	$1,260.00
Winfield Police Dept.	Winfield	Police Departments	$1,260.00
Red Bay Police Dept.	Red Bay	Police Departments	$1,260.00
Franklin County Sheriff Dept.	Red Bay	Sheriff	$1,260.00
Marion County Sheriff's Office	Hamilton	Sheriff	$1,260.00
Colbert County Sheriff	Tuscumbia	Sheriff	$1,260.00
Addison Police Dept.	Addison	Police Departments	$1,260.00
Littleville Police Dept.	Russellville	Police Departments	$1,260.00
Haleyville Police Dept.	Haleyville	Police Departments	$1,260.00
Hackleburg Police Dept.	Hackleburg	Police Departments	$1,260.00
Double Springs Police Dept.	Double Springs	Police	$1,260.00

		Departments	
Tuscumbia Police Dept.	Tuscumbia	Police Departments	$1,260.00
Hackleburg City Police Dept.	Hackleburg	Police Departments	$1,260.00
Bear Creek Police Dept.	Bear Creek	Police Departments	$1,260.00
Cherokee Police Dept.	Cherokee	Police Departments	$1,260.00
Russellville Police Dept.	Russellville	Police Departments	$1,260.00
Franklin County Sheriff's Office	Russellville	Sheriff	$1,260.00
Hamilton Police Dept.	Hamilton	Police Departments	$1,260.00
Phil Campbell Police Dept.	Phil Campbell	Police Departments	$1,260.00
Sheffield Police Dept.	Sheffield	Police Departments	$1,260.00
Arley Police Dept.	Arley	Police Departments	$1,260.00
Guin Town Police Dept.	Guin	Police Departments	$1,260.00
Leighton City Police Dept.	Leighton	Police Departments	$1,260.00
			$31,500.00

Fire Departments	City	Replacement Cost (thous. $)	
Helicon Volunteer Fire Department	Arley	$1,260.00	
Houston/ Moreland Volunteer Fire Dept.	Houston	$1,260.00	
Double Springs Fire Department	Double Springs	$1,260.00	
Black Pond Volunteer Fire Department	Double Springs	$1,260.00	
Delmar Volunteer Fire Department	Haleyville	$1,260.00	
Haleyville Fire/Rescue	Haleyville	$1,260.00	
Lynn Volunteer Fire Department	Lynn	$1,260.00	
Hackleburg Volunteer Fire Department	Hackleburg	$1,260.00	
Hodges Volunteer Fire Department	Hodges	$1,260.00	
Byrd Volunteer Fire & Rescue Department	Detroit	$1,260.00	
Shiloh Volunteer Fire Department	Hamilton	$1,260.00	
Hamilton Fire Department	Hamilton	$1,260.00	
Town of Brilliant Volunteer Fire Dept.	Brilliant	$1,260.00	
Guin Volunteer Fire Department	Guin	$1,260.00	
Pea Ridge Volunteer Fire Department	Guin	$1,260.00	
Twin Fire and Rescue Service	Guin	$1,260.00	
Winfield Fire & Rescue	Winfield	$1,260.00	
Tharptown Volunteer Fire Department	Russellville	$1,260.00	
Russellville Fire Department	Russellville	$1,260.00	

Frankfort Fire Department	Russellville	$1,260.00	
BELGREEN FIRE PROTECTION DISTRICT	RUSSELLVILLE	$1,260.00	
Pleasant Site Fire Protection Authority	Red Bay	$1,260.00	
Burnout Water and Fire Protection District	Red Bay	$1,260.00	
Vina VFD	Vina	$1,260.00	
Blue Springs Fire Department	Phil Campbell	$1,260.00	
Town of Phil Campbell Volunteer Fire De	Phil Campbell	$1,260.00	
Gravel Hill VFD	Phil Campbell	$1,260.00	
Sheffield Fire & Rescue	Sheffield	$1,260.00	
Tuscumbia Fire Department	Tuscumbia	$1,260.00	
Muscle Shoals Fire Rescue	Muscle Shoals	$1,260.00	
Nitrate City Volunteer Fire Department	Muscle Shoals	$1,260.00	
Brick Hatton Volunteer Fire Department	Leighton	$1,260.00	
Rogersville Volunteer F.D.	Rogersville	$1,260.00	
White Oak Volunteer Fire Department	Leighton	$1,260.00	
Locust Shores Volunteer Fire Department	Tuscumbia	$1,260.00	
New Bethel Fire Department	Tuscumbia	$1,260.00	
Barton Volunteer Fire Department	Cherokee	$1,260.00	
Hwy 247 Vol. Fire Department	Tuscumbia	$1,260.00	
Arley Volunteer Fire Department	ARLEY	$1,260.00	
Ashridge Volunteer Fire Department	Haleyville	$1,260.00	
Pebble Fire Department	Haleyville	$1,260.00	
Sunny Home Volunteer Fire Department	Brilliant	$1,260.00	
Littleville Volunteer Fire Department	Russellville	$1,260.00	
Colbert Heights Volunteer Fire Dept.	Tuscumbia	$1,260.00	
		$55,440.00	

Schools			
HIGHLAND PARK ELEMENTARY SCHOOL	MUSCLE SHOALS	$1,927.62	206
MUSCLE SHOALS HIGH SCHOOL	MUSCLE SHOALS	$11,556.34	758
WEBSTER ELEMENTARY SCHOOL	MUSCLE SHOALS	$2,133.48	228
MCBRIDE ELEMENTARY SCHOOL	MUSCLE SHOALS	$8,495.92	607
HOWELL-GRAVES PRESCHOOL	MUSCLE SHOALS	$2,198.98	235
T V Y S D F	TUSCUMBIA	$4,349.30	332
LIBERTY CHRISTIAN ACADEMY	GUIN	$641.91	49
SAVE THE WORLD MINISTRIES	MUSCLE	$67.37	6

DAYC	SHOALS		
COVENANT CHRISTIAN SCHOOL	TUSCUMBIA	$3,576.38	273
FELLOWSHIP CHRISTIAN SCHOOL	DOUBLE SPRINGS	$563.31	43
THARPTOWN JUNIOR HIGH SCHOOL	RUSSELLVILLE	$5,161.52	394
BELGREEN HIGH SCHOOL	RUSSELLVILLE	$6,733.56	514
FRANKLIN COUNTY CAREER TECHNICAL CENTER	RUSSELLVILLE	$6,733.56	514
RED BAY HIGH SCHOOL	RED BAY	$13,521.39	842
VINA HIGH SCHOOL	VINA	$3,825.29	292
EAST FRANKLIN JUNIOR HIGH SCHOOL	PHIL CAMPBELL	$2,292.55	175
PHIL CAMPBELL HIGH SCHOOL	PHIL CAMPBELL	$5,384.23	411
PHIL CAMPBELL ELEMENTARY SCHOOL	PHIL CAMPBELL	$5,873.24	453
HATTON ELEMENTARY SCHOOL	LEIGHTON	$3,557.11	317
COLBERT COUNTY HIGH SCHOOL	LEIGHTON	$7,519.57	574
LEIGHTON ELEMENTARY SCHOOL	LEIGHTON	$3,795.53	331
COLBERT HEIGHTS HIGH SCHOOL	TUSCUMBIA	$6,903.86	527
NEW BETHEL ELEMENTARY SCHOOL	TUSCUMBIA	$1,684.32	180
COLBERT HEIGHTS ELEMENTARY SCHOOL	TUSCUMBIA	$5,788.09	448
HACKLEBURG SCHOOL	HACKLEBURG	$7,165.87	547
HAMILTON MIDDLE SCHOOL	HAMILTON	$7,641.22	553
HAMILTON HIGH SCHOOL	HAMILTON	$5,344.92	408
MARION COUNTY ALTERNATIVE SCHOOL	HAMILTON	$91.70	7
HAMILTON ELEMENTARY SCHOOL	HAMILTON	$10,096.78	701
BRILLIANT ELEMENTARY SCHOOL	BRILLIANT	$2,114.76	226
BRILLIANT HIGH SCHOOL	BRILLIANT	$2,423.56	185
MARION COUNTY HIGH SCHOOL	GUIN	$2,882.07	220
GUIN ELEMENTARY SCHOOL	GUIN	$3,063.23	288
WINFIELD MIDDLE SCHOOL	WINFIELD	$4,759.15	413
WINFIELD HIGH SCHOOL	WINFIELD	$4,807.81	367
WINFIELD ELEMENTARY SCHOOL	WINFIELD	$7,593.31	554
RUSSELLVILLE ELEMENTARY SCHOOL	RUSSELLVILLE	$7,780.65	565
RUSSELLVILLE MIDDLE SCHOOL	RUSSELLVILLE	$8,114.70	576
RUSSELLVILLE HIGH SCHOOL	RUSSELLVILLE	$9,544.51	672
WEST ELEMENTARY SCHOOL	RUSSELLVILLE	$8,461.86	605
PHILLIPS HIGH SCHOOL	BEAR CREEK	$3,458.48	264
PHILLIPS ELEMENTARY SCHOOL	BEAR CREEK	$3,914.75	338

CHEROKEE ELEMENTARY SCHOOL	CHEROKEE	$3,012.13	285
CHEROKEE MIDDLE SCHOOL	CHEROKEE	$2,481.57	221
CHEROKEE HIGH SCHOOL	CHEROKEE	$2,895.17	221
ADDISON HIGH SCHOOL	ADDISON	$4,336.20	331
MEEK HIGH SCHOOL	ARLEY	$3,379.88	258
ADDISON ELEMENTARY SCHOOL	ADDISON	$4,408.63	367
MEEK ELEMENTARY SCHOOL	ARLEY	$3,301.65	302
WINSTON COUNTY TECHNICAL CENTER	DOUBLE SPRINGS	$6,733.56	514
WINSTON COUNTY HIGH SCHOOL	DOUBLE SPRINGS	$3,720.49	284
DOUBLE SPRINGS ELEMENTARY SCHOOL	DOUBLE SPRINGS	$5,924.33	456
DOUBLE SPRINGS MIDDLE SCHOOL	DOUBLE SPRINGS	$3,997.46	356
LYNN HIGH SCHOOL	LYNN	$2,305.65	176
LYNN ELEMENTARY SCHOOL	LYNN	$2,858.86	276
HALEYVILLE HIGH SCHOOL	HALEYVILLE	$11,135.26	740
HALEYVILLE CENTER OF TECHNOLOGY	HALEYVILLE	$6,733.56	514
HALEYVILLE ELEMENTARY SCHOOL	HALEYVILLE	$14,626.86	967
SHEFFIELD JUNIOR HIGH SCHOOL	SHEFFIELD	$2,481.57	221
SHEFFIELD HIGH SCHOOL	SHEFFIELD	$4,703.01	359
L E WILLSON ELEMENTARY SCHOOL	SHEFFIELD	$4,340.51	363
WA THREADGILL PRIMARY SCHOOL	SHEFFIELD	$3,574.14	318
DESHLER HIGH SCHOOL	TUSCUMBIA	$6,235.75	476
R E THOMPSON INTERMEDIATE SCHOOL	TUSCUMBIA	$3,863.65	335
DESHLER ALTERNATIVE SCHOOL	TUSCUMBIA	$4,349.30	332
DESHLER MIDDLE SCHOOL	TUSCUMBIA	$4,087.30	364
G W TRENHOLM PRIMARY SCHOOL	TUSCUMBIA	$4,408.63	367
DESHLER CAREER TECHNICAL CENTER	TUSCUMBIA	$6,733.56	514
MUSCLE SHOALS CENTER FOR TECHNOLOGY	MUSCLE SHOALS	$6,733.56	514
MUSCLE SHOALS MIDDLE SCHOOL	MUSCLE SHOALS	$8,135.29	577
	Total	$355,041.29	27,206

4.8 Vulnerability Synthesis and Overall Risk Assessment

The following section provides an overview of potential vulnerability to land area, property, and individuals from the natural hazards assessed in this plan. It is intended to evaluate vulnerability in terms of probability of a natural hazard occurring, potential damages from the hazard, and the capacity of the community to effectively plan for and implement hazard mitigation measures. The hazards are discussed and then rated as High Risk, Medium Risk, Low Risk, or Very Low Risk.

High Risk: Potentially widespread damage (> $100,000) or loss of life in a 1-10 year period

Medium Risk: Potentially widespread damage (> $100,000) or loss of life in a 10-50 year period

Low Risk: Potentially widespread damage (> $100,000) or loss of life in a 100 year period

Very Low Risk: No probable major damage (> $100,000) or loss of life; possible major damage in a very long (100+) year period.

Under this assessment of risk, those hazards with at least a low risk or those with a reasonable capacity for jurisdiction to mitigate require consideration of mitigation planning strategies that could reduce vulnerability or risk of damage or lost life in the event of a natural hazard.

Dam Failure: People and communities in flood hazard areas and other low areas downstream from major dams have the greatest vulnerability from dam failure. Major dams in Colbert and Franklin counties are the source of greatest vulnerability. In northwest Alabama, 8,164 people were thought to be vulnerable to dam failure. Approximately 15% of the land area of Colbert County and 20% of the land area of Franklin County were estimated to be susceptible to dam failure. And, approximately 7,571 structures were located in flood areas downstream of major dams. With exception of Sloss Lake Dam, which is owned by the City of Russellville, jurisdiction over these dams rests with the Tennessee Valley Authority and private individuals. Although the likelihood of dam failure is very low, a catastrophic failure was estimated to have a potential impact of $827 million dollars to buildings. The combination of susceptibility and vulnerability led to an overall assessment of very low risk from dam failure, which eliminated any need for specific mitigation planning efforts.

Drought: Drought can potentially affect all 141,000 residents and the entire land area of northwest Alabama. Groundwater and surface water sources can diminish during a drought, causing crop losses on agricultural lands and affecting drinking water supplies. Public systems and as individual private wells are potentially affected by drought. Drought could potentially affect all 77,426 structures estimated to be in the region. Although a total loss from drought is highly unlikely, these structures are valued at over $8 billion. More commonly, drought would lead to temporary water shortages and acute strain on public utilities and crop losses. The overall risk of drought is low across the region, and mitigation actions should be reviewed for addressing potential water shortages and crop loses.

Earthquake: Earthquakes can potentially affect all 141,000 residents and 77,426 structures in northwest Alabama. A significant earthquake is highly unlikely, but despite being improbable one could result in widespread serious damage and destruction. The risk to buildings is minimal according to HAZUS model for the area since the probability of an earthquake of significant magnitude is very low. The overall risk of an earthquake is very low, however, the mitigation practices for earthquakes are complementary to those for other disasters and have been reviewed an incorporated into the mitigation plan.

Extreme Temperatures: Extreme temperatures can potentially affect all 141,000 residents of northwest Alabama. High or low temperatures over a prolonged period are not likely to affect structures or facilities, however, they may contribute to droughts and/or winter storm activity. The overall risk from extreme temperature is low, which necessitates a review of mitigation planning techniques to avoid injury to vulnerable populations, in particular the elderly and younger aged population of the region.

Flooding (Riverine and Flash): Flooding is localized to those areas adjacent to surface waters and to areas of poor drainage. Flood hazard areas are most readily identifiable when they appear on a flood hazard map produced by FEMA. However, flooding potentially affects a broader range of properties than those located within FEMA mapped flood areas due to unpredictable weather patterns and changes to drainage features. A population of approximately 24,373 residents was identified as vulnerable to flooding across the four counties of the planning region in northwest Alabama. This affected between 15 and 20% of the land area of each county and approximately 13,355 structures valued at over $867 million. Flooding is among the most common and extensive causes of property damage in the region. Risk associated with flooding

was assessed to be medium, with floods causing significant damage to large numbers of structures and necessitating a mitigation action plan to address potential losses.

The Federal Emergency Management Agency's National Flood Insurance Program provides insurance to homes located in areas of flood hazard in communities that participate in the NFIP program, which requires certain standards for elevating or flood proofing buildings in flood hazard zones and avoiding impacts that would worsen downstream flooding. The FEMA program tracks two types of insured properties under the program, which provide an indication of the long term severity of flood problems in local communities. The Repetitive Loss (RL) Program and Severe Repetitive Loss (SRL) Programs target properties with the worst history of flooding.

Repetitive loss properties: FEMA defines repetitive loss properties as those having two or more claims of $1,000 or more in the past rolling 10-year period.

Severe repetitive loss properties: Properties claiming at least four claim over $5,000, which amount to more than $20,000 total; or properties with two claim payments cumulatively greater than the market value of the building- both of which must take place within a rolling 10-year period and not less than 10 days apart.

In northwest Alabama, 19 properties accounted for 61 total loss claims with total damages of $860,182.28 in the ten years preceding September 30, 2013. Of these losses, damages sustained to two properties in Colbert County also qualified as Severe Repetitive Losses, accounting for 20 individual loss claims and $466,715.36 in damages, or over half of the total claims. Evidence supports efforts to reduce RL and SRL claims through mitigation efforts to address the inordinately high costs of these properties.

	Building	**Contents**	**Total**	**Average**		
Community Name	**Payments**	**Payments**	**Payments**	**Payment**	**Losses**	**Properties**
Colbert County*	$ 255,457.22	$ 211,258.14	$ 466,715.36	$ 23,335.77	20	2
Muscle Shoals, City Of	$ 22,177.98	$ 243.02	$ 22,421.00	$ 2,802.63	8	3
Sheffield, City Of	$ 5,581.86	$ 20,763.53	$ 26,345.39	$ 6,586.35	4	2
Tuscumbia, City Of	$ 76,600.25	$ 32,154.86	$ 108,755.11	$ 9,886.83	11	5
Florence, City Of	$ 36,111.91	$ 50,593.32	$ 86,705.23	$ 10,838.15	8	3
Hamilton, City Of	$ -	$ 28,858.76	$ 28,858.76	$ 14,429.38	2	1
Winfield, City Of	$ 84,783.18	$ 35,598.25	$ 120,381.43	$ 15,047.68	8	3
	$ 480,712.40	$ 379,469.88	$ 860,182.28	$ 82,926.78	61	19

Hail: Hail can potentially affect all 141,000 residents of northwest Alabama and all 77,426 structures. Vulnerability to hail is limited to sporadic damages to properties, including homes and automobiles, across the entire region. Building vulnerability is largely limited to roofs and windows. The overall risk from hail is low, which would normally necessitate a review of mitigation planning techniques; however, the community's capacity to implement mitigation against hail damage is low. Protection is largely limited to property design, maintenance, and insurance, which are individual responsibilities. Unlike other hazards, which can be mitigated through public education and community investments, the isolated and sporadic nature of hail damage makes it primarily an individual responsibility. Therefore, no mitigation techniques are presented for hail events.

High Winds (Tornadoes, Microburst, and Windstorms): high winds including tornadoes are the most destructive natural hazards in northwest Alabama historically and in terms of potential future risk. All lives and property in the region are potentially affected by tornadoes, as the devastation of April 27, 2011 demonstrates clearly. Over $2 billion in damages were sustained in the aftermath of those storms. All 141,000 residents, all 77, 426 structures, an estimated $8 billion in potential losses, and unaccounted for potential for other destruction are directly related to the risk of high winds in northwest Alabama. Risk from high winds is high and requires mitigating responses from all levels of government and from individuals throughout the region.

Landslides: The geography of northwest Alabama is conducive to landslides in some locations in Colbert, Franklin, Marion and Winston Counties. The greatest susceptibility is found in unincorporated areas of Colbert, Franklin, and Marion County as well as throughout all of Winston County. Between 25% and 100% of jurisdictions are vulnerable to landslides; however, their damages and incidence in historical occurrences has been slight in the unincorporated areas of Colbert and Franklin county. Nevertheless, approximately 31,905 structures remain at risk, based on the analysis of landslide hazards, with a total value of $2.1 billion. However, widespread landslide incidence is not at all likely, and damages are most likely to be confined and sporadic. Therefore, the risk of landslides is assessed to be very low, but a plan for mitigation is provided for them because of the capacity of local jurisdictions to influence landslide risk through development policies.

Land Subsidence (Sinkholes): Sinkholes are a threat to large areas of Colbert and Franklin Counties due to karst landforms underlying the surface of developments. The potential for land subsidence affects 39,162 residents as a result of this geologic condition. An estimated 40% to 50% of total land area in Colbert and Franklin County is at risk from land subsidence, which places approximately 20,554 buildings at risk. While sinkholes are rare and sporadic, they would potentially damage individual properties rather than causing widespread damage. Sinkhole risk is estimated to be very low due to the rarity of sinkholes and the relatively sporadic, low damage they cause. However, a mitigation plan is provided for sinkholes based on the ability of local jurisdictions to encourage good design and siting decisions for new developments.

Lightening: Lightening can potentially affect all 141,000 residents of northwest Alabama, and it can potentially affect all 77,426 structures. Vulnerability to lightening is limited to sporadic damages to properties, including homes, electronics, and structural damage from fires. The overall risk from lightening is low, despite it being a very common and highly destructive natural hazard, necessitating a review of potential mitigation techniques.

Wildfire: Wildfire is a potentially damaging natural hazard for those areas closest to fuel sources such as uncleared forestland and timberland. Approximately 10,866 residents live within this area, known as the urban wildland interface. Between 20% and 45% of the acreage of each county is located in an area that is vulnerable to wildfire, representing approximately 22,674 structures valued at over $1.1 billion. The risk of a catastrophic loss of this magnitude is very low, however. More likely, isolated fires would place acreage in more rural areas at risk causing lower overall damages. Nonetheless, wildfire remains a low risk natural hazard to life and property in those areas and necessitates a mitigation plan.

Winter Storms: Winter storms are a high risk natural hazard for northwest Alabama. Although storms are somewhat infrequent, they threaten all 141,000 residents of northwest Alabama and potentially affect all 77,426 structures valued at over $8.2 billion. Although a catastrophic loss is unlikely, the entire area of northwest Alabama is at risk from winter storms, which can damage structures where they cannot properly bear the weight of ice and snow and can cause injury and loss of life where extended power outages and poor heating conditions may lead to exposure to the elements. Winter storms are rated as a high risk natural hazard, which necessitates a mitigation plan.

Section 5 Mitigation Plan Draft

Section Contents

5.1 Mitigation Planning Process

Each hazard mitigation planning participant was asked to review the progress of their mitigation goals and strategies and to re-evaluate those goals and strategies based on changing information, demographic or growth patterns, or updated risk assessment and vulnerability measures. Participants were asked to review their goals and strategies in light of the likelihood of a hazard occurrence within their community, the spatial extent of particular hazards, and the impact of hazard occurrences in the local jurisdiction. The jurisdictions were also asked to provide information regarding the completion, addition, and deletion of their action items and other hazard mitigation strategies. Each jurisdiction's strategies continue to be prioritized based on the jurisdiction's technical, administrative, political, legal, economic, and environmental capability.

5.2 Mitigations Goals

Each jurisdiction was asked to review the mitigation goals of the prior hazard mitigation plans and to provide feedback as to the need to amend, add, or delete goals from the plan as a result of changing circumstances or newly updated risk, threat, threat or vulnerability assessments. The mitigation goals for the plan were determined to be the following:

1) **Protect Life and Property**
    - **a.** Implement measures that assist in protecting lives by making homes, businesses, infrastructure, critical facilities, and other property more resistant to losses from natural hazards.
    - **b.** Increase community awareness of and preparedness for natural hazards.
    - **c.** Reduce losses and repetitive damages for chronic hazard events.

d. Improve hazard assessment information to make recommendations for discouraging new development and encouraging preventative measures for existing development in areas vulnerable to natural hazards, especially those that are area specific.

2) Public Awareness

a. Develop, implement, and expand current education and outreach programs to increase public awareness of the risks associated with natural hazards.

b. Provide information on tools, partnership opportunities, and funding resources for municipalities and the region as a whole to assist in implementing mitigation activities.

3) Natural Systems

a. Balance planning, natural resource management, and land use planning with natural hazard mitigation to protect life, property, and the environment.

b. Preserve, rehabilitate, and enhance natural systems to serve natural hazard mitigation functions.

4) Partnership and Implementation

a. Strengthen communication and coordinate participation among and within public agencies, municipalities, citizens, non-profit organizations, business, and industry to gain a unified interest in plan implementation and maintenance.

b. Encourage leadership within public and private sector organizations to prioritize and implement local, county, and regional hazard mitigation activities.

5) Emergency Services

a. Establish policies to ensure mitigation projects for critical facilities, services, and infrastructure.

b. Strengthen emergency operations by increasing collaboration and coordination among public agencies, municipalities, non-profit organizations, business, and industry.

c. Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operation plans and procedures.

Mitigation planning serves to lessen a community's vulnerability to the hardships and costs of disasters. The implementation of mitigation strategies is a key to achieving a sustainable

community, one in which the economic and social needs of people, businesses, critical facilities, and institutions coexist with natural environmental constraints and are protected from the disruptions and impacts of emergencies and disasters. Hazard mitigation planning must be closely coordinated with a community's overall development efforts. The most effective way for a community to initiate this objective is through a comprehensive local mitigation planning program, as presented here.

5.3 Mitigation Strategies Overview

Each jurisdiction reviewed a comprehensive range of hazard mitigation strategies prior to developing an action plan for mitigation activities to be attempted in the future. The summaries below provide the background on particular strategies for mitigating hazards that were reviewed prior to the selection of techniques by each local jurisdiction.

Flood

Ninety percent of federal disaster declarations are flood events. Response and recovery costs can be extremely high, so where risks are apparent it makes sense to take actions that prevent damage from occurring. If flood damage cannot be fully prevented, there may be mitigation techniques that lessen the damage. Flooding addressed in this section can be from high ground water, overland flooding from rivers or streams, or from a dam failure.

Acquisition	Land with structures may be purchased by and titled in the name of a local governing body that can remove structures and enforce permanent restrictions on development.
Relocation	A structure may be moved to a less hazardous location.
Elevation	A structure may be mechanically lifted so that the lowest floor, including basement, is raised above the base flood elevation. Utilities or other mechanical devices should also be raised above flood levels.
Dry-Flood proofing	It may be possible to keep water out by strengthening walls, sealing openings, or using water proof compounds or plastic sheeting on walls. Dry-proofing is not recommended for residential construction but may be a reasonable alternative for non-residential structures- either in new construction or while making substantial improvement, or while repairing a substantially damaged structure.
Wet-Flood proofing	Using water-resistant paints or materials can allow for easy cleanup after floodwater exposure in accessory structures or in garage area below an elevated residential structure. In a basement, wet-flood proofing may be preferable to attempting to keep water out completely because it allows for controlled flooding to balance exterior and interior water forces and discourage structural collapse. Wet-flood proofing may not be used for basements in cases of new construction, substantial improvement, or substantial damage.
Floodplain/Coastal Zone Management	Determining and enforcing acceptable land uses through planning and regulation may not prevent inevitable flooding in flood-prone areas, but planning and regulation can alleviate the risk of damage by limiting exposure in such hazard areas. Floodplain and coastal zone management can be included in comprehensive planning.

Capital Improvements Plans	Infrastructure planning decisions can affect flood hazard mitigation. For example, decisions to extend roads or utilities to an area may increase exposure. Some communities may consider structural flood protection such as levees or floodwalls.
Zoning Ordinance Adoption or Amendments	Examples of zoning methods that affect flood hazard mitigation include: 1) adopting ordinances that limit development in the floodplain; 2) limiting the density of developments in the floodplain; and 3) requiring that floodplains be kept as open space.
Subdivision Ordinances Or Amendments	Subdivision design standards can require elevation data collection during the platting process. Lots may be required to have buildable space above the base flood elevation.
Building Code Adoption Or Amendment	Requirements for building design standards and enforcement include the following possibilities: 1) that a residential structure be elevated; and 2) that a non-residential structure be elevated or flood proofed.
Conservation Easements	Conservation easements may be used to protect environmentally significant portions of parcels from development. They do not restrict all use of the land. Rather, they direct development to areas of land that are not environmentally significant.
Transfer of Development Rights	In return for keeping floodplain areas in open space, a community may agree to allow a developer to increase densities on another parcel that is not at risk. This allows a developer to recoup potential losses from the non-use of a floodplain site with gains from development of a non-floodplain site.
Purchase/Easement Of Development Rights	Compensating an owner for partial rights, such as easement of development rights, can prevent a property from being developed contrary to a community's plan to maintain open space. This may apply to undeveloped land generally or to farmland in particular.
Storm water Management Ordinances or Amendments	Storm water ordinances may regulate development in upland areas in order to reduce storm water run-off. Examples of erosion control techniques that may be employed within a watershed area include proper bank stabilization with sloping or grading techniques, planting vegetation on slopes, terracing hillsides, or installing riprap boulders or geotextile fabric.
Multi-Jurisdiction Cooperation Within Watershed	Forming a regional watershed council helps bring together resources for comprehensive analysis, planning, decision-making, and cooperation.
Comprehensive Watershed Tax	A tax can be used as a mitigation action in several ways: 1) tax funds can be used to finance maintenance of drainage systems or to construct reservoirs; 2) tax assessments may discourage builders from constructing in a given areas; or 3) taxes may be used to support a regulatory system.

Post-Disaster Recovery Ordinance	A post-disaster recovery ordinance regulates repair activity, generally depending on property location. It prepares a community to respond to a disaster event in an orderly fashion by requiring citizens to 1) obtain permits for repairs, 2) refrain from making repairs, or 3) make repairs using standard methods.
Flood Insurance	Purchasing flood insurance does not prevent a flood from occurring, but it does mitigate a property owner's exposure to loss from flood damage. National Flood Insurance Program (NFIP) policies are only available in communities that participate in the program which is administered by FEMA.
Floodplain Ordinances Or Amendments	Communities that choose to participate in the NFIP must adopt ordinances that meet minimum federal and state requirements. Communities may pass more stringent ordinances to reduce risk even further.
Community Rating System	Also administered by FEMA, the Community Rating System (CRS) is a companion program to the NFIP. It rewards a community for taking actions over and above the minimum NFIP requirements with the goal of further reducing flood damages in the community. The more actions a community takes, the lower the premiums for flood insurance within that community.
Updated Floodplain Mapping	By taking the initiative locally to more accurately map problem areas with information not already on FEMA maps, a community can warn residents about potential risks that may not have been anticipated. Upgrading maps provides a truer measure of risks to a community.
Storm Drainage Systems	Flood mitigation can involve installing, re-routing, or increasing the capacity of a storm drainage system that may involve detention and retention ponds, drainage easements, or creeks and streams. It can include separation of storm and sanitary sewers as well as higher engineering standards for drain and sewer capacity.
Drainage System Maintenance	At most times, a drainage system will do its job and move water to intended areas. However, if a system is not maintained, erosion, material dumping, or deterioration of man-made reinforcement materials may reduce the carrying capacity of a stream. Therefore, regular maintenance, such as sediment and debris clearance, is needed so that the stream may carry out its designed function. Also important is detection and prevention/discouragement of discharges into storm water/sewer systems from home footing drains, downspouts, or sump pumps.
Drainage Easements	Communities may consider obtaining easements for planned and regulated public use of privately owned land for temporary water retention and drainage.
Wetland Protection	With special soils and hydrology, wetlands serve as natural collection basins for floodwaters. Acting like sponges, wetlands collect water, filter it, and release it slowly into rivers and streams. Protecting and preserving wetlands can go a long way toward preventing flooding in other areas.
Roads	Roads are needed to get people and goods from place to place. In addition to planning for traffic control during floods, there are various construction and placement factors to consider when building roads. To maintain dry access, roads should be elevated above

	the base flood elevation. However is 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 flood waters tend to wash roads out, construction, reconstruction, or repair can include not only attention to drainage but also stabilization or armoring of vulnerable shoulders or embankments.
Structural Flood Control Measures	Structural flood control measures (e.g. Levees, dams, or floodwalls) channel water away from people and property. Structural measures may increase drainage or absorption capacities (e.g. detention or retention basins, relief drains, spillways, drain widening/dredging or re-routing, logjam and debris removal, extra culverts, bridge modification, dike setbacks, flood gates and pumps, or channel redirection). However, structural measures may also cause an increase in the base flood elevation. History has shown that structures that channel water may create a false sense of security and result in greater damage to nearby properties if the structures fail.
Minor Structural Projects	A minor structural project is similar by smaller and more localized than a structural project, in that the measures used to reduce flooding may include levees, floodwalls, dams, or other activities that channel water away from people or property. However, a minor structural project should only be constructed in areas that cannot be mitigated through non-structural activities, or where structural activities are not feasible doe to low densities.
Dam and Levee Maintenance	Although dams and levees may have been constructed properly, failure to maintain them can lead to significant loss of life and property if they are stressed and broken or breached during a flood event. An inspection, maintenance and enforcement program helps to ensure continued structural integrity. Dams or levees need to be kept in good repair. Unnecessary or old and structurally unsound dams should be removed. Planning for dam breaks can include constructing emergency access roads as well as automating pump and flood gate operation. And it never hurts to regulate development in a dam's hydraulic shadow, where flooding would occur if there was a severe dam failure.
Community Outreach And Education	Communities may use outreach programs to 1) advise homeowners of risks to life, health, and safety; 2) facilitate technical assistance programs that address measures that citizens can take; or 3) facilitate funding for mitigation measures. Driver safety strategies for flooded areas can be addressed through driver safety/education classes and by the media. Local officials can be trained on flood fighting, floodplain management, flood proofing, traffic control during flooding, and other measures.
Debris Control	Community members can participate in debris control by securing debris, yard items, or stored objects that may otherwise be swept away, damaged, or pose a hazard if floodwaters would pick them up and carry them away. Additionally, a community can pass and enforce an ordinance that regulates dumping.
Hazardous and Buoyant Material Protection	Containers of hazardous materials such as petroleum or chemicals should not be located in a flood hazard area. If such a location is necessary, hazardous material containers need to be anchored, because the contents can contaminate water and multiply the damaging effects of flooding by causing fires or explosions. Also, buoyant materials should be anchored because if they float downstream, the may cause additional damage to buildings or bridges or may plug a stream resulting in higher flood heights.

Manufactured Homes	Manufactured or mobile homes should be elevated above the base flood elevation and anchored, or more preferably, kept out of the floodplain.
Flood Warning	In addition to a communication strategy, a flood warning system may consist of people or machines monitoring water level with stream gauges. Although a flood warning system generally does not provide long-term damage reduction, it can alleviate health and safety risk by providing citizens time to escape and possibly remove belongings that could be damaged. NOAA weather radio and EAS broadcasts can be incorporated into a community's flood warning system.
Back-up Generators	A community may consider back-up generators for pumping and lift stations in sanitary sewer systems, along with other measures (e.g. alarms, meters, remote controls, and switchgear upgrades).
Basement Backflow Prevention	Depending on its infrastructure capabilities, a community may encourage the use of check valves, sump pumps, and backflow prevention devices in homes and buildings.

<u>Landslides</u>

Landslides by the same high water levels or rain that result in flooding. Landslides can also be caused by earthquakes. Although many mitigation measures resemble those for flowing, landslides pose unique considerations.

Mapping	Local governments, developers, and residents will make better decisions using maps. Soil types, slope percentages, drainage, or other critical factors will be used to identify landslide prone areas.
Building Codes	Building codes will set construction standards, including minimum foundation requirements in landslide prone areas.
Zoning Ordinances	Zoning ordinances may be used to create buffers between structures and high-risk areas.
Slide-Prone Area Ordinance	A special purpose ordinance for slide-prone areas may be used to limit fill or dumping, as well as address drainage and other landslide related problems.
Code Enforcement	A strong community commitment to code enforcement is necessary to ensure compliance with building codes and zoning ordinances.
Drainage Control Requirements	Drainage regulations are similar to storm water management regulations. By controlling drainage a community can reduce the risk of landslide associated with saturated soils.
Grading Ordinances	Grading ordinances require developers to obtain permits prior to filling or grading. Such ordinances may also provide specific design standards.
Hillside Development Ordinances	Hillside development ordinances are special purpose ordinances that set specific standards for construction on hillsides.
Subdivision Ordinances	Subdivision ordinances set guidelines on how land will be divided, the placement and size of roads, and the location of infrastructure. Such ordinances can also be used to regulate open space and buildable areas.
Sanitary System	

Codes	Sanitary codes can reduce the effects of drainage on landslides by limiting the type and location of sanitary systems.
Geological Hazard Overlay Zones	A geological hazard overlay zone requires a detailed geotechnical analysis prior to any construction activity. Used in association with building codes, this may reduce damage potential by providing clear information about risk.

Thunderstorms/Lightening

Damage from thunderstorms and lightening is often underestimated. Everyone should have an appreciation for the dangers of lightening. Although not entirely preventable, damage and life safety risk from there events can be minimized.

Community Outreach And Education	Communities may use outreach programs to promote awareness of thunderstorm dangers. Driver safety strategies for severe weather events can be address by driver safety/education classes and by the media.
Early Warning Systems	Local and state governments can invest in public early warning systems/networks, as well as train people to serve as weather spotters.
Building Construction	Public and private buildings can be designed with structural bracing, shutters, laminated glass in window panes, and hail-resistant roof shingles or flashing to minimize damage.
Surge Protectors and Lightening Protection	Surge protection can be installed on critical electronic equipment. Lightening protection devices and methods, such as lightning rods and grounding, can be installed on a community's communications infrastructure and other critical facilities.
Burying Power Lines	Buried power lines offer the security of uninterrupted power during and after storms. However, consideration needs to be made for maintenance and repairs, particularly in cold climates where soil freezes more readily.

Tornado

Tornadoes can strike anywhere and cause extensive damage. Damage and life safety risk may not be entirely preventable, but it can be minimized.

Construction Standards And Techniques	To strengthen public and private structures against sever wind damage, communities can require or encourage wind engineering measures and construction techniques that may include structural bracing, straps and clips, anchor bolts, laminated or impact-resistant glass, reinforced pedestrian and garage doors, window shutters, waterproof adhesive, sealing strips, or interlocking roof shingles. Also, architectural design can make roofs less susceptible to uplift.
Safe Rooms	Risk to lives can be improved through construction and use of concrete safe rooms in homes and shelter areas of mobile home parks, fairgrounds, shopping malls, or other vulnerable public areas.
Manufactured Homes	Damage and injury can be prevented by anchoring manufactured homes and exterior attachments such as carports and porches.

Loose Items	Loose items like yard and patio furniture should be secured.
Temporary Debris Disposal	Temporary debris disposal sites can be protected by fencing and/or located away from populated areas.

Severe Wind

Severe wind can be as destructive as tornadoes. Damage and life safety risk may not be entirely preventable, but it can be minimized.

Roofing Shingles	Requiring the use of special roofing shingles designed to interlock and resist uplift forces in extreme wind conditions can reduce damage to a roof or other structure.
Building Construction	Engineered construction can accommodate foundation design, braced elevated platforms, and the ability of a structure to withstand lateral forces of winds and waves.
Manufactured Home Tie-Downs	The risk of manufactured home damage can be greatly reduced by using tie-downs with anchors and ground anchors appropriate for the soil type.
Burying Power Lines	Buried power lines offer the security of uninterrupted power during and after storms. However, consideration needs to be made for maintenance and repairs, particularly in cold climates where soil freezes more readily.
Designed-Failure Mode	Designed-failure mode refers to power line design that allows for lines to fall or fail in small sections rather than as a complete system, so restoration can be done more quickly.
Backup Power	Backup power resources can enable critical facilities to continue basic services and can be used by businesses to ensure security and protect refrigerated goods.
Tree Management	Tree pruning near power lines can reduce the potential for trees falling on and breaking power lines.

Extreme Temperature

When temperatures reach levels that are extremely high or extremely low, they pose dangers that can be alleviated by planning for how to handle such situations.

Outreach/Public Awareness	A local government can organize outreach to vulnerable populations during period of extreme temperature, including establishing and promoting accessible heating or cooling centers in the community.
Heating Requirements	Housing/landlord codes can require minimum temperatures.
Heating Bills	If not already required by state law, communities can encourage utility companies to offer special arrangements for paying heating bills.
Heating and Cooling Centers	A community can establish heating and/or cooling centers for vulnerable populations. Center operations should be linked to outreach projects that encourage at-risk populations to use the centers.

Winter Weather/Snowstorms

Proper preparation can decrease the risks of injury that can occur during cold weather and snowstorms in particular.

Family and Traveler Emergency Preparedness	A local or state government can produce and distribute family and traveler emergency preparedness information relating to severe winter weather hazards.
Driver Safety	Safety strategies for severe weather events can be included in driver education classes and materials.
Power Lines	Burying or otherwise protecting electric lines and other utility lines can prevent utility disruption by protecting lines from ice, wind or snow damage. Nevertheless, lines buried in frozen soil may be difficult to reach or repair when necessary.
Code Enforcement And Building Maintenance	Local governments can impact building/site design through building code enforcement of snow-related ordinances such as snow loads, roof slope, snow removal , and storage. Communities can also monitor snow amounts to provide site-specific snow load data. Home and public building maintenance should be encouraged in order to prevent roof and wall damage from "ice dams", particularly resulting from ice and sleet storms.
Shelters	A community can establish heating centers or shelters for vulnerable populations, not only for residents, but also for stranded motorists/travelers.
Outreach	A community can plan to systematically contact isolated, vulnerable, or special-needs populations.
Animal Protections	Farmers and other animal custodians should plan for addressing livestock or other animal needs.
Roads	Local governments need to always plan for and maintain adequate road and debris clearing capabilities.
Snow Fences	Using snow fences or "living snow fences" (rows of trees or other vegetation) can limit blowing and drifting of snow over critical roadway segments.

Sinkholes (Land Subsidence)

Some areas of land are susceptible to collapse. Risks of collapse can be determined and managed.

Community Awareness	Local and state governments can promote community awareness of subsidence risks and effects.
Mapping	Old mining areas or geologically unstable terrain should be identified and mapped so that development can be prevented or limited.
Open Space	Areas susceptible to collapse can be maintained as public open space.
Acquisition	Land or structures may be purchased by and titled in the name of a local governing body that can enforce permanent restrictions on development.
Filling or Buttressing	Filling or buttressing subterranean open spaces, as with abandoned mines, can prevent or alleviate collapse.

Relocation	A structure may be relocated to a less hazardous location.
Hydrological Monitoring	Groundwater levels can be monitored in subsidence-prone areas.

Earthquake

Some regions are particularly susceptible to earthquake damage. Risks of injury and damage from earthquake events can be determined and managed.

Seismic Hazard Mapping	Information gained from seismic hazard mapping can be used to assess risk. The first step is collection of geologic information on seismic sources, soil conditions, and related potential hazards. The second step is to prepare a map showing the approximate locations of various hazards.
Related Hazard Mapping	Other earthquake hazards include liquefaction and landslides. Maps of these related hazards may be used for vulnerability analysis and risk assessment.
Map Education	Map users should be educated in the appropriate uses and limitations of maps.
Rapid Visual Screening	Rapid visual screening is a technique used to quickly inspect a building and identify disaster damage or potential seismic structural and non-structural weaknesses. This method may be used to screen and prioritize retrofitting efforts, or inventory high-risk structures and critical facilities. In a post-disaster setting, rapid visual screening can be used to assess risk during response and recovery efforts and determine if buildings are safe to re-occupy.
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 the 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.
HAZUS	FEMA's HAZUS is a computer-based tool that can be used to quantitatively estimate losses from an earthquake.
Seismic Safety Committees	Duties of a local or state seismic safety committee can include providing policy recommendations, evaluating and recommending changes in state and local seismic safety standards, and an annual assessment of local and statewide implementation of safety improvements.
School Survey Procedures	Schools are critical facilities not only because of the special population they accommodate, but also because they are often identified as shelter sites for a community. Due to this sheltering role, it is essential that these buildings function after a seismic event. A community can develop a survey procedure and guidance document to inventory structural and non-structural hazards in or near school buildings. Survey results can be used to determine mitigation priorities that can be incorporated into capital improvements plans.

Capital Improvements Planning	School districts, local governments, corporations, and others have developed capital improvements plans to ensure that facilities remain operational for years down the road. It is more efficient and cost effective to incorporate structural and non-structural seismic strengthening actions into on-going building plans and activities, rather than rehab later.
Guidelines and Model Ordinances	Earthquake hazards can be mitigated through land use planning. Communities can develop and distribute guidelines or pass ordinances that require developers to locate lifelines, buildings, critical facilities, and hazardous materials out of areas subject to significant seismic hazards. Particular consideration should be given to enforcing such ordinances in areas with steep slopes or subject to ground displacement, severe ground shaking, or liquefaction.
Building Codes	Although land use management that avoids building on hazardous sites is an effective way to reduce earthquake risk, there may be times when it is necessary to build on such sites. Engineers and architects have designed buildings in ways that reduce the impact of ground shaking. Encouraging all local governments to adopt and enforce updated building code provisions is one effective way to reduce earthquake risk.
Seismic Code Training	Legislators often enact seismic building provisions that do not get enforced because architects, engineers, and building departments are unaware of the provisions. Conducting information sessions or other forms of outreach on seismic code provisions for new and existing development can enhance code use and enforcement by local architects, engineers, contractors and code enforcement personnel.
Buildings as Structural Hazards	Homeowners and businesses can take simple measures to strengthen their buildings before the next earthquake. Bracing walls and bolting sill plates to the foundation are examples. Non-reinforced masonry buildings and non-ductile concrete facilities are particularly vulnerable to ground shaking. These buildings should be strengthened and retrofitted against future seismic events.
Non-Structural Hazards	Many injuries in earthquakes are caused by non-structural hazards such as attachments to buildings. These include lighting fixtures, windows (glass), pictures, tall bookcases, computers, ornamental decorations on the outside of the buildings (like parapets), gas lines, etc. Activities that can reduce the risk of injury and damages include: anchoring tall bookcases and file cabinets, installing latches on drawers and cabinet doors, restraining desktop computers and appliances, using flexible connections on gas and water lines, mounting framed mirrors and pictures securely, and anchoring and bracing propane tanks and gas cylinders.
Technical Assistance for Homeowners	Developing a technical assistance information program for homeowners and teaching them how to seismically strengthen their houses can be an effective mitigation activity. The program could include providing local government building departments with copies of existing strengthening and repair information for distribution to homeowners. Other potential distribution sources include insurance companies, realtors, and libraries.
Infrastructure Hardening	Identification and hardening of critical lifeline systems, i.e., critical public services such as utilities and roads, to meet “Seismic Design Guidelines and Standards for Lifelines,” or equivalent standards, may distinguish a manageable earthquake from a social and economic catastrophe.

Bridge Strengthening	State and local highway departments should review construction plans for all bridges to determine their susceptibility to collapse. Problem bridges should be retrofitted.
Hazard Mitigation Awareness	Local or state governments can use community outreach activities to foster an awareness of earthquake mitigation activities in homes, schools, and businesses.
Financial Incentives	Local or state governments can support financial incentives like low interest loans or tax breaks for home and business owners who seismically retrofit their structures.
Insurance	Local or state governments can work with insurance industry representatives to increase public awareness of the importance of earthquake insurance. Home structural improvements can be factored into the process of obtaining insurance coverage or reduced deductibles.
Reference Library	A local or state government can establish a library consisting of technical documents on structural and nonstructural mitigation options, as well as model ordinances and procedures that have been used by other jurisdictions to reduce earthquake risk.

Drought

Periods of time with little or no precipitation can pose risks that can be mitigated with conservation and preparation.

Water-Saving	Citizens can be encouraged to take water-saving measures, especially when extra water is needed for irrigation and farming. Possibilities include installing low-flow water saving showerheads and toilets, and turning water flow off while brushing teeth or during other cleaning activities.
Water Storage	Human consumption is the primary reason to maintain a storage of water. People cannot live without consuming water regularly.
Water Use Ordinances	Communities can pass ordinances to prioritize or control water use, particularly for emergency situation like firefighting.
Contingency Plans	Drought contingency plans can help anticipate needs and actions to take during a drought.
Water Delivery Systems	Designs or plans for water delivery systems can include consideration of drought events.
Crop Insurance	Crop insurance can preserve economic stability for farms during a drought.

Wildfire

Wildfires typically start in woodland or prairie areas. They can occur naturally though they are often exacerbated by human activities. Wildfires can be hard to control as they threaten homes and communities located nearby. Although preventing or controlling wildfires is preferable, there are many mitigation efforts we can take to prevent or alleviate damage to our homes and communities when fires inevitably occur.

Public Education	Outreach efforts can promote such items as non-combustible roof covering, fire safe construction, and the importance of clearing brush and grass away from buildings. It is important to promote public education on smoking hazards and the risks of recreational fire.
Neighborhood Groups	Citizens can organize neighborhood wildfire safety coalitions to plan how their neighborhoods can work together to prevent a wildfire.

Zoning	Zoning can be used to cluster development into defensible areas and keep development away from fire hazards such as steep slopes, where fires are difficult to contain.
Defensible Space	Damage potential can be reduced by ensuring that structures are surrounded by defensible space or buffer zones. Buffer zones are manageable areas, generally 30 to 100 feet and cleared of combustible materials.
GIS Mapping	GIS mapping of vegetative cover can facilitate analysis and planning decisions through comparison with topography, zoning, developments, infrastructure, or other markers.
Power Line Management	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.
Insurance Company Promotions	Insurance companies can include wildfire safety information in materials provided to residents.
Property Maintenance	Maintenance of property in or near wildfire prone areas can go a long way toward preventing or reducing the spread of fire. Maintenance includes fuel management techniques such as pruning and clearing of dead vegetation, selective logging, keeping grass short, planting fire-resistant vegetation, and creating fuel breaks. Other helpful techniques include the use of fire-resistant roofing and building materials; use of functional shutters on windows; keeping flammables such as curtains secured away from windows, or using heavy fire-resistant drapes; taking advantage of fire department's home safety inspections; sweeping/cleaning dead or dry leaves, needles, twigs, and combustibles from roofs, decks, eaves, porches and yards; keeping woodpiles and other combustibles away from structures; use of boxed or enclosed eaves on a house; thorough cleanup of spilled flammable fuels; and keeping garage areas protected from blowing embers, whether from a chimney or outdoor fire place.
Fireplace and Chimney Maintenance	Residents should be encouraged to inspect chimneys at least twice a year and clean them at least once a year. Safe fireplace/chimney use and maintenance includes spark arrestors and emphasis on proper storage of flammable items.
Building Codes	Building codes can be used to require upgrades to existing as well as new structures.
Waste Disposal	Wildfire risk can be reduced by safe disposal of yard and household waste rather than open burning.
Arson Prevention	Wildfires can be prevented by arson prevention cleanup activities in areas of abandoned or collapsed structures, accumulated junk or debris, and in areas with a history of storing flammable materials where spills or dumping may have occurred.
Burning Restriction	Local ordinances can require burn permits and restrict campfires and outdoor burning.
Road and Driveway Clearance	Roads and driveways should be kept accessible to emergency vehicles and fire equipment. Driveways should be relatively straight and flat, with at least some open spaces to turn. Bridges should be strong enough to support emergency vehicles, with clearance wide and high enough for two-way traffic and emergency vehicle access.

	Addresses should be visible from the road, and keys to gates around property should be provided to the local fire department.
Hillside Clearance	It is important to note that hillsides facing south or west are more vulnerable to increased dryness or heat from sun exposure. Structures should be set back from slopes outside of the "convection zone" of intense heat that is projected up the slope of a hill as a wildfire "climbs" it.
Building Foundations	In wildfire prone areas, risk may be decreased by enclosing the foundations of a home or other building, rather than leaving them open where undersides can be exposed to blown embers or other materials.
Motorized Equipment	Proper maintenance and storage of motorized equipment can decrease wildfire risk.
Flammable Materials	Wildfires can be alleviated by safely using and storing necessary flammable materials, including machine fuels. Approved safety cans should be used for storing gasoline, oily rags and other flammable materials. Firewood should be stacked at least 100 feet away and uphill from homes.
Smoke/Fire Detectors And Sprinklers	Citizens can install and maintain smoke detectors and fire extinguishers on each floor of their homes or other buildings. This equipment should be tested and/or inspected regularly and smoke detector batteries should be changed twice a year. Everyone in a household or building can be taught how to use a fire extinguisher. Other valuable fire mitigation systems include interior and exterior sprinkler systems.
Spotters	Early detection of wildfires, while fires are smaller, can held make firefighting more successful. Detection can be accomplished by fire spotters who work either from towers or planes.
Media	Media can broadcast information about fire watches and fire warnings.
Response Personnel	Response personnel should have regular training and exercise experience.
Water Supplies	Water supplies for emergency firefighting should be maintained in accordance with National Fire Protection Association (NFPA) standards. Residents should identify and maintain any number of outside water sources such as small ponds, cisterns, wells, swimming pools or hydrants. It is a good idea to have a garden hose that is long enough to reach any area of a home or other structures on a property. Freeze-proof exterior water outlets are recommended for at least two sides of a home or other structures. Additional outlets can be installed at least 50 feet from a home. It may be a good idea to obtain a portable gasoline powered pump in case electrical power is cut off.
Evacuation	Residents should be instructed on proper evacuation procedures, such as wearing protective clothing (e.g. sturdy shoes, cotton or woolen clothing, long pants, a long-sleeved shirt, gloves and a handkerchief to protect the face); taking a Disaster Supplies Kit; and choosing a route away from fire hazards.
Individual Response	Fire emergency telephone numbers should be posted at every telephone. Residents should plan several escape routes away from their homes, by car and foot. It is a good idea to keep a set of hand tools that can be used as fire tools, such as a rake, axe, hand/chainsaw, bucket and shovel.

When wildfire threatens, residents should be instructed to carry and listen to battery-operated radios for reports and evacuation information, and follow instructions from local officials. Cars should be backed into garages or parked in open space facing the direction of escape, with doors and windows closed and the key in the ignition. Garage windows and doors should be closed but left unlocked. If residents have time, they can take steps to protect their homes by closing windows, vent doors, venetian blinds and heavy drapes; removing lightweight curtains; shutting off natural gas at the meter; turning off pilot lights; closing fireplace screens; and moving flammable furniture into the center of the home away from windows and sliding glass doors. Outside, residents can seal the attic and ground vents with pre-cut plywood or commercial seals; turn off propane tanks; place combustible patio furniture inside; connect garden hose to outside taps; set up a portable gasoline-powered pump; place lawn sprinklers on the roof and near above-ground fuel tanks; wet the roof, wet or remove shrubs within 15 feet of the home; and gather fire tools.

5.4 Capabilities Assessment for Local Jurisdictions[6]

The mitigation strategy is framed by the capacity and capability of local jurisdictions to implement particular actions through existing authority, policy, programs, and resources. For most jurisdictions in the planning area, these are each very limited. Authority to control development through land use planning and zoning is vested in municipalities that choose to exercise this practice; however, capacity is limited for enforcement due to expertise, financial constraints, and public acceptance. Therefore, most local jurisdictions avoid the practice of land use planning and zoning for general purposes and for hazard mitigation. In the unincorporated county jurisdictions, this authority is largely absent except as it applies to flood control and public streets, which are practiced by each county in the planning area. Flood control, more broadly, is authorized for each local jurisdiction to practice through local ordinance regulating the placement and construction of new structures. Many municipalities and each county participate in the National Flood Insurance Program and maintain compliance with the applicable regulations of the NFIP (Table 4.1.3). Likewise, the authority to enforce building codes is restricted to municipalities and is only practiced by a limited number of these due to capacity constraints in the form of personnel, financial ability, and public acceptance.

Financial and technical capacity are limiting factors for implementation in most participating jurisdictions. The need for assistance in planning and implementation is well-established. Communities work together through the local EMA and the Northwest Alabama Council of Local Governments (NACOLG) to meet gaps in technical capacity related to

[6] This section has been thoroughly reviewed and revised to incorporate an assessment of each jurisdictions' capabilities and means of incorporating hazard mitigation planning and implementation into ongoing activities.

planning for mitigation. Local jurisdictions work with county EMAs to implement specific strategies. Authority over spending is vested in local elected or appointed boards and commissions. Primarily, the county commissions and local municipal councils have been the leaders in deciding which mitigation strategies are worthy of investment. Other eligible jurisdictions have, largely, channeled mitigation projects through these local governmental bodies. The use of grants from external sources is a prevalent feature of the financial strategy for mitigation projects involving new construction.

The capabilities of each participating jurisdiction are defined by the authorities, policies, programs, and resources that each possesses, practices, implements or intends to expand upon in pursuit of hazard mitigation. Each jurisdiction falls into one of several categories, which possesses distinct authorities and resources to establish hazard mitigation programs. For example, counties and municipalities differ in terms of statutory authority to pursue hazard mitigation. Meanwhile, two communities with the same authority may approach mitigation entirely differently in terms of the exercise of their authority. School and utility boards are subject to even greater restrictions on their authority.

The authorities and capabilities are summarized based on the powers granted by different units of government that participated in the planning process. County jurisdictions include Colbert County, Franklin County, Marion County, and Winston County. Municipalities include Cherokee, Leighton, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Hodges, Phil Campbell, Red Bay, Russellville, Vina, Bear Creek, Brilliant, Guin, Hackleburg, Hamilton, Twin, Winfield, Addison, Arley, Double Springs, Haleyville, Lynn, and Natural Bridge. School Boards include Winston County Schools, Russellville City Schools, Colbert County Schools, Muscle Shoals City Schools, Sheffield City Schools, and Tuscumbia City Schools. Utilities include Phil Campbell water Works and Sewer board, Cherokee Water Works and gas Board, Bear Creek Water Works, Guin Water and Sewer board, twin Water Authority, and Franklin County Water Authority.

The following table summarizes the statutory authority and resources of each jurisdiction and its present use or intended future use of these powers to implement the hazard mitigation plan. The table describes powers or policies that are granted to different types of jurisdictions in general terms, describes the jurisdictions that currently apply those policies in their mitigation efforts, describes the jurisdictions that intend to apply those authorities and policies for future

implementation, and describes the means by which each jurisdiction will incorporate the mitigation action into its existing powers, authorities, policies, and capabilities. In every case, the primary means of incorporation involves review of proposed actions and implementation through the appropriate governmental authority such as the city council, county commission, school board, or utility board.

Multi-Jurisdictional Hazard Mitigation Action Plan: Capabilities Assessment	**Authorized for…**	**Practiced by…**	**Proposed for…**	**Incorporated through…**
Police power- ability to regulate activities of individuals in the jurisdiction for purposes of health, safety, and public welfare	Municipalities	All municipal jurisdictions	All municipal jurisdictions	Council action to enact and enforce regulations
Control of public expenditures- ability to acquire property and improve property owned by the jurisdiction, capacity to borrow and expend funds	Municipalities, Counties, School Boards, Utilities	All jurisdictions	All jurisdictions	Action to approve expenditures by local county commission, city council, school board, or utility board
Building code enforcement- ability to enforce codes related to building materials and construction standards outside of flood hazard areas	Municipalities	Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Hamilton, Haleyville	Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Hamilton, Haleyville	Council action to enact and enforce regulations
Floodplain management authority- ability to regulate development in areas of special flood hazard in compliance with NFIP standards; includes authority to regulate land use and subdivisions inside of flood hazard areas	Municipalities, Counties	Colbert Co, Cherokee, Leighton, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Franklin Co., Hodges, Phil Campbell, Red Bay, Russellville, Marion Co, Guin, Hamilton, Winfield, Winston Co., Haleyville, Double Springs	Colbert Co, Cherokee, Leighton, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Franklin Co., Hodges, Phil Campbell, Red Bay, Russellville, Marion Co, Guin, Hamilton, Winfield, Winston Co., Haleyville,	Council or Commission action to enact and enforce regulations

			Double Springs	
Purchase properties subject to flooding and maintain as permanent open space.	Municipalities, Counties, School Boards, Utilities	City of Tuscumbia		Action to approve expenditures by local county commission, city council, school board, or utility board
Capital improvements- ability to plan public infrastructure to mitigate hazards	Municipalities, Counties, School Boards, Utilities	All jurisdictions	All jurisdictions	Action to approve expenditures by local county commission, city council, school board, or utility board
Zoning authority- ability to divide political jurisdiction into districts for purposes of regulating buildings and their use (inside and outside of flood hazard areas)	Municipalities	Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Winfield, Hamilton, Haleyville, Double Springs	Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Winfield, Hamilton, Haleyville, Double Springs	Council action to enact and enforce regulations
Subdivision regulations- ability to control new developments involving new lot lines and infrastructure (inside and outside of flood hazard areas)	Municipalities	Muscle Shoals, Sheffield, Tuscumbia, Russellville, Winfield, Haleyville	Muscle Shoals, Sheffield, Tuscumbia, Russellville, Winfield, Haleyville	Council action to enact and enforce regulations
Storm water management program- ability to regulate retention, detention, and release of storm water runoff	Municipalities	Muscle Shoals, Russellville	Muscle Shoals, Russellville	Council action to enact and enforce regulations

5.5 Mitigation Strategies by Jurisdiction

Responsibility for hazard mitigation in northwest Alabama is found at the local level and is shared between local governments and private and semi-private entities such as utility companies, hospitals and business/industry entities. Primary responsibility for recommending and implementing the strategies necessary for hazard mitigation has typically been vested in

local governments and individuals. As such, the following section contains the mitigation plans of each county and each municipality in the planning area of northwest Alabama. Other eligible local jurisdictions have been included in the planning process and have been encouraged to adopt the multi-jurisdictional planning framework in order to facilitate implementation by public utilities, school boards, volunteer fire departments and others. Although included in a single multi-jurisdictional plan, each entity's individual plans for hazard mitigation vary, with the exception that each action is undertaken within the framework of goals and objectives established above. Because of local level differences in the approaches to hazard mitigation, the following statements vary in presentation and format. In general, however, the action plans provide an overview of immediate past mitigation efforts, undertaken in the five years since the prior plan was adopted, ongoing activities, and proposed future actions intended to reduce damages to life and property in the event of a natural disaster.

The plan is structured to express multi-jurisdictional strategies that may be common among local jurisdictions as well as presenting local priorities that may be specific to particular local jurisdictions. Therefore, the first section provides a multi-jurisdictional framework for each local jurisdiction in the planning area. The following section provides information on specific mitigation priorities that may be present in the local jurisdiction. The two sections are interdependent and collectively express the local action plan for each jurisdiction in the planning area. Both sections are considered critical actions for those that have endorsed a particular action item in the Multi-Jurisdictional Action Plan or have presented a particular action item in the Individual Jurisdictional Plan sections below.

5.5.1 Multi-Jurisdictional Action Plan

The following Multi-Jurisdictional Action plan establishes broad mitigation actions adopted by participating local jurisdictions. Although the mitigation action is common to all jurisdictions threatened by a particular hazard type, each jurisdiction determined whether to adopt a particular action based on local contextual factors including social, economic, environmental, technical, and other capabilities. In all cases, timelines for implementation are immediate, intended to take place as soon as possible within the next 5 years, as opportunities for mitigating hazards become available. A list of partners and participants is provided, along with a listing of potential funding opportunities; however, additional partnerships and opportunities will be explored as they become known. The plan further specifies whether actions affect existing or

future development (or in many cases both) and the particular jurisdictions that have endorsed a particular action item.

Multi-Jurisdictional Hazard Mitigation Action Plan		
Actions 1.1 to 1.22 Flood: Ninety percent of federal disaster declarations are flood events. Response and recovery costs can be extremely high, so where risks are apparent it makes sense to take actions that prevent damage from occurring. If flood damage cannot be fully prevented, there may be mitigation techniques that lessen the damage. Flooding addressed in this section can be from high ground water, overland flooding from rivers or streams, or from a dam failure.	**Partners & Participants** local gov'ts; EMA, AEMA, FEMA, developers, others TBD	**Funding Sources** local; AEMA/FEMA (HMGP; PDM; FDA); ADECA; others TBD
	Structures Affected (New/Existing)	**Participating Jurisdictions**
Action 1.1 Acquisition		
Purchase properties subject to flooding and maintain as permanent open space.	New & Existing	All counties and municipalities
Action 1.2 Relocation		
Relocate structures subject to flooding outside of flood hazard areas.	Existing	All counties and municipalities and school boards and utilities
Action 1.3 Elevation		
Elevate structures subject to flooding above the base flood elevation.	New & Existing	All counties and municipalities and school boards and utilities
Action 1.4 Dry-Flood proofing		
Dry-flood proof properties where appropriate.	New & Existing	All counties and municipalities and school boards and utilities
Action 1.5 Wet-Flood proofing		
Wet-flood proof properties where appropriate.	New & Existing	All counties and municipalities and school boards and

		utilities
Action 1.6 Floodplain Management		
Incorporate floodplain management into ongoing planning activities.	New & Existing	All counties and municipalities
Action 1.7 Capital Improvements		
Plan capital improvements to minimize the risk of flooding.	New & Existing	All counties and municipalities and school boards and utilities
Action 1.8 Zoning Ordinance Adoption/Amendment		
Enforce zoning regulations that minimize density of development in flood prone areas.	New & Existing	Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Winfield, Hamilton, Haleyville, Double Springs
Action 1.9 Subdivision Regulations		
Enforce subdivision regulations that minimize flood risks to new developments.	New	Muscle Shoals, Sheffield, Tuscumbia, Russellville, Winfield, Haleyville
Action 1.10 Building Code Adoption		
Enforce building codes that minimize flood risks.	New & Existing	Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Hamilton, Haleyville
Action 1.11 Storm water Management		
Regulate storm water runoff in a manner that minimizes the threat of flooding.	New & Existing	Muscle Shoals, Russellville,

Action 1.12 Flood Insurance		
Participate in the National Flood Insurance program, allowing residents to qualify for flood insurance.	New & Existing	Colbert Co, Cherokee, Leighton, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Franklin co., Hodges, Phil Campbell, Red Bay, Russellville, Marion Co, Guin, Hamilton, Winfield, Winston Co., Haleyville, Double Springs
Action 1.13 Updated Floodplain Maps		
Participate in efforts to update floodplain maps as part of ongoing federal, state, and local activities.	New & Existing	All counties and municipalities
Action 1.14 Storm Drainage Systems		
Mitigate flood hazard by improving or installing storm drainage systems that adequately convey storm waters.	New & Existing	All counties and municipalities
Action 1.15 Drainage System Maintenance		
Maintain storm drainage systems in order to adequately convey storm waters.	New & Existing	All counties and municipalities
Action 1.16 Drainage Easements		
Plan for and obtain drainage easements where necessary to protect against or mitigate flooding.	New & Existing	All counties and municipalities and utilities
Action 1.17 Roads		
Require road construction to adequately mitigate flood hazards by requiring appropriate elevations and drainage in new construction; remediate existing flood hazards on existing roads.	New & Existing	All counties and municipalities
Action 1.18 Community Outreach		
Provide information on flood hazards to residents; train responders to react to the threat and incidence of flooding.	New & Existing	All counties and municipalities

Action 1.19 Debris Control		
Minimize debris; provide for collection points; keep properties clear of debris.	New & Existing	All counties and municipalities
Action 1.20 Manufactured Homes		
Elevate and anchor manufactured homes in areas with flood hazard.	New	All counties and municipalities
Action 1.21 Flood Warning		
Participate in and improve flood warning systems.	Existing	All counties and municipalities
Action 1.22 Back-up Generators		
Provide back-up generators for facilities in case of flooding.	Existing	All counties and municipalities and school boards and utilities
Actions 2.1 to 2.3 Landslides: Landslides can be cause by the same high water levels or rain that result in flooding. Landslides can also be caused by earthquakes. Although many mitigation measures resemble those for flowing, landslides pose unique considerations.	**Partners & Participants** local gov'ts; EMA, AEMA, FEMA, developers, others TBD	**Funding Sources** local; AEMA/FEMA (HMGP; PDM) ADECA; others TBD
	Structures Affected (New/Existing)	**Participating Jurisdictions**
Action 2.1 Mapping		
Participate in efforts to map landslide risks.	New & Existing	Colbert Co, Franklin Co., Red Bay, Marion Co., Brilliant, Guin, Gu-Win, Hamilton, Twin, Winfield, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn

Action 2.2 Outreach and Education		
Make public education materials available regarding the risks of landslides.	New & Existing	Colbert Co, Franklin Co., Red Bay, Marion Co., Brilliant, Guin, Gu-Win, Hamilton, Twin, Winfield, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn
<u>Actions 3.1 to 3.5 Severe Storms (Lightening and Hail)</u>: Damage from thunderstorms and lightening is often underestimated. Everyone should have an appreciation for the dangers of lightening. Although not entirely preventable, damage and life safety risk from there events can be minimized.	**Partners & Participants** local gov'ts; EMA, AEMA, FEMA, developers, others TBD	**Funding Sources** local; AEMA/FEMA (HMGP; PDM) ADECA; others TBD
	Structures Affected (New/Existing)	**Participating Jurisdictions**
Action 3.1 Community Outreach		
Provide information on the threat of severe storms, including driving tips, to the public.	Existing	All counties and municipalities
Action 3.2 Early Warning		
Invest in an early warning system.	Existing	All counties and municipalities
Action 3.3 Building Codes		
Enforce building codes that minimize storm damage.	New & Existing	Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Hamilton, Haleyville

Action 3.4 Surge Protectors and Lightening Protection		
Install surge protectors and lightening protection.	New & Existing	All counties and municipalities and school boards and utilities
Action 3.5 Burying Power Lines		
Bury power lines, where appropriate.	New & Existing	All counties and municipalities and electric utilities
Actions 4.1 to 4.5 Tornado: Tornadoes can strike anywhere and cause extensive damage. Damage and life safety risk may not be entirely preventable, but it can be minimized.	**Partners & Participants** local gov'ts; EMA, AEMA, FEMA, developers, others TBD	**Funding Sources** local; AEMA/FEMA (HMGP; PDM) ADECA; others TBD
	Structures Affected (New/Existing)	**Participating Jurisdictions**
Action 4.1 Construction Standards		
Encourage techniques that make buildings less susceptible to wind damage.	New & Existing	Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Hamilton, Haleyville
Action 4.2 Safe Rooms/Shelters		
Install additional safe rooms/shelters.	New & Existing	All counties and municipalities and school boards
Action 4.3 Manufactured Homes		
Anchor manufactured homes.	New	All counties and municipalities
Action 4.4 Loose Items		
Secure loose items.	New & Existing	All counties and municipalities

		and school boards and utilities
Action 4.5 Temporary Debris		
Locate collection centers in fenced areas or away from populated places.	New & Existing	All counties and municipalities
<u>Actions 5.1 to 5.6 Severe Storms (Wind, including Hurricane and Coastal Storms)</u>: Severe wind can be as destructive as tornadoes. Damage and life safety risk may not be entirely preventable, but it can be minimized.	**Partners & Participants** local gov'ts; EMA, AEMA, FEMA, developers, others TBD	**Funding Sources** local; AEMA/FEMA (HMGP; PDM) ADECA; others TBD
	Structures Affected (New/Existing)	**Participating Jurisdictions**
Action 5.1 Building Construction		
Encourage techniques that make buildings less susceptible to damage.	New & Existing	Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Hamilton, Haleyville
Action 5.2 Manufactured Homes		
Anchor manufactured homes.	New & Existing	All counties and municipalities
Action 5.3 Burying Power Lines		
Bury power lines where feasible.	Existing	All counties and municipalities and electric utilities
Action 5.4 Backup Power		
Provide backup power for essential services and recovery/response locations.	Existing	All counties and municipalities and schools boards and utilities
Action 5.5 Tree Maintenance		
Provide adequate tree maintenance to avoid damages.	Existing	All counties

		and municipalities and electric utilities
Action 5.6 Safe Rooms/Shelters		
Provide additional safe rooms/shelters.	New & Existing	All counties and municipalities and school boards
Actions 6.1 to 6.3 Extreme Temperature: When temperatures reach levels that are extremely high or extremely low, they pose dangers that can be alleviated by planning for how to handle such situations.	**Partners & Participants** local gov'ts; EMA, AEMA, FEMA, developers, others TBD	**Funding Sources** local; AEMA/FEMA (HMGP; PDM) ADECA; others TBD
	Structures Affected (New/Existing)	**Participating Jurisdictions**
Action 6.1 Outreach/Public Education		
Promote accessible heating/cooling centers and public knowledge of them and dangers of extreme temperature.	Existing	All counties and municipalities
Action 6.2 Heating Bills		
Facilitate payment of bills through organizations offering such services.	Existing	All counties and municipalities
Action 6.3 Heating and Cooling Centers		
Establish heating/cooling centers.	Existing	All counties and municipalities and school boards
Actions 7.1 to 7.6 Winter Weather/Snowstorms: Proper preparation can decrease the risks of injury that can occur during cold weather and snowstorms in particular.	**Partners & Participants** local gov'ts; EMA, AEMA, FEMA, developers, others TBD	**Funding Sources** local; AEMA/FEMA (HMGP; PDM) ADECA; others TBD

	Structures Affected (New/Existing)	Participating Jurisdictions
Action 7.1 Family and Traveler Emergency Preparedness		
Distribute emergency preparedness materials to families and travelers.	Existing	All counties and municipalities and school boards
Action 7.2 Driver Safety		
Include driver safety education in safety programs and driver's education courses.	Existing	All counties and municipalities and school boards
Action 7.3 Power Lines		
Bury or protect power lines where feasible.	New & Existing	All counties and municipalities and electric utilities
Action 7.4 Code Enforcement		
Enforce local codes relating to structural and load-bearing characteristics.	New & Existing	Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Hamilton, Haleyville
Action 7.5 Shelters		
Establish heating centers for vulnerable populations.	Existing	All counties and municipalities and school boards
Action 7.6 Roads		
Plan for and maintain adequate road safety equipment and supplies.	Existing	All counties and municipalities

<u>Actions 8.1 to 8.2 Sinkholes</u>: Some areas of land are susceptible to collapse. Risks of collapse can be determined and managed.	**Partners & Participants** local gov'ts; EMA, AEMA, FEMA, developers, others TBD	**Funding Sources** local; AEMA/FEMA (HMGP; PDM) ADECA; others TBD
	Structures Affected (New/Existing)	**Participating Jurisdictions**
Action 8.1 Community Awareness		
Provide information on the risks of sinkholes and activities that can mitigate risks.	New & Existing	Colbert Co., Leighton, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Franklin Co., Hodges, red Bay, Russellville, Vina, Marion Co., Brilliant, Hackleburg
Action 8.2 Mapping		
Participate in efforts to map sinkholes.	New & Existing	Colbert Co., Leighton, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Franklin Co., Hodges, red Bay, Russellville, Vina, Marion Co., Brilliant, Hackleburg
<u>Actions 9.1 to 9.9 Earthquakes</u>: Some regions are particularly susceptible to earthquake damage. Risks of injury and damage from earthquake events can be determined and managed.	**Partners & Participants** local gov'ts; EMA, AEMA, FEMA, developers, others TBD	**Funding Sources** local; AEMA/FEMA (HMGP; PDM) ADECA; others TBD

	Structures Affected (New/Existing)	Participating Jurisdictions
Action 9.1 Seismic Hazard Mapping		
Participate in efforts to map seismic hazards.	New & Existing	All counties and municipalities
Action 9.2 Related Hazard Mapping		
Participate in efforts to locate and map related features, including secondary earthquake hazards, evacuation routes, response and recovery centers, shelters, etc.	New & Existing	All counties and municipalities
Action 9.3 Map Education		
Map users should be educated in the appropriate uses and limitations of maps.	New & Existing	All counties and municipalities and school boards
Action 9.4 Capital Improvements Planning		
Plan capital facilities to accommodate earthquake risks.	New	All counties and municipalities and school boards and utilities
Action 9.5 Building Codes		
Enforce building codes sufficient to minimize structural weaknesses, as appropriate to earthquake risks.	New & Existing	Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Hamilton, Haleyville
Action 9.6 Buildings as Structural Hazards		
Strengthen existing buildings in ways appropriate to the risk of earthquakes.	New & Existing	All counties and municipalities and school boards and utilities
Action 9.7 Non-Structural Hazards		
Secure non-structural items against earthquakes.	New & Existing	All counties and municipalities and school boards and utilities

Action 9.8 Bridge Strengthening		
Strengthen bridges as appropriate for the risk of earthquakes.	Existing	All counties and municipalities
Action 9.9 Hazard Mitigation Awareness		
Participate in public outreach campaigns and make information available to the public.	New & Existing	All counties and municipalities and school boards
<u>Actions 10.1 to 10.3 Drought</u>: Periods of time with little or no precipitation can pose risks that can be mitigated with conservation and preparation.	**Partners & Participants** local gov'ts; EMA, AEMA, FEMA, developers, others TBD	**Funding Sources** local; AEMA/FEMA (HMGP; PDM) ADECA; others TBD
	Structures Affected (New/Existing)	**Participating Jurisdictions**
Action 10.1 Water Saving		
Encourage citizens to save water during droughts.	Existing	All counties and municipalities and school boards and utilities
Action 10.2 Water Storage		
Maintain sufficient water treatment and storage for extreme drought conditions.	Existing	All counties and municipalities and utilities
Action 10.3 Delivery System		
Designs and plans for water delivery systems will include consideration of drought events.	New & Existing	All counties and municipalities and utilities

Actions 11.1 to 11.9 Wildfire: Wildfires typically start in woodland or prairie areas. They can occur naturally though they are often exacerbated by human activities. Wildfires can be hard to control as they threaten homes and communities located nearby. Although preventing or controlling wildfires is preferable, there are many mitigation efforts we can take to prevent or alleviate damage to our homes and communities when fires inevitably occur.	**Partners & Participants** local gov'ts; EMA, AEMA, FEMA, developers, others TBD	**Funding Sources** local; AEMA/FEMA (HMGP; PDM) ADECA; others TBD
	Structures Affected (New/Existing)	**Participating Jurisdictions**
Action 11.1 Public Education		
Participate in public outreach efforts to provide public education materials.	New & Existing	Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge
Action 11.2 Zoning		
Enforce zoning regulations that minimize wildfire risks.	New & Existing	Cherokee, Sheffield, Russellville, Winfield, Hamilton, Double Springs
Action 11.3 Defensible Space		
Encourage buffer zones sufficient to minimize wildfire risk.	New & Existing	Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear

		Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge
Action 11.4 GIS Mapping		
Participate in efforts to map wildfire threats.	New & Existing	Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge
Action 11.5 Power Line Management		
Maintain power lines to minimize threat of fire.	Existing	Sheffield
Action 11.6 Property Maintenance		
Encourage appropriate property maintenance to minimize wildfire threats.	Existing	Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant,

		Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge
Action 11.7 Fireplace and Chimney Maintenance		
Enforce restrictions on burning that minimize fire risk.	Existing	Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge
Action 11.8 Motorized Equipment		
Maintain equipment in a manner that minimizes fire risk.	Existing	Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin,

		Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge
Action 11.9 Flammable Materials		
Store flammable materials in a manner that minimizes fire risk.	Existing	Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge

5.5.2 Analysis of Costs and Benefits for Prioritizing Actions[7]

The table in this section lists mitigation actions, many of which will require substantial time commitments from staff of participating jurisdictions. Those that participated in the development of the Northwest Alabama Regional Hazard Mitigation Plan believe that these actions are attainable and can be implemented over the next five-year cycle. While all activities will be pursued over the next five years, the reality of limited time and resources requires the identification of high-priority mitigation actions. Prioritization allows the individuals and organizations involved to focus their energies and ensure progress on mitigation activities.

[7] This section has been thoroughly reviewed and revised to reflect cost-benefit considerations for prioritizing mitigation actions.

Mitigation actions were evaluated using the seven criteria which frame the PASTEEL method. These feasibility criteria include:

- Political: Does the action have public and political support?
- Administrative: Is there adequate staffing and funding available to implement the action in a timely manner?
- Social: Will the action be acceptable by the community or will it cause any one segment of the population to be treated unfairly?
- Technical: How effective will the action be in avoiding or reducing future losses?
- Economic: What are the costs and benefits of the action and does it contribute to community economic goals?
- Environmental: Will the action provide environmental benefits and will it comply with local, state and federal environmental regulations?
- Legal: Does the community have the authority to implement the proposed measure?

The PASTEEL method uses political, administrative, social, technical, economic, environmental and legal considerations as a basis means of evaluating which of the identified actions should be considered most critical. Economic considerations are particularly important in weighing the costs versus benefits of implementing one action prior to another. FEMA mitigation planning requirements indicate that any prioritization system used shall include a special emphasis on the extent to which benefits are maximized according to a cost-benefit review of the proposed projects. To do this in an efficient manner that is consistent with FEMA's guidance on using cost-benefit review in mitigation planning, the PASTEEL method was adapted to include a higher weighting for the element of economic feasibility factor – Benefits of Action and Costs of Action. This method incorporates concepts similar to those described in Method C of FEMA 386-5: Using Benefit Cost Review in Mitigation Planning (FEMA, 2007).

Those participating in the planning process provided comments which allowed for the prioritization of the mitigation actions listed using the seven PASTEEL criteria. In order to evaluate and prioritize the mitigation actions, favorable and less favorable factors were identified for each action. The table summarizes the evaluation methodology and provides the results of this evaluation for all mitigation actions. The first results column includes a summary of the

feasibility factors, placing equal weight on all factors. The second results column reflects feasibility scores with benefits and costs weighted more heavily; and therefore, given greater priority. A weighting factor of three was used for each benefit and cost element. Therefore, a "+" benefit factor rating equals three pluses and a "-" benefit factor rating equals three minuses in the total prioritization score. The resulting scores range from a weighted score of five (5) to nine (9) and indicate the overall emphasis or priority of a particular mitigation action in light of its costs and benefits.

Multi-Jurisdictional Hazard Mitigation Cost Benefit Analysis									
Actions 1.1 to 1.22 Flood: Ninety percent of federal disaster declarations are flood events. Response and recovery costs can be extremely high, so where risks are apparent it makes sense to take actions that prevent damage from occurring. If flood damage cannot be fully prevented, there may be mitigation techniques that lessen the damage. Flooding addressed in this section can be from high ground water, overland flooding from rivers or streams, or from a dam failure.									
	Political	**Administrative**	**Social**	**Technical**	**Environmental**	**Economic**	**Legal**	**Total A**	**Total B**
Action 1.1 Acquisition Purchase properties subject to flooding and maintain as permanent open space.									
All									
	-	-	-	+	+	+	+	4	6
Action 1.2 Relocation Relocate structures subject to flooding outside of flood hazard areas.									
All									
	-	-	-	+	+	+	-	3	5
Action 1.3 Elevation Elevate structures subject to flooding above the base flood elevation.									
All									
	-	-	-	+	-	+	+	3	5
Action 1.4 Dry-Flood proofing Dry-flood proof properties where appropriate.									
All									
	-	-	-	+	-	+	+	3	5
Action 1.5 Wet-Flood proofing Wet-flood proof properties where appropriate.									
All									
	-	-	-	+	-	+	+	3	5
Action 1.6 Floodplain Management Incorporate floodplain management into ongoing planning activities.									
All									
	-	-	-	+	+	+	+	4	6
Action 1.7 Capital Improvements Plan capital improvements to minimize the risk of flooding.									
All									
	+	-	+	+	+	+	+	6	8
Action 1.8 Zoning Ordinance Adoption/Amendment Enforce zoning regulations that minimize density of development in flood prone areas.									
Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Winfield, Hamilton, Haleyville, Double Springs									
	-	-	-	+	+	+	+	4	6

Action 1.9 Subdivision Regulations Enforce subdivision regulations that minimize flood risks to new developments.									
Muscle Shoals, Sheffield, Tuscumbia, Russellville, Winfield, Haleyville									
	-	-	-	+	+	+	+	4	6
Action 1.10 Building Code Adoption Enforce building codes that minimize flood risks.									
Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Hamilton, Haleyville									
	-	-	-	+	N	+	+	3	5
Action 1.11 Storm water Management Regulate storm water runoff in a manner that minimizes the threat of flooding.									
Muscle Shoals, Russellville									
	-	-	+	+	+	+	+	5	7
Action 1.12 Flood Insurance Participate in the National Flood Insurance program, allowing residents to qualify for flood insurance.									
Colbert Co, Cherokee, Leighton, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Franklin co., Hodges, Phil Campbell, Red Bay, Russellville, Marion Co, Guin, Hamilton, Winfield, Winston Co., Haleyville, Double Springs									
	+	-	-	+	N	+	+	3	5
Action 1.13 Updated Floodplain Maps Participate in efforts to update floodplain maps as part of ongoing federal, state, and local activities.									
All									
	-	-	-	+	+	+	+	4	6
Action 1.14 Storm Drainage Systems Mitigate flood hazard by improving or installing storm drainage systems that adequately convey storm waters.									
All									
	+	-	+	+	+	+	+	6	8
Action 1.15 Drainage System Maintenance Maintain storm drainage systems in order to adequately convey storm waters.									
All									
	+	-	+	+	+	+	+	6	8
Action 1.16 Drainage Easements Plan for and obtain drainage easements where necessary to protect against or mitigate flooding.									
All									
	-	-	-	+	+	+	+	4	6
Action 1.17 Roads Require road construction to adequately mitigate flood hazards by requiring appropriate elevations and drainage in new construction; remediate existing flood hazards on existing roads.									
All									
	+	-	+	+	+	+	+	6	8
Action 1.18 Community Outreach Provide information on flood hazards to residents; train responders to react to the threat and incidence of flooding.									
All									
	+	-	+	+	N	+	+	5	7
Action 1.19 Debris Control Minimize debris; provide for collection points; keep properties clear of debris.									
All									
	+	-	+	+	+	+	+	6	8
Action 1.20 Manufactured Homes Elevate and anchor manufactured homes in areas with flood hazard.									
All									
	-	-	-	+	-	+	+	3	5
Action 1.21 Flood Warning Participate in and improve flood warning systems.									
All									
	+	-	+	+	N	+	+	5	7
Action 1.22 Back-up Generators Provide back-up generators for facilities in case of flooding.									
All									

	+	-	+	+	N	+	+	5	7
Actions 2.1 to 2.3 Landslides: Landslides can be cause by the same high water levels or rain that result in flooding. Landslides can also be caused by earthquakes. Although many mitigation measures resemble those for flowing, landslides pose unique considerations.									
	Political	**Administrative**	**Social**	**Technical**	**Environmental**	**Economic**	**Legal**	**Total A**	**Total B**
Action 2.1 Mapping Participate in efforts to map landslide risks.									
Colbert Co, Franklin Co., Red Bay, Marion Co., Brilliant, Guin, Gu-Win, Hamilton, Twin, Winfield, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn									
	+	-	+	+	+	+	+	6	8
Action 2.2 Outreach and Education Make public education materials available regarding the risks of landslides.									
Colbert Co, Franklin Co., Red Bay, Marion Co., Brilliant, Guin, Gu-Win, Hamilton, Twin, Winfield, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn									
	+	-	+	+	+	+	+	6	8
Actions 3.1 to 3.5 Severe Storms (Lightening and Hail): Damage from thunderstorms and lightening is often underestimated. Everyone should have an appreciation for the dangers of lightening. Although not entirely preventable, damage and life safety risk from there events can be minimized.									
	Political	**Administrative**	**Social**	**Technical**	**Environmental**	**Economic**	**Legal**	**Total A**	**Total B**
Action 3.1 Community Outreach Provide information on the threat of severe storms, including driving tips, to the public.									
All									
	+	-	+	+	N	+	+	5	7
Action 3.2 Early Warning Invest in an early warning system.									
All									
	+	-	+	+	N	+	+	5	7
Action 3.3 Building Codes Enforce building codes that minimize storm damage.									
Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Hamilton, Haleyville									
	-	-	-	+	N	+	+	3	5
Action 3.4 Surge Protectors and Lightening Protection Install surge protectors and lightening protection.									
All									
	+	+	+	+	N	+	+	6	8
Action 3.5 Burying Power Lines Bury power lines, where appropriate.									
All									
	+	-	+	+	+	+	+	6	8
Actions 4.1 to 4.5 Tornado: Tornadoes can strike anywhere and cause extensive damage. Damage and life safety risk may not be entirely preventable, but it can be minimized.									

	Political	Administrative	Social	Technical	Environmental	Economic	Legal	Total A	Total B
Action 4.1 Construction Standards Encourage techniques that make buildings less susceptible to wind damage.									
All									
	-	-	-	N	+	+	+	3	5
Action 4.2 Safe Rooms/Shelters Install additional safe rooms/shelters.									
All									
	+	-	+	N	+	+	+	5	7
Action 4.3 Manufactured Homes Anchor manufactured homes.									
All									
	+	-	+	N	+	+	+	5	7
Action 4.4 Loose Items Secure loose items.									
All									
	+	-	-	N	+	+	+	4	6
Action 4.5 Temporary Debris Locate collection centers in fenced areas or away from populated places.									
All									
	+	-	+	+	+	+	+	7	9
Actions 5.1 to 5.6 Severe Storms (Wind, including Hurricane and Coastal Storms): Severe wind can be as destructive as tornadoes. Damage and life safety risk may not be entirely preventable, but it can be minimized.									
	Political	**Administrative**	**Social**	**Technical**	**Environmental**	**Economic**	**Legal**	**Total A**	**Total B**
Action 5.1 Building Construction Encourage techniques that make buildings less susceptible to damage.									
All									
	-	-	-	+	N	+	+	3	5
Action 5.2 Manufactured Homes Anchor manufactured homes.									
All									
	+	-	+	+	N	+	+	5	7
Action 5.3 Burying Power Lines Bury power lines where feasible.									
All									
	+	-	+	+	N	+	+	6	8
Action 5.4 Backup Power Provide backup power for essential services and recovery/response locations.									
All									
	+	-	+	+	N	+	+	5	7
Action 5.5 Tree Maintenance Provide adequate tree maintenance to avoid damages.									
All									
	+	-	+	+	+	+	+	6	8
Action 5.6 Safe Rooms/Shelters Provide additional safe rooms/shelters.									
All									
	+	-	+	+	N	+	+	5	7

Actions 6.1 to 6.3 Extreme Temperature: When temperatures reach levels that are extremely high or extremely low, they pose dangers that can be alleviated by planning for how to handle such situations.									
	Political	**Administrative**	**Social**	**Technical**	**Environmental**	**Economic**	**Legal**	**Total A**	**Total B**
Action 6.1 Outreach/Public Education Promote accessible heating/cooling centers and public knowledge of them and dangers of extreme temperature.									
All									
	+	-	+	+	N	+	+	5	7
Action 6.2 Heating Bills Facilitate payment of bills through organizations offering such services.									
All									
	+	-	+	+	N	+	+	5	7
Action 6.3 Heating and Cooling Centers Establish heating/cooling centers.									
All									
	+	-	+	+	N	+	+	5	7
Actions 7.1 to 7.6 Winter Weather/Snowstorms: Proper preparation can decrease the risks of injury that can occur during cold weather and snowstorms in particular.									
	Political	**Administrative**	**Social**	**Technical**	**Environmental**	**Economic**	**Legal**	**Total A**	**Total B**
Action 7.1 Family and Traveler Emergency Preparedness Distribute emergency preparedness materials to families and travelers.									
All									
	+	-	+	+	N	+	+	5	7
Action 7.2 Driver Safety Include driver safety education in safety programs and driver's education courses.									
All									
	+	-	+	+	N	+	+	5	7
Action 7.3 Power Lines Bury or protect power lines where feasible.									
All									
	+	-	+	+	N	+	+	6	8
Action 7.4 Code Enforcement Enforce local codes relating to structural and load-bearing characteristics.									
Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Hamilton, Haleyville									
	-	-	-	+	N	+	+	3	5
Action 7.5 Shelters Establish heating centers for vulnerable populations.									
All									
	+	-	+	+	N	+	+	5	7
Action 7.6 Roads Plan for and maintain adequate road safety equipment and supplies.									
All									
	+	-	+	+	+	+	+	6	8
Actions 8.1 to 8.2 Sinkholes: Some areas of land are susceptible to collapse. Risks of collapse can be determined and managed.									

	Political	Administrative	Social	Technical	Environmental	Economic	Legal	Total A	Total B
Action 8.1 Community Awareness Provide information on the risks of sinkholes and activities that can mitigate risks.									
Colbert Co., Leighton, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Franklin Co., Hodges, red Bay, Russellville, Vina, Marion Co., Brilliant, Hackleburg									
	+	-	+	+	N	+	+	5	7
Action 8.2 Mapping Participate in efforts to map sinkholes.									
Colbert Co., Leighton, Littleville, Muscle Shoals, Sheffield, Tuscumbia, Franklin Co., Hodges, red Bay, Russellville, Vina, Marion Co., Brilliant, Hackleburg									
	+	-	+	+	+	+	+	6	8
Actions 9.1 to 9.9 Earthquakes: Some regions are particularly susceptible to earthquake damage. Risks of injury and damage from earthquake events can be determined and managed.									
	Political	**Administrative**	**Social**	**Technical**	**Environmental**	**Economic**	**Legal**	**Total A**	**Total B**
Action 9.1 Seismic Hazard Mapping Participate in efforts to map seismic hazards.									
All									
	+	-	+	+	+	+	+	6	8
Action 9.2 Related Hazard Mapping Participate in efforts to locate and map related features, including secondary earthquake hazards, evacuation routes, response and recovery centers, shelters, etc.									
All									
	+	-	+	+	+	+	+	6	8
Action 9.3 Map Education Map users should be educated in the appropriate uses and limitations of maps.									
All									
	+	-	+	+	+	+	+	6	8
Action 9.4 Capital Improvements Planning Plan capital facilities to accommodate earthquake risks.									
All									
	+	-	+	+	+	+	+	6	8
Action 9.5 Building Codes Enforce building codes sufficient to minimize structural weaknesses, as appropriate to earthquake risks.									
Cherokee, Muscle Shoals, Sheffield, Tuscumbia, Russellville, Hamilton, Haleyville									
	-	-	-	+	N	+	+	3	5
Action 9.6 Buildings as Structural Hazards Strengthen existing buildings in ways appropriate to the risk of earthquakes.									
All									
	+	-	-	+	N	+	+	4	6
Action 9.7 Non-Structural Hazards Secure non-structural items against earthquakes.									
All									
	+	-	-	+	N	+	+	4	6
Action 9.8 Bridge Strengthening Strengthen bridges as appropriate for the risk of earthquakes.									
All									

	+	-	+	+	N	+	+	5	7
Action 9.9 Hazard Mitigation Awareness Participate in public outreach campaigns and make information available to the public.									
All									
	+	-	+	+	+	+	+	6	8
Actions 10.1 to 10.3 Drought: Periods of time with little or no precipitation can pose risks that can be mitigated with conservation and preparation.									
	Political	**Administrative**	**Social**	**Technical**	**Environmental**	**Economic**	**Legal**	**Total A**	**Total B**
Action 10.1 Water Saving Encourage citizens to save water during droughts.									
All									
	-	-	-	+	+	+	-	3	5
Action 10.2 Water Storage Maintain sufficient water treatment and storage for extreme drought conditions.									
All									
	+	-	+	+	+	+	+	6	8
Action 10.3 Delivery System Designs and plans for water delivery systems will include consideration of drought events.									
All									
	+	-	+	+	+	+	+	6	8
Actions 11.1 to 11.9 Wildfire: Wildfires typically start in woodland or prairie areas. They can occur naturally though they are often exacerbated by human activities. Wildfires can be hard to control as they threaten homes and communities located nearby. Although preventing or controlling wildfires is preferable, there are many mitigation efforts we can take to prevent or alleviate damage to our homes and communities when fires inevitably occur.									
	Political	**Administrative**	**Social**	**Technical**	**Environmental**	**Economic**	**Legal**	**Total A**	**Total B**
Action 11.1 Public Education Participate in public outreach efforts to provide public education materials.									
Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge									
	+	-	+	+	N	+	+	5	7
Action 11.2 Zoning Enforce zoning regulations that minimize wildfire risks.									
Cherokee, Sheffield, Russellville, Winfield, Hamilton, Double Springs									
	-	-	-	+	+	+	+	4	6
Action 11.3 Defensible Space Encourage buffer zones sufficient to minimize wildfire risk.									
Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge									
	+	-	-	+	+	+	+	5	7
Action 11.4 GIS Mapping Participate in efforts to map wildfire threats.									
Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs,									

Haleyville, Lynn, Natural Bridge									
	+	-	+	+	+	+	+	6	8
Action 11.5 Power Line Management Maintain power lines to minimize threat of fire.									
Sheffield									
	+	-	+	+	N	+	+	6	8
Action 11.6 Property Maintenance Encourage appropriate property maintenance to minimize wildfire threats.									
Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge									
	-	-	-	+	+	+	+	4	6
Action 11.7 Fireplace and Chimney Maintenance Enforce restrictions on burning that minimize fire risk.									
Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge									
	-	-	-	+	+	+	+	4	6
Action 11.8 Motorized Equipment Maintain equipment in a manner that minimizes fire risk.									
Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge									
	+	-	-	+	+	+	+	5	7
Action 11.9 Flammable Materials Store flammable materials in a manner that minimizes fire risk.									
Cherokee, Colbert Co., Sheffield. Franklin Co., Red Bay, Vina, Marion Co., Bear Creek, Brilliant, Guin, Gu-Win, Hackleburg, Hamilton, Twin, Winfield, Haleyville, Winston Co., Addison, Arley, Double Springs, Haleyville, Lynn, Natural Bridge									
	+	-	+	+	+	+	+	6	8

5.5.3 Jurisdictional Action Plans[8]

The following section of the plan details the ongoing planning activities of each local jurisdiction and provides information on the status of mitigation activities proposed in previous plans. It reviews the status of proposed planning activities as completed, deferred, or deleted and briefly discusses the local capacity that has affected this status.

Colbert County

Mitigation Actions

- Flood Protection:
  - **Complete (partial)**. Colbert County was a participant in the FEMA Flood Map Modernization Program, which improved flood mapping data.
  - **Deferred (Funding).** Colbert County continues to seek remedies to flooding issues in areas of the County.
    (1.) Hollowfield Rd.- Dead –end dirt road accepted by the County 2 years ago- During major flooding event road gets blocked at beaver pond area. Solution explored is to elevate road.

    (2.) 6th Street at Fennel Rd.- Water stays for months presenting safety issues. Solution is to elevate road.

[8] This section has been thoroughly reviewed and revised to include ongoing planning activities and identify the office responsible for implementation. Personnel responsible for implementation is found in Appendix C.

(3.) Cassie Davis- House flooding/Blocked road. Solutions include drainage improvements and buyout.

(4.) Dawson Store-Three houses with flooding and four others blocked during flooding. Solutions include elevation and/or buy out.

(5.) King Bridge/Colbert Lane-Flooding closes a one-lane truss bridge.

(6.) Old Lee Hwy intersection with Barnes Rd near Barton.- Flash flooding blocks this intersection and three houses are blocked temporarily until flood water clears. Solutions considered include drainage improvements.
(7.) Gargis / Hollow Road- Creek washes across road at intersection creating safety concerns. Two sets of drainage pipes are not adequately aligned with creek to stop flooding of road.

(8.) Mulberry Lane- Two separate areas on this road flood. In the West Area, sinkholes appear stopped up which cause water to cover road during flash floods. On the East portion of the road the creek floods and blocks road .

(9.) 8th St. Cherokee- Subdivision in Northeastern Cherokee. Two sinkholes located in the subdivision have historically been stopped up and caused water to get into two houses. County has recently cleaned out sinkholes. Water gets over road.

(10.) Lane Springs Bridge- Thirty foot bridge on County 1 has previously washed out. Forces traffic diversion of approximately 15 miles. Water continues to undermine bridge.

(11.) Shook Rd.-Private roads (private deed)- Eight homes along Bear Creek appear to be in floodplain.

(12.) Depot Lane-Area just north of railroad tracks in Barton has three houses subject to flooding and nine more have water on their properties.

(13.) Buck Bridge/ 6th Street -Three houses in floodplain, and the roadway also floods.

- Water Supply. **Deferred (Funding).** Colbert County continues to experience growth in demand for water throughout the County. During recent drought conditions, demand for water has exceeded the County's capacity to treat and store water for residential, commercial and industrial uses. The County will explore a comprehensive range of solutions including water management and conservation plans, interconnectivity with neighboring water production facilities, and the construction of additional intake and treatment facilities in an effort to find safe, efficient solutions to this continuing problem.

- Emergency Warning System. **Complete (Partial)/Deferred (Funding).** There is a countywide emergency warning system in place, which is maintained by the Emergency Management Agency. This system contains numerous sirens and is currently in the process of expanding with the installation of 24 new sirens to reach a wider audience using HMGP funds. Additional sirens are needed.

- Community Shelters / Safe Centers. **Complete (Partial)/Deferred (Funding).** The County EMA is currently using HMGP funds to assist in the construction of storm shelters strategically located throughout the county in order to provide safe and accessible places for citizens to go in the case of tornados or other severe storm activities. These centers will need to be provided with adequate emergency generators. Additional shelters are needed.

- Emergency Communications. **Deferred (Funding).** Colbert County's first responders particularly the Colbert County Sherriff's Department needs upgrades to communications equipment: radios, repeaters, towers, and cameras.

- Public Education and Outreach: Colbert County provides severe weather related updates when severe weather of any type poses a threat. The county maintains email, text, and telephone communications and provides briefings and updates on weather. The County provides information on how to respond to severe weather in the form of briefings and information to be distributed to potentially affected individuals, such as those exposed to extreme cold when the threat of extreme cold is presented.

- Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in Colbert County will be coordinated through the Office of the County Commission and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Cherokee

Mitigation Actions

- Sewer Service Vulnerability. **Complete (Partial)/Deferred (Funding).** Cherokee has worked to determine the cause of most but not all wastewater line integrity failures and has pursued funding from the USDA to address many of the difficulties that result from infiltration of rainwater during heavy storm events. Some wastewater upgrades have been made, partially mitigating infiltration and inflow; others have not yet been made due to funding.

- Warning Siren System. **Deferred (Funding).** The warning siren system should be expanded to include the Lyle Acres Subdivision and the area along US 72. This program

would take in the baseball park and high occupancy housing area. The park has a large number of people using it at peak threat times.

- Flooding: **Deferred (Funding).** Construct and improve existing storm drainage systems, ditches, etc., in flash flood areas. The town has several areas that flood during heavy or multiple day rains that may not be located in designated flood plain areas.

- Fire/Wildfire Protection. **Deferred (Funding).** Construct a fire station on the south side of the Norfolk Southern Railroad to house and disperse emergency equipment. If possible this facility would include some type of shelter facility. This new facility would prevent the total loss of emergency equipment in the event that something happened to the current facility.

- Backup Power at Essential Sewer Facility. **Deferred (Funding).** Complete site work and install a 200 KW diesel generator at the Cherokee Water Treatment Plant to assure power for emergency operations.

- Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Cherokee will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Leighton

- Hazard mitigation action has been deferred in Leighton due to funding constraints.
- Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Leighton will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Littleville

Mitigation Actions

- Flooding: Maintain storm water system. **Complete (Partial).** Littleville works to keep drains clean that are stopped up during heavy rains and winds.
- Future Actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Littleville will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

City of Muscle Shoals

Mitigation Actions

- Mitigate flooding by storm water. **Complete.** The city completed the final phase of a $14,000,000 drainage project that has largely mitigated flooding caused by storm water problems in the city.
- Education plan for disaster assistance. **Complete.** An education plan for storm water hazards was developed by the Muscle Shoals City Schools in accordance with EPA guidelines.
- Power line maintenance. **Complete (Partial).** Muscle Shoals Electric Board works to remove limbs from power lines in town.
- Flood Ordinance Revision. **Complete.** The Muscle Shoals Flood Damage Prevention Ordinance was revised to comply with NFIP Regulations and was adopted by the City Council.
- Special Flood Hazard Area (SFHA) Improvement Program. **Complete.** Muscle Shoals implemented the SFHA Improvement Program to update records of structures and actions affecting SFHAs.
- Citywide Drainage Ordinance. **Complete.** The City adopted a new drainage ordinance that addressed stormwater runoff and flooding for any new development within the City of Muscle Shoals.
- Additional Warning Sirens. **Complete.** Two additional sirens were installed to cover the Shoals Research Airpark and newly annexed land.
- Additional Pumping Capacity at Broadway Retention Pond. **Complete.** Installed a new force main and pump system to double the pumping capacity at this pond as well as provide a backup pump in case of emergency.
- Various Drainage Improvements. **Complete (Partial).** Drainage improvements are ongoing to protect residential and commercial structures from flooding throughout the city and are completed on an "as needed" basis.
- Future Actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the City of Muscle Shoals will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

City of Sheffield

Mitigation Actions

- Storm water and drainage maintenance. **Complete (Partial).** The city has worked to maintain and improve storm water drainage facilities and will continue to improve drainage in areas that flood due to poor drainage.
- Tree maintenance and power line maintenance program. **Complete (Partial).** The city has worked to maintain trees in a manner that minimizes damages from natural hazards. Sheffield Utilities works to remove limbs from power lines in the City.
- New building code. **Complete.** Sheffield adopted the 2003 International Building Code.
- Install additional warning sirens. **Deferred (Funding).**
- Install additional community shelters. **Deferred (Funding).**
- Sanitary sewer improvements. **Complete (Partial).** Sheffield Utilities has worked to repair aging infrastructure and to relocate exposed sewer and water infrastructure away from areas of potential damage from flooding and debris.
- Flood studies for problem areas. **Deferred (Funding).**
- GIS improvements to assist with storm water maintenance. **Complete (Partial).** The City has adopted a GIS system for use in development review.
- Future Actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the City of Sheffield will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

City of Tuscumbia

Mitigation Actions

- Relocate sewer lines in danger of flood damage. **Complete (Partial).** The city has relocated one of several sewer lines in danger of being damaged from flooding. Additional lines await funding opportunities.
- Infiltration and inflow into sanitary sewers during flooding. **Complete (Partial).** The city has corrected problems in some areas. Additional improvements have been deferred due to limited funding.
- Tree maintenance. **Status: Complete (Partial).** The city has an ongoing tree maintenance program that mitigates tree damage.
- Storm water maintenance. **Status: Complete (Partial).** The city has an ongoing storm water maintenance program that corrects problems with blocked storm drains.
- Mitigation actions taken to prevent damage to park property. **Status: Complete.** One new pond has been added and two existing ponds have been enlarged. This has helped with runoff and decreased wet areas. An earthen mound was built with the dirt from the ponds. This mound helps to break the flow of current during flooding, which was a constant problem and caused extensive damage. Plants and shrubs have been planted to prevent erosion on creek banks. Logjams that have built up in the creek have been

removed to allow the water to flow freely. Several homes that were in the flood zone were purchased and removed using FEMA grants. Property in the flood zone has been purchased.

- Water supply. **Complete.** The city has constructed a new water treatment facility that eliminates the threat of water shortages in the foreseeable future.
- Future Actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the City of Tuscumbia will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Franklin County

Mitigation Actions

- Early warning system. **Complete (Partial).** Franklin County has maintained and upgraded the early warning system throughout the county. A total of 26 sirens are in place in Franklin County, however, additional sirens are still needed.
- Storm shelters. **Complete (Partial).** A total of 17 storm shelters have been installed. There are 2 in Red Bay, 2 in Russellville, 1 in Vina, 1 in Hodges, 1 in Phil Campbell, 1 at Union Community Center, 1 at East Franklin, 1 at Blue Springs, 1 at Gravel Hill, 1 at Frog Pond, 1 at Tharptown, 1 at Belgreen, 1 at Frankfort, 1 at Burnout, and 1 at Pleasant Site. Altogether, these shelters have a capacity of 1120 people. Additional shelters are still needed.
- Flood property mitigation. **Complete (Partial).** The county is reviewing the drainage plan and is working toward implementing its recommendations. The county is seeking funding for needed improvements. Storm drainage for Oak Hills Subdivision is the top priority.
- Public education for disaster response. **Complete (Partial).** School systems provide outreach and awareness in classrooms. Local EMA Director provides outreach and awareness materials to interested public.
- Wildfire evacuation planning. **Deferred (Funding).**
- Construct additional water storage. **Deferred (Funding).**
- Future Actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in Franklin County will be coordinated through the Office of the County Administrator and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Hodges

Prior Actions

- Public education for disaster response. **Deferred (Funding).**
- Wildfire evacuation planning. **Deferred (Funding).**
- Storm shelter construction. **Complete (Partial).** Hodges has installed a community shelter with a capacity to shelter 80 persons behind Town Hall. Additional storm shelters are needed throughout the community to serve growing visitation and recreational use of property in the vicinity of Hodges.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Hodges will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Phil Campbell

Mitigation Actions

- Public education for disaster response. **Deferred (Funding).**
- Wildfire evacuation planning. **Deferred (Funding).**
- Storm shelter construction. **Complete (Partial).** Phil Campbell constructed storm shelters at the senior/community center which were used on April 27, 2011 to shelter individuals during the EF5 tornado outbreak.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Phil Campbell will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

City of Red Bay

Mitigation Actions

- Public education for disaster response. **Deferred (Funding).**
- Wildfire evacuation planning. **Deferred (Funding).**
- Storm drainage improvements. **Complete (Partial).** Drainage improvement projects were completed with HMGP and CDBG funds. Additional drainage improvements are needed in other location of the City.

- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Red Bay will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

City of Russellville

Mitigation Actions

- Storm shelters. **Complete (Partial).** Two new storm shelters were constructed from 2002 to 2007. Additional shelters are needed in locations throughout the city.
- Power line maintenance. **Complete (Partial)**. Russellville has relocated numerous utilities underground in order to prevent storm damage.
- Flooding/Drainage improvements. **Complete (Partial).** Russellville just finished an underground culvert repair project for drainage problems. The city completed bridge improvements over the Town Branch to lessen the effect of floodwaters. The City of Russellville has a few areas that remain prone to flooding that need to be studied and improved.
- Public education for disaster response. **Deferred (Funding).**
- Water storage improvements. **Deferred (Funding).** The City of Russellville has a history of water shortage and/or outage at local treatment facilities during power outages, mechanical failures, and drought. This project proposes a one million gallon storage tank to facilitate storage capacity at an adequate elevation to supply water to the region during outages. This plan will eliminate the potential water shortages or outages and is estimated at $998,000.00.
- Sloss Lake Dam failure. **Complete.** The city of Russellville used CDBG funding to repair damage to Sloss Lake Dam which threatened downstream properties.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Russellville will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Vina

Mitigation Actions

- Storm Shelter. **Complete (Partial).** A storm shelter has been installed to provide for residents' safety during storm and tornado events. Additional shelters are needed at locations throughout town in order to shelter additional residents in disasters.
- Wastewater facilities improvements. **Complete (Partial).** Vina has completed a wastewater facilities study of improvements to wastewater system. The town is seeking funds to implement the recommendations.
- Storm drainage planning. **Complete (Partial).** The town has completed a drainage plan and is working toward implementing its recommendations. Vina is seeking funding for many of the needed improvements. The City proposes to provide adequate storm drainage culverts on County Road 23, Main St., Pecan St. and at the intersection state Hwy. 19 and County Rd. 23.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Vina will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Marion County

Prior Actions

- Expand early warning system. **Complete (Partial).** New sirens have been installed using HMGP funds following the April 27, 2011 tornadoes. Additional sirens are still needed. Marion County plans on getting fifteen more warning sirens and dispersing them throughout the county. Existing sirens need a talkback system to allow remote testing and a silent test system to permit testing without alarming citizens. In addition, several sirens need to be upgraded from box sirens to radio frequency sirens.
- Add additional community shelters. **Complete (Partial).** New shelters have been installed using HMGP funds following the April 27, 2011 tornadoes. Additional shelters are still needed. The county is looking at ways to acquire funding to increase the number of storm shelters throughout the county. In this effort the county needs to look at retro fitting all existing community/senior centers. The county applied for 127 in-home safe rooms following the April 27, 2011 tornadoes, and 96 have been installed.
- Flood buyouts. **Deferred (Funding).** There are a few areas where flooding is a problem. The County would like to pursue funding to buy out these areas and leave them as green space.
- Wildfire planning. **Deferred (Funding).**
- Emergency generators. **Deferred (Funding).** Add emergency generators at all existing community/senior centers. The Pea Ridge Community is in need of a generator to power the Pea Ridge Volunteer Fire department that is used as shelter during inclement weather or natural disasters. All of the county's fire departments became gathering/dining halls during prior disasters and are in need of emergency generators. Only Hamilton and Winfield have generators, leaving 10 fire departments in need of them. All water and

wastewater treatment facilities (spring, well, surface) need backup generators to assure continuation of services during emergency situations.

- Communications equipment. **Deferred (Funding).** Marion County is in need of tower(s) and radio system for countywide alert notification. A multi-frequency repeater system is needed to allow communications from towers that are currently dedicated to one frequency for one particular service. A countywide system of wireless internet is needed to improve emergency communications.

Personnel

Mitigation activities in Marion County will be coordinated through the Office of the County Administrator and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Bear Creek

Mitigation Actions

- Bear Creek has one heating/cooling facility that is open to the public. Additional resources are needed to provide assistance with utility bills.
- Drought preparedness calls for frequent flushing of tanks to maintain potable water supply, which is costly. Assistance with these costs is desirable.
- Wildfire evacuation planning. **Deferred (Funding).**
- Construction of a safe center in Bear Creek at proposed multipurpose building. **Deferred (Funding).**
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in Bear Creek will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Brilliant

Mitigation Actions

- Water and sewer improvements. **Complete (Partial).** Brilliant continues to work toward expanding access to water and sewer throughout the town limits.
- Bostick Creek flood mitigation. **Deferred (Funding).**
- Wildfire evacuation plan. **Deferred (Funding).**
- Floodplain mitigation. **Deferred (Funding).** In the flood plain area that runs along Bostick Creek, a future goal is to develop recreational green ways and wetland wildlife habitats.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in Brilliant will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

City of Guin

Mitigation Actions

- Natural disaster education and planning. **Complete (Partial).** Emergency protocols are taught in area schools. An emergency response plan is needed.
- Warning sirens. **Deferred (Funding).** There is a need for additional sirens
- Weather radios. **Deferred (Funding).** There is a need for additional weather radios
- Wildfire planning. **Deferred (Funding).** In the event of a large wildfire or other large natural disaster, the populous needs to be aware of an evacuation plan, such as signposts along major transportation routes.
- Backup generator. **Deferred (Funding).** Assure emergency power for the Guin Water Treatment Plant and the Guin City Hall. Install a 150 KW diesel generator at the Water Treatment Plant and a 60 KW diesel generator at the City Hall.
- Drainage improvements. **Deferred (Funding).** Upgrade the Little Creek culvert to eliminate blockage of 15th Avenue. Install two 9x10 pre cast concrete box culverts at Little Creek culvert.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in Guin will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Gu-Win

Mitigation Actions

- Natural disaster education and planning. **Complete (Partial).** Emergency protocols are taught in area schools. An emergency response plan is needed.
- Warning sirens. **Deferred (Funding).** Additional sirens are needed.
- Police and fire station. **Deferred (Funding).**
- Wildfire evacuation planning. **Deferred (Funding).**
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in Gu-Win will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Hackleburg

Mitigation Actions

- Natural disaster education and planning. **Complete (Partial).** Emergency protocols are taught in area schools. An emergency response plan is needed.
- Wildfire evacuation planning. **Deferred (Funding).**
- Warning sirens. **Deferred (Funding).** Additional sirens are needed.
- Storm shelters. **Deferred (Funding).** Additional shelters are needed.
- Police and fire station. **Complete (Partial).** Following their destruction in April 2011, new facilities are under construction using disaster recovery funds from HUD and ADECA.
- Sewer system infrastructure. **Complete (Partial).** Following the April 2011 tornadoes, sewer was identified as a need in the town's long term recovery plan. New sewer infrastructure is under construction using funds from HUD, ADECA, and EDA.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in Hackleburg will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

City of Hamilton

Mitigation Actions

- Warning Sirens. **Deferred (Funding).** At least 4 additional warning sirens are needed.
- Comprehensive plan and zoning ordinance. **Complete (Partial)**. Hamilton has adopted a zoning ordinance and floodplain management ordinance to aid in growth management.
- Natural disaster education and planning. **Complete (Partial).** Emergency protocols are taught in area schools. An emergency response plan is needed.
- Wildfire evacuation planning. **Deferred (Funding).**
- Floodplain and storm water management. **Complete (Partial).** The city has developed a walking trail in an area that is prone to flooding to preserve it as green space. The city has addressed drainage problems in downtown and near Hamilton High School.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in Hamilton will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Twin

Mitigation Actions

- Community shelter. **Deferred (Funding).** The town needs a community shelter.
- Warning siren. **Deferred (Funding).** Twin is in desperate need of a warning siren.
- Storm water management plan. **Deferred (Funding).**
- Natural disaster education and planning. **Complete (Partial).** Emergency protocols are taught in area schools. An emergency response plan is needed.
- Wildfire evacuation planning. **Deferred (Funding).**
- Community Facilities. **Deferred (Funding).** Twin needs a police station and a generator at the Twin Fire and Rescue Center.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in Twin will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

City of Winfield

Mitigation Actions

- Comprehensive plan and zoning ordinance updates. **Complete (Partial).** Winfield has a zoning ordinance and is in need of an updated comprehensive plan and a review of the zoning ordinance.
- Fire prevention code. **Complete.** Winfield has adopted building codes for structural safety in the city.
- Wildfire planning. **Deferred (Funding).**
- Drainage improvements. **Deferred (Funding).** The Midway culvert structure is failing. The loss of this structure will endanger lives and disrupt traffic flow in downtown Winfield. The structure needs to be upgraded to meet a 50 year or greater storm event.
- Community facilities. **Deferred (Funding).** The Winfield Community Center is in need of an 80 KW diesel emergency generator. Establish a safe center with emergency generator, emergency operations center, and emergency kitchen facilities capably of supplying community needs in the event of an extended power outage.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in Winfield will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Winston County

Mitigation Actions

- Early warning sirens. **Deferred (Funding).** At Present there are seventeen warning sirens in place throughout the county. Winston County continues to need additional early warning sirens for natural disasters. There is a need for more warning signs throughout the County, especially in the southwestern and south central portions of the County, in the Town of Natural Bridge, the Delmar Community, Arley on County Road 12 at the satellite fire station, on County Road 8 at the Blackpond community, and in Lynn. Many sirens are in need of retrofitting to protect against lightening and to provide battery backup systems.
- Storm shelter construction. **Complete (Partial).** Winston County is working on storm shelters in the Houston community and Moreland community, but additional storm shelters are still needed county wide. All existing community/senior centers should be retrofitted with safe rooms and generators for emergency operations.
- Natural Disaster response training, education, and planning. **Deferred (Funding).** Providing better information on disaster response is still needed.
- Wildfire evacuation planning. **Deferred (Funding)**. In the event of a large wildfire or other large natural disaster, the populous needs to be aware of an evacuation plan, such as signposts along major transportation routes. Better response and evacuation plans are still needed for wildfires.
- Communications equipment. **Complete (Partial).** Improvements are needed to the county's system of emergency contact. The County has implemented a reverse 911 system to call residents to provide weather notifications.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in Winston County will be coordinated through the County Commission and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Addison

Mitigation Actions

- Storm shelter construction. **Complete (Partial).** Addison has completed one storm shelter but additional storm shelters and safe rooms are still needed.
- Natural Disaster response training, education, and planning. **Deferred (Funding).** Providing better information on disaster response is still needed. There should be an effort to educate the populous on how to respond to a natural disaster, such as a plan for schools following the new EPA guidelines.
- Wildfire evacuation planning. **Deferred (Funding).** Better response and evacuation plans are still needed for wildfires. In the event of a large wildfire or other large natural

disaster, the populous needs to be aware of an evacuation plan, such as signposts along major transportation routes.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Addison will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Arley

Mitigation Actions

- Storm shelter construction. **Complete (Partial).** Arley has completed one shelter but additional storm shelters are still needed. Help residents acquire funds to build storm shelters or safe rooms.
- Natural Disaster response training, education, and planning. **Deferred (Funding).** Providing better information on disaster response is still needed. There should be an effort to educate the populous on how to respond to natural disasters, such as a plan for schools following the new EPA guidelines.
- Wildfire evacuation planning. **Deferred (Funding).** Better response and evacuation plans are still needed for wildfires. In the event of a large wildfire or other large natural disaster, the populous needs to be aware of an evacuation plan, such as signposts along major transportation routes.
- Generators. **Deferred (Funding).** The Town of Arley is need of a generator to assure power during emergency situations.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Arley will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Double Springs

Mitigation Actions

- Storm shelter construction. **Complete (Partial).** Double Springs is working on one storm shelter, but additional storm shelters are still needed.
- Natural Disaster response training, education, and planning. **Deferred (Funding).** Providing better information on disaster response is still needed. There should be an

effort to educate the populous on how to respond to natural disasters, such as a plan for schools following the new EPA guidelines.

- Wildfire evacuation planning. **Deferred (Funding).** Better response and evacuation plans are still needed for wildfires. In the event of a large wildfire or other large natural disaster, the populous needs to be aware of an evacuation plan, such as signposts along major transportation routes.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Double Springs will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

City of Haleyville

Mitigation Actions

- Storm shelter construction. **Complete (Partial)**. Haleyville has completed five shelters, including one with an emergency operations center, but additional storm shelters are still needed. Help residents acquire funds to build storm shelters or safe rooms.
- Natural Disaster response training, education, and planning. **Deferred (Funding).** Providing better information on disaster response is still needed. There should be an effort to educate the populous on how to respond to natural disasters, such as a plan for schools following the new EPA guidelines.
- Wildfire evacuation planning. **Deferred (Funding).** Better response and evacuation plans are still needed for wildfires. In the event of a large wildfire or other large natural disaster, the populous needs to be aware of an evacuation plan, such as signposts along major transportation routes.
- Generators. **Deferred (Funding).** The City of Haleyville Water Works and Sewer Board has requested a generator at the Kelly Hill Water Booster Station. This station is critical in the operation of supplying water to approximately 65% of Haleyville's customers as well as the town of Double Springs. This generator will be used to pump water from the lower to higher-pressure zones.
- Mitigation in flood-prone areas. **Deferred (Funding).** Along Hwy 13 in Haleyville, near the radio station and in front of Hardee's is a trouble spot. The water crosses the road making it a hazard for traffic during heavy storms. The City of Haleyville proposes to replace/relocate an approximately 2,600 linear foot undersized storm sewer system with failing sections and sections to be located close to and underneath existing buildings. This project will: relocate the existing storm sewer system away from and out from underneath existing structures; upsize the system and provide additional inlets to eliminate flooding of roads; and install guardrail in one location to prevent cars from accidentally driving into a large drainage swale during flooding conditions. This swale, when filled with flood waters, is deep enough to completely cover an automobile, posing the threat of a person drowning before rescue would be available. Water covers the road

during heavy rain along Hwy 129 near Jolly Dam's Service Station at the railroad underpass making this area a hazard for traffic. Water covers the road at Highway 13 in northern Haleyville at the entrance to the North Industrial park, blocking access to industrial property.

- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the City of Haleyville will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Lynn

Mitigation Actions

- Storm shelter construction. **Complete (Partial).** Lynn is working on one storm shelter, but additional storm shelters are still needed.
- Natural Disaster response training, education, and planning. **Deferred (Funding).** Providing better information on disaster response is still needed. There should be an effort to educate the populous on how to respond to natural disasters, such as a plan for schools following the new EPA guidelines.
- Wildfire evacuation planning. **Deferred (Funding).** Better response and evacuation plans are still needed for wildfires. In the event of a large wildfire or other large natural disaster, the populous needs to be aware of an evacuation plan, such as signposts along major transportation routes.
- Bridge replacement. **Deferred (Funding).** There are a few wooden bridges in need of being replaced because they are in danger of being washed out in the event of a large flood. Lynn continues to seek opportunities to make these bridges safer.
- Roadway improvements. **Deferred (Funding).** There are several gravel roads that wash out during times of heavy storm water runoff that need to be updated to withstand this type of hazard. Lynn continues to seek opportunities to repair these roads in a manner that permanently corrects washouts.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Lynn will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Town of Natural Bridge

Mitigation Actions

- Storm shelter construction. **Complete (Partial).** Natural bridge is working on one storm shelter, but additional storm shelters are still needed.
- Early warning sirens. **Deferred (Funding).** Natural Bridge continues to need an early warning system for natural disasters.
- Fire station construction. **Deferred (Funding).** Natural Bridge continues to seek opportunities to expand fire protection to residents. The town needs a Fire Station. Presently the town is protected by the station in Lynn and the one just north of Natural Bridge on State Route 13.
- Police Station construction. **Deferred (Funding).** Natural Bridge continues to seek opportunities to expand police protection. The town is in need of a police station. Presently the town is protected by the station in Lynn and the County Sheriff's office.
- Storm shelter construction. **Deferred (Funding).** Additional storm shelters are a continuing need in Natural Bridge. Help residents acquire funds to build storm shelters or safe rooms.
- Natural Disaster response training, education, and planning. **Deferred (Funding).** Providing better information on disaster response is still needed. There should be an effort to educate the populous on how to respond to a natural disaster, such as a plan for schools following the new EPA guidelines.
- Wildfire evacuation planning. **Deferred (Funding).** Better response and evacuation plans are still needed for wildfires. In the event of a large wildfire or other large natural disaster, the populous needs to be aware of an evacuation plan, such as signposts along major transportation routes.
- Backup power supply for critical facilities. **Deferred (Funding).** Natural Bridge is in need of a generator to supply power during natural disasters at Town Hall.
- Future actions: Future actions are as indicated in the Multi-jurisdictional Action Plan above.

Personnel

Mitigation activities in the Town of Natural Bridge will be coordinated through the Office of the Mayor and the Emergency Management Agency. Contact information is provided in Appendix C.

Phil Campbell Water Works and Sewer Board

Mitigation Actions

- Provide back-up generators
- Coordinate drainage easements
- Install surge protectors
- Design buildings to mitigate structural and non-structural hazards
- Encourage water saving in droughts
- Provide adequate water storage to protect against drought

Personnel

Mitigation activities in the Phil Campbell Water Works and Sewer Board will be coordinated through the Superintendent and the Water Board. Contact information is provided in Appendix C.

Cherokee Water Works and Gas Board

Mitigation Actions

- Provide back-up generators
- Coordinate drainage easements
- Install surge protectors
- Design buildings to mitigate structural and non-structural hazards
- Encourage water saving in droughts
- Provide adequate water storage to protect against drought

Personnel

Mitigation activities in the Cherokee Water and Gas Board will be coordinated through the Superintendent and the Water and Gas Board. Contact information is provided in Appendix C.

Bear Creek Water Works

Mitigation Actions

- Provide back-up generators
- Coordinate drainage easements
- Install surge protectors
- Design buildings to mitigate structural and non-structural hazards
- Encourage water saving in droughts
- Provide adequate water storage to protect against drought

Personnel

Mitigation activities in the Bear Creek Water Works will be coordinated through the Superintendent and the Water Board. Contact information is provided in Appendix C.

Guin Water Works

Mitigation Actions

- Provide back-up generators
- Coordinate drainage easements
- Install surge protectors
- Design buildings to mitigate structural and non-structural hazards
- Encourage water saving in droughts
- Provide adequate water storage to protect against drought

Personnel

Mitigation activities in the Guin Water Works will be coordinated through the Superintendent and the Water Board. Contact information is provided in Appendix C.

Twin Water Authority

Mitigation Actions

- Provide back-up generators
- Coordinate drainage easements
- Install surge protectors
- Design buildings to mitigate structural and non-structural hazards
- Encourage water saving in droughts
- Provide adequate water storage to protect against drought

Personnel

Mitigation activities in the Twin Water Authority will be coordinated through the Superintendent and the Water Board. Contact information is provided in Appendix C.

Winston County Schools

Mitigation Actions

- Provide back-up generators
- Install surge protectors
- Provide safe rooms for students and public
- Store loose items
- Plan capital investments to mitigate hazards
- Participate in community outreach and awareness of hazards and hazard mitigation

Personnel

Mitigation activities in the Winston County Schools will be coordinated through the Superintendent and the School Board. Contact information is provided in Appendix C.

Sheffield Utilities

Mitigation Actions

- Provide back-up generators
- Coordinate drainage easements
- Install surge protectors
- Design buildings to mitigate structural and non-structural hazards
- Encourage water saving in droughts
- Provide adequate water storage to protect against drought
- Maintain power lines, bury power lines, and maintain trees to protect against hazards

Personnel

Mitigation activities in the Sheffield Utilities will be coordinated through the Superintendent. Contact information is provided in Appendix C.

Russellville City Schools

Mitigation Actions

- Provide back-up generators
- Install surge protectors
- Provide safe rooms for students and public
- Store loose items
- Plan capital investments to mitigate hazards
- Participate in community outreach and awareness of hazards and hazard mitigation

Personnel

Mitigation activities in the Russellville City Schools will be coordinated through the Superintendent and the School Board Contact information is provided in Appendix C.

Colbert County School System

Mitigation Actions

- Provide back-up generators
- Install surge protectors
- Provide safe rooms for students and public
- Store loose items
- Plan capital investments to mitigate hazards
- Participate in community outreach and awareness of hazards and hazard mitigation

Personnel

Mitigation activities in the Colbert County School System will be coordinated through the Superintendent and the School Board. Contact information is provided in Appendix C.

Muscle Shoals City Schools

Mitigation Actions

- Provide back-up generators
- Install surge protectors
- Provide safe rooms for students and public
- Store loose items
- Plan capital investments to mitigate hazards
- Participate in community outreach and awareness of hazards and hazard mitigation

Personnel

Mitigation activities in the Muscle Shoals City Schools will be coordinated through the Superintendent and the School Board. Contact information is provided in Appendix C.

Sheffield City Schools

Mitigation Actions

- Provide back-up generators
- Install surge protectors
- Provide safe rooms for students and public
- Store loose items
- Plan capital investments to mitigate hazards
- Participate in community outreach and awareness of hazards and hazard mitigation

Personnel

Mitigation activities in the Sheffield City Schools will be coordinated through the Superintendent and the School Board. Contact information is provided in Appendix C.

Tuscumbia City Schools

Mitigation Actions

- Provide back-up generators
- Install surge protectors
- Provide safe rooms for students and public
- Store loose items
- Plan capital investments to mitigate hazards
- Participate in community outreach and awareness of hazards and hazard mitigation

Personnel

Mitigation activities in the Tuscumbia City Schools will be coordinated through the Superintendent and the School Board. Contact information is provided in Appendix C.

Franklin County Water Authority

Mitigation Actions

- Provide back-up generators
- Coordinate drainage easements
- Install surge protectors
- Design buildings to mitigate structural and non-structural hazards
- Encourage water saving in droughts
- Provide adequate water storage to protect against drought

Personnel

Mitigation activities in the Franklin County Water Authority will be coordinated through the Superintendent and the Water Board. Contact information is provided in Appendix C.

Franklin County Schools

Mitigation Actions

- Provide back-up generators
- Install surge protectors
- Provide safe rooms for students and public

- Store loose items
- Plan capital investments to mitigate hazards
- Participate in community outreach and awareness of hazards and hazard mitigation

Personnel

Mitigation activities in the Franklin County Schools will be coordinated through the Superintendent and the School Board. Contact information is provided in Appendix C.

Section 6 Plan Maintenance Process

6.1 Planning Cycle

6.2 Procedures

6.3 Implementation through Existing Programs

6.4 Continuing Public Involvement

6.1 The Planning Cycle

This chapter presents a continuous cycle for monitoring, evaluating and updating the Natural Hazard Mitigation Plan; the process for incorporating mitigation strategies into other, ongoing planning activities; and methods for continuing public involvement. Continual plan maintenance ensures an active and relevant hazard mitigation planning process.

6.2 Procedures

The Northwest Alabama Council of Local Governments will oversee plan maintenance during the five-year framework of the Action Plan. NACOLG will work with local EMA staff to serve as a facilitator. Local EMA Directors will serve as liaison with those assigned implementation responsibilities in the Action Plan. Local EMA Directors will also serve as liaison with participating municipalities and the County Commission in respective counties.

After the initial plan is finalized and adopted, the EMA Directors and NACOLG will meet annually.

1. If unable to attend a meeting, NACOLG will follow up by communicating with EMA Directors through personal visits, phone calls, correspondence, email or fax.
2. A list of completed mitigation projects will be reviewed at each meeting.
3. Previously implemented mitigation actions will be evaluated for effectiveness.
4. There will be an update on the status of current mitigation projects.
5. Changing land use patterns and new developments will be addressed.
6. Any changes in risk assessment and/or risk vulnerability will be identified.
7. Any other concerns will be addressed; possible future mitigation plans discussed, and any new projects will be adopted by signed resolution.
8. The plan may be updated in the interim as routine maintenance and changing information requires. In the event of an unexpected disaster emergency, the plan may be updated to include measures to address this event by the any local EMA

Director. The plan may also be updated by local amendment adopted by any participating jurisdiction, which may address only that jurisdiction's mitigation strategies or mitigation actions and shall be kept as part of the appendices of this plan.

NACOLG will schedule the meetings at a time and location convenient to the EMA Directors and staff. All meetings will be advertised in the local newspaper and open to the public.

At the end of the five-year cycle of the Action Program, the Committee will oversee a major update to the plan that follows the FEMA planning criteria in effect at the time of the update. The updated plan will again be submitted to the AEMA and FEMA for approval.

6.3 Implementation Through Existing Programs

Once the Alabama Emergency Management Association and the Federal Emergency Management Association have approved this plan, it will be adopted by each of the jurisdictions in northwest Alabama as the Multi-jurisdictional Natural Hazard Mitigation Plan. The Hazard Mitigation Plan will be incorporated into the existing planning processes of local jurisdictions in a manner that is appropriate to the ongoing planning activities of each community. Further incorporation will occur as required by local legislative bodies in these communities. When appropriate, plan elements will be submitted to the appropriate local coordinating body prior to determining prioritization, funding for public projects, review of new developments, and other activities affecting new and existing development. This has been the practice of participating jurisdictions since the practice of mitigation planning was first initiated. Local jurisdictions will prioritize the implementation of specific mitigation strategies based on maximizing the value of mitigation strategies' likely success reducing property damage, injury, and death. Those project with the greatest perceived value, including the greatest ratio of benefits to cost, will receive priority.

6.4 Continuing Public Involvement

A critical part of maintaining an effective and relevant natural hazard mitigation plan is ongoing public review and comment. Consequently, NACOLG and local EMA Directors are dedicated to direct involvement of its citizens in providing feedback and comments on the plan throughout the five-year implementation cycle.

Therefore, a hard copy of the plan will be available for viewing at all appropriate agencies throughout the region, at minimum to include; the County Emergency Management Agency offices, the office of the County Commission of each county, the offices of the Mayors of each municipality, and the municipal Public Libraries of the region. After adoption, a public information notice in the local newspaper will inform the public that the plan may be viewed at these locations.

Public meetings will be held when significant modifications to the plan are required or when otherwise deemed necessary by the Hazard Mitigation Steering Committee. The public will be able to express their ideas, concerns and opinions at the meetings. At a minimum, public hearings will be held during the drafting stage of the five-year plan update and to present the final plan to the public before adoption.

Appendix A: Stakeholders

School Contacts

System Name	County	Superintendent	Job Title	Phone Number	Email
Colbert County	Colbert	Mr. Anthony Jay Olivis	Superintendent	(256) 386-8565	aolivis@colbert.k12.al.us
Muscle Shoals City	Colbert	Dr. Jeff S. Wooten	Superintendent	(256) 389-2607	jwooten@mscs.k12.al.us
Sheffield City	Colbert	Dr. Timothy J. Morgan	Superintendent	(256) 383-0400	tjmorgan@scs.k12.al.us
Tuscumbia City	Colbert	Mrs. Mary Kate Smith	Superintendent	(256) 389-2900	mksmith@tuscumbia.k12.al.us
Franklin County	Franklin	Mr. Gary Williams	Superintendent	(256) 332-1360	garywilliams@franklin.k12.al.us
Russellville City	Franklin	Mr. Rex Mayfield	Superintendent	(256) 331-2001	rex.mayfield@rcs.k12.al.us
Marion County	Marion	Mr. Ryan Hollingsworth	Superintendent	(205) 921-3191	ryanh@mcbe.net
Winfield City	Marion	Dr. James Keith Davis	Superintendent	(205) 487-4255	kdavis@winfield.k12.al.us
Winston County	Winston	Mr. Gregory Pendley	Superintendent	(205) 489-5018	gdpendley@winstonk12.org
Haleyville City	Winston	Dr. Alan Miller	Superintendent	(205) 486-9231	amiller@havc.k12.al.us

EMA Directors	County	Name	Job Title	Business Phone	Email
Colbert County	Colbert	Mike Melton	Director	(256) 386-8558	colema@hiwaay.net
Franklin County	Franklin	Roy Gober	Director	256-332-8890	
Marion County	Marion	Jimmy Mills	Director	205-921-4555	jmills@marionsoal.com
Winston County	Winston	James Burnett	Director	205-489-2747	winstoncounty@centurytel.net

Mayors

City / Town	County	Full Name	Job Title	Business Phone	E-mail
City of Littleville	Colbert	Kenneth Copeland	Mayor	256-332-3567	
City of Muscle Shoals	Colbert	David Bradford	Mayor	256-383-5675	mayor@hiwaay.net
City of Sheffield	Colbert	Ian Sanford	Mayor	256-383-0250	
City of Tuscumbia	Colbert	Bill Shoemaker	Mayor	(256) 3835463 ext 2	
Town of Cherokee	Colbert	Terry Cosby	Mayor	256-359-4959	
Town of Leighton	Colbert	John Landers	Mayor	256-446-8477	
City of Hodges	Franklin	Ed Crouch	Mayor	205-935-3445	
City of Phil Campbell	Franklin	Steve Bell	Mayor	205-993-5313	
City of Red Bay	Franklin	Bobby Forsythe	Mayor	256-356-4473	mayor@redbay-al.gov
City of Russellville	Franklin	David Reed Grissom	Mayor	256-332-6060	davidrgrissom@bellsouth.net
Town of Vina	Franklin	D.W. Franklin	Mayor	256-356-4996	
City of Bear Creek	Marion	Connie Morrison	Mayor	205-486-4707	
City of Brilliant	Marion	Perry Franks	Mayor	205-465-2281	mayor@brilliantal.org
City of Guin	Marion	Phil Segraves	Mayor	205-468-2242	
Town of Gu-Win	Marion	Brandon Webster	Mayor	205-468-2231	
City of Hackleburg	Marion	Waymon "Whitey" Cochran	Mayor	205-935-3133	
City of Hamilton	Marion	Wade Williams	Mayor	205-921-2121	wwilliams64@hotmail.com
City of Winfield	Marion	Randy Price	Mayor	205-487-4337	
Town of Twin	Marion	Charles Baccus	Mayor	205-468-0036	town020@centurytel.net
Town of Addison	Winston	Marsha Pigg	Mayor	256-747-1971	
Town of Arley	Winston	Christopher Tyree	Mayor	205-387-0103	
City of Double Springs	Winston	Elmo Robinson	Mayor	205-489-5447	

City of Haleyville	Winston	Ken Sunseri	Mayor	205-486-3121	
Town of Lynn	Winston	Fred Easley	Mayor	205-893-5250	
Town of Natural Bridge	Winston	Pete Parrish	Mayor	205-486-8449	

County Commission

Company	County	Full Name	Job Title	Business Phone	E-mail
Franklin County Commission	Franklin	Barry Moore	Chairman/Judge	256-332-8800	
Lauderdale County Commission	Lauderdal	Dewey Mitchell	Chairman	256-760-5750	
Marion County Commission	Marion	Bob Burleson	Chairman	205-921-3172	
Winston County Commission	Winston	Roger Hayes	Chairman	205-489-5026	
Colbert County Commission	Colbert	Emmitt Jamar	Chairman	256-386-8500	

Water/Sewer Systems

System	County	Full Name	Job Title	Business Phone	Email
Guin Water	Marion	Tommy Aston	Director/Manager	205-468-2555	guinwater1@centurytel.net
Hamilton Water Authority	Marion	Rodney Williams	Director/Manager	205-921-7484	rwilliams@hamiltoncityal.org
Winfield Water	Marion	James Markham	Director/Manager	205-487-2700	james.markham@centurylink.com
Brilliant Water	Marion	Perry Franks	Director/Manager	205-465-2281	brilliant000@centurytel.net
Twin Water Authority	Marion	Jim Hollis	Director/Manager	205-412-4688	jhollis@watvc.com
Marion County Water Authority	Marion	Jan Cummings	Director/Manager	205-921-2092	janmcwa@sonet.net
Bear Creek Water	Marion	Connie Morrison/Rob Taylo	Director/Manager	205-486-5283	
Hackleburg Water	Marion	Wade Hood	Director/Manager	205-935-5479	
Upper Bear Creek Water System	Marion	Barry Hill	Director/Manager	205-486-5930	
Red Bay Water and Gas	Franklin	Joe Beasley	Director/Manager	256-356-8622	rbwg@bellsouth.net
Vina Public Works	Franklin	DW Franklin/Michael Moor	Superintendent/M	256-356-4996	
Hodges Water	Franklin	Wyndal West/Anthony Love	Operator (WW ret	205-935-3445	
Phil Campbell Water	Franklin	Darren Stewart	Superintendent	205-993-5464	
Russellville Utilities	Franklin	Doug Clement	Manager	256-332-3850	
Franklin County Water	Franklin	Beverly Hargetteq	Office Manager	256-332-1496	
Double Springs Water	Winston	Ron Padgett	Director/Manager	205-489-5447	
Addison Water	Winston	Charles Moore	Director/Manager	256-747-2971	
Arley Water Works	Winston	Dewayne Luker	Superintendent	205-387-0156	dlukerwater4@yahoo.com
Lynn Water	Winston	Andy Tucker	Water Operator	205-893-5250	
Haleyville Water Works	Winston	David Cox	Manager	205-486-3114	
Sheffield Utilities Water	Colbert	Alan Hughes	Director/Manager	256-389-2000	
Tuscumbia Utilities	Colbert	David Thornton	Director/Manager	256-383-0321	david@tuscutilities.com
Muscle Shoals Utilities	Colbert	James Vance	Manager	256-386-9260	
Cherokee Water	Colbert	Art Walker	Chairman	256-359-4941	
Leighton Water	Colbert	Tim Wallace	Manager	256-446-9330	
Littleville Water Works	Colbert	Mayor Copeland	Mayor		
Colbert County Water	Colbert	Larry Parker	Manager	256-381-2120	
Hawk Pride Water System	Colbert	Phillip Potter	Manager	256-381-4520	
West Lawrence Water Co-op	Lawrence	Kevin Martin	Manager	256-974-9114	

Colleges/Universities	County	Name	Job Title	Phone	Email
NWSCC - Muscle Shoals	Colbert	Dr. Humphrey Lee	President	256-331-5200	
NWSCC - Phil Campbell	Franklin	Dr. Humphrey Lee	President	256-331-6200	
Bevill State CC - Hamilton	Marion	Dr. Anne McNutt	President	205-921-3177	

Housing Authorities	County	Name	Job Title	Phone	Email
Tuscumbia Housing Authority	Colbert	Debra Smith	Director/Manager	256-381-0915	
Sheffield Housing Authority	Colbert	Shirley Witten	Director/Manager	256-383-4773	
Housing Authority of Red Bay	Franklin	Donna Nunley	Director/Manager	256-356-4695	
Russellville Housing Authority	Franklin	Margaret Jackson	Director/Manager	256-332-1561	
Phil Campbell Housing Authority	Franklin	Penny Lacey	Director/Manager	205-993-4844	
Bear Creek Housing Authority	Marion	David Jackson	Director/Manager	205-468-2637	
Hackleburg Housing Authority	Marion	David Jackson	Director/Manager	205-935-5214	
Brilliant Housing Authority	Marion	Debra Berryhill	Director/Manager	205-465-2490	
Winfield Housing Authority	Marion	David Jackson	Director/Manager	205-487-2400	
Housing Authority of Guin	Marion	David Jackson	Director/Manager	205-468-8325	
Hamilton Housing Authority	Marion	Genice Owens	Director/Manager	205-921-3155	
Haleyville Housing Authority	Winston	Paulette Richie	Director/Manager	205-486-3571	

Nathan Willingham

From: Nathan Willingham
Sent: Thursday, February 13, 2014 1:06 PM
To: George Grabryan (ggrabryan@florenceal.org); Tim Greer (tgreer@florenceal.org); 'pcema@centurytel.net'; 'facoema@centurytel.net'; 'walkerema@bellsouth.net'; 'walkerlilema@bellsouth.net'; 'plittle@cullmanema.org'; 'kallen@cullmanema.org'
Cc: 'tony.wingo@ema.alabama.gov'; Mike Melton (colema@hiwaay.net); Roy Gober (fcem@hiwaay.net); Jimmy Mills (jmills@marionsoal.com); James D. Burnett (winstoncounty@centurytel.net)
Subject: Regional Hazard Mitigation Plan for Colbert, Franklin, Marion, and Winston counties

To: Alabama EMA Directors Adjacent to Colbert, Franklin, Marion, and Winston counties
From: Nathan Willingham, Director of Planning and Transportation, NACOLG on behalf of EMA Directors in Colbert, Franklin, Marion and Winston Co.
Subject: Northwest Alabama Regional Hazard Mitigation Plan, FEMA Requirement for Consultation with Neighboring Jurisdictions

The Northwest Alabama Council of Local Governments (NACOLG) is assisting the EMA of Colbert County, Franklin County, Marion County and Winston County to prepare a multi-jurisdictional hazard mitigation plan for those counties. The plan consolidates mitigation plans for each county into a single multi-jurisdictional plan that meets requirements for hazard mitigation planning established by FEMA. One such requirement is the consultation with adjacent jurisdictions during the course of the planning process. Therefore, the following link is provided in order to inform and solicit input from adjacent EMA jurisdictions:
http://www.nacolg.com/Community_Planning/Northwest%20Alabama%20Regional%20Hazard%20Mitigation%20Plan_DRAFT_online011514.pdf. Please respond no later than February 27, 2014.

Please contact me with any questions that you may have.

Thank you for your assistance.

Sincerely,

Nathan Willingham
Director of Planning and Transportation
Northwest Alabama Council of Local Governments

P.O. Box 2603
Muscle Shoals, AL 35661
nwillingham@nacolg.org
(256) 389-0515 (Telephone)
(256) 389-0599 (Fax)

Nathan Willingham
Director of Planning and Transportation
Northwest Alabama Council of Local Governments

P.O. Box 2603
Muscle Shoals, AL 35661

nwillingham@nacolg.org
(256) 389-0515 (Telephone)
(256) 389-0599 (Fax)

Northwest Alabama Council of Local Governments

P.O. Box 2603, Muscle Shoals, Alabama 35662

Keith Jones
Executive Director
kjones@nwscc.edu

(256) 389-0500
(256) 389-0599 - Fax

Mickey Haddock
Chairman

Jerry Groce
Vice Chairman

MEMO

FROM: **Nathan Willingham**

TO: **School Superintendents in Colbert, Franklin, Marion and Winston Counties**

DATE: **February 3, 2014**

RE: **Hazard Mitigation Plan and Hazard Mitigation Grant Program**

The Northwest Alabama Council of Local Governments (NACOLG) is assisting the Emergency Management Agency of Colbert County, Franklin County EMA, Marion County EMA, and Winston County EMA to complete a hazard mitigation plan for the region. The plan identifies and assesses the risks associated with various natural disasters and proposes mitigation strategies to reduce the potential loss of life and property from disaster events. Participation and adoption is required to maintain eligibility for Hazard Mitigation Grant Program (HMGP) funding following a major natural disaster.

School districts are eligible to apply for HMGP funds directly and independently of the local government jurisdiction in which the school is located. Participation in the plan is a requirement to maintain eligibility and allow systems to apply independently. Systems may still apply through local government jurisdictions without participating in the plan or adopting it. However, by reviewing the draft Hazard Mitigation Plan found on the website www.nacolg.com and returning the enclosed contact form, your district will be a documented participant and will be eligible to adopt the plan and apply for funds directly when they become available following a major disaster. Forms can be returned by email to nwillingham@nacolg.org or fax to (256) 389-0599. Please review and respond with contact information and comments by February 21, 2014.

Once the plan is completed, a copy will be sent along with a sample resolution for adoption to the individual indicated on the contact form. If you have any questions, I can be reached at (256) 389-0515 or nwillingham@nacolg.org. Thank you for your time and consideration.

Hazard Mitigation Planning

School Participant Contact Form

District Name: _____

Name of District Contact: _____

Telephone Number: _____

Email Address: _____

Mailing Address: _____

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

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Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0515 ATTN: Hazard Mitigation.

Nathan Willingham

From: Nathan Willingham
Sent: Tuesday, February 04, 2014 9:24 AM
To: 'aolivis@colbert.k12.al.us'; 'blindsey@mscs.k12.al.us'; 'tjmorgan@scs.k12.al.us'; 'mksmith@tuscumbia.k12.al.us'; 'garywilliams@franklin.k12.al.us'; 'rex.mayfield@rcs.k12.al.us'; 'ryanh@mcbe.net'; 'kdavis@winfield.k12.al.us'; 'gdpendley@winstonk12.org'; 'amiller@havc.k12.al.us'
Cc: Mike Melton (colema@hiwaay.net); Roy Gober (fcem@hiwaay.net); Jimmy Mills (jmills@marionsoal.com); James D. Burnett (winstoncounty@centurytel.net)
Subject: Regional Hazard Mitigation Plan
Attachments: Hazard Mitigation Planning- School response form.docx

To: EMA Directors and School Superintendents
From: Nathan Willingham, NACOLG

RE: Regional Hazard Mitigation Plan

The Northwest Alabama Council of Local Governments (NACOLG) is assisting the Emergency Management Agency of Colbert County, Franklin County EMA, Marion County EMA, and Winston County EMA to complete a hazard mitigation plan for the region. The plan identifies and assesses the risks associated with various natural disasters and proposes mitigation strategies to reduce the potential loss of life and property from disaster events. Participation and adoption is required to maintain eligibility for Hazard Mitigation Grant Program (HMGP) funding following a major natural disaster.

School districts are eligible to apply for HMGP funds directly and independently of the local government jurisdiction in which the school is located. Participation in the plan is a requirement to maintain eligibility and allow systems to apply independently. Systems may still apply through local government jurisdictions without participating in the plan or adopting it. However, by reviewing the draft Hazard Mitigation Plan found on the website http://www.nacolg.com/Community_Planning/Northwest%20Alabama%20Regional%20Hazard%20Mitigation%20Plan_DRAFT_online011514.pdf and returning the attached contact form, your district will be a documented participant and will be eligible to adopt the plan and apply for funds directly when they become available following a major disaster. Forms can be returned by email to nwillingham@nacolg.org or fax to (256) 389-0599. Please review and respond with contact information and comments by February 21, 2014.

Once the plan is completed, a copy will be sent along with a sample resolution for adoption to the individual indicated on the contact form. If you have any questions, I can be reached at (256) 389-0515 or nwillingham@nacolg.org. Thank you for your time and consideration.

Thank you,

Nathan Willingham
Director of Planning and Transportation
Northwest Alabama Council of Local Governments

P.O. Box 2603

Muscle Shoals, AL 35661
nwillingham@nacolg.org
(256) 389-0515 (Telephone)
(256) 389-0599 (Fax)

Northwest Alabama Council of Local Governments

P.O. Box 2603, Muscle Shoals, Alabama 35662

Keith Jones
Executive Director
kjones@nwscc.edu

(256) 389-0500
(256) 389-0599 - Fax

Mickey Haddock
Chairman

Jerry Groce
Vice Chairman

MEMO

FROM: **Nathan Willingham**

TO: **Local Authorities Eligible for Hazard Mitigation Grant Assistance**

DATE: **February 5, 2014**

RE: **Hazard Mitigation Plan and Hazard Mitigation Grants**

The Northwest Alabama Council of Local Governments (NACOLG) is assisting the Emergency Management Agency of Colbert County, Franklin County EMA, Marion County EMA, and Winston County EMA to complete a hazard mitigation plan for the region. The plan identifies and assesses the risks associated with various natural disasters and proposes mitigation strategies to reduce the potential loss of life and property from disaster events. Participation and adoption is required to maintain eligibility for Hazard Mitigation Grant Program (HMGP) funding following a major natural disaster.

Public authorities and instrumentalities of local governments such as utilities and housing authorities are eligible to apply for HMGP funds directly and independently of the local government jurisdiction in which the authority is located. Participation in the plan is a requirement to maintain eligibility and to allow these authorities to apply independently. These authorities may still apply through local government jurisdictions without participating in the plan or adopting it. However, by reviewing the draft Hazard Mitigation Plan found on the website www.nacolg.com and returning the enclosed contact form, your jurisdiction or board will be a documented participant and will be eligible to adopt the plan and apply for funds directly when they become available following a major disaster. Forms can be returned by email to nwillingham@nacolg.org or fax to (256) 389-0599. Please review and respond with contact information and comments by February 21, 2014.

Once the plan is completed, a copy will be sent along with a sample resolution for adoption to the individual indicated on the contact form. If you have any questions, I can be reached at (256) 389-0515 or nwillingham@nacolg.org. Thank you for your time and consideration.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: _____

Name of Contact: _____

Telephone Number: _____

Email Address: _____

Mailing Address: _____

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

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Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Appendix B: Documentation of Participation and Public Involvement

Northwest Alabama Regional Hazard Mitigation Plan
Franklin County Public Hearing and Plan Review
January 22, 2014
Franklin Commission Office
10:00 AM

I. Introduction- Roy Gober, Franklin County EMA

II. Purpose of Plan- Nathan Willingham, NACOLG

III. Hazard Profile and Vulnerability

IV. Mitigation Strategies Review

V. Questions and Comments?

AFFP
PUBLIC NOTICE

Affidavit of Publication

STATE OF ALABAMA } SS
COUNTY OF FRANKLIN }

Nicole Pell, being duly sworn, says:

That she is general manager of the Franklin County Times, a biweekly newspaper of general circulation, printed and published in Russellville, Franklin County, Alabama; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

January 15, 2014

That said newspaper was regularly issued and circulated on those dates.

The sum charged by the Newspaper for said publication does not exceed the lowest rate paid by commercial customers for an advertisement of similar size and frequency in the same newspaper in which the public notice appeared.

There are no agreements between the Franklin County Times and the officer or attorney charged with the duty of placing the attached legal advertising notices whereby any advantage, gain or profit accrued to said officer or attorney.

SIGNED:

Nicole Pell

Publisher

Subscribed to and sworn to me this 15th day of January 2014.

Mary Jo Eskridge

Mary Jo Eskridge, Notary Public, Franklin County,

My commission expires: April 13, 2014

04133182 00071258

FRANKLIN COUNTY EMA
P.O. BOX 699
RUSSELLVILLE, AL 35653

LEGAL NOTICE

Franklin County EMA
Public Hearing Notice
Regional Hazard
Mitigation Plan

The Franklin County EMA will hold a public hearing on January 22nd, 2014 at the Franklin County Courthouse Annex, 410 Jackson Ave., Russellville at 10:00 a.m. The purpose of this hearing will be to discuss the Northwest Alabama Hazard Mitigation Plan, which addresses natural hazards and mitigation efforts in Colbert, Franklin, Marion, and Winston counties. Information to be presented includes the purpose and contents of the plan and the county's hazard mitigation strategy. All citizens are urged to express their views on the community's hazard mitigation policies.

Individuals not attending the public hearing may send written comments to: Regional Hazard Mitigation Plan, P.O. Box 2603, Muscle Shoals, AL 35661. Under provisions of the American Disabilities Act of 1990, individuals wishing to attend the public hearing with special requirements should call (256) 389-0515 at least five days prior to the date of the hearing. Hearing impaired individuals having access to a TDD may contact via the Alabama Relay Service at 1-800-548-2546.

Franklin County Times
Jan. 15, 2014

PUBLIC NOTICE

Regional Hazard Mitigation Plan 01-22-14 10 AM

NAME	ORGANIZATION	PHONE	EMAIL
ROY GOBER	FRANKLIN EMA	256-332-8890	FCEM@HIWAAY.NET
Mandi Willis	Franklin Co. Commission	256-332-8852	MWillis@hiwaay.net
Leah Mansell	Franklin Co. Commission	256-332-8850	lmansell@hiwaay.net
Chris Hargett	Russellville Police	256-332-2230	rpd10@russellville-pd.net
Elizabeth Foster	ADPH	256 389 3534	elizabeth.foster@adph.state.al.us
Matthew Willingham	NACOLG	256-389-0515	mwillingham@nwscc.edu
Barry Moore	Franklin Co. Comm	256-332-8800	fcp.judge@hiwaay.net
VINCENT DEFAZIO	GATES CORP	256-356-4436	VDEFAZIO@GATES.COM
Greg Allen	Russellville Hosp/M	256-332-8614	gregory.allen@lpnt.net
Belinda Johnson	Russellville Hospital	256-332-8685	Belinda.Johnson@lpnt.net
Mike Shewbart	City of Red Bay	256-356-4473	Mike.Shewbart@REDBAY-AL.C
Gary Williams	Franklin Co. Schools	256-412-3407	gary.williams@franklin.k12.al.us
Donald Borden	Franklin Co Schools	256-577-0302	donald.borden@franklin.k12.al.us
Joe Mann	Russellville Fire	256-349-0568	JOEREFD@Firehousemail.com
John Henry	Russellville Fire	256 668-5164	Dudley RFD@gmail.com
Dellena Cole	Extension	270-332-8880	cole kat@auburn.edu
Krista Madden	Franklin Co Comm.	256-332-8851	kmadden@hiwaay.net
Richard Crouch	Hodges	205-544-0052	rcrouch@centurytel.net
Anthony Comi	Red Bay Hospital	256-356-9532	Tony.Comi@HELENKELLER.com

AGENDA
NACOLG BOARD OF DIRECTORS
January 23, 2014
11:30 AM

1. CALL TO ORDER

2. APPROVAL OF MINUTES
   December 12, 2013

3. REPORT OF EXECUTIVE DIRECTOR
   - A. Regional Clearinghouse Reviews
   - B. Department of Aging Services Report
   - C. Department of Governmental Services Report

Speaker: Tate Godfrey, President & CEO
North Alabama Industrial Development
Association, Inc. (NAIDA)

LUNCH

- D. Department of Planning & Transportation Report
- E. NW Alabama Hazard Mitigation Plan
  Executive Summary for Draft Plan Review

4. REPORT OF COMMITTEES
   Budget/Personnel Committee

5. UNFINISHED BUSINESS

6. NEW BUSINESS
   Next Meeting Date
   Announcements

7. A DJOURN

NORTHWEST ALABAMA COUNCIL OF LOCAL GOVERNMENTS

NACOLG BOARD OF DIRECTORS
JANUARY 23, 2014

	NAME:	Representing:
1	Mickey Haddock	Florence
2	Bill Howard	City of Muscle Shoals
3	Mike Watkins	City of Winfield
4	Randy Price	Winfield
5	Wade Williams	Hamilton - Mayor
6	Ed Crouch	Hodges, Mayor
7	Gary Warren	Winston Co.
8	Philip Darrisaw	City of Guin
9	~~Emmitt R. Zimmer~~	~~Gilbert S. Comm~~
10	Tim Tubbs	Killen
11	Mel Grimes	Waterloo
12	John Landers	Leighton
13	Ray [illegible]	Marion County
14	Horace Gray	Lauderdale
15	Chip Kasmeier	Laud Co.
16	Don Strait	Mayor St. Florian
17	AUGIE HENDERSHOT	TOWN OF LEXINGTON
18	RICHARD SHARP	FLORENCE
19	[illegible]	Lauderdale Co.
20	Bill Shoemaker	Tuscumbia

NORTHWEST ALABAMA COUNCIL OF LOCAL GOVERNMENTS

21	Don Barnwell	Marion County
22	Connie Morris	Bear Creek
23	L. S. Ford	Sheffield
24	Tate Godfrey	NADA
25	Jessa C. McDonald	Colbert County
26	John Allgood	Lauderdale
27	Mike Vaughn	Franklin Co.
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32	Keith Jones	NACOLG
33	Jay Pace Dean	NACOLG
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Northwest Alabama Regional Hazard Mitigation Plan
Winston County Public Hearing and Plan Review
January 28, 2014
Winston County EMA Office, Municipal Building
10:00 AM

I. Introduction- James Burnett, Winston County EMA

II. Purpose of Plan- Nathan Willingham, NACOLG

III. Hazard Profile and Vulnerability

IV. Mitigation Strategies Review

V. Questions and Comments?

LEGAL NOTICE
Winston County EMA
Public Hearing Notice
Regional Hazard Mitigation Plan

The Winston County EMA will hold a public hearing on **January 28, 2014** at the EMA Office located at the Double Springs Municipal Building, 23415 Highway 195, Double Springs, AL at **10:00 a.m.** The purpose of this hearing will be to discuss the **Northwest Alabama Hazard Mitigation Plan**, which addresses natural hazards and mitigation efforts in Colbert, Franklin, Marion, and Winston counties. Information to be presented includes the purpose and contents of the plan and the county's hazard mitigation strategy. All citizens are urged to express their views on the community's hazard mitigation policies.

Individuals not attending the public hearing may send written comments to: Regional Hazard Mitigation Plan, P.O. Box 2603, Muscle Shoals, AL 35661. Under provisions of the American Disabilities Act of 1990, individuals wishing to attend the public hearing with special requirements should call (256) 389-0515 at least five days prior to the date of the hearing. Hearing impaired individuals having access to a TDD may contact via the Alabama Relay Service at 1-800-548-2546.

WE-Jan. 15
180

st-Publication Affidavit of Legal Notice

notary public in and for the county and state above listed, personally
e (name of affiant), who, by me duly sworn, deposes and says that:

Horace Moore. I am the Publisher (position
iant *i.e.* publisher or manager) of
t Alabamian ("Newspaper").

aper published the attached legal notice(s) in the issue(s) of:
14 (dates of publication). The sum charged for
was $ 57.60. The sum charged by the Newspaper for said
does not exceed the lowest classified rate paid by commercial
for an advertisement of similar size and frequency in the same
s) in which the public notice(s) appeared.

no agreements between the Newspaper and the officer or attorney
th the duty of placing the attached legal advertising notices whereby
age, gain or profit accrued to said officer or attorney."

Horace Moore
AFFIANT

Sworn and subscribed this 15th day of January, 2014.

Notary Public

My Commission Expires
09-05-2017

Northwest Alabama Regional Hazard Mitigation Plan
Sign In
January 28, 2014

Name	Agency	Phone	Email
Nathan Willingham	NACOLG	256-389-0515	nwillingham@nacolg.org
Elma Robinson	Town of Double Springs	205-489-5447	epr35553@Yahoo.com
James D. Burnett	Winston EMA	205-489-2747	winstoncountyema@centurytel.net

Winston County EMA

Northwest Alabama Council of Local Governments

Northwest Alabama Regional Hazard Mitigation Plan
Marion County Public Hearing and Plan Review
January 29, 2014
Marion County EMA Office
10:00 AM

I. Introduction- Jimmy Mills, Marion County EMA

II. Purpose of Plan- Nathan Willingham, NACOLG

III. Hazard Profile and Vulnerability

IV. Mitigation Strategies Review

V. Questions and Comments?

Post-Publication Affidavit of Legal Notice

State of Alabama

Marion **County**

Before me, a notary public in and for the county and state above listed, personally appeared Les Walters (name of affiant), who, by me duly sworn, deposes and says that:

"My name is Les Walters. I am the Manager (position of affiant *i.e.* publisher or manager) of The Journal Record ("Newspaper").

The Newspaper published the attached legal notice(s) in the issue(s) of: Jan. 15, 2014 (dates of publication). The sum charged for publication was $ 52.48. The sum charged by the Newspaper for said publication does not exceed the lowest classified rate paid by commercial customers for an advertisement of similar size and frequency in the same newspaper(s) in which the public notice(s) appeared.

There are no agreements between the Newspaper and the officer or attorney charged with the duty of placing the attached legal advertising notices whereby any advantage, gain or profit accrued to said officer or attorney."

AFFIANT

Sworn and subscribed this 3rd day of Feb., 2014

Notary Public

MY COMMISSION EXPIRES 9-19-2015

Marion County EMA
Public Hearing Notice
Regional Hazard
Mitigation Plan

The Marion County EMA will hold a public hearing on January 29, 2014 at the EMA Office located at the 280 Winchester Drive, Hamilton, AL at 10:00 a.m. The purpose of this hearing will be to discuss the Northwest Alabama Hazard Mitigation Plan, which addresses natural hazards and mitigation efforts in Colbert, Franklin, Marion, and Winston counties. Information to be presented includes the purpose and contents of the plan and the county's hazard mitigation strategy. All citizens are urged to express their views on the community's hazard mitigation policies.

Individuals not attending the public hearing may send written comments to: Regional Hazard Mitigation Plan, P.O. Box 2603, Muscle Shoals, AL 35661. Under provisions of the American Disabilities Act of 1990, individuals wishing to attend the public hearing with special requirements should call (256) 389-0515 at least five days prior to the date of the hearing. Hearing impaired individuals having access to a TDD may contact via the Alabama Relay Service at 1-800-548-2546.

Jan. 15, 2014

Northwest Alabama ~~Regional~~ Hazard Mitigation Plan
Sign In
January 29, 2014

Name	Agency	Phone	Email
[illegible]	NACOLG	256-389-0515	dwillingham@nacolg.org
Jimmy Mills	Marion Co EMA	205-921-4555	JMills@marionsoal.com
Kevin Williams	MARION CO. SHERIFF	205-921-7483	Kwilliams@MARIONSOAL.com
Erica Warren	Marion Co. EMA	205-921-4555	emaoffice@marionsoal.com

Marion County EMA

Northwest Alabama Council of Local Governments

Northwest Alabama Regional Hazard Mitigation Plan
Colbert County Public Hearing and Plan Review
January 31, 2014
Colbert County EMA Office, Courthouse Annex
10:00 AM

I. Introduction- Mike Melton, Colbert County EMA

II. Purpose of Plan- Nathan Willingham, NACOLG

III. Hazard Profile and Vulnerability

IV. Mitigation Strategies Review

V. Questions and Comments?

Colbert County Reporter
Standard and Times

106 W. Fifth Street, P.O. Box 969, Tuscumbia, AL 35674-0969
(256) 383-8471 or Fax (256) 383-8476

AFFIDAVIT OF PUBLICATION OF LEGAL NOTICE

State of Alabama)
Colbert County)

Colbert County EMA
Public Hearing Notice
Regional Hazard Mitigation Plan

The Colbert County EMA will hold a public hearing on January 31st, 2014 at the Colbert County EMA Office, 120 West 5th Street Annex Basement at 10:00 a.m. The purpose of this hearing will be to discuss the Northwest Alabama Hazard Mitigation Plan, which addresses natural hazards and mitigation efforts in Colbert, Franklin, Marion, and Winston counties. Information to be presented includes the purpose and contents of the plan and the county's hazard mitigation strategy. All citizens are urged to express their views on the community's hazard mitigation policies. Individuals not attending the public hearing may send written comments to: Regional Hazard Mitigation Plan, P.O. Box 2603, Muscle Shoals, AL 35661. Under provisions of the American Disabilities Act of 1990, individuals wishing to attend the public hearing with special requirements should call (256) 389-0515 at least five days prior to the date of the hearing. Hearing impaired individuals having access to a TDD may contact via the Alabama Relay Service at 1-800-548-2546.

04/1TNP/9348

Before me, a notary public in and for the county and state above listed, personally appeared Janice M. Williams who, by me duly sworn, deposes and says that:

"My name is Janice M. Williams with the of the Colbert County Reporter. The Newspaper is printed in the English language, has a general circulation and its principal editorial office in the county above listed and has been mailed under a publication class mailing privilege of the United States Postal Service from the post office where it is published at least 51 weeks a year.

The Newspaper published the attached legal notice in the issues of: Jan 24, 2014.

The sum charged for pubication was $ 94.60. The sum charged by the Newspaper for said publication does not exceed the lowest classified rate paid by commercial customers for an advertisement of similar size and frequency in the same newspaper(s) in which the public notice(s) appeared. There are no agreements between the Newspaper and the officer or attorney charged with the duty of placing the attached legal advertising notices whereby any advantage, gain or profit accrued to said officer or attorney.

Janice M. Williams
AFFIANT

Sworn and subscribed this 3 day of Feb, 2014.

Stella Whitehead
NOTARY PUBLIC

Northwest Alabama Regional Hazard Mitigation Plan
Sign In
January 31, 2014

Name	Agency	Phone	Email
Bill Howard	City Planner of Muscle Shoals	(256) 383 5675	bhoward1@[illegible]net
LANCE YOUNG	COLBERT EMA	256 386 8578	lyoung@colbertco.org
Nathan Willingham	NACOLG	256 389 0515	nwillingham@nacolg.org
Mike Melton	Colbert EMA / 911		

Northwest Alabama Regional Hazard Mitigation Plan
Sign In
February 19, 2014

Name	Agency	Phone	Email
Nathan Willingham	NACOLG	256-389-0515	NWillingham@nacolg.org
James Burnett	EMA Winston	205-489-2747	winstoncountyema@centurytel.net

Winston County EMA

Northwest Alabama Council of Local Governments

Franklin County EMA
Public Hearing Notice
Regional Hazard Mitigation Plan

The Franklin County EMA will hold a public hearing on February 19th, 2014 at the Franklin County Courthouse Annex, 410 Jackson Ave., Russellville at 10:00 a.m. The purpose of this hearing will be to discuss the Northwest Alabama Hazard Mitigation Plan, which addresses natural hazards and mitigation efforts in Colbert, Franklin, Marion, and Winston counties. Information to be presented includes the purpose and contents of the plan and the county's hazard mitigation strategy. All citizens are urged to express their views on the community's hazard mitigation policies. A copy of the draft can be found at www.nacolg.com.

Individuals not attending the public hearing may send written comments to: Regional Hazard Mitigation Plan, P.O. Box 2603, Muscle Shoals, AL 35661. Under provisions of the American Disabilities Act of 1990, individuals wishing to attend the public hearing with special requirements should call (256) 389-0515 at least five days prior to the date of the hearing. Hearing impaired individuals having access to a TDD may contact via the Alabama Relay Service at 1-800-548-2546.

Please publish once in the legal section of the Franklin County Times.

Send statement and affidavit of publication to:
Nathan Willingham
NACOLG
P.O. Box 2603
Muscle Shoals, AL 35662
(256) 389-0515

Send copy of affidavit of publication to:
Roy Gober
Franklin County EMA
P.O. Box 699
Russellville, AL 35653

Northwest Alabama Regional Hazard Mitigation Plan
Sign In
February 19, 2014

Name	Agency	Phone	Email
[signature]	Franklin Co	256-332-8803	fcemtpm@hiwaay.net
[signature]	" "	256-332-8434	mhughes@"

Franklin County EMA

Northwest Alabama Council of Local Governments

NAME	ORGANIZATION	PHONE	EMAIL
Leah Mansell	Franklin Co. Commission	(256)332-8850	lmansell@hiwaay.net
Barry Moor-	Franklin Co Comm	256-332-8800	fcpjudge@hiwaay.net
Phillip Wilson	Franklin Co. S.W.	256-332-8412	PWoj@hiwaay.net
ROY GOBER	FRANKLIN CO. EMA	256-332-8890	Fcem@HIWAAY.net
Nathan Willingham	NACOLG	256-389-0515	nwillingham@nacolg.org
Jessica Thompson	Franklin Co. Commission	(256)332-8850	jthompson@hiwaay.net

Post-Publication Affidavit of Legal Notice

State of Alabama

Marion **County**

Before me, a notary public in and for the county and state above listed, personally appeared Les Walters (name of affiant), who, by me duly sworn, deposes and says that:

"My name is Les Walters. I am the Manager (position of affiant *i.e.* publisher or manager) of The Journal Record ("Newspaper").

The Newspaper published the attached legal notice(s) in the issue(s) of: Feb. 12, 2014 (dates of publication). The sum charged for publication was $ 55.68. The sum charged by the Newspaper for said publication does not exceed the lowest classified rate paid by commercial customers for an advertisement of similar size and frequency in the same newspaper(s) in which the public notice(s) appeared.

There are no agreements between the Newspaper and the officer or attorney charged with the duty of placing the attached legal advertising notices whereby any advantage, gain or profit accrued to said officer or attorney."

AFFIANT

Sworn and subscribed this 19th day of Feb., 2014.

Notary Public

MY COMMISSION EXPIRES 9-19-2015 .

Marion County EMA Public Hearing Notice Regional Hazard Mitigation Plan

The Marion County EMA will hold a public hearing on February 19, 2014 at the EMA Office located at the 280 Winchester Drive, Hamilton, AL at 1:00 p.m. The purpose of this hearing will be to discuss the Northwest Alabama Hazard Mitigation Plan, which addresses natural hazards and mitigation efforts in Colbert, Franklin, Marion, and Winston counties. Information to be presented includes the purpose and contents of the plan and the county's hazard mitigation strategy. All citizens are urged to express their views on the community's hazard mitigation policies. A copy of the plan can be found at www.nacolg.com.

Individuals not attending the public hearing may send written comments to: Regional Hazard Mitigation Plan, P.O. Box 2603, Muscle Shoals, AL 35661. Under provisions of the American Disabilities Act of 1990, individuals wishing to attend the public hearing with special requirements should call (256) 389-0515 at least five days prior to the date of the hearing. Hearing impaired individuals having access to a TDD may contact via the Alabama Relay Service at 1-800-548-2546.

Feb. 12, 2014

Northwest Alabama Regional Hazard Mitigation Plan
Sign In
February 19, 2014

Name	Agency	Phone	Email
Nathan Willingham	NACOLG	256-389-0515	nwillingham@nacolg.org
Jimmy Mills	Marion Co EMA	205-921-4555	JMills@marionsoal.com

Marion County EMA

Northwest Alabama Council of Local Governments

Colbert County EMA
Public Hearing Notice
Regional Hazard Mitigation Plan

The Colbert County EMA will hold a public hearing on February 21, 2014 at the NACOLG Office located at 103 Student Drive, Muscle Shoals, AL at 8:30 a.m. The purpose of this hearing will be to discuss the Northwest Alabama Hazard Mitigation Plan, which addresses natural hazards and mitigation efforts in Colbert, Franklin, Marion, and Winston counties. Information to be presented includes the purpose and contents of the plan and the county's hazard mitigation strategy. All citizens are urged to express their views on the community's hazard mitigation policies. A copy of the draft can be found at www.nacolg.org.

Individuals not attending the public hearing may send written comments to: Regional Hazard Mitigation Plan, P.O. Box 2603, Muscle Shoals, AL 35661. Under provisions of the American Disabilities Act of 1990, individuals wishing to attend the public hearing with special requirements should call (256) 389-0515 at least five days prior to the date of the hearing. Hearing impaired individuals having access to a TDD may contact via the Alabama Relay Service at 1-800-548-2546.

Please publish once in the legal section of the Colbert County Reporter.

Send statement and affidavit of publication to:
Nathan Willingham
NACOLG
P.O. Box 2603
Muscle Shoals, AL 35662
(256) 389-0515

Send copy of affidavit of publication to:
Mike Melton
Colbert Co. EMA
120 West 5th St
Tuscumbia, AL 35674

Northwest Alabama Regional Hazard Mitigation Plan
Sign In
February 21, 2014

Name	Agency	Phone	Email
LANCE YOUNG	COLBERT EMA	256 386 8558	lyoung@colbertco.org
Lawrence Huffman	Colbert EMA	256 386 8558	Lhuffman@colbertco.org
Mike Melton	Colbert EMA/911	256-386-8558	colema@hiwaay.net
Nathan Willingham	NACOLG	256-389-0515	nwillingham@nacolg.org
Keith Jones	NACOLG	256-389-0555	KJones@nacolg.org

Northwest Alabama Council of Local Governments
RPO HAzard Mitigation Planning
Sign In
February 24, 2014

Name	Agency	Phone	Email
Jud Young	ALDOT, 2ND Div	256-389-1488	young_ju@dot.state.al.us
Raylon Massey	Franklin Co. Comm.	256-810-6977	frmassey66@gmail.com
Ronald Barnes	Littleville Council	256-332-3567	
Elmo Robinson	Town of Double Springs	205-489-5447	epr35553@Yahoo.Com
Beau Cooper	NACOLG		
Connie Morrison	Town of Bear Creek	205-486-4707	cmorrison_63@yahoo.com
Ken Sanders	Hamilton	205 486-3121	
Nathan Willingham	NACOLG	256-389-0515	nwillingham@nacolg.org
C.W. Colson, Jr	~~NACO~~ ALDOT	334-353-6403	colsonc@dot.state.al.us
Matt Johnson	NWSCC		
Andrea Bryant	NWSCC		
William Washington	NWSCC		
Tommy Hall	NWSCC		
Bobby Jones	NWSCC		
Dustin Trammell	NWSCC		
Sally Hall	NWSCC		
Cody Willingham	NWSCC		
Cody Cole	NWSCC		
Joe E. Jones	NACOLG		
Janice Cleveland	NLOSCC		

Appendix C: Implementation Personnel and Contact Information

Jurisdiction	Contact	Telephone	Address	Email	Type of Jurisdiction
Colbert County	Mike Melton	256-386-8558	401 North Main Street, Tuscumbia, AL 35674	colema@hiwaay.net	Local Government
Town of Cherokee	Terry Cosby	256-359-4959	P.O. Box D, Cherokee, AL 35616	townhall@cherokeetel.net	Local Government
Town of Leighton	John Landers	256-466-8477	P.O. Box 308, Leighton, AL 35646	jland@bellsouth.net	Local Government
Town of Littleville	Kenneth Copeland	256-332-3567	1830 George Wallace Highway, Russellville, AL 35654	bj902b@aol.com	Local Government
City of Muscle Shoals	David Bradford	256-386-9200	P.O. Box 2624, Muscle Shoals, AL 35661	mayor@hiwaay.net	Local Government
City of Sheffield	Ian Sanford	256-383-0250	P.O. Box 380, Sheffield, AL 35660	itsinala@sheffieldalabama.org	Local Government
City of Tuscumbia	Bill Shoemaker	256-383-5463	P.O. Box 29, Tuscumbia, AL 35674	mayorshoemaker@comcast.net	Local Government
Franklin County	Roy Gober	256-332-8890	P.O. Box 699, Russellville, AL 35653	fcem@hiwaay.net	Local Government
Town of Hodges	Ed Crouch	256-935-3445	P.O. Box 87, Hodges, AL 35571	mcrouch@centurytel.net	Local Government
Town of Phil Campbell	Steve Bell	256-993-5313	811 Ball Park Hill Road, Phil Campbell, AL 35581	mayrobell@philcampbellal.com	Local Government
City of Red Bay	David Tiffin	256-356-4473	P.O. Box 2002, Red Bay, AL 35582	mayor@redbay-al.gov	Local Government
City of Russellville	David Grissom	256-332-6060	P.O. Box 486, Russellville, AL 35653	mayor.grissom@yahoo.com	Local Government
Town of Vina	D.W. Franklin	256-356-4996	P.O. Box 73, Vina, AL 35593		Local Government
Marion County	Jimmy Mills	205-921-4555	280 Winchester Drive, Hamilton, AL 35570	jmills@marionsoal.com	Local Government

Town of Bear Creek	Connie Morrison	205-486-4707	P.O. Box 186, Bear Creek, AL 35543	cmorrison_63@yahoo.com	Local Government
Town of Brilliant	Perry Franks	205-465-2281	P.O. Box 407, Brilliant, AL 35548	brilliant000@centurytel.net	Local Government
Town of Guin	Phil Segraves	205-468-2242	P.O. Box 249, Guin, AL 35563	cityhall@guinal.org	Local Government
Town of Gu-Win	Brandon Webster	205-468-2213	P.O. Box 550, Guin, AL 35563		Local Government
Town of Hackleburg	Waymon Cochran	205-935-3133	P.O. Box 279, Hackleburg, AL 35564	townofhburg@centurytel.net	Local Government
City of Hamilton	Wade Williams	205-921-2121	P.O. Box 188, Hamilton, AL 35570	mayor@hamiltonal.org	Local Government
Town of Twin	Charles Baccus	205-468-0036	P.O. Box 250, Guin, AL 35563	town020@centurytel.net	Local Government
City of Winfield	Randy Price	205-487-4337	P.O. Drawer 1438, Winfield, AL 35594	rprice@randyprice.com	Local Government
Winston County	James Burnett	205-489-2747	P.O. Box 215, Double Springs, AL 35553	winstoncounty@centurytel.net	Local Government
Town of Addison	Marsha Pigg	256-747-2971	P.O. Box 98, Addison, AL 35540	sardistruss@yahoo.com	Local Government
Town of Arley	Christopher Tyree	205-387-0103	P.O. Box 146, Arley, AL 35541	tfarley@bellsouth.net	Local Government
Town of Double Springs	Elmo Robinson	205-489-5447	P.O. Box 279, Doubple Springs, AL 35553	epr35553@yahoo.com	Local Government
City of Haleyville	Ken Sunseri	205-486-3121	1901 11th Avenue, Haleyville, AL 35565	haleyvillemayor@cityofhaleyville.co	Local Government
Town of Lynn	Jeff Stokes	205-893-5250	P.O. Box 145, Lynn, AL 35575	marcia-townoflynn@tds.net	Local Government
Town of Natural Bridge	Pete Parrish	205-486-8449	P.O. Box 367, Natural Bridge, AL 35577		Local Government
Phil Campbell Water	Darren Stewart	205-993-5464	215 McClung Ave, Phil Campbell, AL 35581		Water and Sewer Board

Cherokee Water	Arnna Glover	256-359-4941	3780 Old Lee Hwy Cherokee, AL 35616		Utility Board
Bear Creek Water	Connie Morrison	205-486-5283	135 Grover St, Bear Creek, AL 35543		Water Authority
Guin Water	Tommy Aston	205-468-2555	P.O. Box 249 Guin, AL 35563	guinwater1@centurytel.net	Water Authority
Twin Water Authority	Jim Hollis	205-412-4688	5068 State Highway 253 , Guin, AL 35563	jhollis@watvc.com	Water Authority
Winston County Schools	Danny Springer or Greg Pendley	205-489-5018	P.O. Box 9, Double Springs, AL 35553	sdaspringer@winstonk12.org; gdp	Public School System
Sheffield Utilities Water	Steve Hargrove	256-248-2706	P.O. Box 580, Sheffield, AL 35660	shargrove@sheffieldutilities.org	Utility Board
Russellville City School	Rex Mayfield	256-332-2001	1945 Waterloo Road, Russellville, AL 35653	rex.mayfield@rcs.k12.al.us	Public School System
Colbert County School System	Anthony Olivis	256-386-8565	425 Highway 72 West, Tuscumbia, AL 35674	aolivis@colbert.k12.al.us	Public School System
Muscle Shoals City Schools	Brian Lindsey	256-389-2607	3200Wilson Dam Road, Muscle Shoals, AL 35660	blindsey@mscs.k12.al.us	Public School System
Sheffield City Schools	Timothy Morgan	256-383-0400	300 West Sixth Street, Sheffield, AL 35660	tjmorgan@scs.k12.al.us	Public School System
Tuscumbia City Schools	Mary Kate Smith	256-389-2900	303 North Commons Street, East, Tuscumbia, AL 35674	mksmith@tuscumbia.k12.al.us	Public School System
Franklin County Water	Beverly Hargette	256-332-1496	12951 Highway 187 Russellville, AL 35653		Water Authority
Franklin County Schools	Mr. Gary Williams	256-332-1360	P.O. Box 610 Russellville, AL 35653	garywilliams@franklin.k12.al.us	Public School System

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Phil Campbell Water Works + Sewer Board

Name of Contact: Darren Steward

Telephone Number: (205) 993-5464

Email Address: pcwater@centurytel.net

Mailing Address: P.O. Box 519 Phil Campbell, AL 35581

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Cherokee Waterworks & Gas Board

Name of Contact: Anna Glover

Telephone Number: 256-359-4941

Email Address: CWGoffice@Cherokeetel.net

Mailing Address: P.O. Box 273, Cherokee, AL, 35616

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Bear Creek Water Works, Town of Bear Creek

Name of Contact: Robert Taylor

Telephone Number: (205)486-3842

Email Address: bearcreekfd1@yahoo.com

Mailing Address: 135 Grover Street, Bear Creek, AL 35543

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Action 4.2 - Page 8 - Explore avenue of funding for additional safe rooms and shelters.

Action 6.2, 6.3, 7.5 - Page 9-10 - We have a facility for a heating and cooling cooling center during adverse weather. It is available to anyone including vulnerable populations, however we do have funding assistance for the utility bills. Possible sources of revenue for these expenses must be explored.

Action 10.2 - Page 12 - Funding is needed to cover costs of water used for extra flushing of water tanks required to maintain potable water used as contingency for drought conditions.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Town of Hodges

Name of Contact: Mike Franklin / Ed Crouch

Telephone Number: 205-935-3499 or 205-935-3445

Email Address: townofhodges@centurytel.net

Mailing Address: P.O. Box 87 Hodges, Al. 35571

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: CITY OF GUIN WATER WORKS & SEWER BOARD

Name of Contact: TOMMY ASTON

Telephone Number: 205 468-2555

Email Address: guinwater1@centurytel.net

Mailing Address: P.O. BOX 249 GUIN, AL 35563

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

ATTN: HAZARD MITIGATION

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: TWIN WATER AUTHORITY

Name of Contact: JAMES D. HOLLIS

Telephone Number: 205-412-4688 (CELL)

Email Address: JHollis@Watvc.com

Mailing Address: 5068 STATE Hwy 253 GUN, AL. 35563

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

School Participant Contact Form

District Name: Winston County Schools

Name of District Contact: Danny Springer or Greg Pendley

Telephone Number: 205-489-5018

Email Address: daspringer@winstonk12.org / gdpendley@winstonk12.org

Mailing Address: P.O. Box 9, Double Springs, AL 35553

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

No Comments

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0515 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Sheffield Utilities

Name of Contact: Steve Hargrove (General Manager)

Telephone Number: 256-248-2706

Email Address: Shargrove@sheffieldutilities.org

Mailing Address: P.O. Box 580, Sheffield, AL 35660

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

School Participant Contact Form

District Name: Russellville City Schools

Name of District Contact: Rex Mayfield

Telephone Number: 256-331-2001

Email Address: rex.mayfield@rcs.k12.al.us

Mailing Address: 1945 Waterloo Road, Russellville, AL 35653

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0515 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Colbert County Road & Water Departments

Name of Contact: John Bedford

Telephone Number: (256) 381-2120, (256) 386-8504

Email Address: JBedford@ColbertCo.org

Mailing Address: 2750 Hwy 20, Tuscumbia, AL 35674

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

School Participant Contact Form

District Name: Colbert County School System

Name of District Contact: Anthony Olivis

Telephone Number: (256) 386-8565

Email Address: aolivis@colbert.k12.al.us

Mailing Address: 425 Highway 72 West, Tuscumbia, AL 35674

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

I did take the time to review this plan and I do appreciate all the work that went into developing it. If the Colbert County School system can ever be of any help, please feel free to call. Colbert County schools is comprised of the following schools; Cherokee High School & Cherokee Elementary, (located in western Colbert County)New Bethel Elementary, Colbert Height Elementary & Colbert Heights High (located in the central portion of the county); Hatton Elementary, Leighton Elementary & Colbert County High (located in eastern Colbert County.

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0515 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

School Participant Contact Form

District Name: Muscle Shoals City Schools

Name of District Contact: Brian Lindsey

Telephone Number: 256-389-2607

Email Address: blindsey@MSCS.K12.al.us

Mailing Address: 3200 Wilson Dam Rd. - Muscle Shoals, AL. 35661

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0515 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

School Participant Contact Form

District Name: Sheffield City Schools

Name of District Contact: Dr. Timothy Morgan, Superintendent

Telephone Number: 256-383-0400

Email Address: tjmorgan@scs.k12.al.us

Mailing Address: 300 West Sixth Street; Sheffield, AL 35660

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0515 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Town of Arley

Name of Contact: Mayor Christopher Tyree, Town Clerk Tammi Farley

Telephone Number: 205- 387-0103

Email Address: tfarley@bellsouth.net

Mailing Address: P.O. Box 146, Arley, AL 35541-0146

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

School Participant Contact Form

District Name: Tuscumbia City Schools

Name of District Contact: Mary Kate Smith

Telephone Number: 256-389-2900

Email Address: mksmith@tuscumbia.k12.al.us

Mailing Address: 303 North Commons Street, East, Tuscumbia, AL 35674

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

No Comments

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0515 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Town of Brilliant

Name of Contact: Perry Franks

Telephone Number: 205-465-2281

Email Address: brilliant000@centurytel.net

Mailing Address: 1275 Main St P.O. Box 407 Brilliant, AL 35548

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Gary Williams

Franklin county Schools

256-412-3407

PO Box 610, Russellville, AL 35653

garywilliams@franklin.k12.al.us

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: BEVILL STATE CC

Name of Contact: RUSSELL HOWTON, INTERIM ASSOCIATE DEAN

Telephone Number: (205) 921-3177 x 5310

Email Address: rhowton@bscc.edu

Mailing Address: P.O. DRAWER 9 HAMILTON, AL 35570

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Northwest Shoals Community College

Tom Carter

256-331-5263

Tom.carter@nwscc.edu

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Town of Vina

Name of Contact: Sue Raper

Telephone Number: 256-356-4996

Email Address: townvina@yahoo.com

Mailing Address: P.O. Box 6 Vina, AL 35593

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Town of Twin

Name of Contact: Mayor Charles r. Baccus

Telephone Number: (205) 468-0036

Email Address: _____

Mailing Address: P.O. Box 250, Guin, AL 35563

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Town of Phil Campbell

Name of Contact: Mayor Steve Bell

Telephone Number: (205) 993-5313

Email Address: mayorbell@philcampbellal.com

Mailing Address: P.O. Box 489, Phil Campbell, AL 35581

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Town of Natural Bridge

Name of Contact: Pete Parrish

Telephone Number: (205) 486-8449

Email Address: _____

Mailing Address: P.O. Box 367, Natural Bridge, AL 35577

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Town of Lynn

Name of Contact: Mayor Jeff Stokes

Telephone Number: (205) 893-5250

Email Address: _____

Mailing Address: P.O. Box 145, Lynn, AL 35575

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Town of Hackleburg

Name of Contact: Mayor Waymon Cochran

Telephone Number: (205) 935-3133

Email Address: _____

Mailing Address: P.O. Box 279, Hackleburg, AL 35564

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Town of Gu-Win

Name of Contact: Brandon Webster

Telephone Number: (205) 468-2213

Email Address: _____

Mailing Address: P.O. Box 430, Guin, AL 35563

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Town of Cherokee

Name of Contact: Mayor Terry Cosby or Melinda Malone, City Clerk

Telephone Number: (256) 359-4659

Email Address: TOWNHALL@CHEROKEETEL.NET

Mailing Address: P.O. Box D, Cherokee, AL 35616

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Hazard Mitigation Planning

Local Authorities Participant Contact Form

Authority Name: Town of Addison

Name of Contact: Mayor Marsha Pigg

Telephone Number: (205) 747-2971

Email Address: _____

Mailing Address: P.O. Box 98, Addision, AL 35540

Comments on Draft Hazard Mitigation Plan found at www.nacolg.com:

Please complete and return by email to nwillingham@nacolg.org or fax to (256) 389-0599 ATTN: Hazard Mitigation.

Nathan Willingham

From: Beverly Scott Hargett <fcwater@hiwaay.net>
Sent: Thursday, March 06, 2014 1:57 PM
To: Nathan Willingham
Subject: Hazard Mitigation Planning

Mr. Willingham:

The following information pertains to the Hazard Mitigation Planning request:

Authority Name: Franklin County Water Service Authority

Name of Contact: Beverly Scott-Hargett

Telephone Number: 256-332-1496

Email Address: fcwater@hiwaay.net

Mailing Address: PO Box 278
Russellville, AL 35653

Thank you!!

Beverly