



ST. CLAIR COUNTY, ALABAMA MULTI-HAZARD MITIGATION PLAN

2015

Prepared under the direction of the:

St. Clair County EMA

and the

St. Clair County Hazard Mitigation Planning Committee

By:



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SECTION 1: INTRODUCTION

Background

St. Clair County Hazard Mitigation Plan

On October 30, 2000, the United States Congress passed the Disaster Mitigation Act of 2000, also known as DMA2K. Among its other features, DMA2K established a requirement that in order to remain eligible for federal disaster assistance and grant funds, localities must develop and adopt hazard mitigation plans as a condition of receiving mitigation project grants under the Pre-Disaster Mitigation (PDM) Program and the Post-Disaster Hazard Mitigation Program (HMGP). On February 26, 2002 (updated October 1, 2002 and October 28, 2003), the Federal Emergency Management Agency (FEMA) published an Interim Final Rule (IFR) updated to the Final Rule (FR) on October 1, 2013 that provides the guidance and regulations under which such plans must be developed. The Final Rule (FR) provides detailed descriptions of both the planning process that localities are required to observe, as well as the contents of the plan that emerges.

On June 22, 2004, St. Clair County officially adopted the initial St. Clair County Natural Hazards Mitigation Plan in response to the requirements of DMA2K and the Interim Final Rule (IFR) Section 201.6 (a). FEMA approved this plan on December 4, 2004. In addition Section 201.6 (d) (3) mandates that a county update its plan every five years “to reflect changes in development, progress in local mitigation efforts, and changes in priorities.” The first update to the 2004 plan renamed the St. Clair County Multi-Hazard Mitigation Plan was approved on March 31, 2010. The 2015 version of this plan is the third plan revision in response to those requirements and the Final Rule (FR) Section 201.6.

St. Clair County will continue to comply with all applicable federal and state statutes and regulations related to hazard mitigation planning. In addition, St. Clair County will amend its plan whenever necessary to reflect changes in countywide hazard mitigation.

Authority

Section 409 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act

(Public Law 93-228, as amended), Title 44 Code of Federal Regulations, as amended by Section 201 of the Disaster Mitigation Act of 2000 requires that all state and local governments develop a Hazard Mitigation Plan as a condition of receiving federal disaster assistance.

Funding

Funding for this plan update was made available through the Hazard Mitigation Grant Program (HMGP). The grant's Period of Performance is November 18, 2013 through February 18, 2015. St. Clair County entered into an agreement with Lee Helms Associates L.L.C. (LHA) to update the 2010 plan that was also revised by Lee Helms Associates L.L.C. (LHA) and expires on March 30, 2015.

Scope

The St. Clair County Multi-Hazard Mitigation Plan includes all incorporated and unincorporated areas in St. Clair County. The plan addresses all natural hazards that may affect St. Clair County and its residents. Hazard mitigation strategies are discussed in terms of goals, objectives and mitigation actions. Responsibility for implementation of strategies is discussed and possible funding sources are identified.

Purpose

The purpose of the plan is to rationalize the process of identifying and implementing appropriate countywide hazard mitigation actions. The document includes a detailed characterization of natural hazards countywide; a risk assessment that describes potential losses to physical property, people, and operations; a set of goals, objectives, strategies and actions that will guide the county's mitigation activities, and a detailed plan for implementing and monitoring the required aspects of the plan.

SECTION 2: THE PLANNING PROCESS

Plan Update Process

As the 2015 process of updating the 2010 plan began, the St. Clair County EMA (SCCEMA) reappointed the Hazard Mitigation Planning Committee (HMPC) to participate in the process and reiterated the importance of the plan for the county. The St. Clair County Commission delegated responsibility for overseeing the update of the plan to the SCCEMA. The HMPC served as the core group responsible for all decisions about the planning process and content. The HMPC met two times and will meet once more following the FEMA status of an approvable plan pending adoption. The third and final meeting will be for jurisdictions to adopt the plan by resolution. An initial HMPC meeting was held on Thursday, March 13, 2014 at 10 a.m. in the County Commission Chambers in the Courthouse located at 1815 Cogswell Avenue in Pell City. This meeting was the first of two public meetings held during the planning process. An advertisement for the meeting was placed in *The St. Clair Times*. The second HMPC meeting was held on Thursday, July 24, 2014 at 10 a.m. in the St. Clair County EMA's Emergency Operations Center located at 1610 Cogswell Avenue, Suite B-10 in Pell City. The final public HMPC meeting will be held in the County Commission Chambers in the Courthouse located at 1815 Cogswell Avenue in Pell City. Advertisements, agendas, sign in sheets and additional meeting informational documents are included in this section. Adoption Resolutions can be found in **Section 8**.

The St. Clair County EMA led the update of all sections of the plan. Subject matter experts on the HMPC were solicited for specific information regarding hazards, risks, capabilities and strategies. HMPC members were also asked to review/discuss statuses of mitigation strategies from the 2010 plan for which they were responsible and asked to provide new actions that they may pursue in the future.

The hazard mitigation planning update process began in February of 2014. The St. Clair County Emergency Management Agency (SCCEMA) was awarded a planning grant from the Alabama Emergency Management Agency (AEMA). The SCCEMA received 75 percent funding from the Federal Emergency Management Agency (FEMA). The remaining 25 percent was

provided locally through in-kind services. The 2015 plan update reflects an updated more concise structure than the 2010 plan; however, all required information remains a part of the plan.

The St. Clair County Hazard Mitigation Planning Committee's members serve for the entire five-year planning cycle of the Natural Hazards Mitigation Plan. The Hazard Mitigation Committee mission statement remains the same and is as follows:

To develop and oversee a comprehensive natural hazard mitigation planning process that:

- Facilitates coordination among local, state, and federal agencies
- Monitors and evaluates the potential risks of hazards to life and property
- Actively mobilizes all available community resources and measures to mitigate the threats of hazards
- Implement programmed actions with specific results

St. Clair County EMA Director, Ellen Tanner, devised a list of requirements and guidelines that must be adhered to by each committee member in order for them to remain a part of the multi jurisdictional plan. Each board member stated they fully understood and will abide by, the guidelines set forth by the St. Clair County EMA. The requirements/guidelines remain the same and are as follows:

- Attendance by them, or a representative, at each of the HMPC meetings
- If unable to attend a meeting, follow up by communicating with the St. Clair County EMA through personal visits, phone calls, correspondence, email or fax
- Timely submission of information necessary for the draft plan
- Full cooperation among the members of each municipality with the St. Clair County EMA and the consultant

Committee members not signed in and participating in an HMPC meeting were contacted in person, by phone, by mail, or by email and provided the meeting information in order to get input for the plan update.

INITIAL MEETING AGENDA

2015 ST. CLAIR COUNTY NATURAL HAZARDS MITIGATION PLAN UPDATE

Thursday, March 13, 2014 @ 10 a.m.

Courthouse County Commission Chambers, 1815 Cogswell Ave., Pell City

1. Introductions
 - Sign-in sheets – please print and make sure your email is on the form
2. Project Background
 - 2010 plan update was prepared by Lee Helms Associates, L. L. C. under the direction of the Hazard Mitigation Planning Committee and the St. Clair County Emergency Management Agency and adopted by:
 - St. Clair County – Unincorporated
 - Argo – Town
 - Ashville – Town
 - Branchville – Town
 - Margaret – Town
 - Moody – Town
 - Odenville – Town
 - Pell City - City
 - Ragland – Town
 - Riverside – Town
 - Springville – Town
 - Steel - Town
 - Pell City Schools – School District
 - 2015 plan update will also be prepared by Lee Helms Associates, L. L. C. under the direction of the Hazard Mitigation Planning Committee and the St. Clair County Emergency Management Agency
3. Project Participation
 - Identify opportunities for public input into the 2015 plan update
 - Identify potential plan meeting participants that are not present today (municipalities, school boards, engineers, hospitals, surrounding county EMAs, fire departments, etc.)
 - PNP's are their own applicant
4. Project Schedule
 - 2009 plan update expires March 20, 2015
 - Period of Performance for the grant is November 18, 2013 – February 18, 2015
 - Goal date for draft plan to be submitted in order to be approved before current plan expires: Friday, November 14, 2014
 - AEMA/Local Review = 30 days; Local response to a request for information (RFI) = 30 days; AEMA review of local response to RFI = 30 days; FEMA Review = 45 days (allowing 135 days at the least for plan approval)
 - There will be an initial, mid-term, and final meeting. Committee members will be made aware of the meetings via email unless other means is requested. Information may be sent to LHA by fax 205-280-0543 or email to renee@leehelmsllc.com. If you have any questions or need assistance, call LHA at 205-280-3027.
5. Project Tasks for this Meeting
 - All general public attendees are to complete the form titled: "Citizen Input on Hazard Mitigation Planning" and leave completed form with LHA representative
 - Local EMA Director is to complete Questionnaire #1 and return by March 27, 2014
 - Local EMA Director is to provide LHA with a copy of the media release for this meeting
 - Update 2010 plan information – see handouts
 - Discuss in-kind contributions for local match to this planning grant
 - Set date and location for next meeting (Look at June 23-27, 2014)

Community Calendar

March 6, 2014

Prayer Group between 11:45 - 1:00, Thursday, March 6th, at Ami's in Eden. Come as you are. Come & leave on your time schedule. (205) 401-6142

March 12, 2014

You can change someone's life by teaching the how to read! Become a tutor! Adult Basic Literacy Tutor Training, Saturday, March 15, 2014 9:00 a.m. - 3:00 p.m. Moody United Methodist Church, 820 Church St., Moody, AL 35004. Registration fee is \$25.00. Contact Linda DeRocher to register: lderocher@literacy-council.org or call 205-326-1925

March 13, 2014

PUBLIC MEETING - The St. Clair County Emergency Management Agency has scheduled a public meeting on March 13, 2014, at 10 a.m. to update the county's Hazard Mitigation Plan. The meeting will take place at the St. Clair County Courthouse in Pell City in the Commission Chambers. The public, private non-profits, municipalities, school boards, colleges, water/sewer boards, fire departments and elected officials are among those invited and encouraged to attend. Participation by these entities is required in order to apply for federal hazard mitigation grants in the future.

March 18, 2014

The regular meeting of the St. Clair County Education Retirees Association will be at 10:00 a.m. Tuesday morning at Metro Bank in Pell City. Special guests will be District IV AERA Director, Leannier Turner, who will install the 2014-2016 SCCERA Officers and bring news from the state association and St. Clair County Superintendent of Education, Jenny Seals, candidate for reelection in the June 4th primary election. All members and potential members are urged to attend.

March 18, 2014

The Jacksonville State University Small Business Development Center, the SBA, and the Pell City Chamber of Commerce will offer one-on-one counseling for prospective and existing small business owners at no charge on Tuesday, March 18, 2014, from 9:00 a.m. to 11:00 a.m. at the Chamber office. It is necessary that you make an appointment. For more information, or your appointment, please call (205) 338-3377. NOTE: This is not a seminar.

March 23, 2014

There will be an Installation Service for Pastor Daniel T. Johnson at the First Baptist Church Cropwell, Pell City, Alabama, on Sunday, March 23, 2014, 11:00 a.m. and 3:00 p.m. Morning message - Dr. Q. E. Hammonds, Antioch Baptist Church, Pratt City, Alabama. Afternoon message - Dr. Johnny L. Johnson, White Plains Baptist Church, Laurens, South Carolina. All Pastors and Churches are invited.

April 8, 2014

Mt. Hebron Cemetery Association will meet Tuesday at 7:00 p.m. in the fellowship hall of Mt. Hebron Baptist Church. Election of Trustees.

URGENT NEWS IF YOU USED
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Calendar

Rules of Order, Newly Revised, 11th Edition. This includes how to conduct meetings, following an agenda and how to handle motions. Loaner books are available for visitors. The unit meets in the Fellowship Hall of the First Baptist Church, 7481 Parkway Drive (Highway 78), Leeds, from 11:30 a.m.-1 p.m. The lesson will be taught by Grady Sue Saxon, Registered Parliamentarian. Call 205-699-2440 for directions or more information.

Pre-Teen Book Club at Odenville Public Library meets Wednesday, March 12, 3-4 p.m. Join Becky Wilson for books and crafts. For information call the library at 205-629-5901.

THURSDAY, MARCH 13

Distinguished Young Women of St. Clair County hosts its tenth annual "Teaming Up for Scholarships" Celebrity Waiver Dinner from 5-8 p.m. at St. Clair County High School Cafeteria in Odenville. Local community leaders will "team up" with Class of 2015 program participants to raise funds for college scholarships at this entertaining, family-oriented, casual event. Catering by Main Street Pizza. Tickets are \$10 at the door and \$5 for children's plates (age 10 and under). Everyone is welcome. For more information, call 205-616-7783 or 205-915-1780, or email stclair@distinguishedyw.org.

The St. Clair County Emergency Management

Agency has scheduled a public meeting for Thursday, March 13, at 10 a.m., to update the county's Hazard Mitigation Plan. The meeting will take place at the St. Clair County Courthouse in Pell City in the Commission Chambers. All public, private non-profits, municipalities, school boards, colleges, water/sewer boards, fire departments and elected officials are among those invited and encouraged to attend; participation by these entities is required in order to apply for federal hazard mitigation grants in the future. For more information call the EMA office at 205-884-6800.

SATURDAY, MARCH 15

The Red Barn Therapeutic Riding Center is hosting a Shamrock Path Ride on Saturday, March 15, at Eagle Point, 7905 Shoal Creek Road, in Ashville. Registration is from 8-9 a.m., with ride briefing at 9 a.m. and riding to begin at 10 a.m. Entry is \$50 for the obstacle ride, and donations of \$5 will also be accepted. Winners will receive ribbons and prizes, and a fish fry will take place

following the event. For more information contact Carolyn Mills at 205-253-7970.

MONDAY, MARCH 17

Pancakes for a Purpose. Moody Kiwanis Club is hosting its semi-annual pancake supper at Carpenetti's Pizzeria in Moody on Monday,

March 17, from 5:00-7:30 p.m. Proceeds will fund college scholarships for area Key Club students and youth projects. \$5 per plate. Dine in with your family or carry out. Tickets available from Kiwanis, Key Club, and Aktion Club members and at the door. Call 640-3078 for more information.

Margaret Salon in the Shops of Margaret
(Just to the left of the County Courthouse)

HAIR 4 ALL



ADVOCANES
PRODUCTS AVAILABLE HERE

**Hours: Tuesday-Thursday 9:30 - 7:00
Friday 9:00 - 6:00 • Saturday 9:00 - 3:00
WALK-INS WELCOME!**
**183 COUNTY ROAD 12 • SUITE 400
ODENVILLE, ALABAMA 35120**
205-629-7322

INVITING SOULS TO CHRISTIAN WORSHIP

As a fellow worshiper in the United Methodist Church I invite you to attend any United Methodist Church nearest you. Certainly I would be delighted to meet and greet you any Lord's Day at the church I attend, Pell City First United Methodist. For more information about what United Methodist believe, send me a self addressed envelope with first class postage or a \$1.00 bill. I will mail to you a fifteen (15) page illustrated booklet thoroughly outlining what we United Methodist believe FREE of any other cost to you. If you are in attendance in a church of another persuasion, I do not invite you to leave it.

Ivester's Mission
111 Hillview Drive | Pell City, AL 35125 | 1-205-338-3195

Renee Helms

From: Ellen Tanner [etanner@stcema.org]
Sent: Thursday, February 27, 2014 3:46 PM
To: Deborah Gaither(dgaither@tcema.co.talladega.al.us); EMA Blount; Kniphfer, Allen; HUBBARD HARVEY 'HHARVEY@shelbyal.com'; Donnie Knight; Jonathan Gaddy 'jgaddy@calhounema.org'; ACE09 ClayEMA
Cc: Lee Helms (lee@leehelmsllc.com); Renee Helms 'renee@leehelmsllc.com'; Patrice Kurzejeski; Bryan Schaefer
Subject: St. Clair County Hazard Mitigation Planning Meeting - March 13, 2014 10:00am

February 27, 2014

TO: Deborah Gaither, Talladega County EMA Director
Max Armstrong, Blount County EMA Director
Allen Kniphfer, Jefferson County EMA Director
Hub Harvey, Shelby County EMA Director
Donnie Knight, Randolph County EMA Director
Jonathan Gaddy, Calhoun County EMA Director
Theresa Daughtery, Clay County EMA Director

SUBJECT: All-Hazard Multi-Jurisdiction Mitigation Plan

St. Clair County is in the process of updating the county's All Hazard Mitigation Plan. As you are aware, one of the requirements in the planning process is to coordinate with surrounding counties/jurisdictions to see the impact on your county of any proposed actions and policies that may be adopted by St. Clair County and local municipalities.

The initial planning meeting with multiple agencies within St. Clair County will be held on Thursday, March 13, 2014 at 10 a.m. at the St. Clair County Courthouse-Pell City, Commission Chambers at 1815 Cogswell Ave. in Pell City. As a representative of your jurisdiction, you are invited to attend. If you need additional information, please contact Ellen Tanner or Patrice Kurzejeski at 205.884.6800 or Lee Helms at 205.280.3027.

Sincerely,

Ellen Tanner
Director
St. Clair County EMA
205-884-6800
205-884-6811 fax
etanner@stcema.org
etanner@stclairco.com

Please note new email address.



Monday, March 03, 2014 FROM ELLEN TANNER, EMA DIRECTOR, ST. CLAIR COUNTY
ATTENTION! A CALL FOR THE HAZARD MITIGATION COMMITTEE!
IT'S THAT TIME AGAIN. THE ST. CLAIR COUNTY HAZARD MITIGATION PLANNING COMMITTEE
COMES TOGETHER EVERY 5 YEARS TO REVISE THE COUNTY HAZARD MITIGATION PLAN. IN
ORDER FOR YOUR JURISDICTION TO RECEIVE ANY MITIGATION GRANTS (FUNDING), YOU
MUST PARTICIPATE IN THE PLAN. THIS IS NOT A REQUIREMENT OF THE EMA, BUT IS A
FEDERAL/STATE EMA REQUIREMENT.

Please read all of below & return this completed form by March 7, 2014.

The St. Clair County Hazard Mitigation Planning Committee Meeting kicks off Thursday, March 13, 2014 at 10:00am at the Commission Chambers of the Pell City Courthouse. This meeting is very important and your attendance or the attendance of your representative is required if your city/town or entity would like to receive federal funding for hazard mitigation projects within the next five years. Please choose your representative and let us know below.

All projects you have in mind for your area must be included in our updated Hazard Mitigation Plan for St. Clair County in order for you to apply for future funding. Examples of such projects include roads and bridges, warning sirens, tornado shelters, and drainage/water projects, just to name a few. Without your attendance and participation in the committee meetings, your project inclusions will not be listed in the updated plan. This is not a requirement of the St. Clair County EMA, but is a Federal/State EMA requirement. Therefore your participation is vitally important. If you want to know who represented your jurisdiction in 2009, just call me. 205-884-6800. Thank you for your support to this planning process.

Please return completed form by Friday, March 7, 2014. Please submit the person or persons name below & return by scan & email, by fax or by mail.

NAME OF YOUR JURISDICTION: _____ PHONE # _____

NAME OF YOUR REPRESENTATIVE: _____

EMAIL: _____ PHONE: _____

NAME OF ADDITIONAL REPRESENTATIVE: _____

EMAIL: _____ PHONE: _____

(additional representative not required, but helpful with the larger jurisdictions)

Please scan & email, fax or send this by mail to:

St. Clair County EMA

By scan & email: etanner@stcema.org

Or by fax: 205-884-6807

Or by mail:

St. Clair County EMA

1610 Cogswell Avenue, Suite B-10

Pell City, Al. 35125

By scan & email: etanner@stcema.org
Or by fax: 205-884-6807
Or by mail:
St. Clair County EMA
1610 Cogswell Avenue, Suite B-10
Pell City, AL 35125

Ellen Tanner
Director
St. Clair County EMA
205-884-6800
205-884-6811 fax
etanner@stcema.org etanner@stclairco.com [Please note new email address.](mailto:etanner@stclairco.com)



Renee Helms

From: Ellen Tanner [etanner@stcema.org]
Sent: Wednesday, March 12, 2014 11:52 AM
To: Adam Pardue (odenvillechief@yahoo.com); Bobby Jones (NLWA2009@hotmail.com); Bryan Schaefer; Carter Franklin (odenchief@windstream.net); Clay Morgan (morganc4105@yahoo.com); Clay Phillips (cphillips@stclairco.com); David Parrish (DavidParrish@windstream.net); Dennis Matthews (dmatthews002@yahoo.com); Ed Baskin (jebaskin@bellsouth.net); Ellen Tanner; Freddy Hazelwood (fhazelwood@cityofpellcity.net); 'Greg Gossett' (greggossett@epell.net); Jonathan Campbell (jcampbell@cityofpellcity.net); Lee Helms (lee@leehelmsllc.com); Mayor John Wilcox -care of: (townofsteele@bellsouth.net); Mike Barry (jmb1911@gmail.com); Mike Platts (afdchief901@gmail.com); Patrice Kurzejeski; rdoliver117@hotmail.com; Renee Helms 'renee@leehelmsllc.com'; Richard Harvey (springvillefc@windstream.net); Richard Reynolds (rikkireynoldsss70x47y@gmail.com); St. Clair County Engineer Dan Dahlke (jddahlke@stclairco.com); Tim Kurzejeski (riversidefire@centurytel.net); Tim McKinney (waterworks@ragland.net)
Cc: Kellie Graff (KLGraff@stclairco.com)
Subject: Meeting Tomorrow 10AM PC Courthouse, Commission Chambers

St. Clair County Hazard Mitigation Planning Committee:

Your name has been submitted to serve on the 2014 St. Clair County Hazard Mitigation Committee. Thank you for serving on this very important committee. This is just a reminder of the kick-off meeting that takes place tomorrow morning, Thursday, March 13 at the St. Clair County Courthouse, Pell City in the Commission Chambers. We look forward to seeing you there and promise to keep the meeting short.

Thank you.

-Ellen

Ellen Tanner
Director
St. Clair County EMA
205-884-6800
205-884-6811 fax
etanner@stcema.org
etanner@stclairco.com

Please note new email address.



Renee Helms

From: Ellen Tanner [etanner@stcema.org]
Sent: Monday, March 03, 2014 5:10 PM
To: Asheville City Clerk 'chrystalstjohn@windstream.net'; Mayor Buck Christian; Mayor Isaac Howard III (ich3@windstream.net); Mayor Joe Funderburg 'jofunderburg@epell.net'; Mayor John Wilcox -care of: (townofsteele@bellsouth.net); Mayor Lanis White (mayor@ragland.net); Mayor of Moody Joe Lee (jlee@moodyalabama.gov); Mayor Paul Jennings (mayorpauljennings@gmail.com); Mayor Robert McKay - care of: (Anitatibbs@windstream.net); Mayor Rusty Jessup (riversidemayor@centurytel.net); Mayor William Isley 'williamisley@springvilleaccounting.com'; Mike Platts (afdcchief901@gmail.com); Patrick Draper (pdraper@cityofpellcity.net); Penny Owens (townclerk@ragland.net)
Cc: Patrice Kurzejeski; Bryan Schaefer; Renee Helms 'renee@leehelmslc.com'
Subject: Hazard Mitigation Planning--required by FEMA. Please read & see attached.
Attachments: Attention all Jurisdictions - A Call for the HMP Committee.doc

Please see attached and below.

Monday, March 03, 2014 FROM ELLEN TANNER, EMA DIRECTOR, ST. CLAIR COUNTY
ATTENTION! A CALL FOR THE HAZARD MITIGATION COMMITTEE!
IT'S THAT TIME AGAIN. THE ST. CLAIR COUNTY HAZARD MITIGATION PLANNING COMMITTEE COMES TOGETHER EVERY 5 YEARS TO REVISE THE COUNTY HAZARD MITIGATION PLAN. IN ORDER FOR YOUR JURISDICTION TO RECEIVE ANY MITIGATION GRANTS (FUNDING), YOU MUST PARTICIPATE IN THE PLAN. THIS IS NOT A REQUIREMENT OF THE EMA, BUT IS A FEDERAL/STATE EMA REQUIREMENT.
Please read all of below & return this completed form by March 7, 2014.

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Please return completed form by Friday, March 7, 2014. Please submit the person or persons name below & return by scan & email, by fax or by mail.

NAME OF YOUR JURISDICTION: _____ PHONE # _____

NAME OF YOUR REPRESENTATIVE: _____
EMAIL: _____ PHONE: _____

NAME OF ADDITIONAL REPRESENTATIVE: _____
EMAIL: _____ PHONE: _____
(additional representative not required, but helpful with the larger jurisdictions)

Please scan & email, fax or send this by mail to:
St. Clair County EMA

ST. CLAIR COUNTY 1815 Cogswell Ave. / Courthouse

Thursday, March 13, 2014 at 10 a.m. - EMA Office, 1610 Cogswell Ave., Suite B-10, Pell City

INITIAL HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET

County
Commission Chambers

(PLEASE PRINT CLEARLY)

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Jonathan Campbell	Agency: City of Pell City Job Title: Heavy Equip. Oper.	Phone: 205-369-6148 Fax: 205-884-2431	Jcampbell@cityofpellcity.net
HAZEL HOYLE	Agency: ST. CLAIR CO. Job Title: Property Manager	Phone: 205-365-3928 Fax: 205-544-2110	hhoyle@stclairco.com
HARVEY	Agency: Shelby Co. EMA Job Title: Director	Phone: 205-669-3999 Fax:	harvey@shelbyal.com
Dan Dahlke	Agency: St. Clair County R/W Job Title: Safety Engineer	Phone: 205-574-2190 Fax:	jdahlke@stclairco.com
Greg Gosssett	Agency: City of Pell City Job Title: Street Dept	Phone: 205-473-6209 Fax:	ggosssett@pellcity.net
Richard Reynolds	Agency: Town of Steele Job Title: Council	Phone: 256-538-8145 Fax:	vikki.reynolds@townofsteele.net



use:
townofsteele@bellsonline.net

ST. CLAIR COUNTY

Thursday, March 13, 2014 at 10 a.m. - EMA Office, 1640 Cogswell Ave., Suite B-10, Pell City
INITIAL HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET

(PLEASE PRINT CLEARLY)

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Ed Brasher <i>* Mr. Brasher has retired</i>	Agency: Pell City PD Job Title: Asst. Chief	Phone: 884-3334 Fax: 814-9079	ebrasher@pellcity.org
Patrice Kurzejski	Agency: St. Clair EMA Job Title: Asst. Director	Phone: 884-6800 Fax: 884-6807	PatriceK@stema.org
Tim McKimney	Agency: Rockland Water Job Title: Manager	Phone: 472-0409 Fax: 472-2154	Waterworks@rockland.net
Freddy Hazelwood	Agency: City of Pell City Job Title: Utility Mgr	Phone: 338-3886 Fax: 338-1886	freddy.hazelwood@cityofpellcity.net
Phillip Johnson	Agency: St. Clair BOE Job Title: PRINCIPAL	Phone: 594-2242 Fax: 594-2241	phillip.johnson@sccboe.org
Walter Franklin	Agency: City of Odenville Job Title: Fire Chief	Phone: 629-2232 Fax: 629-0206	odenchief@windstream.net



ST. CLAIR COUNTY

Thursday, March 13, 2014 at 10 a.m. – EMA Office, 1610 Cogswell Ave., Suite B-40, Pell City
INITIAL HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET

(PLEASE PRINT CLEARLY)

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Kellic Craft	Agency: St. Clair County Job Title: Administrator	Phone: 205.544.2100 Fax: 205.544.2110	kcraft@stclair.co.com
Bobby Jones	Agency: New London Water Job Title: Board Member	Phone: 205-525-5177 Fax:	nlwa2009@hotmail.com
Adam Pardue	Agency: Odenville Police Job Title: Chief of Police	Phone: 629-0811 Fax:	odenvillechief@panhandle.com
Bryan Schodes	Agency: St. Clair Co. EMA Job Title: Planner	Phone: 205.884.6800 Fax:	bryans@stclairema.org
D. Matthews	Agency: Ashville PD Job Title: Chief	Phone: 578 4152 Fax:	dmatthews000@vickoo.com
Mike Barry	Agency: Ashville Fire Job Title: Chief	Phone: 205-544-5186 Fax:	mjb1910@gmail.com



ST. CLAIR COUNTY

Thursday, March 13, 2014 at 10 a.m. – EMA Office, 1610 Cogswell Ave., Suite B-40, Pell City

INITIAL HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET

(PLEASE PRINT CLEARLY)

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Tim Kurzejeski	Agency: City of Riverside Job Title: Fire Chief	Phone: 205 338-7692 Fax: 205 814-4782	FredDieF@riverside-ak.com
Rick Oliver	Agency: City of Riverside Job Title: Police Chief	Phone: 205 338-7692 Fax: 205 814-4782	roliver117@hotmail.com
Richard Harvey	Agency: City of Springville Job Title: Fire Chief	Phone: 205 467-2703 Fax: 205 467-2706	Springvillefc@windstream.net
Lee Helms	Agency: Lee Helms Assoc. Job Title: Owner	Phone: 205-280-3027 Fax: 205-280-0543	lee@leehelmsllc.com
Renee Helms	Agency: Lee Helms Assoc. Job Title: manager	Phone: 205-280-3027 Fax: 205-280-0543	renee@leehelmsllc.com
Bryan Price	Agency: St. Clair County Job Title: GIS Manager	Phone: 205-368-1536 Fax:	bryan@stclairco.com



ST. CLAIR COUNTY

Thursday, March 13, 2014 at 10 a.m. - EMA Office, 1640 Cogswell Ave., Suite B-16, Pell City
INITIAL HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET

(PLEASE PRINT CLEARLY)

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Paul Manning	Agency: St. Clair Co. Comm Job Title:	Phone: 205-544-2100 Fax: 205-544-2110	Send info to the EMA Office
Clay Morgan	Agency: Margaret Police Job Title: Chief of Police	Phone: 205-629-5501 Fax:	margaretpolicedepartment @gmail.com
Ellen Tanner	Agency: St. Clair EMA Job Title: Director	Phone: 205-894-6800 Fax: 205-894-6807	etanner@stclaire.org
	Agency: Job Title:	Phone: Fax:	
	Agency: Job Title:	Phone: Fax:	
	Agency: Job Title:	Phone: Fax:	



ST. CLAIR COUNTY EMA QUESTIONNAIRE #1

1. Initial Hazard Mitigation Plan is dated: May 2004
2. Dates of all Hazard Mitigation Plan revisions: Aug 2010
3. What disaster funds did you apply for to get this plan revision grant? DR-1971-733
4. Are there any ongoing plans that need to be integrated into the 2015 Hazard Mitigation Plan revision? _____
5. Any local plans that pertain to this plan? _____
6. If so, have they been updated since 2010? _____
7. If so, list title(s) and what is new in the plans since 2010:
THIRA - Added technological and man-made hazards
8. Is your jurisdiction a member of the National Flood Insurance Program (NFIP)? yes
9. Have you given or had an agency/organization representative attend NFIP training during the past five years? If so, list: yes
Classes held by Office of Urban Resources (6) Spring and Fall Floodplain Mgt Training classes attended
10. How do you deliver mitigation planning information throughout your jurisdiction?
Email, mail, phone, meetings
11. What printed materials relating to hazard mitigation have you distributed to the public?
Refer to 3.5.3 of Action Items in Haz Mit Plan
12. What outreach services, if any, do you use to communicate this plan and keep the public informed of risks and countywide efforts underway to mitigate these risks? (How do you inform the public of risks, threats, watches, warnings, evacuations, shelters, etc.? Example: Social Media (Facebook, Twitter...))
EAS, Sirens, Facebook, Twitter, Radio, TV
13. Do you have a website? yes
14. If so, does it have documents that can be viewed by the public? NO
15. What are their titles?

16. Are there changes to the 2010 Hazard Mitigation Planning Committee (HMPC) members that will take effect for the 2014 HMPC? (New members; no longer participating members; etc.) I have your list you sent me!
17. Do you have any annual review forms or other documentation of proof that you conducted your annual review over the past five years? I have the annual review form, etc. - Do you have any reviews that might have been sent to you?
18. If so, I need copies for this plan revision. (Copies of emails, letters, notes, etc.)

Please return completed form to renee@leehelmllc.com by Thursday, March 27, 2014.

SECOND MEETING AGENDA

2015 ST. CLAIR COUNTY HAZARD MITIGATION PLAN UPDATE

Thursday, July 24, 2014 @ 10 a.m.

St. Clair County EMA, 1610 Cogswell Ave., Suite B-10, Pell City

1. Introductions

- Sign-in sheets – please print and make sure your email is on the form.

2. Project Schedule Reminder

- 2009 plan update expires March 20, 2015
- Period of Performance for the grant is November 18, 2013 – February 18, 2015
- Goal date for draft plan to be submitted in order to be approved before current plan expires: **Friday, November 14, 2014**
 - AEMA/Local Review = 30 days; Local response to a request for information (RFI) = 30 days; AEMA review of local response to RFI = 30 days; FEMA Review = 45 days (allowing 135 days at the least for plan approval)
- There will be an initial, mid-term, and final meeting. Committee members will be made aware of the meetings via email unless other means is requested. Information may be sent to LHA by fax 205-280-0543 or email to renee@leehelmsllc.com. If you have any questions or need assistance, call LHA at 205-280-3027.

3. Project Tasks for this Meeting

- All general public attendees are to complete the form titled: “Citizen Input on Hazard Mitigation Planning” and leave completed form with LHA representative
- Local EMA Director is to provide LHA with a copy of the media release for this meeting
- Update 2010 plan information – see handouts Discuss in-kind contributions for local match to this planning grant
- Set date and location for next meeting



ST. CLAIR COUNTY

Thursday, July 24, 2014 at 10 a.m. - EMA Office, 1610 Cogswell Ave., Suite B-10, Pell City

MID-TERM HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET

(PLEASE PRINT CLEARLY)

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Clatus Beard	Agency: Moody Job Title:	Phone: 205-640-0357 Fax:	clat62@gmail.com J.Dobles@moodycalabone
JOSHUA HERRIN	Agency: Pell City Police Job Title: Captain	Phone: 205-473-5935 Fax: 205-812-9079	.gov Jherrin@cityofpellcity.net
Carter D. Franklin	Agency: Odenville Job Title: Fire Chief	Phone: 205-629-2232 Fax: 205-629-0206	odlenchief@windstream.net
Tim Kurzejeski	Agency: Riverside Job Title: Fire Chief	Phone: 205-338-7692 Fax: 205-814-4782	firechief@riverside-ak.com
Tony Morris	Agency: Pell City Schools Job Title: Transportation Supervisor	Phone: 205-884-4800 Fax: 205-814-1952	morrison@yahoo.com
Richard Harvey	Agency: Springville Job Title: Fire Chief	Phone: (205) 467-2703 Fax: (205) 467-2706	Springvillefc@windstream.net



ST. CLAIR COUNTY

Thursday, July 24 2014 at 10 a.m. - EMA Office, 1610 Cogswell Ave., Suite B-10, Pell City

MID-TERM HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET

(PLEASE PRINT CLEARLY)

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Lay Ray	Agency: St. Clair County Dept Job Title: Office Manager	Phone: 205-594-2190 Fax: 205-594-2193	engineering@stclairco.com
JOHN W/COX	Agency: TOWN OF STEELE Job Title: MAYOR	Phone: 206-538-8145 Fax: 206-538-8167	TOWNOFSTEELE@bellsouth.net
Mike Platts	Agency: City of Argo Job Title: Fire Chief	Phone: 205-965-5521 Fax: 205-352-7128	plattschief901@gmail.com
Andy Griffith	Agency: City of Argo Job Title: Lt. Firefighter	Phone: 205-352-2109 Fax:	andgriffith90@gmail.com
Jeanette Jueckstock	Agency: City of Pell City Job Title: PLZETS	Phone: 205-338-2244 x112 Fax: 205-844-9088	jueckstock@cityofpellcity.net
Greg Gosselt	Agency: City of Pell City Job Title: Street Dept. Supv.	Phone: 205-884-8267 Fax: 205-884-2431	ggosselt@cityofpellcity.net



ST. CLAIR COUNTY

Thursday, July 24, 2014 at 10 a.m. – EMA Office, 1610 Cogswell Ave., Suite B-10, Pell City

MID-TERM HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET

(PLEASE PRINT CLEARLY)

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Patrice Kurzejeski	Agency: St. Clair Co EMA Job Title: Asst. Director	Phone: 205-473-4312 Fax: 205-884-6804	patricek@stcema.org
Lee Helms	Agency: Lee Helms Assoc Job Title: Owner/Consultant	Phone: 205-280-3027 Fax: 205-280-0543	lee@leehelmsllc.com
Ellen Tanner	Agency: St. C. EMA Job Title: Director	Phone: 205-884-6800 Fax: 205-884-6807	stamert@stcema.org
	Agency: Job Title:	Phone: Fax:	
	Agency: Job Title:	Phone: Fax:	
	Agency: Job Title:	Phone: Fax:	



A Citizen Input on Hazard Mitigation Planning Form was available at all HMPC meetings for use by HMPC members to provide to citizens and for citizens in attendance to complete as well. Twelve forms were submitted during this planning update period. The consolidation of these forms is below:

CITIZEN INPUT ON HAZARD MITIGATION PLANNING
(0 forms submitted)

Where in the county do you live (Which city or township?)	
What is your zip code at home?	
Do you work with Law Enforcement, Fire Service, Emergency Medical Services, Public Health, or Emergency Management? (Yes or No)	

Which of these emergency events have occurred at your home or in your neighborhood during the past ten years?

	EVENT	YES	NO
A	Brush or grass fire?		
B	Building fire?		
C	Severe thunderstorm?		
D	Tornado?		
E	Winter Weather?		
F	Terrorism?		
G	Drought?		
H	Hazardous material spill or release from pipelines, trucks, trains, or aircraft?		
I	Hazardous material spill or release from a facility?		
J	Power failure for more than two or three hours?		
K	Earthquake		

Did you have to leave your home because of any of these events?
If so, which ones? List by letter designation:

Did you lose time from work or school because of any of these events?
If so, which ones? List by letter designation:

Which of the following events are you concerned about in the next 12 months?

	EVENT	YES	NO
A	Brush or grass fire?		
B	Building fire?		
C	Severe thunderstorm?		
D	Tornado?		
E	Winter Weather?		
F	Terrorism?		
G	Drought?		
H	Hazardous material spill or release from pipelines, trucks, trains, or aircraft?		
I	Hazardous material spill or release from a facility?		
J	Power failure for more than two or three hours?		
K	Earthquake		

Of the concerns listed in question eight, please list the ones that you think are most likely to happen.
List in priority by letter designation:

Of the concerns that you think are most likely to happen from question 9, which one do you think would affect most of the population of your County?

Of the concerns listed in question eight, please list the ones you think are least likely to happen. List by letter designation:

Do you own a NOAA weather radio? YES __ NO __

If yes, is it on right now? YES __ NO __

Are you familiar with the Emergency Alert System YES __ NO __

Do you have a device that can sound an alarm to alert you to emergencies? YES __ NO __

Can you receive emergency warning information on your pager, cell phone, or wireless messaging devices? YES __ NO __ If no, would you like to? YES __ NO __

Do you have a family emergency plan for events such as a home fire? YES __ NO __

Do you have a safe place for shelter in or around your home? YES __ NO __

Are there emergency plans at your place of employment? YES __ NO __

If you are willing to, please provide your name, address, and a telephone number so that the County Emergency Management or the community representative may contact you if further input is needed:

Name	
Mailing Address	
Contact Number	
E-Mail	

Questions?

Continued Public Participation

Continued public participation remains the same for this plan update as was in the previous update and is as follows: During June of each year for the annual review of the plan, a notice will be posted in the Ashville and Pell City Courthouses requesting input from the public for use in the five-year revision period. The notice will include contact information for the SCCEMA for citizens to provide any input, as well as a mitigation fact sheet.

Interagency and Intergovernmental Coordination

Interagency and intergovernmental coordination also played a vital part in the update of this plan and has been updated from the previous plan update. Each of the agencies listed below were contacted via mail, email, fax, or telephone requesting the best available data that they could contribute to the 2015 plan update. All information provided was beneficial in completing risk and vulnerability assessments.

Federal Agencies

- National Weather Service provided storm event data
- United States Geological Survey provided information on general geology, earthquakes, sinkholes, land subsidence, and landslides
- U.S. Army Corp of Engineers and HAZUS-MH 2.1 provided information on dams
- Federal Emergency Management Agency provided information throughout the plan, including the National Flood Insurance Program information
- U.S. Department of Transportation's Hazardous Material Information System provided event data
- U.S. Census – provided population and demographic information
- U.S. Department of Agriculture – Census of Agriculture provided land value per acre
- HAZUS-MH 2.1 (2011) provided critical facility information, dam information, estimation information on potential damage, economic loss, and social impacts from natural disasters, etc.

State Agencies

- Alabama Emergency Management Agency provided hazard information throughout the plan
- Geological Survey of Alabama provided information on general geology, earthquakes, sinkholes, and landslides
- Alabama Department of Economic and Community Affairs provided the “Alabama Drought Management Plan,” National Flood Insurance Program information and FEMA flood map update information
- Forestry Commission provided information regarding wildfires

Regional Agencies

- Regional Planning Commission of Greater Birmingham (RPCGB) provided area planning and development and transportation planning information, as well as maps pertaining to plan information

Local Agencies

- St. Clair County Emergency Management Agency provided assistance in gathering data

Academia

- University of Alabama - Department of Geology

Miscellaneous

- Easidemographics.com – provided population and demographic information
- USA.com – provided population and demographic information

Integration with Existing Plans

Careful attention was taken when updating the plan so that it would not contradict or conflict with any existing local subdivision regulations, zoning ordinances, comprehensive plans, or standard building codes. Integration with existing plans of the local EMA and regional planning commission was taken. **Table 2-1** provides a list of the existing plans by jurisdiction.

The THIRA identifies natural, technological, and human-caused threats/hazards affecting St. Clair County as noted below:



St. Clair County
Emergency Management Agency
1610 Cogswell Avenue Suite B-10 • Pell City, AL 35125
Telephone: 205-884-6800 • Fax: 205-884-6807
Ellen Tanner, Director

Date: 31 October 2012

TO: AEMA

From: Ellen Tanner

Re: THIRA

I, Ellen Tanner, EMA Director of St Clair County do hereby certify that all data found in the submitted Risk Assessment was obtained by following PPD8 guidelines. I further certify that on 27 June 2012 a public meeting was held to gather input from private citizens.

Ellen Tanner
Director
St. Clair County EMA

TYPES OF THREATS/HAZARDS AFFECTING ST CLAIR COUNTY

As of 19 October 2012

NATURAL	TECHNOLOGICAL	HUMAN-CAUSED
Resulting from acts of nature	Involves accidents or the failures of systems and structures	Caused by the intentional actions of an adversary
<ul style="list-style-type: none">• Disease outbreak (Human or Animal)• Drought• Earthquake• Epidemic• Flood• Hurricane• Landslide• Tornado• Wildfire• Winter storm	<ul style="list-style-type: none">• Airplane crash• Dam failure• Hazardous materials release• Power failure• Radiological release• Train derailment• Large Urban Fire• Interstate Bridge Failure	<ul style="list-style-type: none">• Civil disturbance• Cyber incidents• Sabotage• School violence• Contamination of Drinking Water Supplies• Telephone System Failure/Sabotage• 911 Communications Failure• Disruption of Natural Gas Delivery• Prison Riot with Jail Break• Propane and/or Natural Gas Storage Facility Fire/Leak• Nosocomial Infection in the Hospital• Dispersal of Anthrax in Jefferson County•

The information in the table above is a conglomeration of information provided to the EMA by the County Commission, LEPC Members, Elected Officials, and also Fire, Police, and Water Authorities throughout the Whole County.

These newly identified threats which include the Technological and Human-Caused threats identified in the above chart have been included in the Hazard Mitigation Plan.

Plan Adoption

All jurisdictions in St. Clair County (Argo, Ashville, Margaret, Moody, Odenville, Pell City, Ragland, Riverside, Springville, and Steele, along with the St. Clair County Board of Education, Pell City Schools, St. Vincent's Hospital, and all water/sewer authorities actively participated in the planning process. Representatives from each local government attended each of the meetings and provided information vital to the update of this plan. Upon completion of the plan each of the municipalities, along with the St. Clair County Board of Education, Pell City Schools, St. Vincent's St. Clair, and the water/sewer authorities passed a formal resolution adopting the plan. By adopting this multi-jurisdictional multi-hazard mitigation plan the listed participants will be eligible applicants for mitigation grant funds through the Pre-Disaster Mitigation Program, Hazard Mitigation Grant Program, and Flood Mitigation Assistance Program. Adopting Resolutions can be found in **Section 8**.

**Table 2-1: St. Clair County
Existing Plans by Jurisdiction**

PLAN/ POLICY	Argo	Ashville	Margaret	Moody	Odenville	Pell City	Ragland	Riverside	Springville	Steele	Unincorporated County
Comprehensive Plan	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Subdivision Regulations	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N
Growth Management Plan	N	N	N	N	N	Y	N	Y	N	N	N
Capital Improvement Plan	N	N	N	N	N	N	N	N	Y	N	N
Zoning Ordinance	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
Building Code	N	N	N	N	N	N	N	N	Y	N	N
Floodplain Management Plan	N	N	N	N	N	Y	N	Y	N	N	N
Elevation Certificates	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y
Drainage Ordinance	N	N	N	N	N	Y	N	Y	N	N	N
Emergency Management Plan	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Critical Facilities Map	N	N	N	N	N	N	N	N	N	N	N
Existing Land Use Map	N	N	N	N	N	N	N	N	N	N	N
State Plan	N	N	N	N	N	N	N	N	N	N	Y
Hazard Mitigation	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Strategic National Stockpile Plan	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
<i>Other</i>											Corridor Study

Source: Participating Jurisdictions

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SECTION 3: GENERAL CHARACTERISTICS

Growth Trends

Development trends, particularly population shifts and land use changes created by major economic development expansions and infrastructure improvements of countywide significance, are important considerations to effective mitigation planning. These trends must be continually monitored and analyzed to keep abreast of changing vulnerabilities of jurisdictions and the increasing exposure of growing populations, new buildings, and enlarged infrastructure to natural hazards. As growth and development patterns change over time, the risks to property damage and lives also change. This section examines the projected growth trends and other impacts of countywide significance that are expected to affect the location and extent of natural hazards vulnerability over time.

The county government relies on the Regional Planning Commission of Greater Birmingham (RPCGB) for assistance in economic development and land use planning. The following is acreage usage in order of most use to least use in St. Clair County: Residential, Public, Industrial, Commercial, Transportation, Forest, and Agriculture. Recreation is highly treasured in the county.

In December 2013, Governor Robert Bentley announced \$30 million plus in Community Development Block Grants from the U. S. Department of Housing and Urban Development (HUD) grants to be awarded to sixteen Alabama Counties and municipalities devastated by April 2011 tornadoes. The funding will aid in disaster recovery and result in better places to live by addressing the needs for demolition and clearance, multi-family housing, construction of public buildings, road repairs, water and sewer services, and economic revitalization. (*Source: RPCGB*)

The Alabama Senate passed SB217 in February 2014, creating the Alabama Workforce. The council's mission is to ensure the continued partnership between education and industry in an effort to produce the best skilled workforce for Alabama's future. Employment is forecasted at around 1.3%, adding approximately 25,000 new jobs during 2014. New and existing businesses continue to thrive in Alabama. According to UA's Center for Business and Economic Research

(CBER), Alabama is expected to see stronger growth in both economic output (GDP) and employment during 2014. (Source: RPCGB)

This plan fully recognizes that changes in development for jurisdictions in hazard prone areas are on-going issues that must be constantly monitored and addressed in the local planning process. Changing development trends and the on-going growth and shift of population can increase levels of vulnerability. The potential impacts of these changes can have adverse impacts, such as those noted here:

- Increasing demands for developable land area to accommodate new growth can push new development to previously undeveloped flood plains.
- New development and associated parking, roads, and other impermeable surfaces can increase urban runoff, exacerbating flooding hazards.
- New construction in previously rural areas can push the wildland-urban interface, increasing exposure to wildfires.
- New housing may be constructed inadequately to withstand the damaging wind threats of high winds and tornadoes.
- Increased population can stretch the demand for limited water resources in times of drought.
- More development in widespread areas subject to sinkholes can increase the probability of property and infrastructure damages.

General Geology

(Source: U. S. Department of the Interior/U. S. Geological Survey)

St. Clair County's geologic units are as follows:

Red Mountain Formation (Silurian) at surface, covers 2% of this area. Red Mountain Formation - Interbedded yellowish-gray to moderate-red sandstone, siltstone and shale; greenish-gray to moderate-red fossiliferous partly silty and sandy limestone; few thin hematitic beds. Visible physical characteristics include: sandstone; shale; siltstone; limestone.

Pottsville Formation (Pennsylvanian) at surface, covers 2% of this area. Pottsville Formation - Light-gray thin to thick-bedded quartzose sandstone and conglomerate containing

interbedded dark-gray shale, siltstone, and coal. Visible physical characteristics include: sandstone; conglomerate; shale; siltstone; coal.

Pottsville Formation (upper part) (Pennsylvanian) at surface, covers 22% of this area.

Pottsville Formation (upper part) - Interbedded dark-gray shale, siltstone, medium-gray sandstone, and coal in cyclic sequences. Visible physical characteristics include: shale; siltstone; sandstone; coal.

Pottsville Formation (lower part) (Pennsylvanian) at surface, covers 5% of this area.

Pottsville Formation (lower part) - Light-gray thick-bedded to massive pebbly quartzose sandstone, containing varying amounts of interbedded dark-gray shale, siltstone, and thin discontinuous coal. Visible physical characteristics include: sandstone; shale; siltstone; coal.

Parkwood and Pennington Formations undifferentiated (Pennsylvanian-Mississippian) at surface, covers 2% of this area. Parkwood and Pennington Formations undifferentiated - Interbedded medium to dark-gray shale and light to medium-gray sandstone, locally contains lithic conglomerate, dusky-red and grayish-green mudstone, argillaceous limestone, and clayey coal. Visible physical characteristics include: shale; sandstone; conglomerate; mudstone; limestone; clay or mud; mixed clastic/coal.

Parkwood Formation and Floyd Shale undifferentiated (Pennsylvanian-Mississippian) at surface, covers 7% of this area. Parkwood Formation and Floyd Shale undifferentiated - Parkwood Formation -- Interbedded medium to dark-gray shale and light to medium-gray sandstone; locally contains dusky-red and grayish-green mudstone, argillaceous limestone, and clayey coal. Floyd Shale -- Dark-gray shale, sideritic in part; thin beds of sandstone, limestone and chert are locally present. Visible physical characteristics include: shale; sandstone; mudstone; limestone; chert; mixed clastic/coal; clay or mud.

Parkwood Formation (Pennsylvanian-Mississippian) at surface, covers 2% of this area.

Parkwood Formation - Interbedded medium to dark-gray shale and light to medium-gray sandstone; locally contains dusky-red and grayish-green mudstone, argillaceous limestone, and clayey coal. Visible physical characteristics include: shale; sandstone; mudstone; limestone; clay or mud; mixed clastic/coal.

Sequatchie Formation, Colvin Mountain Sandstone, Greensport Formation undifferentiated

(Ordovician) at surface, covers 0.1 % of this area. Sequatchie Formation, Colvin Mountain Sandstone, Greensport Formation undifferentiated - variegated dusky-red and pale-yellowish-orange shale, calcareous mudstone, dolomite, siltstone, and minor sandstone. Visible physical characteristics include: shale; mudstone; dolostone (dolomite); siltstone; sandstone.

Sequatchie Formation (Ordovician) at surface, covers 0.2% of this area. Sequatchie Formation - Grayish-red, grayish-green, and yellowish-gray thin-bedded calcareous shale and calcareous mudstone containing interbedded fossiliferous limestone, and medium-gray to moderate-red partly sandy and glauconitic, medium to coarse-grained bioclastic limestone. Visible physical characteristics include: shale; mudstone; limestone.

Newala Limestone (Ordovician) at surface, covers 2% of this area. Newala Limestone - light to dark-gray thick-bedded micritic and peloidal limestone and minor dolomite. Visible physical characteristics include: limestone; dolostone (dolomite).

Longview Limestone (Ordovician) at surface, covers 0.9% of this area. Longview Limestone - light to medium-gray thick-bedded cherty limestone and dolomite, locally sandy. Visible physical characteristics include: limestone; dolostone (dolomite).

Little Oak and Lenoir Limestones undifferentiated (Ordovician) at surface, covers 2% of this area. Little Oak and Lenoir Limestones undifferentiated - dark-gray argillaceous, fossiliferous medium to thick-bedded limestone; locally contains rare chert in upper part and an interval of fenestral mudstone in lower part (Mosheim Limestone Member of the Lenoir Limestone). Visible physical characteristics include: limestone; mudstone; chert.

Greensport Formation (Ordovician) at surface, covers 0.4% of this area. Greensport Formation - variegated dusky-red and dark-yellowish-orange shale, calcareous mudstone, limestone, siltstone, and minor sandstone. Visible physical characteristics include: shale; mudstone; limestone; siltstone; sandstone.

Colvin Mountain Sandstone (Ordovician) at surface, covers 0.2% of this area. Colvin Mountain Sandstone - light-gray quartzose sandstone, pebbly in part. Locally contains thin beds of bentonite in the upper part. Visible physical characteristics include: sandstone; bentonite.

Knox Group undifferentiated (Ordovician-Cambrian) at surface, covers 13% of this area. Knox Group undifferentiated - Light-gray to light-brown locally sandy dolomite, dolomitic

limestone, and limestone; characterized by abundant light-colored chert. Visible physical characteristics include: dolostone (dolomite); limestone; chert.

Chepultepec and Copper Ridge Dolomites undifferentiated (Ordovician-Cambrian) at surface, covers 6% of this area. Chepultepec and Copper Ridge Dolomites undifferentiated - Light-gray to dark-bluish-gray thick-bedded dolomite and interbedded light-gray limestone; includes abundant chert. Visible physical characteristics include: dolostone (dolomite); limestone; chert.

Attalla Chert Conglomerate Member of the Chickamauga Limestone (Ordovician) at surface, covers < 0.1% of this area. Attalla Chert Conglomerate Member of the Chickamauga Limestone - conglomerate of pebbles, cobbles, and boulders of chert and rare dolomite and quartzite in a sand-sized chert and quartz matrix; thin beds of gray-green or dusky-red shale common at base. Visible physical characteristics include: conglomerate; chert; shale; dolostone (dolomite); quartzite.

Chickamauga Limestone (Ordovician) at surface, covers 0.5% of this area. Chickamauga Limestone - Medium to dark-gray thick to thin-bedded partly argillaceous, locally fossiliferous limestone. Locally includes a thin interval of Attalla Chert Conglomerate Member at base. Attalla Chert Conglomerate - conglomerate of pebbles, cobbles, and boulders of chert and rare dolomite and quartzite in a sand-sized matrix; thin beds of gray-green or dusky-red shale common at base. Visible physical characteristics include: limestone; conglomerate; chert; shale; dolostone (dolomite); quartzite.

Tuscumbia Limestone and Fort Payne Chert undivided (Mississippian) at surface, covers 3% of this area. Tuscumbia Limestone and Fort Payne Chert undivided - Tuscumbia Limestone -- light-gray partly oolitic limestone; very coarse bioclastic crinoidal limestone common; light-gray chert nodules and concretions locally abundant. Upper part of formation locally consists of light-bluish-gray laminated siltstone containing vugs lined or filled with quartz and scattered throughout the formation are interbeds of medium to greenish-gray shale, shaly limestone and siltstone. Visible physical characteristics include: limestone; chert; siltstone; shale; claystone.

Pride Mountain Formation (Mississippian) at surface, covers 1% of this area. Pride Mountain Formation - Medium to dark-gray shale, containing one to three units of a variable

combination of sandstone and limestone in the lower part; locally contains rare interbeds of dusky-red and greenish-gray mudstone. Visible physical characteristics include: shale; limestone; sandstone; mudstone.

Hartselle Sandstone (Mississippian) at surface, covers 2% of this area. Hartselle Sandstone - Light-colored thick-bedded to massive quartzose sandstone, containing interbeds of dark-gray shale. Visible physical characteristics include: sandstone; shale.

Floyd Shale (Mississippian) at surface, covers 4% of this area. Floyd Shale - Dark-gray shale, sideritic in part; thin beds of sandstone, limestone and chert are locally present. Visible physical characteristics include: shale; sandstone; limestone; chert.

Bangor Limestone (Mississippian) at surface, covers 3% of this area. Bangor Limestone - Medium-gray bioclastic and oolitic limestone, containing interbeds of dusky-red and olive-green mudstone in the upper part. Visible physical characteristics include: limestone; mudstone.

Alluvial, coastal and low terrace deposits (Holocene) at surface, covers < 0.1% of this area. Alluvial, coastal and low terrace deposits - Varicolored fine to coarse quartz sand containing clay lenses and gravel in places. Visible physical characteristics include: beach sand; alluvium.

Rome Formation (Cambrian) at surface, covers 0.6% of this area. Rome Formation - variegated thinly interbedded mudstone, shale, siltstone, and sandstone; limestone and dolomite occur locally. Quartzose sandstone commonly present near top of formation. Visible physical characteristics include: mudstone; shale; siltstone; sandstone; limestone; dolostone (dolomite).

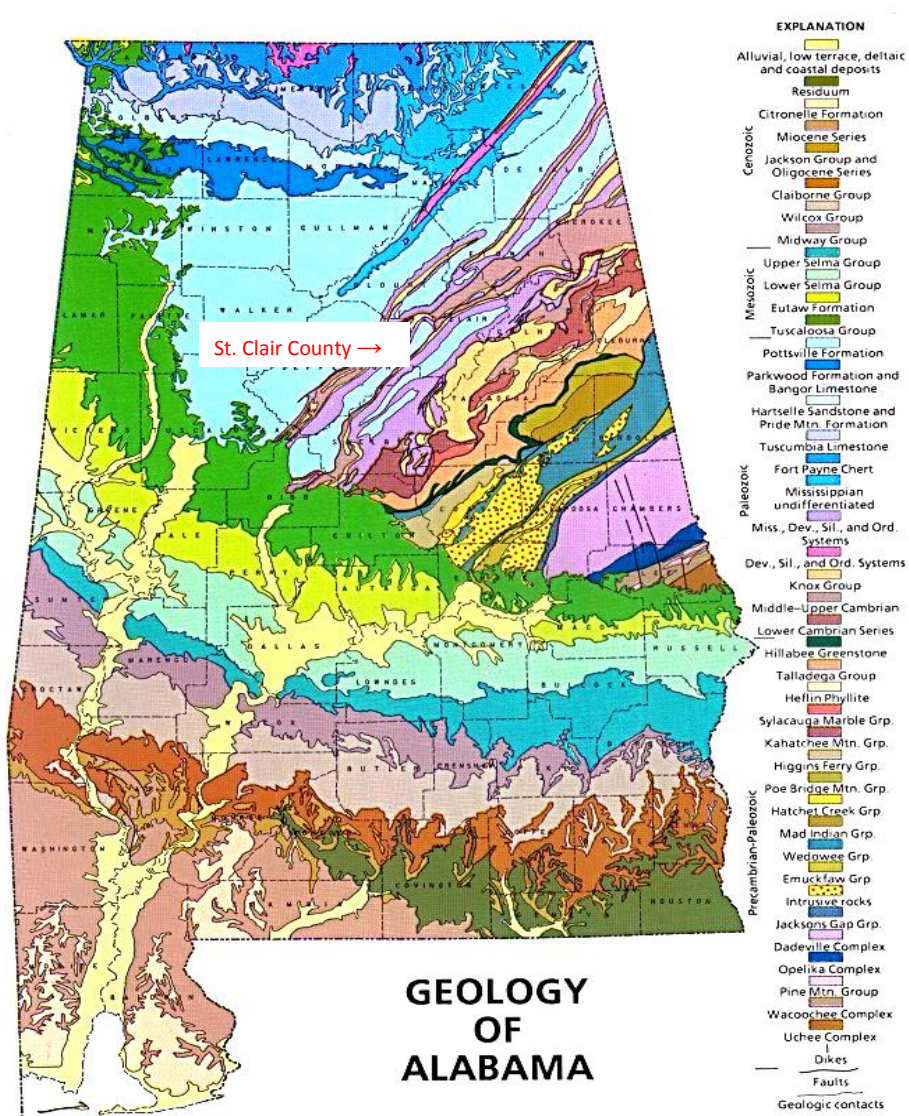
Ketona Dolomite (Cambrian) at surface, covers 0.1% of this area. Ketona Dolomite - Light to medium-gray thick-bedded coarsely crystalline dolomite. Visible physical characteristics include: dolostone (dolomite).

Conasauga Formation, lower unnamed shale facies (Cambrian) at surface, covers 0.1% of this area. Conasauga Formation, lower unnamed shale facies - lower unnamed shale facies in eastern Valley and Ridge consists of dark-green to pale-olive fossiliferous shale with a few dark-gray limestone interbeds. Visible physical characteristics include: shale; limestone.

Conasauga Formation (Cambrian) at surface, covers 13% of this area. Conasauga Formation - Medium-bluish-gray fine-grained, thin-bedded argillaceous limestone and interbedded dark-gray shale in varying proportions. Visible physical characteristics include: limestone; shale.

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Figure 3-1: Geology of Alabama
(Source: University of AL – Geology Department)



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SECTION 4: RISK AND VULNERABILITY ASSESSMENT

Risk Assessment

The risk assessment process is necessary to identify those natural hazards that pose a threat to St. Clair County and its municipal jurisdictions. This process used information provided by members of the St. Clair County Hazard Mitigation Planning Committee to identify these hazards.

Table 4-1 summarizes the county's Hazard Probability Assessment. A zero denotes no data is available to determine the probability or affected area. Each jurisdiction has an individual hazard probability assessment shown in **Section 6** of the plan.

Table 4-2 shows the hazards that pose a threat to each jurisdiction. Each jurisdiction was responsible for identifying the hazards that pose a threat to their community.

Table 4-3 provides the prioritized occurrence threat by jurisdiction based on past events. Occurrence prioritizations were based on the National Oceanic and Atmospheric Administration (NOAA)-National Climatic Data Center (NCDC) reports of occurrences. Hazards are prioritized highest to least threat designating the hazard with the highest threat of occurrence as number one.

Table 4-4 through Table 4-16 is the cornerstone for the hazard profiles that follow in this section. This table contains data from the NOAA NCDC for a defined ten-year study period of January 1, 2003 – December 31, 2013. The table shows events for all hazard types and provides the location, date, type, magnitude, deaths and injuries, dollar amounts for property and crop damages, and total damages.

As FEMA guidelines request that detailed event data be provided, the Hazard Mitigation Committee agreed upon the new ten-year study period as a means of establishing a corrected historical reference that utilized verifiable sources.

Event locations in the table labeled as “countywide” refer to an event that affected the entire county, including all municipalities within. If there is an associated amount of damages, they are assumed to be countywide. Countywide events are also listed in each municipality's event table in the individual Jurisdiction Assessment located in **Section 6**. There are events labeled for specific unincorporated areas of the county that were identified as affected. Such

events will not be repeated in the individual jurisdiction tables since the location was site specific and did not affect an incorporated jurisdiction.

Some events provided by the NOAA/NCDC are reported as statewide occurrences. Hurricanes, droughts, and winter storms often have this type of far-reaching impact. In cases such as this, the event is shown as a countywide event that affected all municipalities. The county's extent and probability of a hazard will be listed under each event description.

The extent of the hazard provides the range of magnitude or severity that could be experienced by the county if such an event occurred. The hazard is classified using terms of major, minor, and minimum based on the probability of future damage estimates providing information on the range of magnitude or severity the county can anticipate from potential hazardous events. A major ranking requires continuous action and participation from the entire community and has a 100% or greater chance of an annual occurrence. A minor ranking involves fewer people, effort, and area of community and has a 50% - 99% chance of an annual occurrence. A minimum ranking involves a small number of people and plans for a specific action and has a 49% or less chance of an annual occurrence. In addition to extent rankings and whenever possible, the worst case scenarios of hazard events are provided as documentation of the extent the particular hazard has on St. Clair County.

Probability is the likelihood that events of particular severities will occur. The ability of scientists and engineers to calculate probability varies considerably depending on the hazard in question. In many areas, flood studies of various kinds can provide reasonably accurate estimates of how often water will reach particular places and elevations. On the other hand, tornadoes and earthquakes are nearly impossible to predict, except in the most general sense. The probability (frequency) of the various hazards is drawn from a combination of sources, expertise, and the NCDC Storm Event Database for Alabama.

For the 2015 plan update, the probability (%) that an identified hazard will occur on an annual basis was determined using the following formula:

Number of historical or reported events in a time period divided by the number of years the incidents occurred within = Probability of Future Annual Event Occurrences

Example: 13 Extreme Temperature events experienced divided by a 6 year period; 13 divided 6

= >100%

A similar formula was used to determine an estimate of the expected damages from each event:

Total amount of damages (in dollars) for each historical or reported event divided by the number of damage causing events within the time period = Estimate of expected future damages

Example: \$172,000 total reported hail damage from 2003-2013 with 21 of those being reported as damage causing; $\$172,000/21=\$8,190$

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Table 4-1: St. Clair County Hazard Probability of Future Occurrence			
Natural Hazards	Number of Occurrences Between 2003-2013	Probability of Future Occurrence	Area Affected
Thunderstorm	98	>100%	Countywide
Lightning	1	1%	Countywide
Hail	57	>100%	Countywide
Tornado	12	>100%	Countywide
Flood/Flash Flood	18	>100%	Countywide
Droughts/Extreme Heat	20	>100%	Countywide
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	9	90%	Countywide
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	10	100%	Countywide
Sinkhole/Expansive Soil	0	Unknown	Countywide
Landslide	0	Unknown	Countywide
Earthquake	1	1%	Countywide
Wildfire (3 year study period – 2010-2013)	93	>100%	Countywide
Dam/Levee Failure	0	Unknown	Countywide
<i>Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; Alabama Geological Survey</i>			
Methodology: Probability of Future Occurrences was expressed by dividing the total number of occurrences by the ten-year study period, with the exception of wildfire being a 3-year study period. Zero denotes no data available to determine the probability of future occurrence or areas affected.			

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**Table 4-2: St. Clair County
Hazard Identification by Jurisdiction**

Natural Hazards	Argo	Ashville	Margaret	Moody	Odenville	Pell City	Ragland	Riverside	Springville	Steele	Unincorporated County
Thunderstorm	X	X	X	X	X	X	X	X	X	X	X
Lightning	X	X	X	X	X	X	X	X	X	X	X
Hail	X	X	X	X	X	X	X	X	X	X	X
Tornado	X	X	X	X	X	X	X	X	X	X	X
Flood/Flash Flood	X	X	X	X	X	X	X	X	X	X	X
Drought/Extreme Heat	X	X	X	X	X	X	X	X	X	X	X
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	X	X	X	X	X	X	X	X	X	X	X
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	X	X	X	X	X	X	X	X	X	X	X
Sinkhole/Expansive Soil	X	X	X	X	X	X	X	X	X	X	X
Landslide	X	X	X	X	X	X	X	X	X	X	X
Earthquake	X	X	X	X	X	X	X	X	X	X	X
Wildfire	X	X	X	X	X	X	X	X	X	X	X
Dam/Levee Failure	X	X	X	X	X	X	X	X	X	X	X

Source: Participating Jurisdictions

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Table 4-3: St. Clair County Prioritized Occurrence Threat by Jurisdiction Based on Past Events											
Natural Hazards	Argo	Ashville	Margaret	Moody	Odenville	Pell City	Ragland	Riverside	Springville	Steele	St. Clair County
Thunderstorm	3	3	3	2	3	2	3	3	2	3	1
Lightning	7	8	8	7	8	8	8	8	7	8	9
Hail	5	6	6	5	4	6	6	6	6	6	3
Tornado	7	8	7	6	7	7	8	8	8	8	6
Flood/Flash Flood	4	5	3	4	5	5	4	9	4	5	5
Drought/Extreme Heat	2	2	2	3	2	3	2	2	3	2	4
Winter Storm/Frost Freeze/ Heavy Snow/ Ice Storm/ Winter Weather/Extreme Cold	4	5	5	5	6	5	5	5	5	5	8
Hurricane/Tropical Storm/ Tropical Depression/High Wind/Strong Wind	3	4	4	4	5	4	4	4	4	4	7
Sinkhole/Expansive Soil	7	8	8	7	8	8	8	8	8	8	10
Landslide	7	8	8	7	8	8	8	8	8	8	10
Earthquake	7	8	8	7	8	8	7	8	8	8	9
Wildfire	1	1	1	1	1	1	1	1	1	1	2
Dam/Levee Failure	6	7	7	6	7	7	7	7	7	7	10
<i>Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey</i>											
Hazards are prioritized with the highest threat of occurrence assigned number one based on hazardous events that have occurred within each jurisdiction over the past ten years, with the exception of wildfires that were based on events that have occurred over the past three years. Some natural hazards have equal threats to a jurisdiction; therefore, their threat number will be the same.											

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2003-2013 ST. CLAIR COUNTY HAZARD EVENT OCCURRENCES

Table 4-4: Thunderstorm Events

98 Thunderstorm Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	02/22/2003	03:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	05/05/2003	18:40	CST	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	05/06/2003	19:15	CST	Thunderstorm Wind	55 kts. EG	0	0	5.00K	0.00K
MOODY	ST. CLAIR CO.	AL	05/07/2003	12:52	CST	Thunderstorm Wind	50 kts. EG	0	0	50.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	05/07/2003	13:19	CST	Thunderstorm Wind	50 kts. EG	0	0	28.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	05/07/2003	13:40	CST	Thunderstorm Wind	50 kts. EG	0	0	6.00K	0.00K
MOODY	ST. CLAIR CO.	AL	05/07/2003	15:07	CST	Thunderstorm Wind	55 kts. EG	0	0	17.00K	0.00K
MOODY	ST. CLAIR CO.	AL	05/16/2003	16:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/11/2003	14:10	CST	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	08/27/2003	16:31	CST	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	11/18/2003	13:30	CST	Thunderstorm Wind	55 kts. EG	0	0	8.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/22/2004	17:17	CST	Thunderstorm Wind	50 kts. EG	0	0	12.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	07/06/2004	19:38	CST	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
STEELE	ST. CLAIR CO.	AL	07/14/2004	16:29	CST	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	07/26/2004	13:45	CST	Thunderstorm Wind	55 kts. EG	0	0	15.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	10/19/2004	08:15	CST	Thunderstorm Wind	50 kts. ES	0	0	3.00K	0.00K

MOODY	ST. CLAIR CO.	AL	12/07/2004	07:25	CST	Thunderstorm Wind	52 kts. EG	0	0	3.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	04/30/2005	03:38	CST	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	06/08/2005	13:30	CST	Thunderstorm Wind	52 kts. EG	0	0	8.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	07/19/2005	16:45	CST	Thunderstorm Wind	52 kts. EG	0	0	4.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	04/08/2006	00:58	CST	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	04/19/2006	16:30	CST	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	04/19/2006	16:55	CST	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	04/20/2006	15:44	CST	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	07/29/2006	15:00	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	07/29/2006	15:21	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	06/28/2007	14:50	CST-6	Thunderstorm Wind	50 kts. EG	0	0	50.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	06/30/2007	14:42	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	06/30/2007	15:03	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	06/30/2007	15:03	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
EDEN	ST. CLAIR CO.	AL	06/30/2007	15:03	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
STEELE	ST. CLAIR CO.	AL	07/10/2007	13:58	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	07/20/2007	11:15	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
SANIE	ST. CLAIR CO.	AL	01/10/2008	19:05	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
PRESCOTT	ST. CLAIR CO.	AL	02/26/2008	03:45	CST-6	Thunderstorm Wind	91 kts. EG	0	0	500.00K	0.00K
PRESCOTT	ST. CLAIR CO.	AL	04/04/2008	15:18	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
EDEN	ST. CLAIR CO.	AL	05/11/2008	01:16	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K

WHITNEY	ST. CLAIR CO.	AL	05/11/2008	12:40	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	05/11/2008	12:40	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	05/20/2008	15:38	CST-6	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	06/01/2008	12:00	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
MOODY	ST. CLAIR CO.	AL	07/05/2008	15:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
COOKS SPGS	ST. CLAIR CO.	AL	07/05/2008	15:35	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	07/29/2008	17:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	08/02/2008	17:59	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	09/08/2008	15:00	CST-6	Thunderstorm Wind	39 kts. EG	0	0	2.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	04/02/2009	20:53	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.50K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	04/02/2009	21:09	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
STEELE	ST. CLAIR CO.	AL	04/02/2009	21:11	CST-6	Thunderstorm Wind	55 kts. EG	0	0	2.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	04/02/2009	21:20	CST-6	Thunderstorm Wind	55 kts. EG	0	0	1.00K	0.00K
ACMAR	ST. CLAIR CO.	AL	05/03/2009	13:19	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
EDEN	ST. CLAIR CO.	AL	05/03/2009	13:55	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
PARSONS	ST. CLAIR CO.	AL	06/12/2009	19:36	CST-6	Thunderstorm Wind	40 kts. EG	0	0	0.50K	0.00K
SANIE	ST. CLAIR CO.	AL	06/12/2009	19:36	CST-6	Thunderstorm Wind	40 kts. EG	0	0	10.00K	0.00K
COOKS SPGS	ST. CLAIR CO.	AL	06/12/2009	19:38	CST-6	Thunderstorm Wind	56 kts. EG	0	0	0.00K	0.00K
CROPWELL	ST. CLAIR CO.	AL	06/12/2009	19:46	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	06/14/2009	10:54	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
WHITNEY	ST. CLAIR CO.	AL	06/15/2009	20:20	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K

STEELE	ST. CLAIR CO.	AL	06/15/2009	20:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
STEELE	ST. CLAIR CO.	AL	06/15/2009	20:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
STEELE	ST. CLAIR CO.	AL	06/15/2009	20:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	06/15/2009	20:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
ST CLAIR	ST. CLAIR CO.	AL	05/20/2010	19:14	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
WATTSVILLE	ST. CLAIR CO.	AL	10/26/2010	21:30	CST-6	Thunderstorm Wind	55 kts. EG	0	0	4.00K	0.00K
MOODY	ST. CLAIR CO.	AL	02/25/2011	00:25	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
WATTSVILLE	ST. CLAIR CO.	AL	02/25/2011	00:26	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
HENRY LAKE	ST. CLAIR CO.	AL	02/25/2011	00:27	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	02/25/2011	00:40	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
MOODY	ST. CLAIR CO.	AL	04/27/2011	05:03	CST-6	Thunderstorm Wind	78 kts. EG	0	0	0.00K	0.00K
ACMAR	ST. CLAIR CO.	AL	04/27/2011	05:04	CST-6	Thunderstorm Wind	78 kts. EG	1	0	0.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	04/27/2011	05:15	CST-6	Thunderstorm Wind	78 kts. EG	1	0	0.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	04/27/2011	05:30	CST-6	Thunderstorm Wind	70 kts. EG	0	0	15.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/17/2011	11:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	0.50K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:40	CST-6	Thunderstorm Wind	60 kts. EG	0	0	1.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:54	CST-6	Thunderstorm Wind	45 kts. EG	0	0	2.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/22/2011	16:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/26/2011	15:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
CROPWELL	ST. CLAIR CO.	AL	04/05/2012	18:25	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K

RAGLAND	ST. CLAIR CO.	AL	07/02/2012	04:50	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
CALDWELL	ST. CLAIR CO.	AL	07/05/2012	17:18	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	07/05/2012	17:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
WHITNEY	ST. CLAIR CO.	AL	07/05/2012	17:52	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
WATTSVILLE	ST. CLAIR CO.	AL	07/05/2012	17:53	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	07/05/2012	20:55	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	07/05/2012	21:09	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	07/10/2012	17:19	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	08/09/2012	10:35	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
WATTSVILLE	ST. CLAIR CO.	AL	08/09/2012	10:52	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
SANIE	ST. CLAIR CO.	AL	03/18/2013	14:30	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	03/18/2013	14:32	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	03/18/2013	14:33	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	03/18/2013	14:34	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	03/18/2013	14:35	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	03/18/2013	14:45	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
OAK RIDGE	ST. CLAIR CO.	AL	06/16/2013	17:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	06/17/2013	13:36	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	07/17/2013	16:53	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Totals:								2	0	889.50K	0.00K

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Table 4-5: Lightning Events

1 Lightning Event – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
SPRINGVILLE	ST. CLAIR CO.	AL	06/19/2010	11:40	CST-6	Lightning		0	0	2.00K	0.00K
Totals:								0	0	2.00K	0.00K

Table 4-6: Hail Events

57 Hail Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
MARGARET	ST. CLAIR CO.	AL	04/25/2003	15:29	CST	Hail	0.75 in.	0	0	0.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/02/2003	17:12	CST	Hail	1.75 in.	0	0	40.00K	0.00K
STEELE	ST. CLAIR CO.	AL	05/18/2004	13:42	CST	Hail	0.88 in.	0	0	0.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	07/07/2004	16:30	CST	Hail	0.88 in.	0	0	0.00K	0.00K
RIVERSIDE	ST. CLAIR CO.	AL	10/19/2004	09:02	CST	Hail	0.88 in.	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	03/30/2005	22:44	CST	Hail	0.88 in.	0	0	0.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	04/22/2005	15:55	CST	Hail	1.00 in.	0	0	1.00K	0.00K
BRANCHVILLE	ST. CLAIR CO.	AL	04/22/2005	15:57	CST	Hail	0.88 in.	0	0	1.00K	0.00K
MOODY	ST. CLAIR CO.	AL	05/20/2005	14:15	CST	Hail	0.75 in.	0	0	0.00K	0.00K
CROPWELL	ST. CLAIR CO.	AL	12/28/2005	12:22	CST	Hail	0.75 in.	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	03/13/2006	20:09	CST	Hail	0.75 in.	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	04/03/2006	02:25	CST	Hail	0.88 in.	0	0	0.00K	0.00K

ASHVILLE	ST. CLAIR CO.	AL	04/19/2006	16:10	CST	Hail	0.75 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	04/19/2006	16:27	CST	Hail	0.75 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	04/19/2006	16:40	CST	Hail	0.75 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	04/19/2006	16:51	CST	Hail	1.00 in.	0	0	0.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	04/19/2006	16:55	CST	Hail	1.75 in.	0	0	0.00K	0.00K
RIVERSIDE	ST. CLAIR CO.	AL	04/19/2006	17:00	CST	Hail	1.75 in.	0	0	0.00K	0.00K
RIVERSIDE	ST. CLAIR CO.	AL	04/19/2006	17:15	CST	Hail	1.75 in.	0	0	0.00K	0.00K
STEELE	ST. CLAIR CO.	AL	04/20/2006	15:23	CST	Hail	0.88 in.	0	0	0.00K	0.00K
STEELE	ST. CLAIR CO.	AL	04/20/2006	15:55	CST	Hail	1.75 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	09/22/2006	13:55	CST	Hail	0.75 in.	0	0	0.00K	0.00K
HENRY LAKE	ST. CLAIR CO.	AL	04/04/2008	12:58	CST-6	Hail	0.75 in.	0	0	0.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	04/04/2008	14:05	CST-6	Hail	0.88 in.	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	04/11/2008	16:00	CST-6	Hail	0.75 in.	0	0	0.00K	0.00K
BRANCHVILLE	ST. CLAIR CO.	AL	06/01/2008	11:53	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
MARGARET	ST. CLAIR CO.	AL	06/01/2008	11:53	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
SANIE	ST. CLAIR CO.	AL	06/01/2008	11:55	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	06/01/2008	11:56	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
WATTSVILLE	ST. CLAIR CO.	AL	06/01/2008	12:25	CST-6	Hail	0.75 in.	0	0	0.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	07/29/2008	17:14	CST-6	Hail	0.88 in.	0	0	0.00K	0.00K
COOKS SPGS	ST. CLAIR CO.	AL	02/18/2009	15:15	CST-6	Hail	0.88 in.	0	0	0.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	02/18/2009	16:13	CST-6	Hail	0.75 in.	0	0	0.00K	0.00K

RAGLAND	ST. CLAIR CO.	AL	02/18/2009	16:29	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
COOKS SPGS	ST. CLAIR CO.	AL	04/01/2009	00:04	CST-6	Hail	0.88 in.	0	0	0.00K	0.00K
OAK RIDGE	ST. CLAIR CO.	AL	04/01/2009	00:12	CST-6	Hail	0.88 in.	0	0	0.00K	0.00K
NEW LONDON	ST. CLAIR CO.	AL	04/10/2009	15:00	CST-6	Hail	1.75 in.	0	0	0.00K	0.00K
CROPWELL	ST. CLAIR CO.	AL	05/03/2009	13:37	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
CROPWELL	ST. CLAIR CO.	AL	06/11/2009	11:55	CST-6	Hail	0.88 in.	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	03/28/2011	00:53	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	05/26/2011	15:00	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/15/2011	21:24	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	03/02/2012	17:37	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
MARGARET	ST. CLAIR CO.	AL	03/02/2012	19:33	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	03/02/2012	19:34	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	07/01/2012	16:43	CST-6	Hail	1.75 in.	0	0	0.00K	0.00K
OAK RIDGE	ST. CLAIR CO.	AL	07/01/2012	16:53	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST CLAIR SPGS	ST. CLAIR CO.	AL	07/05/2012	17:11	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
CALDWELL	ST. CLAIR CO.	AL	07/05/2012	17:38	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
WHITNEY	ST. CLAIR CO.	AL	07/05/2012	17:48	CST-6	Hail	0.88 in.	0	0	0.00K	0.00K
EDEN	ST. CLAIR CO.	AL	07/05/2012	21:00	CST-6	Hail	0.75 in.	0	0	0.00K	0.00K
WHITNEY	ST. CLAIR CO.	AL	07/05/2012	22:46	CST-6	Hail	0.88 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	03/18/2013	14:35	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K

CROPWELL	ST. CLAIR CO.	AL	03/18/2013	14:46	CST-6	Hail	1.75 in.	0	0	0.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	07/17/2013	16:54	CST-6	Hail	0.88 in.	0	0	0.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	07/17/2013	16:55	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
Totals:								0	0	42.00K	0.00K

Table 4-7: Tornado Events

12 Tornado Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
PELL CITY	ST. CLAIR CO.	AL	05/07/2003	13:10	CST	Tornado	F1	0	0	85.00K	0.00K
MOODY	ST. CLAIR CO.	AL	05/07/2003	14:21	CST	Tornado	F0	0	0	5.00K	0.00K
CROPWELL	ST. CLAIR CO.	AL	11/24/2004	06:42	CST	Tornado	F0	0	0	75.00K	0.00K
EASONVILLE	ST. CLAIR CO.	AL	02/26/2008	04:00	CST-6	Tornado	EF1	0	0	250.00K	0.00K
ST CLAIR SPGS	ST. CLAIR CO.	AL	08/25/2008	09:56	CST-6	Tornado	EF1	0	0	20.00K	0.00K
ACMAR	ST. CLAIR CO.	AL	12/10/2008	04:34	CST-6	Tornado	EF1	0	0	82.00K	0.00K
GREENSPORT	ST. CLAIR CO.	AL	04/19/2009	20:21	CST-6	Tornado	EF1	0	0	20.00K	0.00K
PRESCOTT	ST. CLAIR CO.	AL	05/03/2009	13:15	CST-6	Tornado	EF1	0	0	60.00K	0.00K
NEW LONDON	ST. CLAIR CO.	AL	05/03/2009	13:27	CST-6	Tornado	EF1	0	0	100.00K	0.00K
BRANCHVILLE	ST. CLAIR CO.	AL	04/27/2011	05:16	CST-6	Tornado	EF2	0	5	865.00K	0.00K
SANIE	ST. CLAIR CO.	AL	04/27/2011	17:32	CST-6	Tornado	EF4	13	30	200.000M	0.00K
MARGARET	ST. CLAIR CO.	AL	01/23/2012	04:16	CST-6	Tornado	EF1	0	0	0.00K	0.00K
Totals:								13	35	201.562M	0.00K

Table 4-8: Flood/Flash Flood Events

18 Flood/Flash Flood Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/06/2003	16:00	CST	Flood		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/18/2003	05:00	CST	Flood		0	0	0.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/05/2003	21:30	CST	Flash Flood		0	0	25.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/07/2003	14:00	CST	Flash Flood		0	0	1.000M	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	07/01/2003	10:00	CST	Flash Flood		0	0	17.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2004	02:02	CST	Flash Flood		0	0	5.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	09/16/2004	09:00	CST	Flash Flood		0	0	50.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	11/24/2004	05:45	CST	Flash Flood		1	0	400.00K	0.00K
MOODY	ST. CLAIR CO.	AL	07/14/2005	16:05	CST	Flash Flood		0	0	2.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	07/19/2005	17:00	CST	Flash Flood		0	0	4.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2006	16:30	CST	Flash Flood		0	0	3.00K	0.00K
WHITNEY	ST. CLAIR CO.	AL	01/06/2009	12:01	CST-6	Flash Flood		0	0	10.00K	0.00K
MARGARET	ST. CLAIR CO.	AL	09/17/2009	19:17	CST-6	Flash Flood		0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	09/17/2009	19:20	CST-6	Flash Flood		0	0	5.00K	0.00K
MARGARET	ST. CLAIR CO.	AL	09/17/2009	20:20	CST-6	Flash Flood		0	0	50.00K	0.00K
WATTSVILLE	ST. CLAIR CO.	AL	07/21/2011	06:00	CST-6	Flash Flood		0	0	0.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	03/23/2012	11:15	CST-6	Flash Flood		0	0	0.00K	0.00K

SEDDON	ST. CLAIR CO.	AL	05/18/2013	03:00	CST-6	Flash Flood		0	0	0.00K	0.00K
Totals:								1	0	2.021M	0.00K

Table 4-9: Drought/Extreme Heat Events

20 Drought/Extreme Heat Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 4-10: Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events

9 Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/09/2011	15:50	CST-6	Winter Storm		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/25/2010	07:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/17/2013	12:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/12/2010	13:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2010	08:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/26/2010	03:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 4-11: Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events

10 Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events –
01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	42.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/29/2005	19:00	CST	Tropical Storm		0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/16/2004	10:45	CST	High Wind	52 kts. EG	0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/05/2011	18:20	CST-6	High Wind	52 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/09/2006	18:00	CST	Strong Wind	40 kts. EG	0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2007	22:40	CST-6	Strong Wind	35 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/20/2007	17:30	CST-6	Strong Wind	30 kts. EG	0	0	10.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/11/2009	11:50	CST-6	Strong Wind	43 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	268.00K	0.00K

Table 4-12: Sinkhole Events

0 Sinkhole Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No sinkhole events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 4-13: Landslide Events

0 Landslide Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No landslide events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 4-14: Earthquake Events

1 Earthquake Event – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: Homefacts.com)

Location	County/Zone	St.	Date	Time	I.Z.	Type	Mag	Dth	Inj	PrD	CrD
Ragland	St. Clair County	AL	3/17/2009	11:27 p.m.		Earthquake	2.5	0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

No earthquake events occurred or were reported to NOAA NCDC or U. S./AL Geological Survey during 01/01/2003 thru 12/31/2013.

Table 4-15: Wildfire Events

93 Wildfire Events – 2010 thru 2013

(Source: Alabama Forestry Commission)

County	Total # of Fires 2010-2013	Average # of Fires Per Year	Total Acres Burned 2010-2013	Average Acres Burned Per Year	Average Fire Size in Acres
St. Clair	93	31	1,785.45	594.89	19.19

Table 4-16: Dam/Levee Failure Events

1 Dam/Levee Failure Event – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/Local Input)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Countywide (Dam failed near the Friendship Community)	St. Clair County	AL	11/24/2004	5:45 p.m.		Dam Failure		1	0	0.00K	0.00K
Totals:								1	0	0.00K	0.00K

Hazard Profiles

This section provides: a general description of each hazard; background information about previous occurrences; nature of the hazard to include the extent (or severity) of each hazard; and, the probability and loss estimates of future occurrences of each hazard. The primary effects and hazardous results are considered for all identified hazards. Each hazard was further reviewed to identify the impacts on the county and its jurisdictions. Impact in terms of dollar value for past hazard occurrences are shown for the county in **Table 4-4 through Table 4-16** and for each jurisdiction in their individual Hazard Event table in **Section 6** of this plan. Events occurring within this plan's study period were discussed to demonstrate the severity of the hazard to St. Clair County.

I. Thunderstorms

A thunderstorm is a convective cloud that often produces heavy rain, wind gusts, thunder, lightning, and hail. St. Clair County experiences many thunderstorms each year. The county is most susceptible to thunderstorms during the spring, summer, and late fall. Most of the damage caused by thunderstorms results from straight-line winds, lightning, flash flooding, and hail. Occasionally, thunderstorms will spawn tornados. **Table 4-4** shows the historical occurrences of thunderstorms during the study period. Damage from thunderstorms can have a wide range of severity. Each jurisdiction is at risk for thunderstorm events.

On February 26, 2008 an advancing cold front moving through the state caused widespread wind damage and a few tornadoes across Central Alabama, especially in the eastern half of the state. Wind gusts estimated up to 105 mph blew down and snapped numerous trees and power lines across the southern portion of Saint Clair County, from Camp Winnataska eastward to the county line near Pell City. Five homes sustained roof and structural damage from downed trees in Margaret; 2 homes were damaged in Chula Vista; and at least a dozen homes were damaged in the Hunting Ridge area of Pell City. Fifty to 100 trees were blown down or snapped off near the Wolf Creek Fire Department. Property damages of \$500,000 resulted.

On April 27, 2011 a powerful storm system crossed the Southeast United States, resulting in a large and deadly tornado outbreak. This epic event broke the record for number of tornadoes in

a day for the State of Alabama, becoming the most significant tornado outbreak in the state's history. Central Alabama had two rounds of severe weather that day. During the early morning hours, a Quasi-Linear Convective System quickly moved across the northern half of the National Weather Service, Birmingham- Jefferson County warning area. Straight line winds of 90 mph (78kts) or greater and 11 tornadoes led to widespread damage and power outages. During the afternoon, long-lived supercell thunderstorms produced long-track, strong and violent tornadoes. Destruction and loss of life across many towns and communities was devastating. The same parent supercell produced another violent tornado in East Central Alabama as it tracked across St. Clair and Calhoun Counties, resulting in additional fatalities and incredible damage to a number of neighborhoods. Most of the violent tornadoes from this day were captured on video by a number of people, including storm spotters and chasers, as well as numerous television news crews and remotely controlled web-enabled video cameras. This allowed unprecedented coverage and viewing of this historic event in real time from people worldwide. Storm damage to the east of Moody was found to be consistent with straight-line winds, with peak wind gusts estimated between 80 and 100 mph. A broad swath of enhanced damage was found in a largely wooded area a couple miles northeast of the Brompton Community. In this area, numerous trees were snapped off and uprooted. One tree fell onto a mobile home, fatally injuring one of its occupants. Several other buildings received varying degrees of damage, both directly from the wind and as a result of trees being blown on top of them. One death occurred as a result of this event.

Also on April 27, 2011 and as a part of the storm system described in the previous paragraph, storm damage in and around Pell City and Riverside was found to be consistent with straight-line winds, with peak wind gusts estimated between 80 and 100 mph. There was a diffuse and intermittent, yet discernible, swath of wind damage that extended from just west of the St. Clair County Courthouse, northeastward across Pell City, Industrial Park Drive, Interstate 20, and through Riverside. Additional isolated wind damage was noted to the south and east of this main damage swath. The most significant damage across the area was several large trees that were uprooted, causing damage to homes and structures. One fatality was caused when a large oak tree was uprooted and fell on a manufactured home. Two metal buildings received direct damage from the winds; the damage on both of these buildings was associated with the failure of large doors. Dozens of homes

in the area received minor roof damage as well.

St. Clair County experienced 98 thunderstorm events in a 10 year period resulting in a greater than 100% probability that a thunderstorm event will occur on an annual basis. The total amount of damages for the 98 thunderstorm events was \$889,500 with 72 thunderstorm events causing damage resulting in an estimated \$12,354 of expected annual damages from future events. The referenced thunderstorm event(s) are the ones that resulted in the most damages, deaths, and injuries during the past ten year period and serves as the extent/range of magnitude or severity that could be experienced by St. Clair County due to a thunderstorm event; the ranking is minor to major.

Primary effects from thunderstorms in St. Clair County would include:

1. Straight-line Winds
2. Lightning
3. Flooding
4. Hail
5. Spawning Tornadoes

Hazardous results from significant thunderstorms in St. Clair County would include:

1. High winds can cause downed trees and electrical lines resulting in loss of power.
2. Severe storms are capable of producing intense lightning that poses many threats to people and infrastructure and can ignite fires.
3. Heavy rains can produce severe storm water run-off in developed areas and cause bodies of water to breach their banks.
4. Large hail can injure people and livestock and damage crops.
5. Severe thunderstorms can produce tornadoes that destroy anything in its path, resulting in loss of power, shelter, and potential loss of life.

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II. *Lightning*

Lightning is a natural phenomenon associated with all thunderstorms but can occur in the absence of a storm. Lightning typically occurs as a by-product of a thunderstorm and can cause substantial property damage and loss of human lives. Each jurisdiction is at risk for lightning events. Lightning strikes can cause power outages, fires, electrocution, and disruptions to communication systems. The NOAA NCDC reported one lightning event for St. Clair County during the ten-year study period of 2003-2013, resulting in \$2,000 of property damages. **Table 4-5** shows the historical occurrences of lightning during the study period. The State of Alabama has experienced 11-20 deaths as a result of lightning strikes during 2003 – 2013.

The action of rising and descending air in a thunderstorm separates positive and negative charges, with lightning the result of the buildup and discharge of energy between positive and negative charge areas.

Water and ice particles may also affect the distribution of the electrical charge. In only a few millionths of a second, the air near a lightning strike is heated to 50,000°F, a temperature hotter than the surface of the sun. Thunder is the result of the very rapid heating and cooling of air near the lightning that causes a shock wave.



Figure 4-1: Formation of Lightning

Source: University Corporation for Atmospheric Research (UCAR)

The hazard posed by lightning is significantly underrated. High winds, rainfall, and a darkening cloud cover are the warning signs for possible cloud-to-ground lightning strikes. While many lightning casualties happen at the beginning of an approaching storm, more than half of lightning deaths occur after a thunderstorm has passed. The lightning threat diminishes after the last sound of thunder, but may persist for more than 30 minutes. When thunderstorms are in the area, but not overhead, the lightning threat can exist when skies are clear. Lightning has been known to strike more than 10 miles from the storm in an area with clear sky above.

According to the National Oceanic and Atmospheric Administration (NOAA), an average of 20 million cloud-to-ground flashes has been detected every year in the continental United States. About half of all flashes have more than one ground strike point, so at least 30 million points on the ground is struck on the average each year. In addition, there are roughly 5 to 10 times as many cloud-to-cloud flashes as there are to cloud-to-ground flashes (NOAA, July 7, 2003).

Cloud-to-ground lightning can kill or injure people by either direct or indirect means. The lightning current can branch off to strike a person from a tree, fence, pole, or other tall object. It is not known if all people are killed who are directly struck by the flash itself. In addition, electrical current may be conducted through the ground to a person after lightning strikes a nearby tree, antenna, or other tall object. The current also may travel through power lines, telephone lines, or plumbing pipes to a person who is in contact with an electric appliance, telephone, or plumbing fixture. Lightning may use similar processes to damage property or cause fires.

The probability of a lightning strike causing damage somewhere in St. Clair County is high. However, because the impacts are so localized, the site-specific incidence of a lightning strike occurring is considered very low.

A lightning event on June 19, 2010 resulted in \$2,000 property damages near Springville. No deaths or injuries were reported for this lightning event. A warm and unstable air mass, and a weak upper level disturbance, led to the formation of numerous showers and thunderstorms. Many storms produced damaging winds, damaging lightning strikes, and locally heavy rain. Lightning struck a tree, which fell onto a power line, on Quail Ridge Road.

St. Clair County experienced 1 lightning event in a 10 year period resulting in 1% probability that a lightning event will occur on an annual basis. The total amount of damages for the 1 lightning

event was \$2,000 with 1 lightning event causing damage resulting in an estimated \$2,000 of expected annual damages from future events. The referenced lightning event is the one that resulted in the most damages, deaths, and injuries during the past ten year period and serves as the extent/range of magnitude or severity that could be experienced by St. Clair County due to a lightning event; the ranking is minimum to minor. St. Clair County is at a moderate risk of lightning incidences.

Primary effects from lightning in St. Clair County would include:

1. Power Outages
2. Wild Fires
3. Electrocution
4. Disruption of Communication Waves

Hazardous results from significant lightning in St. Clair County would include:

1. Power outages result in tremendous losses for food distributors and individuals due to loss of refrigeration as well as disruptions to routine business operations.
2. Fires destroy most everything it comes in contact with and also can be detrimental to the health of any living organism due to the massive smoke cloud it produces.
3. Electrocution of electronic device such as water and sewer pumps can cause disruption in service leading to unsanitary conditions and lack of potable water.
4. Disrupted communications from electrical storms can result in inability to communicate with other agencies, making preparation or recovery from a storm nearly impossible.

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III. Hail

St. Clair County is at a severe risk of experiencing hail which has ranged from dime/penny size to tennis ball size in some areas of the county. Hail is an outgrowth of severe thunderstorms and develops within a low-pressure front as warm air rises rapidly in to the upper atmosphere and is subsequently cooled, as shown in **Figure 4-2**, leading to the formation of ice crystals. These are bounced about by high-velocity updraft winds and accumulate into frozen droplets, falling as precipitation after developing enough weight (FEMA, 1997).

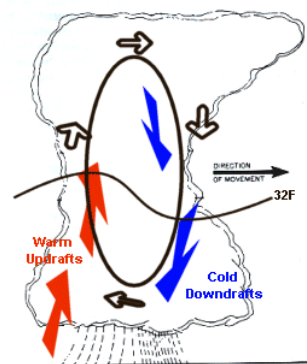


Figure 4-2
How Hail Is Formed
Source: NWS, January 10, 2003

The National Weather Service (NWS) defines severe thunderstorms as those with downdraft winds in excess of 58 miles an hour and/or hail at least 3/4 inches in diameter. While only about 10 percent of thunderstorms are classified as severe, all thunderstorms are dangerous because they produce numerous dangerous conditions, including one or more of the following: hail, strong winds, lightning, tornadoes, and flash flooding (National Weather Service – Flagstaff). The size of hailstones varies and is related to the severity and size of the thunderstorm that produced it. The higher the temperatures at the Earth's surface, the greater the strength of the updrafts, and the greater the amount of time the hailstones are suspended, giving the hailstones more time to increase

in size. Hailstones vary widely in size, as shown in **Table 4-17**. Note that penny size ($\frac{3}{4}$ inches in diameter) or larger hail is considered severe.

Table 4-17: Estimating Hail Size

Size	Inches in Diameter
Pea	$\frac{1}{4}$ inch
Marble/mothball	$\frac{1}{2}$ inch
Dime/Penny	$\frac{3}{4}$ inch
Nickel	$\frac{7}{8}$ inch
Quarter	1 inch
Ping-Pong Ball	1 $\frac{1}{2}$ inch
Golf Ball	1 $\frac{3}{4}$ inch
Tennis Ball	2 $\frac{1}{2}$ inch
Baseball	2 $\frac{3}{4}$ inch
Tea Cup	3 inches
Grapefruit	4 inches
Softball	4 $\frac{1}{2}$ inches
<i>Source: NWS, January 10, 2003</i>	

Hailstorms occur most frequently during the late spring and early summer, when the jet stream moves northward across the Great Plains. During this period, extreme temperature changes occur from the surface up to the jet stream, resulting in the strong updrafts required for hail formation. Hailstorms occur in some form or fashion on a very regular basis in St. Clair County. The annual probability of hail occurring somewhere in the county is clearly quite high; however, the site-specific incidence of hail is considered low because of the localized nature of the hazard.

During 2003-2013, approximately 57 events were reported having hail up to 1.75 inches (golf ball size) throughout the county. On May 2, 2003, pea to golf ball size hail was reported across the county that resulted in \$40,000 property damage. No deaths, injuries, or crop damages were reported due to hail storms. **Table 4-6** shows pertinent information relating to the 57 hail events in St. Clair County.

On April 22, 2005, quarter size hail was reported in and around Ashville. Property Damages

in the amount of \$1,000 resulted. Nickel size hail was reported in the Branchville Area. Property Damages in the amount of \$1,000 resulted.

St. Clair County experienced 57 hail events in a 10 year period resulting in a greater than 100% probability that a hail event will occur on an annual basis. The total amount of damages for the 57 hail events was \$42,000 with 2 hail events causing damage resulting in an estimated \$21,000 of expected annual damages from future events. The referenced hail event(s) are the ones that resulted in the most damages, deaths, and injuries during the past ten year period and serves as the extent/range of magnitude or severity that could be experienced by St. Clair County due to a hail event; the ranking is minor to major.

Primary Effects from Hail in St. Clair County would include:

1. Property Damage
2. Crop Damage
3. Communication equipment damage
4. Livestock loss and injury

Hazardous results from significant Hail in St. Clair County would include:

1. Any size hail can damage exposed real and personal property. Hail is a major problem for car dealerships, as the unprotected lots of cars receive major damage.
2. Heavy hail is capable of destroying entire crop yields. Farmers of above ground crops are especially concerned with hail as it is extremely detrimental to the crop.
3. Communication equipment, such as receivers, is susceptible to large hail. These instruments can be seriously damaged or destroyed by large hail.
4. Large hail is a danger to livestock of all sorts and is a threat farmers must consider. Hundreds of thousands of dollars are invested in these animals which may be injured or killed in a hailstorm.

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IV. Tornadoes

A tornado is a rapidly rotating funnel (or vortex) of air that extends toward the ground from a cumulonimbus cloud. Most tornadoes do not touch the ground, but when the lower tip of a tornado touches the earth, it can cause extensive damage. Tornadoes often form in convective cells such as thunderstorms or at the front of hurricanes. Tornadoes are rotating columns of air extending downward to the ground with recorded winds in excess of 300 miles per hour. Most tornadoes last less than 30 minutes, but can exist for more than an hour. In Alabama the typical tornado season extends from March through early June, with April and June being peak months for tornado activity. Additionally, Alabama experiences a secondary tornado season from November through December. **Figure 4-3** shows the general paths of tornados across the United States.

Figure 4-4 shows the FEMA designated wind zones in the United States. St. Clair County is located in Zone IV. Zone IV has witnessed a higher frequency of tornados than any other zone. Zone IV has also witnessed some of the deadliest tornados in history. The impacts of tornados can be far-reaching. Life, property, and personal items are at risk. Tornadoes do not follow a definite path; all jurisdictions are vulnerable to tornado events. Property damage, injury, and death can result from the weakest tornados. Interruption of electrical services, communications, and other utilities may occur. Transportation corridors may be blocked or even destroyed. Debris removal can take time and can be costly. Residents may suffer from post-traumatic stress disorder, depression, anxiety, and grief for lost loved ones. Longer response times results from having limited emergency personnel.

A total of 12 tornados occurred in St. Clair County according to NOAA NCDC during 2003 - 2013. An estimated \$201,562,000 in property damage, 13 deaths, and 35 injuries occurred as a result of the reported tornados. **Table 4-18** lists the figures used by FEMA for the valuation of deaths and injuries. These figures are approximations and are based on FEMA guidance used in benefit-cost analysis of hazard mitigation measures.

Table 4-18: Values Used for Monetary Conversion of Tornado Injuries and Deaths

Damage Category	Value for Monetary Conversion
Injury (blended major and minor)	\$23,175
Death	\$3,666,003

(Source: FEMA Guidance)

Areas with higher population densities pose the greatest potential for property damage, injury, and death. Moody and Pell City are the most densely populated areas in the county. Communities with a high concentration of mobile homes are extremely vulnerable to tornados. Mobile homes are not capable of withstanding the strong winds associated with tornados. St. Clair County has a total of 9,541 mobile homes countywide, 27% of the total housing stock. The greatest concentration of mobile homes in a municipality is in Ashville where 41.59% of the units are mobile homes. Eight deaths occurred from those living in mobile homes on April 27, 2011.

The most significant event during the study period occurred in the area of Sanie on April 27, 2011 with an EF4 tornado, 28.85 miles in length and 1,760 yards wide. A powerful storm system crossed the Southeast United States on Wednesday, resulting in a large and deadly tornado outbreak. This epic event broke the record for number of tornadoes in a day for the State of Alabama, becoming the most significant tornado outbreak in the state's history. The tornado crossed into St. Clair County near Argo where it caused mostly tree damage consistent with an EF1 rating as it tracked north of Margaret. The tornado began to strengthen as it neared US Hwy 411 where it caused minor roof damage to one home. The tornado crossed US Hwy 411 north of Odenville, taking a turn to the northeast, and then moved parallel to Shoal Creek. The tornado strengthened rapidly to an EF4 with winds of 170 mph, and caused extensive damage along Shoal Creek Rd, east of CR 26. At least 6 homes were destroyed, with only small interior rooms remaining. At least one home was swept clean from the foundation. Many mobile homes were also destroyed. In addition, tree damage was extensive in this area, with every tree left mangled. At least 14 fatalities occurred along Shoal Creek Rd. The path width increased to around 1 mile as the tornado approached Neely Henry Lake and the Calhoun County line. The tornado maintained a path

along Shoal Creek Rd until it crossed the lake. Most of the violent tornadoes from this day were captured on video by a number of people, including storm spotters and chasers, as well as numerous television news crews and remotely controlled web-enabled video cameras. This allowed unprecedented coverage and viewing of this historic event in real time from people worldwide.

(Source: NCDC NOAA)

The entire county is vulnerable to high winds caused by tornadoes. The location of St. Clair County in Wind Zone IV, past occurrences of tornados, and the potential for future occurrences to cause damage, death, and injuries leaves St. Clair County vulnerable to and at risk for tornados.

St. Clair County experienced 12 tornado events in a 10 year period resulting in a greater than 100% probability that a tornado event will occur on an annual basis. The total amount of damages for the 12 tornado events was \$201,562,000 with 11 tornado events causing damage resulting in an estimated \$18,323,818 of expected annual damages from future events. The referenced tornado event(s) are the ones that resulted in the most damages, deaths, and injuries during the past ten year period and serves as the extent/range of magnitude or severity that could be experienced by St. Clair County due to a tornado event; the ranking is minor to major.

Primary effects from Tornados in St. Clair County would include:

1. Loss of life
2. Property damage
3. Infrastructure destruction and damage
4. Sanitation and water delivery interruption

Hazardous results from significant Tornados in St. Clair County would include:

1. Collapse of structures can leave people homeless.
2. Roadways may become blocked by debris. Damage may destroy automobiles, creating additional hardships to individuals and families and business operations.
3. High wind speeds associated with a tornado can destroy anything in its path. Power poles topple, communication receivers are destroyed, and water sanitation and treatment plants are offline.
4. Due to destruction, sanitation crews are unable to remove massive amounts of

waste, and water delivery is disrupted. This can lead to an increase in disease-carrying insects and lack of potable water.

Figure 4-3: Generalized Tornado Paths

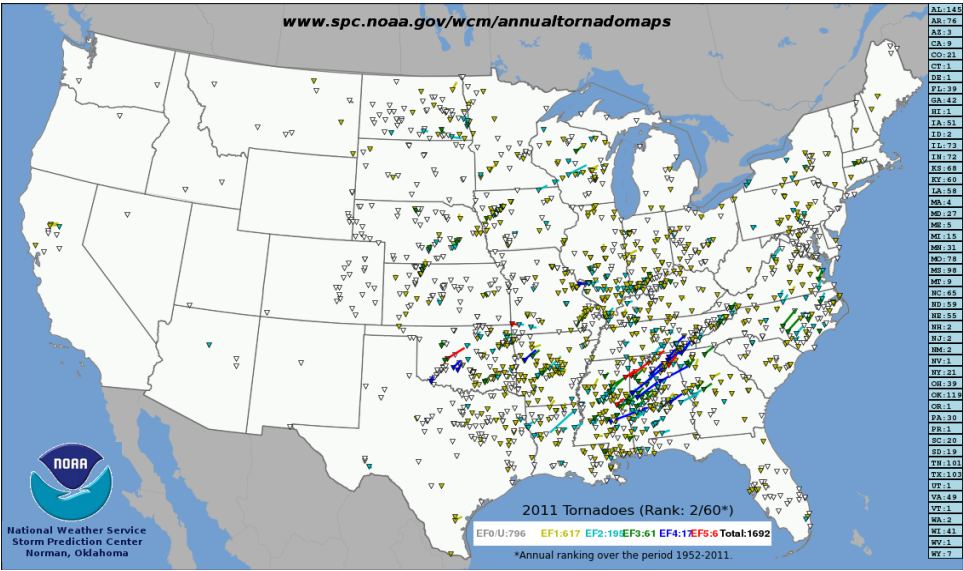
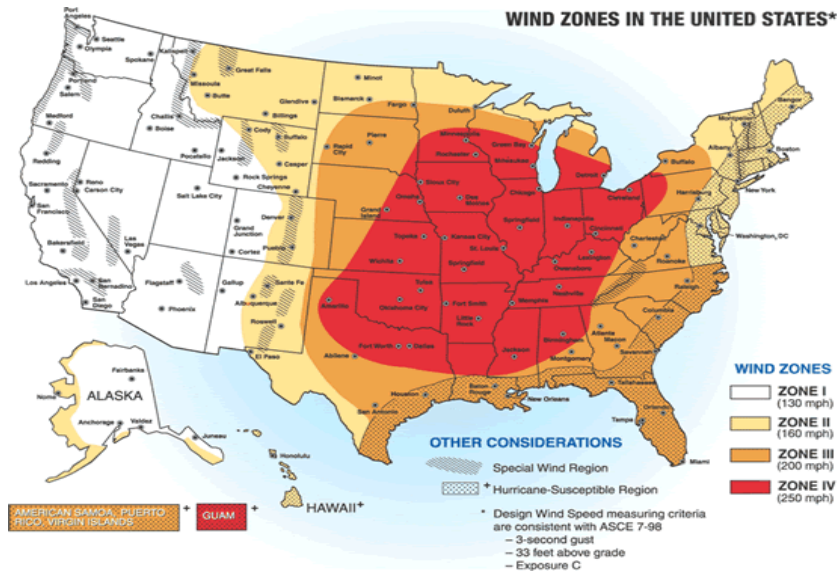


Figure 4-4: Wind Zones in the United States



Source: www.fema.gov

Figure 4-4 shows the different wind zones throughout the State of Alabama used by the American Society of Civil Engineers (ASCE) for determining design wind speeds. Design wind speeds are used by engineers to determine what type of winds (i.e. how strong) a building should be designed to withstand. According to **Figure 4-4**, the U. S. Wind Zone map, St. Clair County is located in Zone IV. This map shows the frequency and strength of extreme windstorms across the U. S. The map is based on 40 years of tornado history and more than 100 years of hurricane history. Zone IV has experienced both frequent and strong tornadoes, with wind speeds reaching 250 mph.

Tornadoes are now measured using the new Enhanced Fujita Tornado Scale by examining the damage caused by the tornado after it passes over man-made structures and vegetation. The new scale was put into use in February of 2007. Due to the study period of the plan, this goes from 2003-2013, events shown in **Table 4-7** express the magnitude of tornadoes using the original Fujita

scale and the enhanced Fujita scale. Below is a table comparing the estimated winds in the original F-scale and the operational EF-scale that is currently in use by the National Weather Service, as well as damage descriptions of each category. Like the original Fujita scale, there are six categories from zero to five that represent damage in increasing degrees. The new scale incorporates the use of 28 Damage Indicators and 8 Degrees of Damage to assign a rating. The new scale takes into account quality of construction and standardizes different kinds of structures. The only differences between the Fujita Scale and the Enhanced Fujita Scale is adjusted wind speeds, measurements of which weren't used in previous ratings, and refined damage descriptors; to standardize ratings and to make it easier to rate tornadoes which strike few structures.

Table 4-19: Fujita Tornado Scales**Fujita Tornado Scale**

Category	Wind Speed	Description of Damage
F0	40-72 mph	Light damage. Some damage to chimneys; break branches off trees; push over shallow-rooted trees; damage to sign boards.
F1	73-112 mph	Moderate damage. The lower limit is the beginning of hurricane speed. Roof surfaces peeled off; mobile homes pushed off foundations or overturned; moving autos pushed off roads.
F2	113-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.
F3	158-206 mph	Severe damage. Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; cars lifted off ground and thrown.
F4	207-260 mph	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	261-318 mph	Incredible damage. Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100-yards; trees debarked.

Source: FEMA, 1997.

Enhanced Fujita Tornado Scale

Category	Wind Speed	Description of Damage
EF0	65-85 mph	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF1	86-110 mph	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111-135 mph	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	136-165 mph	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	166-200 mph	Devastating damage. Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF5	>200 mph	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (109 yd); high-rise buildings have significant structural deformation; incredible phenomena will occur. So far only one EF5 tornado has been recorded since the Enhanced Fujita Scale was introduced on February 1, 2007.

Source: NOAA, NWS, Storm Prediction Center, 2007

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V. Floods/Flash Floods

Flooding is the accumulation of water within a water body (e.g., stream, river, lake, or reservoir) and the overflow of excess water onto adjacent floodplains. Floodplains are usually lowlands adjacent to water bodies that are subject to recurring floods.

Floods are natural events that are considered hazards only when people and property are affected. Nationwide, hundreds of floods occur each year, making them one of the most common hazards in the U.S. (FEMA, 1997). There are a number of categories of floods in the U.S., including the following:

- Riverine flooding, including overflow from a river channel, flash floods, alluvial fan floods, ice-jam floods and dam break floods
- Local drainage or high groundwater levels
- Fluctuating lake levels
- Coastal flooding, including storm surges
- Debris flows
- Subsidence

While there is no sharp distinction between riverine floods, flash floods, alluvial fan floods, ice jam floods, and dam-break floods, these types of floods are widely recognized and may be helpful in considering the range of flood risk and appropriate responses.

The most common kind of flooding event is riverine flooding, also known as overbank flooding. Riverine floodplains range from narrow, confined channels in the steep valleys of mountainous and hilly regions, to wide, flat areas in plains and coastal regions. The amount of water in the floodplain is a function of the size and topography of the contributing watershed, the regional and local climate, and land use characteristics. In steep valleys, flooding is usually rapid and deep, but of short duration, while flooding in flat areas is typically slow, relatively shallow, and may last for long periods of time.

Flash floods involve a rapid rise in water level, high velocity, and large amounts of debris, which can lead to significant damage that includes the tearing out of trees, undermining of buildings and bridges, and scouring new channels. The intensity of flash flooding is a function of

the intensity and duration of rainfall, steepness of the watershed, stream gradients, watershed vegetation, natural and artificial flood storage areas, and configuration of the streambed and floodplain. Dam failure and ice jams may also lead to flash flooding.

Alluvial fan floods occur in the deposits of rock and soil that have eroded from mountainsides and accumulated on valley floors in the pattern of a fan. Alluvial fan floods often cause greater damage than overbank flooding due to the high velocity of the flow, amount of debris, and broad area affected. Human activities may exacerbate flooding and erosion on alluvial fans via increased velocity along roadway acting as temporary drainage channels or changes to natural drainage channels from fill, grading, and structures.

Ice jam floods are primarily a function of the weather and are most likely to occur where the channel slope naturally decreases, culverts freeze solid, reservoir headwaters, natural channel constructions (e.g., bends and bridges), and along shallows.

Dam-break floods may occur due to structural failures (e.g., progressive erosion), overtopping or breach from flooding, or earthquakes.

Local drainage floods may occur outside of recognized drainage channels or delineated floodplains for a variety of reasons, including concentrated local precipitation, a lack of infiltration, inadequate facilities for drainage and storm water conveyance, and/or increased surface runoff. Such events often occur in flat areas, particularly during winter and spring in areas with frozen ground, and also in urbanized areas with large impermeable surfaces. High groundwater flooding is a seasonal occurrence in some areas, but may occur in other areas after prolonged periods of above-average precipitation.

Flooding/flash flooding caused by rainfall occurs to some extent almost every year in almost every part of St. Clair County. Flooding occurs most frequently between November and April, with a peak from February through April. Flash flooding has the potential to affect every jurisdiction in St. Clair County. Riverine flooding can potentially create minor to moderate property damage and a slight risk of casualties throughout areas of the county adjacent to rivers and creeks. Flash flooding can potentially create extensive property damage and casualties to the entire county. Riverine and flash flooding can also affect accessibility for emergency services. **Table 4-20** shows the flood risk in dollar amount to critical facilities in St. Clair County based on FEMA

HAZUS-MH 2011.

**Table 4-20: Flood Risk to St. Clair County Critical Facilities
based on FEMA HAZUS Data**

County	Police	Schools	Fire	EOCs	Total
St. Clair	\$12,600,000	\$62,859,000	\$5,911,746	\$2,500,000	\$83,870,746

(Source: HAZUS MH 2.1)

Dam and levee failures are flood risks. According to HAZUS-MH 2011, St. Clair County has 44 High Density Polyethylene (HPDE - Earth) Dams, 2 HPDG (Gravity) Dams, 1 HPDZ (Miscellaneous) Dam, 1 HPDA (Arch) Dam, 1 HPDB (Buttress) Dam, and 1 HPDR (Rock Fill) Dam. There are 31 Low Risk Dams, 17 Significant Risk Dams, and 2 High Risk Dams. In the event of a flood or significant earthquake in St. Clair County, the possibility for an emergency situation could exist at the two high hazard dams. A Neely Henry Dam failure on the Coosa River would result in devastation in some areas. The St. Clair County EMA is prepared to coordinate efforts if an event arises at these dams. No historical records are available of dam/levee failures in St. Clair County. When a dam fails, a large quantity of water is suddenly released downstream, destroying anything in its path. The area impacted by the water emitted by dam failure would encounter the same risks as those in a flood zone during periods of flooding. The area directly affected by the water released during a dam failure is not county wide.

The two major dams in the county, H. Neely Henry and Logan Martin help form their respective lakes and also are used to produce power for Alabama Power. In the event of failure, not only will flooding occur downstream, but power from that particular dam would no longer be available, possibly leading to a strain on the power supply throughout the region. Also, State Highway 144 crosses H. Neely Henry Dam and County Road 54 crosses Logan Martin Dam. If dam failure occurs, these roadways would no longer be passable and major disruptions in transportation would occur.

Flooding can occur along the banks of the creeks and streams that flow throughout the county and where development has encroached in the floodplain. Flash flooding can occur

anywhere in the county due to inadequate or clogged drainage systems and excessive rainfall. Unpaved dirt roads, common in the rural areas, are particularly vulnerable. Impacts in developed areas include street flooding and water backing up into homes and buildings. In addition to damaging homes, flooding can adversely impact crops, water and sewer systems, and dams and levees. All jurisdictions are vulnerable to flood events.

On May 7-8, 2003, numerous roads were flooded and temporarily closed due to high water. Especially hard hit was Pell City where the City Hall was flooded and power was out for over 24 hours. Several homes were destroyed by the flooding. Numerous swift water rescues were performed in the Cook Springs and Prescott areas. Several stores were flooded in Moody along Moody Parkway. Many municipal buildings in Moody were also flooded. Several businesses were flooded in Springville and Odenville. Several cattle were killed by a lightning strike during the storms. Also, at least 7,000 customers were without power for several hours as the storms repeatedly moved through the area. One million dollars of property damages was reported.

On November 24, 2004, several roads were reported covered with water and were temporarily impassable. Several area streams and creeks rose above bankfull. Doppler radar estimated widespread rain amounts of 4 to 5 inches with a few spots approaching 12 inches. A potential dam break situation developed in the afternoon. The dam eventually failed near the Friendship Community resulting in significant damage. Runoff from these storms lasted for several hours after the heaviest rains ended. A 73 year old man died when his car was swept away in the high water near Pinedale Road. Property damages in the amount of \$400,000 and one death resulted. (*Source: NOAA NCDC*)

The probability of future occurrences of dam/levee failure events cannot be characterized on a countywide basis because of the lack of information available. The qualitative probability is rated low because the overall area affected is low and impacts are localized. This rating is intended only for general comparison to other hazards that are being considered.

Local drainage floods may occur outside of recognized drainage channels or delineated flood plains for a variety of reasons, including concentrated local precipitation, a lack of infiltration, inadequate facilities for drainage and storm water conveyance, and/or increased surface runoff. Such events often occur in flat areas, particularly during winter and spring in areas with

frozen ground, and also in urbanized areas with large impermeable surfaces. High groundwater flooding is a seasonal occurrence in some areas, but may occur in other areas after prolonged periods of above-average precipitation.

Floods are described in terms of their extent (including the horizontal area affected and the vertical depth of floodwaters) and the related probability of occurrence. Flood studies use historical records to determine the probability of occurrence for different extents of flooding. The probability of occurrence is expressed in percentages as the chance of a flood of a specific extent occurring in any given year. It is also often referred to as the “100-year flood” since its probability of occurrence suggests it should only occur once every 100 years. This expression is, however, merely a simple and general way to express the statistical likelihood of a flood; actual recurrence periods are variable from place to place. Smaller floods occur more often than larger (deeper and more widespread) floods. Thus, a “10-year” flood has a greater likelihood of occurring than a “100-year” flood. **Table 4-21** shows a range of flood recurrence intervals and their probabilities of occurrence.

Table 4-21: Flood Probability Terms	
Flood Recurrence Intervals	Percent Chance of Annual Occurrence
10-Year	10.0%
50-Year	2.0%
100-Year	1.0%
500-Year	0.2%
<i>(Source: FEMA, August 2001)</i>	

St. Clair County experienced 18 flood/flash flood events in a 10 year period resulting in a greater than 100% probability that a flood/flash flood event will occur on an annual basis. The total amount of damages for the 18 flood/flash flood events was \$1,571,000 with 12 flood/flash flood events causing damage resulting in an estimated \$130,917 of expected annual damages from future events. The referenced flood event(s) are the ones that resulted in the most damages, deaths, and

injuries during the past ten year period and serves as the extent/range of magnitude or severity that could be experienced by St. Clair County due to a flood event; the ranking is minor to major.

Primary Effects from Floods in St. Clair County would include:

1. Loss of life
2. Property damage
3. Crop damage
4. Dam and levee failure

Hazardous results from significant flood in St. Clair County would include:

1. Rising water levels can quickly sweep people along in its path.
2. Rapidly moving water destroys anything in its path and also leaves hazardous mold and breed insects.
3. Periods of standing water kill inadaptible plants, and flowing water removes sediment and nutrients from the soil.
4. Breached dams and levees allow water to flood into the surrounding floodplain resulting in destruction of crops and property.

Dam failures may result from one or more the following:

1. Prolonged periods of rainfall and flooding (the cause of most failures)
2. Inadequate spillway capacity which causes excess overtopping flows
3. Internal erosion erosions due to embankment or foundation leakage or piping
4. Improper maintenance
5. Improper design
6. Negligent operation
7. Failure of upstream dams
8. Landslides into reservoirs
9. High winds
10. Earthquakes

Flood Assessment Tools

Programs

St. Clair County participates in the *National Flood Insurance Program (NFIP)*. The *NFIP* allows property owners to purchase federally sponsored flood insurance. The *NFIP* maps communities in order to establish Flood Risk Zones or Special Flood Hazards Areas. These hazard areas are then mapped on the *Flood Insurance Rate Maps (FIRMS)*. *FIRMS* are used to assess the risks of floods and aid in proper floodplain management. An update of the flood maps of St. Clair County was completed in 2012. Currently, the county and all jurisdictions are considered participants in the NFIP. Elevations for Springville and Steele have not been determined; therefore, all areas are Zone A, C, and X. The National Flood Insurance Program (NFIP) requires local participation. **Table 4-22** shows the current NFIP status of each jurisdiction. There are four homes on Dana Road in the City of Moody that have suffered repetitive losses due to flooding in the crawl space.

Flood Mitigation Assistance Program (FMA) - This program now allows for additional cost share flexibility: up to 100% federal cost share for severe repetitive loss properties; up to 90% federal costs share for repetitive loss properties; and 75% federal cost share for NFIP insured properties. The Repetitive Flood Claims (RFC) and Severe Repetitive Loss (SRL) Grant Programs were eliminated by the Biggert-Waters Flood Insurance Reform Act of 2012. Elements of these flood grant programs have been incorporated into FMA.

Regulations

The *National Pollutant Discharge Elimination System (NPDES)* requires cities to obtain a NPDES permit for the discharge of wastewater/storm water. This program will address residential and commercial land uses, illicit discharges and improper disposal, industrial facilities, and construction sites.

Additionally, St. Clair County and each jurisdiction have various plans and regulatory tools in place to aid in hazard mitigation as shown earlier in the plan in **Table 2-1**.

Table 4-22: St. Clair County National Flood Insurance Program Status by Jurisdiction						
CID	Community Name	Initial FHB Identified	Initial FIRM Identified	Current Eff. Map Date	Reg-Emer Date	Tribal
010290#	St. Clair County	03/31/78	09/29/89	06/19/12	09/29/89	No
010450#	Argo		09/29/06	06/19/12	04/02/13	No
010186#	Ashville	06/21/74	04/17/87	06/19/12	04/17/87	No
010393#	Margaret	10/06/78	06/19/12	06/19/12	06/19/12	No
010187#	Moody	05/31/74	07/04/89	06/19/12	07/04/89	No
010188#	Odenville	05/24/74	08/05/86	06/19/12	08/05/86	No
010189#	Pell City	06/21/74	07/04/89	06/19/12	07/04/89	No
010190#	Ragland	05/24/74	06/03/86	06/19/12	06/03/86	No
010288#	Riverside	04/04/75	08/19/86	06/19/12	08/19/86	No
010289#	Springville	12/27/74	08/19/86	06/19/12 (M)	08/19/86	No
010291#	Steele	02/07/75	09/18/85	06/19/12 (M)	09/18/85	No
<i>Source: FEMA Community Status Book Report as of February 6, 2014</i>						
<i>Key: M = No Elevation Determined – All Zone A, C, and X</i>						

VI. Drought/Extreme Heat

Droughts and heat waves have a county-wide impact. The future incidence of drought is highly unpredictable, conditions may be localized or widespread, and not much historical data is available making it difficult to determine the future probability of drought conditions with any accuracy. The qualitative probability rating for drought is high. Though historically not a major problem, the region is susceptible to extreme drought conditions.

The climate of St. Clair County is best described as being closer to a continental climate. Average temperature ranges from 90 degrees F to 70 degrees F during a summer day and 45 degrees F to 10 degrees F during a winter day to 65 degrees F to 50 degrees F during a summer night and 25 degrees F to -10 degrees F during a winter night. Generally, St. Clair County has hot summers and mild winters.

Drought is a normal part of virtually every climate on the planet, including areas of both high and low normal rainfalls. Drought is the result of a natural decline in the expected precipitation over an extended period of time, typically one or more seasons in length. The severity of drought can be aggravated by other climatic factors, such as prolonged high winds and low relative humidity (FEMA, 1997). Drought is a complex natural hazard which is reflected in the following four definitions commonly used to describe it:

Meteorological droughts are defined as the degree of dryness as compared to the normal precipitation for the area over the duration of the dry season. This type of drought is specific to a given region since atmospheric conditions and precipitation vary from one region to the next.

Hydrological droughts are associated with the effects of precipitation deficiencies on surface or groundwater supplies. Hydrological droughts do not occur as often as meteorological or agricultural droughts. It takes longer for precipitation deficiencies to show up in soil moisture, stream flow, groundwater levels, and reservoir levels. Hydrological droughts have an immediate impact on crop production, but reservoirs may not be affected for several months. Climate, changes in land use, land degradation, and the construction of dams can have adverse effects on the hydrological system especially in drought conditions.

Agricultural droughts occur when the moisture in the soil no longer meets the needs of the crops.

Socioeconomic droughts occur when physical water shortage begins to affect people and their quality of life. Socioeconomic drought occurs when the demand for water exceeds the supply as a result of weather-related supply shortfall. They may also be called a water management drought. A drought's severity depends on numerous factors, including duration, intensity, and geographic extent as well as regional water supply demands by humans and vegetation. Due to its multidimensional nature, drought is difficult to define in exact terms and also poses difficulties in terms of comprehensive risk assessments.

Drought differs from other natural hazards in three ways. First, the onset and end of a drought are difficult to determine due to the slow accumulation and lingering of effects of an event after its apparent end. Second, the lack of an exact and universally accepted definition adds to the confusion of its existence and severity. Third, in contrast with other natural hazards, the impact of drought is less obvious and may be spread over a larger geographic area. These characteristics have hindered the preparation of drought contingency or mitigation plans by many governments.

Droughts may cause a shortage of water for human and industrial consumption, hydroelectric power, recreation, and navigation. Water quality may also decline and the number and severity of wildfires may increase. Severe droughts may result in the loss of agricultural crops and forest products, undernourished wildlife and livestock, lower land values, and higher unemployment.

Extreme summer heat is the combination of very high temperatures and exceptionally humid conditions. If such conditions persist for an extended period of time, it is called a heat wave (FEMA, 1997). Heat stress can be indexed by combining the effects of temperature and humidity, as shown in **Table 4-24**. The index estimates the relationship between dry bulb temperatures (at different humidity) and the skin's resistance to heat and moisture transfer - the higher the temperature or humidity, the higher the apparent temperature. The human risks associated with extreme heat include heatstroke, heat exhaustion, heat syncope, heat cramps.

In addition to affecting people, severe heat places significant stress on plants and animals. The effects of severe heat on agricultural products, such as cotton, may include reduced yields

and even loss of crops (Brown and Zeiher, 1997). Similarly, cows may become overheated, leading to reduced milk production and other problems. (Garcia, September 2002).

Drought is a natural event that, unlike floods or tornadoes, does not occur in a violent burst but gradually happens; furthermore, the duration and extent of drought conditions are unknown because rainfall is unpredictable in amount, duration and location. Drought events can potentially affect the entire county.

The Draft Alabama Drought Management Plan (DMP), developed by the Alabama Department of Economic and Community Affairs – Office of Water Resources (ADECA-OWR), defines drought in terms of several indices that describe the relative amounts of surface water flow, groundwater levels, and recent precipitation as compared to localized norms. Because drought is defined in relative terms, it can be stated that all areas of the county are susceptible to drought.

The National Weather Service uses two indexes to categorize drought. The most accurate index of short-term drought is the Crop Moisture Index (CMI). This index is effective in determining short-term dryness or wetness affecting agriculture. The most accurate index of long-term drought is the Palmer Index (PI). It has become the semi-official index of drought.

From 2003 – 2013, St. Clair County experienced abnormally dry (D0) to exceptional (D4) drought conditions, as explained in **Table 4-23**. In January 2008, roughly three-quarters of Central Alabama was in Exceptional Drought (D4), with the remainder in Moderate (D1) to Extreme (D3) Drought. Agricultural impacts were relatively low due to being in between growing seasons. However, hydrologic and sociologic impacts continued to be felt. Most stream and river levels across Central Alabama continued to be much below normal, with flow levels generally 25 percent or less of normal. Reservoir levels showed limited improvement due to rainfall that occurred during the month. The threat of water shortages for municipal water systems persisted, and most water restriction plans already in place continued. (*Source: NOAA NCDC*)

Table 4-23: Drought Severity Classification

Ranges							
Category	Description	Possible Impacts	Palmer Drought Index	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Objective Short and Long-term Drought Indicator Blends (Percentiles)
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered	-1.0 to -1.9	21-30	21-30	-0.5 to -0.7	21-30
D1	Moderate Drought	Some damage to crops, pastures; streams, reservoirs, or wells low, some water shortages developing or imminent; voluntary water-use restrictions requested	-2.0 to -2.9	11-20	11-20	-0.8 to -1.2	11-20
D2	Severe Drought	Crop or pasture losses likely; water shortages common; water restrictions imposed	-3.0 to -3.9	6-10	6-10	-1.3 to -1.5	6-10
D3	Extreme Drought	Major crop/pasture losses; widespread water shortages or restrictions	-4.0 to -4.9	3-5	3-5	-1.6 to -1.9	3-5
D4	Exceptional Drought	Exceptional and widespread crop/pasture losses; shortages of water in reservoirs, streams, and wells creating water emergencies	-5.0 or less	0-2	0-2	-2.0 or less	0-2

St. Clair County experienced 20 drought/extreme heat events in a 10 year period resulting in a greater than 100% probability that a drought event will occur on an annual basis. The total amount of damages for the 20 drought/extreme heat events was \$0 with 0 drought events causing damage resulting in an estimated \$0 of expected annual damages from future events. The referenced drought/extreme heat event(s) are the ones that resulted in the most damages, deaths,

and injuries during the past ten year period and serves as the extent/range of magnitude or severity that could be experienced by St. Clair County due to a drought/extreme heat event; the ranking is minimum to minor.

Primary effects from Drought and Excessive Heat in St. Clair County would include:

1. Crop and other agricultural damage
2. Water supply shortage - water wells, creeks, rivers, and lakes dry up
3. Increase vulnerability to forest fires and sinkholes
4. Heat exhaustion; heat stroke; heat syncope; and heat cramps

Hazardous results from significant Drought and Excessive Heat in St. Clair County would include:

1. Agricultural damage from drought will result in economic losses of crops and livestock.
2. A water supply shortage will result in the necessity for water to be trucked into the area, damage to the sewer system and lack of hydroelectric power.
3. Forest fires can devastate vast acreages and burn homes and businesses.
4. Heat exhaustion can be debilitating and result in a hospital stay. Heat stroke can cause death.
5. Energy prices will inflate due to loss of hydro-power

Temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks are defined as extreme heat. Humid or muggy conditions occur when a “dome” of high atmospheric pressure traps hazy, damp air near the ground. The combination of high temperatures and humid conditions increase the level of discomfort and the potential for danger to humans. A sibling to the heat wave is the drought. Droughts occur when a long period passes without any substantial rainfall. A heat wave combined with a drought is a very dangerous situation.

The human risks associated with extreme heat include heatstroke, heat exhaustion, heat syncope, heat cramps. A description of each of these conditions follows:

- Heatstroke is considered a medical emergency and is often fatal. It exists when rectal temperature rises above 105°F as a result of environmental temperatures. Patients may

be delirious, stuporous, or comatose. The death to care ratio in reported cases averages about 15%.

- Heat Exhaustion is much less severe than heatstroke. The body temperature may be normal or slightly elevated. A person suffering from heat exhaustion may complain of dizziness, weakness or fatigue. The primary cause of heat exhaustion is fluid and electrolyte imbalance. The normalization of fluids will typically alleviate the situation.
- Heat Syncope is typically associated with exercise by people who are not acclimated to exercise. The symptom is a sudden loss of consciousness. Consciousness returns promptly when the person lies down. The cause is primarily associated with circulatory instability as a result of heat. The condition typically causes little or no harm to the individual.
- Heat Cramps are typically a problem for individuals who exercise outdoors but are unaccustomed to heat. Similar to heat exhaustion it is thought to be a result of a mild imbalance of fluids and electrolytes.

In 1979 R. G. Steadman, a meteorologist, developed the heat index, which is a relationship between dry bulb temperatures (at different humidity) and the skin's resistance to heat and moisture transfer. Utilizing Steadman's heat index, the following table was developed to show the risk associated with ranges in apparent temperature or heat index.

Table 4-24: Heat Index/Heat Disorders

Danger Category	Heat Disorder	Apparent Temperature (°F)
IV Extreme Danger	Heatstroke or sunstroke imminent.	>130
III Danger	Sunstroke, heat cramps, or heat exhaustion likely, heat stroke possible with prolonged exposure and physical activity.	105-130
II Extreme Caution	Sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and physical activity.	90-105
I Caution	Fatigue possible with prolonged exposure and physical activity.	80-90

(Source: National Weather Service, 1997)

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VII. Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold

St. Clair County is vulnerable to extreme winter weather conditions such as extreme cold temperatures, snow, and ice. **Table 4-10** shows the winter storm/frost freeze/heavy snow/ice storm/winter weather/extreme cold events that have affected St. Clair County from 2003 - 2013.

St. Clair County commonly has extreme cold and winter storm events. These events impact the county in a variety of ways. Ice and small amounts of snow can cripple the county. Drivers are not accustomed to driving in these conditions, therefore many accidents occur. Snow and ice can weigh down tree limbs and power lines causing them to break, resulting in power failure and property damage. Local businesses and residents are not equipped with generators to restore power during these severe winter weather events. Also many homes may not be properly insulated, leading to health concerns and deaths. Since these storms have no defined track, all residents of St. Clair County are vulnerable to severe winter storms.

The most common impacts of severe winter weather are power failure due to downed power lines and traffic hazards. Winter storm occurrences tend to be very disruptive to transportation and commerce as the county and its citizens are unaccustomed to them. Trees, cars, roads, and other surfaces develop a coating or glaze of ice, making even small accumulations of ice extremely hazardous to motorists and pedestrians. The most prevalent impacts of heavy accumulations of ice are slippery roads and walkways that lead to vehicle and pedestrian accidents; collapsed roofs from fallen trees and limbs and heavy ice and snow loads; and fallen trees, telephone poles and lines, electrical wires, and communication towers. As a result of severe ice storms, telecommunications and power can be disrupted for days. Also many homes and buildings, especially in rural areas, lack proper insulation or heating, leading to risk of hypothermia. Extremely cold temperatures accompanied by strong winds can result in wind chills that cause bodily injury such as frostbite and death.

On January 25, 2003, the coldest temperatures in 7 years occurred across much of North and Central Alabama and lasted for about two days. Early morning temperatures ranged from 2 to 10 degrees. The coldest temperatures were measured in outlying areas. Although no new records were established, these temperatures were very cold for the Deep South. Many area residents reported frozen and broken water pipes as a result of the extended cold. Several lawn

sprinkler systems also froze and broke making many areas very icy. Many area farmers lost a large part of their strawberry crops. On December 25, 2010, an average snowfall accumulation of 1.5 inches occurred across the county with isolated higher amounts, including in the higher elevations of the northern portion of the county where 2.0 inches accumulated. A period of freezing rain led to ice accumulation on area roadways and several vehicle accidents. On January 9, 2011, Moody reported snow accumulations from 2 to 4 inches as a result of a winter storm. On January 17, 2013, snowfall totals across the county ranged from half of an inch up to 5 inches in the higher elevations.

St. Clair County experienced 10 winter storm/frost freeze/heavy snow/ice storm/winter weather/extreme cold events in a 10 year period resulting in a 100% probability that a winter storm/frost freeze/heavy snow/ice storm/winter weather/extreme cold event will occur on an annual basis. The total amount of damages for the 10 winter storm/frost freeze/heavy snow/ice storm/winter weather/extreme cold events was \$0 with 0 winter storm/frost freeze/heavy snow/ice storm/winter weather/extreme cold event causing damage resulting in an estimated \$0 of expected annual damages from future events. The referenced winter storm/frost freeze/heavy snow/ice storm/winter weather/extreme cold event(s) are the ones that resulted in the most damages, deaths, and injuries during the past ten year period and serves as the extent/range of magnitude or severity that could be experienced by St. Clair County due to a winter storm/frost freeze/heavy snow/ice storm/winter weather/extreme cold event; the ranking is minimum to minor.

Primary effects from winter storms in St. Clair County would include:

1. Injury and damage from downed trees and utility lines due to the snow and ice load
2. Widespread impassable roads and bridges
3. Disruption of services and response capabilities
4. Crop and other agricultural damage

Hazardous results from winter storms in St. Clair County would include:

1. Loss of power, communications, and fires are common results of severe winter storms. Widespread power outages close down businesses and impact

hospitals, nursing homes, and adult and child care facilities serving special needs populations.

2. Loss of transportation ability will affect emergency response, recovery and supply of food and materials.
3. Numerous vehicle accidents in a winter storm can stretch thin the resources of fire rescue and law enforcement.
4. Stranded motorists and the homeless can create a food and housing shortage within the community.
5. The widespread nature of winter storms usually creates a strain on police, fire and medical providers due to the volume of calls for service.

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VIII. Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind

Hurricane season in the northern Atlantic Ocean, which affects the United States, begins on June 1 and ends on November 31. These months accompany warmer sea surface temperatures which is a required element to produce the necessary environment for tropical cyclone/hurricane development.

NOAA measures wind speeds for thunderstorm/wind and hurricane events in knots (kts) while the Saffir-Simpson scale as shown in **Table 4-25**, measures wind speed in miles per hour. Both knots and miles per hour is a speed measured by a number of units of distance covered in certain amount of time. Here is how knots compare to MPH:

- 1 knot = 1 nautical mile per hour = 6076.12 feet per hour
- 1 MPH = 1 mile per hour = 5280 feet per hour

To convert knots into miles per hour, multiply the number of knots by 1.151.

Saffir-Simpson Hurricane Wind Scale

Once a tropical storm reaches the level of a hurricane, it is then classified by the storm's intensity. Intensity levels, or categories, are used to assign a number (e.g., Category 1) to a hurricane based on the storm's intensity at the current time. The Saffir-Simpson Hurricane Wind Scale, **Table 4-25**, is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. With the scale in place, people within the hurricane's tract can better estimate the type of damage they should expect (i.e., wind, storm surge, and/or flooding impacts) due to the intensity of the oncoming hurricane.

Table 4-25: Saffir-Simpson Hurricane Wind Scale

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph 64-82 kt 119-153 km/h	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph 83-95 kt 154-177 km/h	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (major)	111-129 mph 96-112 kt 178-208 km/h	Devastating damage will occur: Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130-156 mph 113-136 kt 209-251 km/h	Catastrophic damage will occur: Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	157 mph or higher 137 kt or higher 252 km/h or higher	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

(Source: National Hurricane Center – NOAA)

Hurricanes impact areas in a variety of ways. The intensity of the storm, the speed of the winds, whether the storm moves through an area quickly or whether it stalls over one area all are variables toward the physical damage the storm will cause. Storm surges, high winds, and heavy rains are the three primary elements of hurricanes, while tornados and inland flooding are potential secondary elements caused in the wake of the storm. St. Clair County is not directly affected by storm surges.

St. Clair County is at a low risk for a direct hit by a hurricane due to its position several miles inland from the Alabama coastline. Although St. Clair County does not feel the effects of storm surges, other effects including heavy rain, flooding, winds, and tornados often have significant impacts on St. Clair County.

Hurricane Dennis made landfall on July 10, 2005 at the Santa Rosa Sound in Florida, approximately 25 miles from the Florida-Alabama state line. At this time, St. Clair County had already received significant rainfall from Tropical Storm Arlene and Hurricane Cindy. Because St. Clair County was on the western side of the eye of Dennis, it was spared the worst of the storm surge; however, as much as 10 inches of rain fell in some areas causing flash flooding in inland counties. Several trees and power lines were knocked down in association with Dennis. A few roadways were temporarily impassable due to fallen trees. At least 1500 county customers were without power for several hours.

Hurricane Katrina made landfall along the Louisiana-Mississippi border on August 29, 2005, approximately 80 miles east of the Mississippi-Alabama border. As Katrina moved inland, it dropped huge amounts of rain throughout the state causing significant flash flooding in inland areas. Several trees and power lines were snapped off or blown down during Katrina. Many locations were without power for a time. At least 3000 customers were without power. Approximately \$100,000 in property damages occurred.

Hurricanes/tropical storms/tropical depressions such as Dennis, Katrina, Fay, and Ida have affected St. Clair County. The most significant impacts have been related to excessive rainfall, damaging wind, and tornados. Residents suffer loss of power, damage to homes, blocked roadways from associated storm debris, and loss of other crucial utilities. Mobile homes are particularly vulnerable and are impacted more than conventionally built structures. St. Clair County has a total of 9,541 mobile homes countywide, 27% of the total housing stock. The greatest concentration of mobile homes in a municipality is in Ashville where 41.59% of the units are mobile homes.

Effects of these storms generally impact the entire county and are not limited to a specific location. The fact that other surrounding counties will have also been affected by the same event only adds to the burden, as utility crews are often overwhelmed by the needs of an entire region

or state.

On September 16, 2004, winds up to 60 miles per hour resulted in \$100,000 of property damages. Numerous trees and power lines were blown down across St. Clair County. Thirty to forty homes sustained mainly minor roof damage. Power outages affected some locations for 3 days. Doppler radar and ground observations indicate parts of St. Clair received up to 7 inches of rain. This heavy rainfall produced flooding of several roadways and flooded some businesses in Springville.

St. Clair County experienced 10 hurricane/tropical storm/tropical depression/high wind/strong wind events in a 10 year period resulting in a 100% probability that a hurricane/tropical storm/tropical depression/high wind/strong wind event will occur on an annual basis. The total amount of damages for the 10 hurricane/tropical storm/tropical depression/high wind/strong wind events was \$268,000 with 9 hurricane/tropical storm/tropical depression/high wind/strong wind events causing damage resulting in an estimated \$29,778 of expected annual damages from future events. The referenced hurricane/tropical storm/tropical depression/high wind/strong wind events are the ones that resulted in the most damages, deaths, and injuries during the past ten year period and serves as the extent/range of magnitude or severity that could be experienced by St. Clair County due to a hurricane/tropical storm/tropical depression/high wind/strong wind event; the ranking is minor to major.

Primary Effects of Hurricanes:

1. Storm Surges
 - a. Primary cause of deaths in hurricanes
 - b. Large volumes of ocean water that are driven onshore by a land-falling hurricane or tropical storm
 - c. Can increase mean water level by 15 feet+ if accompanied by tide
2. Wind
 - a. Secondary cause of deaths related to hurricanes
 - b. Continue causing destruction as storm travels miles inland
 - c. Able to completely destroy towns and structures that fall within storm path
 - d. Winds near perimeter of eye of storm are strongest and most intense

- e. Oftentimes produce tornados
- 3. Heavy Rains
 - a. Rain levels during hurricanes can easily exceed 15 to 20 inches
 - b. Cause flooding beyond coastal regions

Secondary Effects of Hurricanes:

- 1. Tornados
 - a. Usually found in right-front quadrant of storm or embedded in rain bands
 - b. Some hurricanes capable of producing multiple twisters
 - c. Usually not accompanied by hail or numerous lightning strikes
 - d. Tornado production can occur for days after the hurricane makes landfall
 - e. Can develop at any time of the day or night during landfall of a hurricane
- 2. Inland Flooding
 - a. Statistically responsible for greatest number of fatalities over last 30 years
 - b. Stronger storms not necessarily cause of most flooding; weaker storms that move slowly across the landscape can deposit large amounts of rain, causing significant flooding

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IX. Sinkhole/Expansive Soil

Sinkholes

Land subsidence, the loss of surface elevation due to the removal of subsurface support, ranges from broad, regional lowering of the land surface to localized collapse. The primary cause of land subsidence is a direct result of human activity often in areas of karsts geology. The human activities that may trigger subsidence include mining and the withdrawal of groundwater and/or petroleum. The most dramatic form of subsidence is the collapse of superficial material into underground voids.

A sinkhole is a natural depression or hole in the surface topography caused by the removal of soil or bedrock, often both, by water. They may be formed gradually or suddenly. Sinkholes are common where the rock below the land surface is limestone, carbonate rock, salt beds, or rocks that can naturally be dissolved by circulating ground water. As the rock dissolves, spaces and caverns develop underground. These sinkholes can be dramatic because the surface land usually stays intact until there is not enough support. Then a sudden collapse of the land surface can occur.

There are three types of potential problems associated with the existence or formation of sinkholes: subsidence, flooding, and pollution. The term subsidence commonly involves a gradual sinking, but it also refers to an instantaneous or catastrophic collapse. In Cullman County, sinkholes are common where the rock below the land surface is limestone, dolomite, or salt that can naturally be dissolved by ground water. As the rock dissolves, cavities and caverns develop underground. Sinkholes may be dramatic if the land stays intact for some time until the underground spaces just get too big and a sudden collapse of the land surface occurs.

The change in the local environment affecting the soil mass causing subsidence and sinkholes collapse is called “triggering mechanism.” Water, is the main factor affecting the local environment that causes subsidence. The main triggering mechanisms for subsidence are:

- ☐ Water level decline,
- ☐ Changes in groundwater flow,
- ☐ Increased loading, and

- Deterioration (abandoned coalmines).

Water level decline can happen naturally or be human induced. Main factors in water decline are:

- Pumping of water from wells,
- Localized drainage from construction,
- Dewatering, and
- Drought

Changes in the groundwater flow (as indicated in **Figure 4-5**) include an increase in the velocity of groundwater movement, increase in the frequency of water table fluctuations, and increased or reduced recharge. Increased loading causes pressure in the soil leading to failure of underground cavities and spaces. Vibrations caused by an earthquake, vibrating machinery and blasting, can cause structural collapse followed by surface settlement.

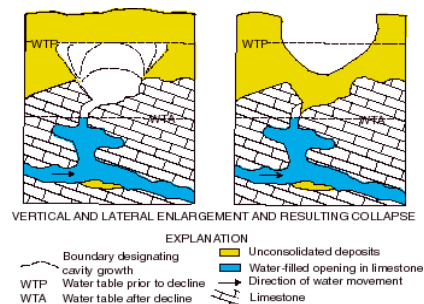


Figure 4-5
Water Level Decline

Source: Alabama Department of Transportation

Natural sinkholes occur where soluble limestone, carbonate rock, salt beds, or rocks can be dissolved by groundwater circulating through them. As the rock dissolves, spaces and caverns develop underground. The land usually stays intact until the underground spaces become too large to support the ground at the surface. When the ground loses its support it will collapse,

forming a sinkhole. Sinkholes can be small or so extreme they consume an automobile or a house. The most damage from sinkholes tends to occur in Florida, Texas, Alabama, Missouri, Kentucky, Tennessee, and Pennsylvania.

Historically, land subsidence or sinkhole events have not been well documented. St. Clair County geology has a low susceptibility to such events; therefore, is at a slight risk for sinkholes. The probability of future occurrences cannot be predicted due to a lack of historical records and detailed geologic studies. Areas in St. Clair County underlain by carbonate rocks and characterized by the presence of subsurface cavities, sinkholes, and underground drainage are called "karst terrains." It is these karst areas that are most susceptible to sinkhole development and subsidence.

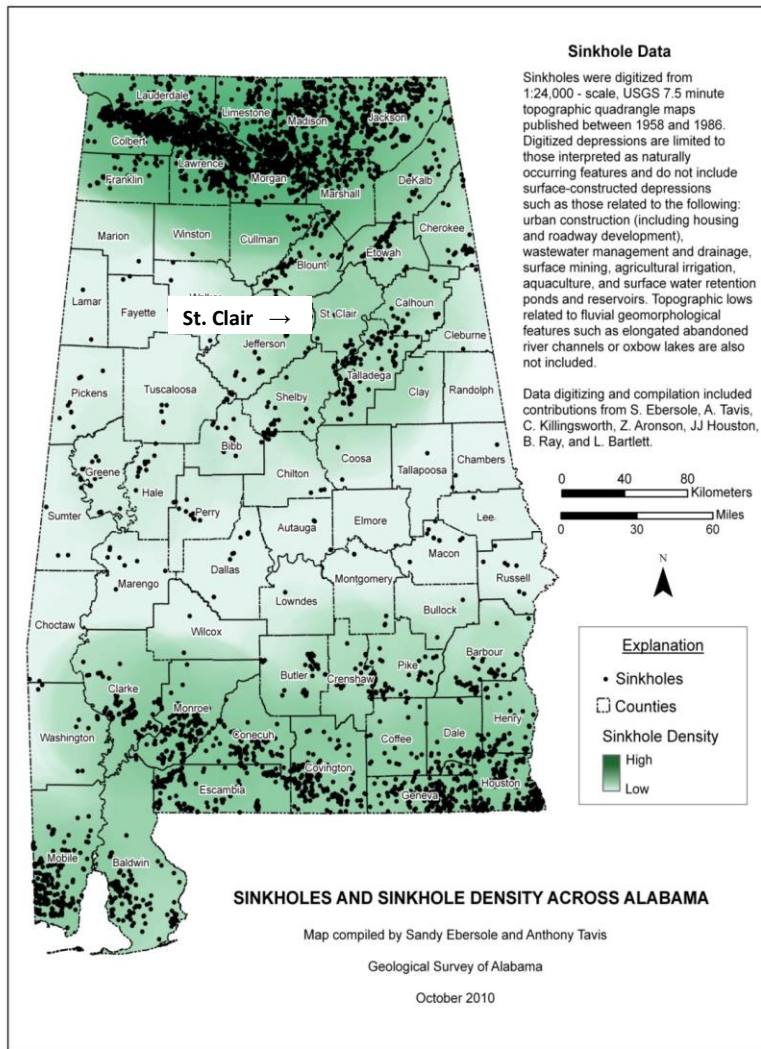
As development continues in rural areas of St. Clair County it is likely that sinkholes will begin to have a greater impact on communities. When subsidence occurs in developed areas it can have a significant impact on communities including loss of property values, increased insurance costs and potential injuries.

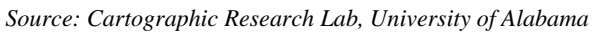
In St. Clair County, sinkholes are common where the rock below the land surface is limestone, dolomite, or salt that can naturally be dissolved by ground water. As the rock dissolves, cavities and caverns develop underground. Sinkholes may be dramatic if the land stays intact for some time until the underground spaces just get too big and a sudden collapse of the land surface occurs. Some sinkholes are formed due to the leak in underground storm drains and sewer systems; when they collapse, the damage can be seen for many miles due to the repairs that become necessary.

The probability of future occurrences cannot be predicted due to a lack of historical records and detailed geologic studies. These are random events, which can be influenced by drought conditions.

Expansive soils are soils that swell when they come in contact with water. The presence of clay is generally the cause of such behavior. **Figure 4-7** shows the general soil areas for the state. St. Clair County has Limestone Valleys and Uplands and Appalachian Plateau soils. There were no expansive soils reported from NOAA or local sources during the time frame covered by the plan.

Figure 4-6





St. Clair County experienced 0 sinkhole/expansive soil events in a 10 year period resulting in a 0% probability that a sinkhole/expansive soil event will occur on an annual basis. The total amount of damages for the 0 sinkhole/expansive soil events was \$0 with \$0 sinkhole/expansive soil events causing damage resulting in an estimated \$0 of expected annual damages from future events. The extent/range of magnitude or severity that could be experienced by St. Clair County due to a sinkhole/expansive soil event is minimum to minor based on the lack of historical records and detailed geologic studies.

Primary effects from sinkholes in St. Clair County would include:

1. Property damage
2. Impassable roads
3. Sediment erosion
4. Infrastructure damage

Hazardous results from sinkholes in St. Clair County would include:

1. When they are formed on land, they can change the general topography of the land area and divert streams of underground water.
2. If they form suddenly in areas with heavy population, they can cause a lot of damage to human life and property, as all in the area of the sinkhole may be lost.
3. They can be dangerous to the foundations of buildings. Total buildings could be lost.
4. Toxic chemicals beneath the earth can come up and may pollute the groundwater.

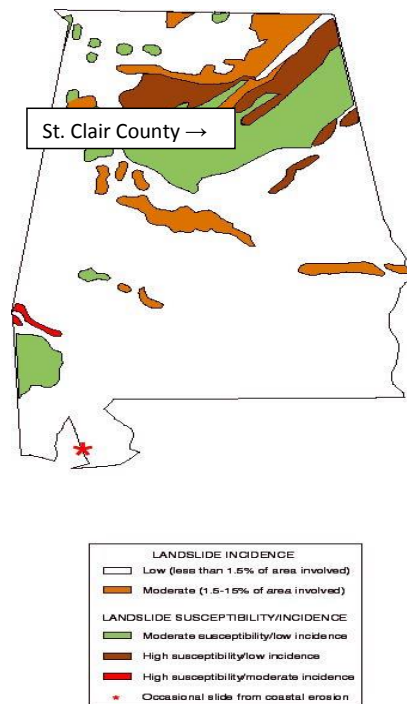
X. *Landslide*

A landslide is a geological phenomenon which includes a wide range of ground movement, such as rock falls, deep failure of slopes and shallow debris flows, which can occur in offshore, coastal and onshore environments. Although the gravity is the primary force for a landslide to occur, there are other contributing factors affecting the original slope stability. Typically, pre-conditional factors build up specific sub-surface conditions that make the area/slope prone to failure, whereas the actual landslide often requires a trigger before being released.

Land subsidence, the loss of surface elevation due to the removal of subsurface support, ranges from broad, regional lowering of the land surface to localized collapse. The primary cause of land subsidence is a direct result of human activity often in areas of karsts geology. The human activities that may trigger subsidence include mining and the withdrawal of groundwater and/or petroleum. The most dramatic form of subsidence is the collapse of superficial material into underground voids.

A landslide is defined by the United States Geological Survey as the movement of rock, debris, or earth down a slope. Various natural and man-induced triggers can cause a landslide. Naturally induced landslides occur as a result of weakened rock composition, heavy rain, changes in groundwater levels, and seismic activity. Geologic formations in a given area are key factors when determining landslide susceptibility. **Figure 4-8** shows moderate to high landslide susceptibility to low incidence in St. Clair County.

Figure 4-8: Landslide Incidences in St. Clair County, AL



Source: U.S. Geological Survey

The map units are split into three incidence categories according to the percentage of the area affected by landslides. High incidence means greater than 15 percent of a given area has been involved in land sliding; medium incidence means that 1.5 to 15 percent of an area has been involved; and low incidence means that less than 1.5 percent of an area has been involved. High, medium, and low susceptibility are delimited by the same percentages used for classifying the incidence of land sliding. Susceptibility is not indicated where it is the same as or lower than incidence. Because the map above was prepared at a small scale using limited landslide and climate information, it is not intended for local planning or actual site selection.

The term landslide includes a wide range of ground movement, such as rock falls, deep failure of slopes, and shallow debris flows. Although gravity acting on an over steepened slope is the primary reason for a landslide, there are other contributing factors:

- Erosion by rivers, glaciers, or ocean waves creates over-steepened slopes
- Rock and soil slopes are weakened through saturation by snowmelt or heavy rains
- Earthquakes create stresses that cause or encourage the failure of weak slopes
- Earthquakes of magnitude 4.0 and greater have been known to trigger landslides
- Volcanic eruptions produce loose ash deposits, heavy rain, and debris flows
- Excess weight from accumulation of rain or snow, stockpiling of rock or ore from waste piles, or from man-made structures may stress weak slopes to fail

Slides are downward displacements along one or more failure surfaces of soil or rock. The material may be a single intact mass or a number of pieces. The sliding may be rotational (turning about a point) or translational (movement roughly parallel to the failure surface).

Flows are a form of rapid mass movement by loose soils, rocks, and organic matter, together with air and water that form slurry flowing rapidly downhill. Flows are distinguished from slides by high water content and velocities that resemble those of viscous liquids.

Lateral spreads are large movements of rock, fine-grained soils (i.e., quick clays), or granular soils, distributed laterally. Liquefaction may occur in loose, granular soils, and can occur spontaneously due to changes in pore-water pressure or due to earthquake vibrations.

Falls and topples are masses of rocks or material that detach from a steep slope or cliff that free-fall, roll, or bounce. Movements typically are rapid to extremely rapid. Earthquakes commonly trigger rock falls.

Almost any steep or rugged terrain is susceptible to landslides under the right conditions. The most hazardous areas are steep slopes on ridges, hills, and mountains; incised stream channels; and slopes excavated for buildings and roads. Slide potentials are enhanced where slopes are destabilized by construction or river erosion. Road cuts and other altered or excavated areas are particularly susceptible to landslides and debris flows. Rainfall and seismic shaking by earthquakes or blasting can trigger landslides.

Debris flows (also referred to as mudslides) generally occur during intense rainfall on

water saturated soil. They usually start on steep hillsides as soil slumps or slides that liquefy and accelerate to speeds as great as 35 miles per hour. Multiple debris flows may merge, gain volume, and travel long distances from their source, making areas down slope particularly hazardous. Surface runoff channels along roadways and below culverts are common sites of debris flows and other landslides (USGS, 2000).

Landslides often occur together with other major natural disasters, such as the following, thereby exacerbating relief and reconstruction efforts:

- ☐ Floods and landslides are closely related and both involve precipitation, runoff, and ground saturation that may be the result of severe thunderstorms or tropical storms.
- ☐ Earthquakes may cause landslides ranging from rock falls and topples, to massive slides and flows.
- ☐ Landslides into a reservoir may indirectly compromise dam safety or a landslide may even affect the dam itself.
- ☐ Wildfires may remove vegetation from hillsides, significantly increasing runoff and landslide potential.

The probability of future occurrences cannot be predicted due to a lack of historical records and detailed geologic studies. These are random events, which can be influenced by drought conditions.

St. Clair County experienced 0 landslide events in a 10 year period resulting in a 0% probability that a landslide event will occur on an annual basis. The total amount of damages for the 0 landslide event was \$0 with 0 landslide events causing damage resulting in an estimated \$0 of expected annual damages from future events. The referenced landslide event is the only reported landslide; therefore, the referenced event is the one that resulted in the most damages, deaths, and injuries during the past ten year period and serves as the extent/range of magnitude or severity that could be experienced by St. Clair County due to a landslide event; the ranking is minimum to minor.

Primary effects from landslide in St. Clair County would include:

1. Property damage
2. Impassable roads

3. Sediment erosion
4. Underground infrastructure damage

Hazardous results from landslide in St. Clair County would include:

1. Landslides move with tremendous force capable of destroying most structures in its path while carrying anything it comes in contact with.
2. Material from landslides can damage and destroy roads as well as block them with debris, resulting in disruption to business and other activity.
3. Removed sediment can leave the surrounding area bare and prone to erosion.
4. The flow of a landslide can rip underground pipes and wiring from an area as well as bury them deeper under debris, creating a loss of services.

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XI. Earthquake

An earthquake is a sudden slip on a fault and the resulting ground shaking and radiated seismic energy caused by an abrupt release of accumulated strain in the tectonic plates that comprise the earth's crust. These rigid plates, known as tectonic plates, are some 50 to 60 miles in thickness and move slowly and continuously over the earth's interior. The plates meet along their edges, where they move away, past or under each other at rates varying from less than a fraction of an inch up to five inches per year. While this sounds small, at a rate of two inches per year, a distance of 30 miles would be covered in approximately one million years (FEMA, 1997).

The tectonic plates continually bump, slide, catch, and hold as they move past each other which causes stress to accumulate along faults. When this stress exceeds the elastic limit of the rock, an earthquake occurs, immediately causing sudden ground motion and seismic activity. Secondary hazards may also occur, such as surface faulting, sinkholes, and landslides. While the majority of earthquakes occur near the edges of the tectonic plates, earthquakes may also occur at the interior of plates.

The vibration or shaking of the ground during an earthquake is described by ground motion. The severity of ground motion generally increases with the amount of energy released and decreases with distance from the fault or epicenter of the earthquake. Ground motion causes waves in the earth's interior, also known as seismic waves, and along the earth's surface, known as surface waves. The following are the two kinds of seismic waves:

- P (primary) waves are longitudinal or compression waves similar in character to sound waves that cause back-and-forth oscillation along the direction of travel (vertical motion), with particle motion in the same direction as wave travel. They move through the earth at approximately 15,000 MPH.
- S (secondary) waves, also known as shear waves, are slower than P waves and cause structures to vibrate from side-to-side (horizontal motion) due to particle motion at right angles to the direction of wave travel. Unreinforced buildings are more easily damaged by S waves. There are also two kinds of surface waves, Raleigh waves and Love waves. These waves travel more slowly and typically are significantly less damaging than seismic waves.

Seismic activity is commonly described in terms of magnitude and intensity. Magnitude (M) describes the total energy released and intensity (I) subjectively describes the effects at a particular location. Although an earthquake has only one magnitude, its intensity varies by location.

Magnitude is the measure of the amplitude of the seismic wave and is expressed by the Richter scale. The Richter scale is a logarithmic measurement, where an increase in the scale by one whole number represents a tenfold increase in measured amplitude of the earthquake. Intensity is a measure of the strength of the shock at a particular location and is expressed by the Modified Mercalli Intensity (MMI) scale.

Another way of expressing an earthquake's severity is to compare its acceleration to the normal acceleration due to gravity. If an object is dropped while standing on the surface of the earth (ignoring wind resistance), it will fall towards earth and accelerate faster and faster until reaching terminal velocity. The acceleration due to gravity is often called "g" and is equal to 9.8 meters per second squared (980 cm/sec/sec). This means that every second something falls towards earth, its velocity increases by 9.8 meters per second. Peak ground acceleration (PGA) measures the rate of change of motion relative to the rate of acceleration due to gravity. For example, acceleration of the ground surface of 244 cm/sec/sec equals a PGA of 25.0 percent. It is possible to approximate the relationship between PGA, the Richter scale, and the MMI, as shown in **Table 4-26**. The relationships are, at best, approximate, and also depend upon such specifics as the distance from the epicenter and depth of the epicenter. An earthquake with 10.0 percent PGA would roughly correspond to an MMI intensity of V or VI, described as being felt by everyone, overturning unstable objects, or moving heavy furniture.

Table 4-26: Earthquake PGA, Magnitude and Intensity Comparison

PGA (%g)	Magnitude (Richter)	Intensity (MMI)	Description (MMI)
<0.17 – 1.4	1.0 – 3.0	I	Not felt except by a very few under especially favorable conditions.
0.17 – 1.4	3.0 – 3.9	II - III	II. Felt only by a few persons at rest, especially on upper floors of buildings. III. Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
1.4 – 9.2	4.0 – 4.9	IV - V	IV. Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rock noticeably. V. Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
9.2 - 34	5.0 – 5.9	VI – VII	VI. Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight. VII. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
34 – 124	6.0 – 6.9	VIII - IX	VIII. Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. IX. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
>124	7.0 and higher	VIII or Higher	X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent. XI. Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly. XII. Damage total. Lines of sight and level are distorted. Objects thrown into the air.

(Source: <http://earthquake.usgs.gov>)

Earthquake-related ground failure, due to liquefaction, is a common potential hazard from strong earthquakes in the central and eastern United States. Liquefaction occurs when seismic waves pass through saturated granular soil, distorting its granular structure, and causing some of the empty spaces between granules to collapse. Pore-water pressure may also increase sufficiently to cause the soil to behave like a fluid (rather than a soil) for a brief period and causing deformations. Liquefaction causes lateral spreads (horizontal movement commonly 10-15 feet, but up to 100 feet), flow failures (massive flows of soil, typically hundreds of feet, but up to 12 miles), and loss of bearing strength (soil deformations causing structures to settle or tip). Sands blows were common following major New Madrid earthquakes in the central United States.

The hazards associated with earthquakes include anything that can affect the lives of humans, including surface faulting, ground shaking, landslides, liquefaction, tectonic deformation, tsunamis, and seiches. Earthquake risk is defined as the probability of damage and loss that would result if an earthquake caused by a particular fault were to occur. Losses depend on several factors including the nature of building construction, population density, topography and soil conditions, and distance from the epicenter.

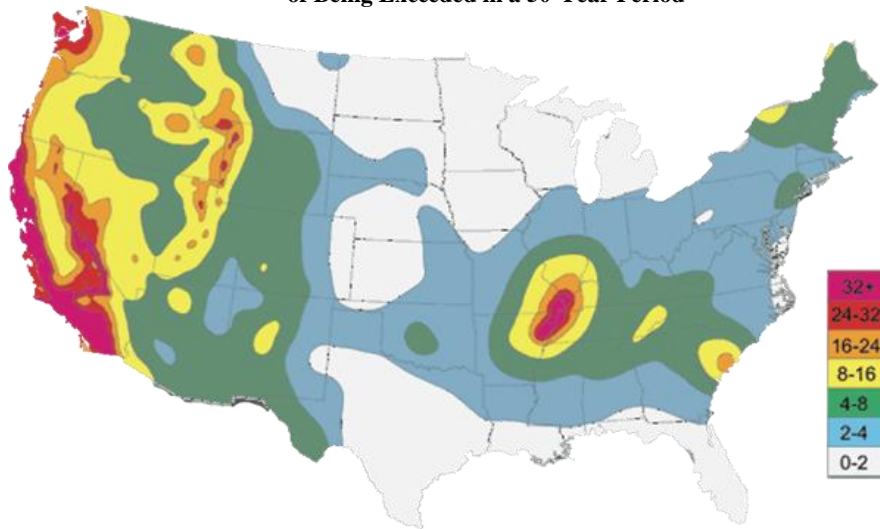
Interestingly, an earthquake's magnitude can be a poor indicator of hazard impact because the duration of ground shaking, and resulting increased damages, is not factored into the magnitude concept. The majority of losses are due to collapsing houses and other structures, the most vulnerable being those of unreinforced masonry and adobe. Structures built with more flexible materials such as steel framing are preferred. Wood frame construction, which constitutes a high percentage of homes in the United States, also tends to flex rather than collapse but is more susceptible to fire. Building codes have historically been utilized to address construction standards to mitigate damages for earthquakes and other hazards. However, older structures, non-compliance, and incomplete knowledge of needed measures remain a problem. In order to reduce losses to lives and property, wider adoption of improved construction methods for both residential and important critical facilities such as hospitals, schools, dams, power, water, and sewer utilities is needed.

The zone of frequent earthquake activity affecting St. Clair County is the Southern

Appalachian Seismic Zone (SASZ) (also called the Eastern Tennessee Seismic Zone. The SASZ extends from near Roanoke in Southwestern Virginia southwestward to Central Alabama. Considered a zone of moderate risk, the SASZ includes the Appalachian Mountains. Most of the earthquakes felt in Alabama are centered in the SASZ. The hypocenters of earthquakes in this zone are on deeply buried faults. St. Clair County is located within the SASZ zone and is at a moderate risk for earthquakes.

Earthquakes occurring in St. Clair County are predominantly low magnitude events. However, there is growing concern that a high magnitude event is inevitable and earthquakes are becoming a much larger concern to the county. GSA is currently working to better define seismic hazards and impacts throughout the county. **Figure 4-9** is based on earthquake occurrences and their shaking extent relative to the epicenter. Colors show levels of horizontal shaking having a 1-in-10 chance of being exceeded in a 50-year period. St. Clair County has a 4-8% chance of experiencing an earthquake; however, there are insufficient historical records and geologic studies to predict the future probability of an earthquake occurring in St. Clair County. The risk of a significant, damage-causing earthquake in St. Clair County is low to moderate.

Figure 4-9: Horizontal Shaking Having a 1-in-10 Chance of Being Exceeded in a 50-Year Period



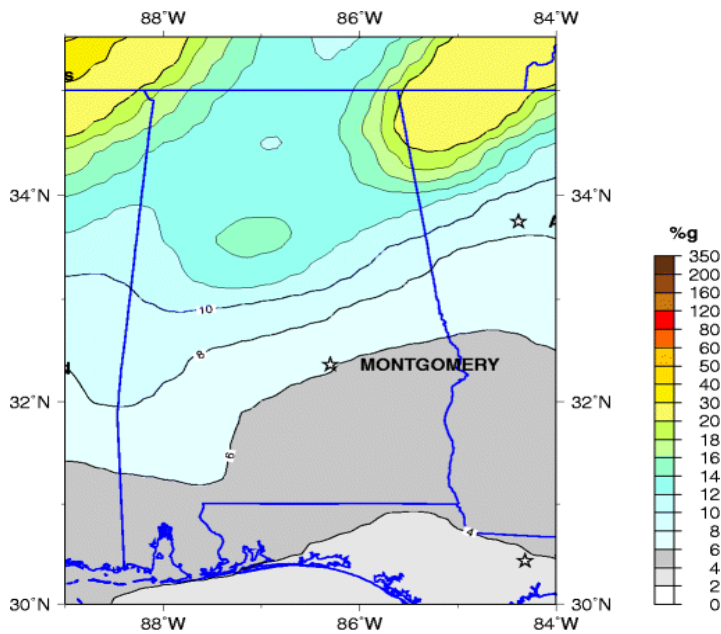
(Source: Geological Survey of Alabama, 2010)

Although many areas of the United States are better known for their susceptibility, earthquakes do occur in Alabama. **Figure 4-11** shows the seismic zones of the Southeastern United States, which includes Alabama, as well as the epicenters of earthquakes recorded in the state from 1886-2007 as provided by the Geological Survey of Alabama and noted in the Alabama EMA Earthquake Book 2002. Since 1916, there have been no earthquakes documented in St. Clair County; however, a couple of recent earthquakes were recorded in Helena, AL (Shelby County) just south of St. Clair County. These occurred in April and May of 2004, and were felt by much of the St. Clair County area. On October 18, 1916, a strong earthquake occurred on an unnamed fault east of Birmingham in Shelby County. This was the strongest earthquake ever to occur in Alabama. It was noted by residents in St. Clair County and affected 100,000 square miles. The epicenter is in an area that was rural at the time of the earthquake. The epicenter of an earthquake has not been located within the limits of St. Clair County in the 20th Century. Today this area is highly populated and many structures are situated on steep hillsides

susceptible to landslides. Another earthquake of the same magnitude in this area would cause considerable damage today.

In accordance with FEMA guidelines, an area with 2% or greater probability of exceedance in 50 years should be further assessed for vulnerability. St. Clair County's risk falls at approximately the 12-14% probability of exceedance (**Figure 4-10**). To date, there have been earthquake epicenters of 2.2 - 2.7 experienced in St. Clair County.

Figure 4-10: Alabama's Seismic Hazard Map



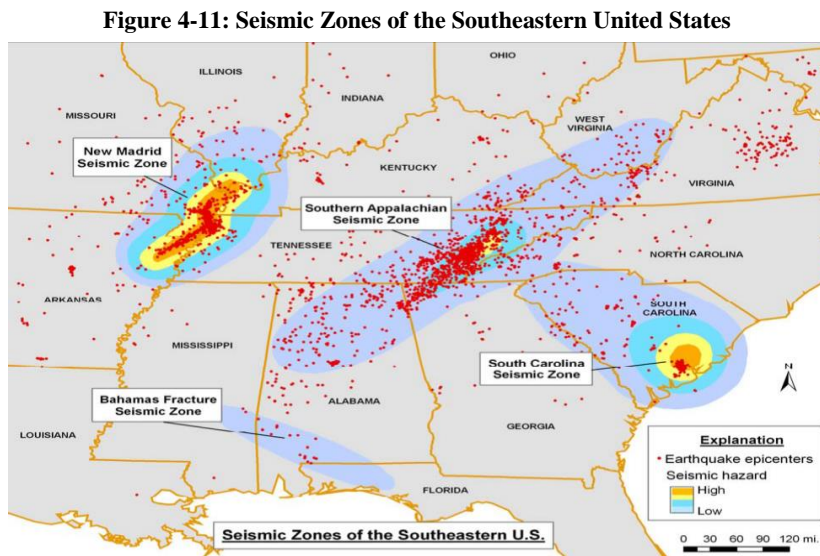
Peak Acceleration (%g) with 2% Probability of Exceedance in 50 Years
site: NEHRP B-C boundary
National Seismic Hazard Mapping Project (2008)
(Source: United States Geological Survey, 2008)

The Geological Survey of Alabama, in conjunction with the Alabama Emergency Management Agency, developed basement fault and liquefaction susceptibility maps for Alabama. The basement fault mapping project was an effort to approximate locations of buried

faults. Some buried faults are considered active based on earthquake epicenters in the vicinity of the faults (**Figure 4-12**). The liquefaction mapping project was conducted to help identify areas that are most at risk to liquefaction during a moderate to strong magnitude earthquake.

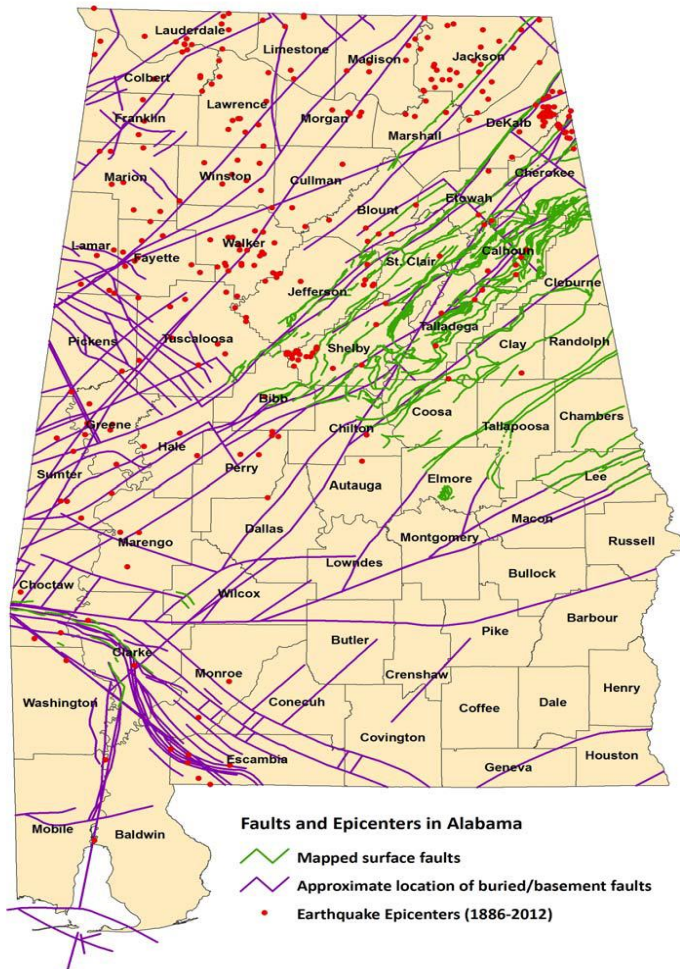
Liquefaction is a phenomenon that can occur during an earthquake when seismic waves pass through saturated unconsolidated material causing sediment particles to move in relation to each other. Liquefaction can be especially damaging to structures built on thick sediments, as in areas where the sediments are saturated with water such as in floodplains (**Figure 4-13**). (Source: *Alabama Hazard Mitigation Plan*)

Figure 4-14 shows the location and magnitudes of all known earthquakes occurring in Alabama from 1886 through March 2012. Data for epicenters was collected by the GSA from GSA records and the USGS.



(Source: *Geological Survey of Alabama, 2010*)

Figure 4-12: Faults and Epicenters in Alabama

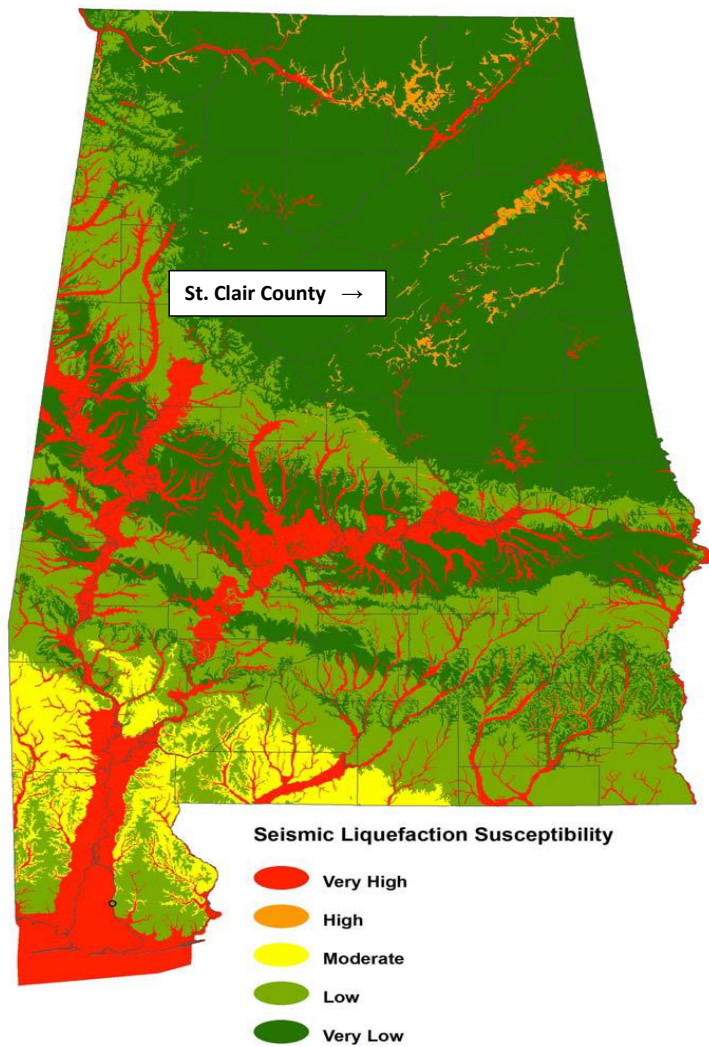


Historical Earthquake Epicenters, Mapped Surface Faults, and Approximate Locations of Buried Faults in the Alabama

Surface maps are based on the 1:250,000-scale digital geologic map of Alabama (GSA, 2006). Buried faults are based on the faults approximated in the basement fault mapping project (GSA, 2008). Epicenters are based on historical data from seismic records (2012).

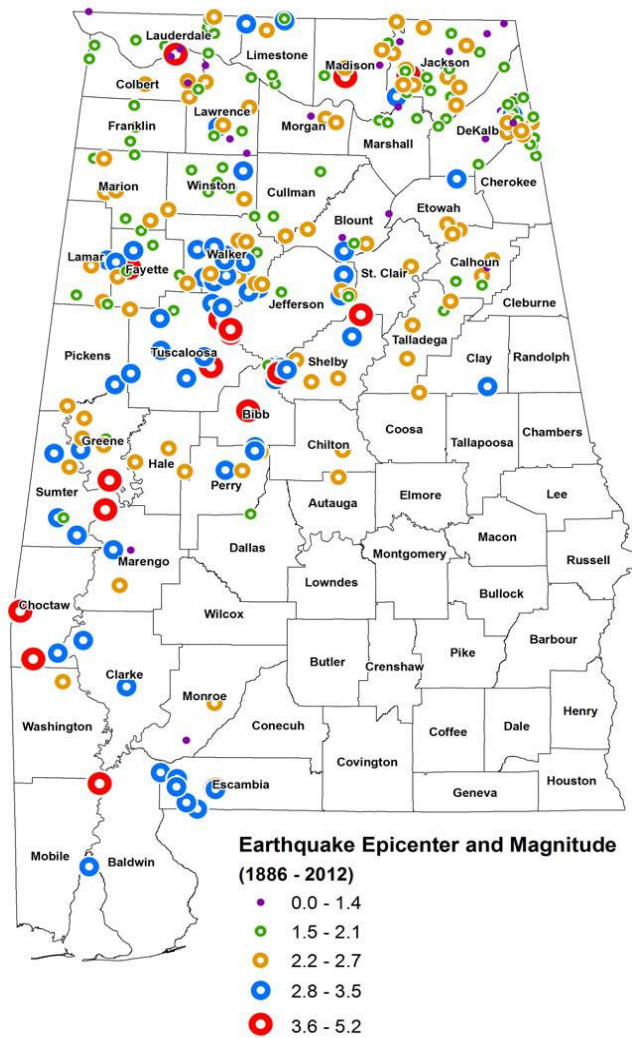
(Source: Geological Survey of Alabama, 2010; Alabama Hazard Mitigation Plan)

Figure 4-13: Seismic Liquefaction Susceptibility



Susceptibility to Liquefaction During a Moderate to Strong Magnitude Earthquake
(Source: Geological Survey of Alabama, 2006; Alabama Hazard Mitigation Plan)

Figure 4-14: Earthquake Epicenter and Magnitude



Historical Earthquakes of Alabama (1886-2012)

(Source: Geological Survey of Alabama, 2012; Alabama Hazard Mitigation Plan)

In the eastern United States strong earthquakes occur less frequently than other parts of the country; however, this does not mean that the damage in this area would be any less catastrophic should a powerful quake occur. There are two important reasons for this. The first is that the type of rock present in the eastern part of the country transmits seismic waves more effectively. This in turn creates better transmission of earthquake energy and results in higher damage over a wider area. Second, because buildings and other structures in the eastern United States have not been designed to withstand severe earth shaking, they will sustain more damage.

Primary effects from earthquake in St. Clair County would include:

1. Property Damage
2. Underground infrastructure damage
3. Building collapse
4. Trigger for other natural disasters

Hazardous results from earthquake in St. Clair County would include:

1. Shaking can cause cracking of roads, bridges, or buildings, which may also lead to collapse.
2. Pipes and wiring underground could be severely damaged due to the movement of the earth. This would result in interruption of service and long periods of repair before lines were serviceable again.
3. Buildings in St. Clair County are not built to meet the rigors of earthquakes; collapsing structures could kill or injure occupants.
4. Earthquakes can create other disasters such as landslides, flooding, and sinkholes.
5. Shifting of underlying soil and breaching of dams are examples of possible results from an earthquake.

XII. Wildfire

St. Clair County is at a slight to moderate risk of a wildfire. A wildfire is an uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures. They often begin unnoticed, spread quickly, and are usually signaled by dense smoke that may fill the area for miles around. Wildfires can be human-caused through acts such as arson or campfires, or can be caused by natural events such as lightning. Wildfires can be categorized into 3 types:

1. **Wildland fires** occur in very rural areas and are fueled primarily by natural vegetation. In St. Clair County, the vast majority of these fires occur on privately owned land. Wildland fire suppression is the responsibility of the State of Alabama, through the Alabama Forestry Commission.
2. **Interface fires** occur in areas where homes or other structures are endangered by the wildfires. The fires are fueled by both natural vegetation and man-made structures. These are often referred to as Wildland Urban Interface fires and form the majority of wildfires in St. Clair County. Interface fire suppression is the responsibility of the Alabama Forestry Commission, working closely with local volunteer fire departments.
3. **Firestorms** occur during extreme weather (e.g., high temperatures, low humidity, and high winds) with such intensity that fire suppression is virtually impossible. These events typically burn until the conditions change or the fuel is exhausted.

The vast majority of wild land fires occur on privately owned lands. Additionally, the majority of the fires occur in areas where homes or structures are endangered. These areas are known as the wild land urban interface and are defined as areas where development meets wild land vegetation, both of which provide fuel for fires. The wild land urban interface areas have increased significantly throughout the county, and now face the risk of major losses from wildfires. In St. Clair County, most wild land urban interface areas are considered “intermixed.”

Instead of having large forest areas surrounding an isolated town, St. Clair County contains many scattered homes and farms spread across the forest areas. The following two factors contribute significantly to wildfire behavior in Alabama:

1. **Fuel:** The type of fuel and the fuel loading (measured in tons of vegetative matter per acre) have a direct impact on fire behavior. Fuel types vary from light fuels (grass) to moderate fuels (Southern Rough) to heavy fuels (slash). The type of fuel and the fuel load determines the potential intensity of the wildfire and how much effort must be expended to contain and control it.
2. **Weather:** The most variable factor affecting wildfire behavior is weather. Important weather variables are precipitation, humidity, and wind. Weather events ranging in scale from localized thunderstorms to large cold fronts can have major effects on wildfire occurrence and behavior. Extreme weather, such as extended drought and low humidity can lead to extreme wildfire activity.

In addition to affecting people, wildfires may severely impact livestock inflicting a severe economic impact on farmers. Timber loss to fire creates an economic loss to both the private landowner and the county's economy. Wildfires in St. Clair County generally are moderate in intensity, resulting in destruction of undergrowth and some timber. The soil surface layer of the forest recovers quickly, minimizing erosion and water quality impacts. The entire St. Clair County is vulnerable to wildfires.

The frequency and severity of wildfires is dependent on weather and on human activity. Nearly all wildfires in St. Clair County are human caused (only a small percent are caused by lightning), with arson and careless debris burning being the major causes of wildfires. If not promptly controlled, wildfires may grow into an emergency or disaster. Even small fires can threaten lives, damage forest resources and destroy structures. **Table 4-15** shows the number of fires and acres burned during the period 2010-2013, as recorded by the Alabama Forestry Commission. St. Clair County had a total of 93 fires during this 3 year period, affecting a total of 1,785.45 acres.

Wildfires are responsible for burning thousands of acres of land across the United States each year. They are large, fast moving, disastrous fires that occur in the wilderness or rural areas. These fires are uncontrolled and in dry conditions can spread rapidly through the surrounding vegetation and structures. St. Clair County is susceptible to wild/forest fires especially during times of drought. St. Clair County has a total of 310,346 acres of forestland. The total acres are

made up of 86,911 softwoods, 52,800 oak-pine, and 170,635 hardwoods. (Source: Alabama Forestry Commission – Forest Resource Report 2012)

St. Clair County is located in an area where the current fire danger conditions are low to moderate, according to the U. S. Forestry Service.

Table 4-27: Wildfires in St. Clair County 2010-2013					
County	Total # of Fires	Average # of Fires	Total Acres Burned	Average Acres Burned	Average Fire Size
St. Clair	93	31	1,785.45	594.89	19.19

Source: Alabama Forestry Commission

Wildfires are an ongoing threat to both rural St. Clair County and wild land urban interface communities at risk. As with most natural hazards, wildfires are strongly influenced by weather phenomena, although their risk and impacts are also related to other factors such as the number of structures that are near forested areas, and so forth. Wildfire probability can be expected to remain relatively constant over the long run, assuming that weather patterns do not change significantly.

St. Clair County experienced 93 wildfire events in a 3 year period resulting in a greater than 100% (31.00) probability that a wildfire event will occur on an annual basis. The total amount of acres burned for the 93 wildfire events was 1,785.45 resulting in an estimated 19.19 acres burned per wildfire event. Based upon the average cost of an acre in St. Clair County, the cost of the average fire size of 19.19 acres equals \$36,461 per fire. The extent/range of magnitude or severity that could be experienced by St. Clair County due to a wildfire event is minimum to minor.

Primary effects from wildfire in St. Clair County would include:

1. Loss of property
2. Loss of livestock
3. Destruction of wilderness
4. Crop destruction

Hazardous results from significant wildfire in St. Clair County would include:

1. Widespread fire destroys everything flammable, leaving people homeless and businesses destroyed.
2. Fenced in livestock have no way of escaping the path of a wildfire and most are lost due to smoke inhalation.
3. Most wildfires actually help forests grow because they rid the forest of underbrush, but exceptionally hot fires that have a long duration destroy entire forests.
4. An entire year's crop can be lost by burning through all vegetation.

XIII. Dam Failures

A dam is barriers constructed across a watercourse in order to store, control, or divert water. Dams are usually constructed of earth, rock, concrete, or mine tailings. The water impounded behind a dam is referred to as the reservoir and is measured in acre-feet, with one acre-foot being the volume of water that covers one acre of land to a depth of one foot. Due to topography, even a small dam may have a reservoir containing many acre-feet of water. A dam failure is the collapse, breach, or other failure of a dam that causes downstream flooding. Dam failures may result from natural events, human-caused events, or a combination thereof. Due to the lack of advance warning, failures resulting from natural events, such as hurricanes, earthquakes, or landslides, may be particularly severe. Prolonged rainfall that produces flooding is the most common cause of dam failure (FEMA, 1997).

Dam failures usually occur when the spillway capacity is inadequate and water overtops the dam or when internal erosion through the dam foundation occurs (also known as piping). If internal erosion or overtopping cause a full structural breach, a high-velocity, debris-laden wall of water is released and rushes downstream, damaging or destroying whatever is in its path.

Dam failures may result from one or more the following:

- ☐ Prolonged periods of rainfall and flooding (the cause of most failures)
- ☐ Inadequate spillway capacity which causes excess overtopping flows
- ☐ Internal erosion erosions due to embankment or foundation leakage or piping
- ☐ Improper maintenance
- ☐ Improper design
- ☐ Negligent operation
- ☐ Failure of upstream dams
- ☐ Landslides into reservoirs
- ☐ High winds
- ☐ Earthquakes

Dam failures are potentially the worst flood events. A dam failure is usually the result of neglect, poor design, or structural damage caused by a major event such as an earthquake.

Historical records of dam/levee failures for St. Clair County are not available. When a dam fails, a large quantity of water is suddenly released downstream, destroying anything in its path. The area impacted by the water emitted by dam failure would encounter the same risks as those in a flood zone during periods of flooding. The area directly affected by the water released during a dam failure is not county wide. The risks associated with dam/levee failures are the same as those risks associated with flooding. A flash flood on November 24, 2004 resulted in widespread rain amounts of 4 to 5 inches, with a few spots approaching 12 inches. The dam eventually failed near the Friendship Community, resulting in significant damage. Property damages of \$400,000 were reported.

Alabama, including St. Clair County, has no dam safety program and legislation. Individuals from Natural Resources, the Catfish Farmers Federation, Alabama Power Company and several other agencies have formed a committee to promote state dam safety legislation. A draft legislative instrument was written, and the Dam Safety initiative has been transferred to the Alabama Department of Economic Affairs. The Alabama Office of Water Resources is supporting the establishment of an Alabama Dam Security and Safety Program. The legislation to establish this program has been under development for several years, but was reemphasized in 2002 when OWR assumed overall management of dam safety and National Flood Insurance Program initiatives from the AEMA down to the local NFIP Coordinator. Dam safety has been an ongoing hazard mitigation issue in the State of Alabama, especially for small dams that are privately owned and poorly maintained. No state law currently exists to regulate any private dams or the construction of new private dams, nor do private dams require federal licenses or inspections. There have been several attempts in the State of Alabama to pass legislation that would require inspection of dams on bodies of water over 50 acre-feet or dams higher than 25 feet. Enactment has been hampered by the opposition of agricultural interest groups and insurance companies. Once established, the program will provide an up-to-date inventory of dams in St. Clair County. A full inventory of dams will help to benefit public safety and emergency response operations in the event of a natural or other disaster. It will also provide for the inspection and permitting certification of certain dams in order to protect the citizens of Alabama by reducing the risk of failure of such dams.

The probability of future occurrences cannot be characterized on a countywide basis because of the lack of information available. The overall area affected is low and impacts are localized. This rating is intended only for general comparison to other hazards that are being considered.

According to HAZUS-MH 2011, St. Clair County has 44 High Density Polyethylene (HPDE - Earth) Dams, 2 HPDG (Gravity) Dams, 1 HPDZ (Miscellaneous) Dam, 1 HPDA (Arch) Dam, 1 HPDB (Buttress) Dam, and 1 HPDR (Rock Fill) Dam. There are 31 Low Risk Dams, 17 Significant Risk Dams, and 2 High Risk Dams. The St. Clair County EMA is prepared to coordinate efforts if an event arises at these dams. **Table 4-28** depicts dam locations in St. Clair County.

The two major dams in the county, H. Neely Henry and Logan Martin help form their respective lakes and also are used to produce power for Alabama Power. In the event of failure, not only will flooding occur downstream, but power from that particular dam would no longer be available, possibly leading to a strain on the power supply throughout the region. Also, State Highway 144 crosses H. Neely Henry Dam and County Road 54 crosses Logan Martin Dam. If dam failure occurs, these roadways would no longer be passable and major disruptions in transportation would occur.

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Table 4-28: St. Clair County Dams

Dam Name	NID ID	River	Dam Class	Nearest Jurisdiction	Year Completed	Hazard Classification	Latitude	Longitude
Land M	AL01052	Tributary Big Black Creek	HPDE	Whites Chapel	1954	Significant	33.721670	-86.450000
Baswell	AL01065	Tributary Perimeter Creek	HPDE	Riverside	1952	Low	33.838330	-86.208329
Pinedale	AL01064	Tributary Big Canoe Creek	HPDE	Ashville	1958	Low	33.834999	-86.306669
Huff	AL01059	Little Canoe Creek	HPDE	Steele	1955	Low	33.971670	-86.286669
Sumatanga	AL01058	Tributary Little Canoe Creek	HPDE	NE Steele	1963	Significant	33.959999	-86.260000
Borders	AL01057	Trout Creek	HPDB	Ragland	1929	Low	33.751669	-86.196669
Chulavista	AL01056	Tributary Roberts Creek	HPDE	Pell City	1950	Low	35.586670	-86.356669
Howell	AL01067	Tributary Little Cande Creek	HPDE	Buzzard Roost	1955	Significant	33.751669	-86.430000
Springville Sportmans	AL01053	Crooked Creek	HPDE	Buzzard Roost	1961	Significant	33.719999	-86.415000
Hickman	AL01068	Tributary Little Canoe Creek	HPDZ	Buzzard Roost	1940	Significant	33.766670	-86.459999
Riddle	AL01050	Middle Black Creek	HPDE	Margaret	1951	Low	33.706669	-86.446669
James	AL01048	Tributary Cahaba River	HPDE	Whites Chapel	1964	Significant	33.611670	-86.543330
Watkins	AL01047	Tributary Big Black Creek	HPDA	Whites Chapel	1952	Low	33.653329	-86.514999
Tadpole	AL01046	Tributary Big Black Creek	HPDE	Whites Chapel	1954	Low	33.703330	-86.503329
Martin	AL01045	Tributary Big Black Creek	HPDE	Whites Chapel	1958	Low	33.694999	-86.488330

Dam Name	NID ID	River	Dam Class	Nearest Jurisdiction	Year Completed	Hazard Classification	Latitude	Longitude
Lazy Ranch Dam	AL01044	Tributary Kelly Creek	HPDE	Ebenezer Church Community	1960	Significant	33.639999	-86.453330
Clayton Dam	AL01043	Tributary Kelly Creek	HPDE	Brompton	1956	Low	33.638329	-86.403329
Hoover	AL01042	Tributary Kelly Creek	HPDE	Brompton	1955	Low	33.610000	-86.434999
W. L. Golden	AL01055	Tributary Dry Creek	HPDE	Golden Grove	1952	Low	33.558329	-86.336670
Cobb	AL01066	Tributary Big Canoe Creek	HPDE	Ashville	1950	Significant	33.801670	-86.315000
Purvis	AL01039	Tributary Kelly Creek	HPDZ	Stewarts Crossroads	1957	Significant	33.546669	-86.459999
Tekawitha	AL01073	Tributary Canoe Creek	HPDE	Camp Tekawitha	1954	Low	33.771670	-86.555000
National	AL01072	Tributary Trout Creek	HPDR	Morning Star	1944	Significant	33.725000	-86.156670
Golden	AL01071	Tributary Canoe Creek	HPDE	Springville Estates	1957	Low	33.799999	-86.533330
Springville Estate	AL01070	Tributary Canoe Creek	HPDE	Springville Lake Estates	1956	Significant	33.795000	-86.508330
Schneider	AL01041	Tributary Kelly Creek	HPDE	Stewarts Crossroads	1955	Significant	33.545000	-86.456669
Halls	AL01038	Kerr Branch	HPDE	Brompton	1962	Low	33.586670	-86.478329
Catfish Lake	AL01037	Tributary Kelly Creek	HPDE	Brompton	1962	Significant	33.625000	-86.466669
Minith	AL01035	Tributary Little Cahaba Creek	HPDE	Camp Coleman	1970	Low	33.684999	-86.510000
Watkins	AL01034	Tributary Cane Creek	HPDE	Cook Springs	1971	Low	33.659999	-86.360000

Dam Name	NID ID	River	Dam Class	Nearest Jurisdiction	Year Completed	Hazard Classification	Latitude	Longitude
Luke	AL01033	Tributary Kelly Creek	HPDE	Camp Winnataska	1960	Significant	33.578330	-86.421669
Hames	AL01040	Tributary Kelly Creek	HPDE	Lawley	1957	Low	33.504999	-86.454999
Elam	AL01498	Tributary Little Canoe Creek	HPDE	Springville	1954	Significant	33.768330	-86.481669
QSL Fish Hatchery	AL01503	Tributary Kelly Creek	HPDE	Brompton	1973	Low	33.649999	-86.398330
Harbert	AL01502	Tributary Big Canoe Creek	HPDE	Ashville	1973	Low	33.791670	-86.436669
Pope	AL01500	Tributary Big Canoe Creek	HPDE	Steele	1948	Significant	33.933329	-86.218329
Burch	AL01501	Tributary Little Canoe Creek	HPDE	Buzzards Roost	1967	Low	33.753329	-86.441670
Logan Martin	AL01417	Coosa	HPDG	Vincent	1964	High	33.426670	-86.338330
H. Neely Henry	AL01416	Coosa	HPDG	Ohatchee	1966	High	33.783330	-86.053340
Baptist Lake	AL01060	Tributary Cane Creek	HPDE	Cooks Springs	1953	Low	33.603329	-86.395000
Larry Jenkins	AL01069	Tributary Gulf Creek	HPDE	Steele	1969	Low	33.921669	-86.284999
Joyce Lake	AL01036	Tributary Kelly Creek	HPDE	Brompton	1958	Low	33.616669	-86.483329
Trucks	AL01051	Tributary Big Black Creek	HPDE	Margaret	1956	Low	33.718329	-86.461670
Rumac	AL01061	Tributary Gulf Creek	HPDE	Rainbow City	1961	Low	33.883330	-86.245000
Farr	AL01074	Tributary North Fork	HPDE	Ashville	1972	Low	33.811669	-86.266670
Stolle	AL01499	Tributary North Fork	HPDE	Ashville	1973	Low	33.811669	-86.263329
Wancoole	AL01062	Tributary Fishing Creek	HPDE	Riverside	1959	Low	33.620000	-86.248330

Dam Name	NID ID	River	Dam Class	Nearest Jurisdiction	Year Completed	Hazard Classification	Latitude	Longitude
Ezell Jenkins	AL01054	Jake Creek	HPDE	Steele	1971	Low	33.969999	-86.215000
Chandler Mountain	AL01032	Gulf Creek	HPDE	Rainbow City	1970	Low	33.941670	-86.238330
Carl Wittichen	AL02255	Canoe Creek	HPDE	Ashville	1984	Significant	33.833060	-86.333060

(Source: HAZUS MH 2011)

The probability of future occurrences cannot be characterized on a countywide basis because of the lack of information available. The qualitative probability is rated low because the overall area affected is low and impacts are localized. This rating is intended only for general comparison to other hazards that are being considered. Dam failures are potentially the worst flood events. A dam failure is usually the result of neglect, poor design, or structural damage caused by a major event such as an earthquake.

When a dam fails, a large quantity of water is suddenly released downstream, destroying anything in its path. The area impacted by the water emitted by dam failure would encounter the same risks as those in a flood zone during periods of flooding. The area directly affected by the water released during a dam failure is not county wide. Historical records of dam/levee failures for St. Clair County are not available.

Figure 4-15 depicts the locations of High Hazard Dams in St. Clair County. According to the HAZUS 2011 database, there are 50 identified dams in St. Clair County, 2 major dams of which have been categorized as having a high hazard classification (loss of one human life is likely if the dam fails); 17 dams categorized as having a significant risk (possible loss of human life and likely significant property or environmental destruction if the dam fails if the dam fails); and 31 dams categorized as having a low risk (**Table 4-28**). Classifications are assigned to a dam depending upon the urban development directly downstream of the dam and whether or not failure would result in serious economic loss. The classification is not an indication of the quality of the dams' construction.

FIGURE 4-15: High Hazard Dams in St. Clair County

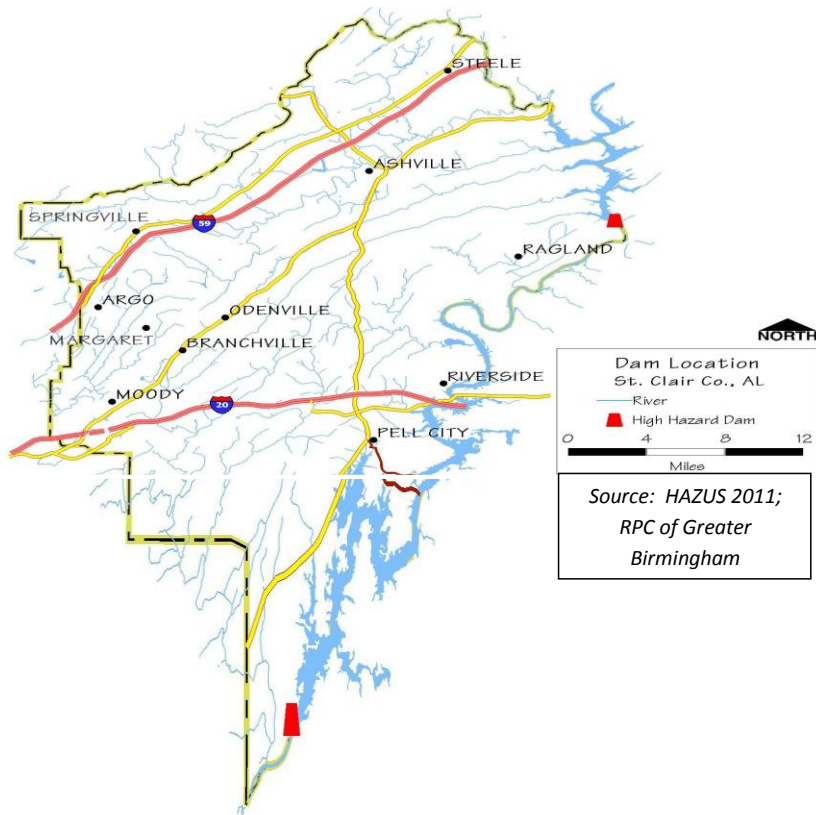


Table 4-29: St. Clair County Dams Risk Categories	
Risk Categories	Number of Dams
High - loss of one human life is likely if the dam fails	2
Significant - possible loss of human life and likely significant property or environmental destruction if the dam fails if the dam fails	17
Low	31
Total	50
<i>(Source: HAZUS MH 2.1)</i>	

The risks associated with dam/levee failures are the same as those risks associated with flooding; therefore:

St. Clair County experienced 18 flood/flash flood events in a 10 year period resulting in a greater than 100% probability that a flood/flash flood event will occur on an annual basis. The total amount of damages for the 18 flood/flash flood events was \$1,571,000 with 12 flood/flash flood events causing damage resulting in an estimated \$130,917 of expected annual damages from future events. The referenced flood event(s) are the ones that resulted in the most damages, deaths, and injuries during the past ten year period and serves as the extent/range of magnitude or severity that could be experienced by St. Clair County due to a flood event; the ranking is minor to major. In addition to the above statistics, St. Clair County experienced 1 dam failure event in a 10 year period resulting in a greater than 1% probability that a dam failure event will occur on an annual basis. The total amount of damages for the 1 dam failure event was \$400,000 with 1 dam failure event causing damage resulting in an estimated \$400,000 of expected annual damages from future events. The referenced dam failure event(s) are the ones that resulted in the most damages, deaths, and injuries during the past ten year period and serves as the extent/range of magnitude or severity

that could be experienced by St. Clair County due to a dam failure event; the ranking is minor to major.

Primary effects from Dam failure in St. Clair County would include:

1. Loss of life
2. Destruction of property
3. Unregulated water flow to surrounding areas
4. Increased amount of disease and disease-carrying animals in the area

Hazardous results from dam failure in St. Clair County would include:

1. Heavy flooding would be a direct result of a dam failure, causing many deaths by injuring and trapping people in structures.
2. Large amounts of water would sweep with it property and severely damage any property that remained in the area.
3. Chemical spills from local factories caused by rushing water would pollute the area and destroy crops and other property.
4. The river would be able to flow naturally once the dam was breached - damaging any structures in the path, as well as interrupting wildlife cycles and hydrologic power supply.
5. There would be increased diseases as a result of the unsanitary conditions.

General Risk

Requirement §201.6(c)(2)(ii) of the FR states that “a description of an overall summary of each hazard and its impact on the community” shall be included in the plan. **Table 4-30** summarizes the risk determinations for St. Clair County based upon the events that occurred 2003-2013.

Table 4-30: Summary of St. Clair County's Annual Potential Loss Estimates for Specific Hazards

Hazard	Total Estimated Risk Per Event
Thunderstorms	\$12,354
Lightning	\$2,000
Hail	\$21,000
Tornados	\$18,323,818
Floods/Flash Floods	\$130,917
Droughts/Extreme Heat	Not available
Winter Storms/Frost Freezes/ Heavy Snows/Ice Storms/Winter Weather/Extreme Cold	Not available
Hurricanes/Tropical Storms/ Tropical Depressions/High Winds/Strong Winds	\$29,778
Sinkholes/Expansive Soils	Not available
Landslides	Not available
Earthquakes	Not available
Wildfires	\$36,461
Dam/Levee Failures	\$130,917 - \$400,000

Source: NCDC/NOAA

Socially Vulnerable Populations

Population Density for St. Clair County, Alabama

Certain populations are generally more affected by hazard events. These populations can be defined in terms of social, racial, and economic characteristics. **Table 4-31** shows the county's population characteristics by jurisdiction and by census tract. Pell City is the most populated jurisdiction, followed by Moody, Margaret, Springville, Argo, Odenville, Ashville, Riverside, Ragland and Steele. The county has five census tracts. In terms of vulnerability, the larger the population of an area the more people and structures that could possibly be damaged or destroyed. Tract 401 is the most populated tract. Tract 403 is the least populated tract.

Minority populations are generally considered to be more vulnerable to hazard events.

These populations may not have the resources necessary to recover as quickly or completely from disasters. Minorities generally have higher percentages of inadequate medical insurance, inadequate home insurance, and homes that may be deemed as substandard housing.

Populations over sixty-five years of age and those under eighteen years of age are more vulnerable than other population groups. These groups are at higher risk for injury and medical complications that may occur during or as a result of a disaster. These special needs populations may require more attention during evacuation and may require special shelters.

Table 4-31: St. Clair County Population Characteristics

Geographic Area	Population	Race- White	Race- Black	Race- Other	Age 19 years - under	Age 20–64 years	Age 65 years and over
St. Clair County	83,593	73,741	7,150	2,702	21,832	50,852	10,909
Argo	4,071	3,832	148	91	1,281	2,462	328
Ashville	2,212	1,677	450	85	593	1,325	294
Margaret	4,428	3,423	853	152	1,406	2,801	221
Moody	11,726	10,348	912	466	2,980	7,358	1,388
Odenville	3,585	3,376	82	127	970	2,180	435
Pell City	12,695	10,252	1,975	468	3,285	7,411	1,999
Ragland	1,639	1,357	252	30	427	953	259
Riverside	2,208	1,931	235	42	586	1,377	245
Springville	4,080	3,820	192	68	1,072	2,424	584
Steele	1,043	987	4	52	235	618	190
Census Tracts							
401	25,023	22,559	1,577	887	6,585	15,413	3,025
402	23,885	20,510	2,637	738	6,190	14,098	3,597
403	5,509	5,048	313	148	1,471	3,232	806
404	8,449	7,500	557	392	2,142	5,050	1,257
405	20,727	18,124	2,066	537	5,444	13,059	2,224
<i>(Source: 2010 Census)</i>							

Given the importance of population shifts over time, successful mitigation planning requires a look at future trends to assess future vulnerability. Population projections show that St. Clair County is expected to increase in size by approximately 57.4% by the year 2040 as presented in **Table 4-32**. Census 2010 recorded a population of over 83 thousand residents in St. Clair County. St. Clair County is one of the counties located within Alabama that has the greatest population percentage change increase projected through 2040. St. Clair County is ranked number 15 in population among the 67 Alabama Counties as shown in the **Table 4-33**.

Table 4-32: St. Clair County's Population Growth

County	Census 2000	Census 2010	Projections						Change 2010-2040	
			2015	2020	2025	2030	2035	2040	Number	Percent
St. Clair	64,742	83,593	92,992	102,072	110,552	118,195	125,148	131,566	47,973	57.4%

(Source: U. S. Census Bureau and Center for Business and Economic Research, The University of Alabama, Fall 2012/Alabama State Plan)

Table 4-33: Geographical Rank of St. Clair County

Population Rank	Geographic Area	Population	Housing Units	Area in Square Miles			Density per Square Mile of Land Area	
				Total Area	Water Area	Land Area	Population	Housing Units
15	St. Clair County	83,593	35,336	653.64	21.74	631.90	127.89	54.06

(Source: U. S. Census Bureau 2010)

In addition to the racial and age composition within the county, income levels are important when identifying vulnerable populations. Lower income individuals may not have the resources to prepare for or recover from disasters. **Table 4-34** shows the median household income, per capita income, and poverty level data for the jurisdictions and census tracts in St.

Clair County.

The median household income for the State of Alabama is \$43,160. The median household income for the United States is \$53,046. One tract, 405, exceeds the state and national averages for median household income. Tracts 401, 402, 403, and 405 have median household incomes that exceed the state's average; however, all tracts but 405 are lower than the national average. St. Clair County, Argo, Margaret, Odenville, Pell City, Riverside, and Springville have median household incomes that exceed the state average; and, all but Argo, Margaret, Riverside, and Springville are less than the national average. *(Source: 2010 Census)*

Per capita income is the average obtained by dividing aggregate income by the total population of an area. The per capita income for the State of Alabama is \$23,587. The per capita income for the United States is \$28,051. Tracts 401 and 402 are the only tracts that exceed the state average, but remain below the national average. Argo, Pell City, Riverside, and Springville are the municipalities having a per capita income that exceeds the state average; however, all but Argo is below the national average. *(Source: 2010 Census)*

The percent of persons below the poverty level in the State of Alabama is 18.1%. The corresponding rate for the United States is 14.9%. Tract 403 is the only tract that exceeds the state and national poverty levels. Three (402, 403 and 404) out of five tracts in the county is above one or both of these rates, leaving two Tracts: 401 and 405 equal or below the state and national rates. Argo, Moody, Riverside, and Springville have rates that are below the state and national rates. Ashville has the highest poverty rate in the county at 21.19%. *(Source: 2010 Census)*

Housing is an important consideration of mitigation planning. The concentration and the type of housing are two primary factors. In St. Clair County there are a total of 35,336 housing units. **Table 4-35** shows the housing characteristics of the county by jurisdiction and census tracts. Pell City has the highest number of mobile home units within a municipality; while, Ashville has the highest percent of mobile homes within a municipality. Mobile home units are historically very vulnerable to a variety of hazards and prone to high amounts of damage and complete destruction.

Table 4-34: St. Clair County Income Data

Geographic Area	Median Household Income (2008-2012)	Per Capita Income (2008-2012)	Persons Below Poverty Level (2008-2012)	Percent Below Poverty Level
St. Clair County	\$46,652	\$23,144	12,026	14.82%
Argo	\$58,485	\$29,886	408	10.25%
Ashville	\$34,234	\$20,611	450	21.19%
Margaret	\$54,761	\$20,372	700	16.67%
Moody	\$11,726	\$20,087	1,314	11.27%
Odenville	\$51,923	\$23,351	556	15.57%
Pell City	\$46,348	\$26,329	2,093	16.73%
Ragland	\$40,278	\$16,739	414	19.43%
Riverside	\$59,688	\$27,005	98	4.78%
Springville	\$72,634	\$27,794	470	11.58%
Steele	\$35,298	\$18,354	184	18.83%
Census Tracts				
401	\$52,066	\$24,412	2,906	11.00%
402	\$43,291	\$24,544	4,040	16.00%
403	\$46,158	\$19,894	1,231	21.11%
404	\$41,071	\$20,854	1,428	16.00%
405	\$55,773	\$21,948	2,421	11.00%
<i>(Sources: 2010 Census; www.usa.com)</i>				

Table 4-35: St. Clair County Housing Characteristics			
Geographic Area	Total Housing Units	Mobile Home Units	Mobile Home %
St. Clair County	35,336	9,541	27%
Argo	1,647	636	38.62%
Ashville	928	386	41.59%
Margaret	1,468	234	15.94%
Moody	4,960	587	11.83%
Odenville	1,541	402	26.09%
Pell City	5,575	705	12.65%
Ragland	885	169	19.10%
Riverside	974	290	29.77%
Springville	1,573	170	10.81%
Steele	524	104	19.85%
Census Tracts			
401	10,251	2,182	21.00%
402	11,011	2,992	27.00%
403	2,530	810	32.02%
404	3,775	1,482	39.00%
405	7,769	2,075	26.00%

(Sources: 2010 Census; www.usa.com)

Table 4-36 shows the building stock in St. Clair County by general occupancy. The data provides the number of buildings by use and is shown by census tract. According to this data, provided by *HAZUS-MH 2.1* software, Tract 402 has the highest number of structures in the county, as well as the highest total value for structures in the county. **Table 4-37** that provides the value totals for these building types and **Table 4-38** that provides the content value for these building types. Each table is shown by Census Tract.

Table 4-36: St. Clair County Building Stock by General Occupancy

Tract	Residential	Commercial	Industrial	Agriculture	Religious	Government	Education	Building Count
401	6,947	246	94	14	28	5	5	7339
402	9,685	509	165	25	58	15	16	10,473
403	2,527	58	24	9	14	5	1	2,638
404	3,635	138	66	21	21	14	5	3,900
405	5,703	258	105	21	22	11	9	6,129
TOTAL	28,497	1,209	454	90	143	50	36	30,479

(Source: HAZUS-MH 2.1)

Table 4-37: St. Clair County Building Exposure

(Numbers shown in thousands of dollars)

Tract	Residential	Commercial	Industrial	Agriculture	Religious	Government	Education	Total Exposure
401	\$695,674	\$121,929	\$40,469	\$2,599	\$16,354	\$2,152	\$4,234	\$883,411
402	\$945,998	\$214,501	\$74,950	\$3,855	\$34,646	\$8,227	\$11,606	\$1,293,783
403	\$218,744	\$12,669	\$4,581	\$1,141	\$6,651	\$881	\$3,539	\$248,206
404	\$356,221	\$36,124	\$46,483	\$3,610	\$12,631	\$9,529	\$6,126	\$470,724
405	\$567,105	\$82,034	\$22,492	\$3,268	\$14,311	\$5,345	\$5,634	\$700,189
TOTAL	\$2,783,742	\$467,257	\$188,975	\$14,473	\$84,593	\$26,134	\$31,139	\$3,596,313

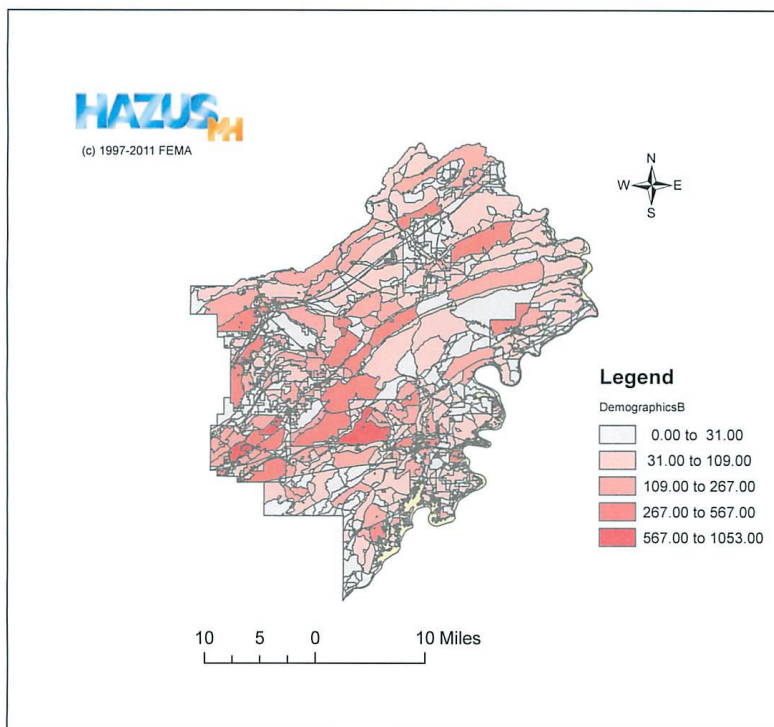
(Source: HAZUS-MH 2.1)

Table 4-38: St. Clair County Building Contents Exposure <i>(Numbers shown in thousands of dollars)</i>								
Tract	Residential	Commercial	Industrial	Agriculture	Religious	Government	Education	Total Exposure
401	\$348,107	\$124,959	\$55,094	\$2,599	\$16,354	\$2,937	\$4,234	\$554,284
402	\$473,591	\$230,588	\$103,367	\$3,855	\$34,646	\$8,803	\$11,866	\$866,716
403	\$109,531	\$12,902	\$5,835	\$1,141	\$6,651	\$935	\$3,539	\$140,534
404	\$178,265	\$37,426	\$67,420	\$3,610	\$12,631	\$12,536	\$6,126	\$318,014
405	\$283,813	\$83,656	\$28,437	\$3,268	\$14,311	\$6,000	\$5,955	\$425,440
TOTAL	\$1,393,307	\$489,531	\$260,153	\$14,473	\$84,593	\$31,211	\$31,720	\$2,304,988
<i>(Source: HAZUS-MH 2.1)</i>								

Mitigation goals and strategies of this plan update have been reviewed and reprioritized based on the rate and amount of development that has occurred in high risk and highly vulnerable areas. **Figure 4-16** depicts the population density distributions of the urban and rural subsections across the county. St. Clair County will continue to monitor development trends and adjust its mitigation responses accordingly. This plan update reflects the changes in population and growth patterns since the 2010 Plan, and future updates will address continuing changes over time.

Developed when and by whom?

FIGURE 4-16: St. Clair County Population Density



Impacts of Development Trends on Vulnerability

Development trends, particularly population shifts and land use changes created by major economic development expansions and infrastructure improvements of countywide significance, are important considerations to effective mitigation planning. These trends must be continually monitored and analyzed to keep abreast of changing vulnerabilities of jurisdictions and the increasing exposure of growing populations, new buildings, and enlarged infrastructure to natural hazards. As growth and development patterns change over time, the risks to property damage and lives also change. This section examines the projected growth trends and other impacts of countywide significance that are expected to affect the location and extent of natural hazards vulnerability over time.

This plan fully recognizes that changes in development for jurisdictions in hazard prone areas are on-going issues that must be constantly monitored and addressed in the local planning process. Changing development trends and the on-going growth and shift of population can increase levels of vulnerability. The potential impacts of these changes can have adverse impacts, such as those noted here:

- Increasing demands for developable land area to accommodate new growth can push new development to previously undeveloped flood plains.
- New development and associated parking, roads, and other impermeable surfaces can increase urban runoff, exacerbating flooding hazards.
- New construction in previously rural areas can push the wildland-urban interface, increasing exposure to wildfires.
- New housing may be constructed inadequately to withstand the damaging wind threats of high winds and tornadoes.
- Increased population can stretch the demand for limited water resources in times of drought.
- More development in widespread areas subject to sinkholes can increase the probability of property and infrastructure damages.

The county government relies on the Regional Planning Commission of Greater Birmingham for assistance in land use development. The following is acreage usage in order of most use to least use in St. Clair County: Residential, Public, Industrial, Commercial, Transportation, Forest, and Agriculture. St. Clair County has a total area of 654 square miles of which 634 square miles is land and 20 square miles is water. Recreation is highly valued in the county.

St. Clair County is exposed to some risk of property damage or loss of life during a natural hazard. It is important to monitor the plan regularly in order to track the types and properties at risk. Mitigation goals and strategies of this plan update have been reviewed and reprioritized based on the rate and amount of development that has occurred in high risk and highly vulnerable areas.

Table 4-40: St. Clair County's Critical Facilities

CRITICAL FACILITIES – ST. CLAIR COUNTY	
FACILITY TYPE	REPLACEMENT VALUE
St. Clair Regional Hospital, Pell City	\$16,495,910
Moody Fire and Rescue, Moody	
Riverside Fire and Rescue, Riverside	
Pell City Fire and Rescue, Pell City	
Wolf Creek VFD, Pell City	
Shoal Creek VFD and Rescue, Ashville	
Wattsville FD, Ragland	
Friendship VFD, Springville	
Gallant VFD, Gallant	
Chandler Mountain VFD, Steele	
Whitney Fire and Rescue, Steele	
Davis Lake FD, Springville	
Springville Fire and Rescue, Springville	
Pleasant Hill VFD, Springville	
Branchville Fire and Rescue, Branchville	
Odenville Fire Department, Odenville	
Cook Springs VFD, Cook Springs	
Margaret Fire and Rescue, Margaret	
Sheriff's Department – Dispatch Center, Pell City	\$1,260,000
St. Clair County Sheriff's Office, Pell City	\$1,260,000
St. Clair Sheriff's Office, Ashville	\$1,260,000
Pell City PD, 1 st Ave. North, Pell City	\$1,260,000
Pell City PD, 19 th St. South, Pell City	\$1,260,000
Ashville PD, Ashville	\$1,260,000
Riverside PD, Riverside	\$1,260,000
Branchville PD, Odenville	\$1,260,000
Springville PD, US Hwy 11, Springville	\$1,260,000
Springville PD, P. O. Box 919, Springville	\$1,260,000
Bible Methodist Christian School, Pell City	\$1,165,930
Pearl Lake Christian Academy, Springville	\$262,010
Calvary Christian Academy, Springville	\$510,910
Mountain View Adventist, Pell City	\$235,810

Victory Christian School, Pell City	\$6,707,360
First Baptist Kindergarten, Pell City	\$121,650
Moody Middle School, Moody	\$6,900,120
Moody Elementary School, Moody	\$9,943,510
Moody Junior High School, Moody	\$3,952,550
Moody High School, Moody	\$8,772,530
Coosa Valley Elementary School, Cropwell	\$5,379,360
Iola Roberts Elementary School, Pell City	\$4,272,380
Eden Elementary School, Pell City	\$7,388,950
Duran South, Pell City	\$3,436,020
Duran Junior High School, Pell City	\$9,802,770
Pell City High School, Pell City	\$22,270,520
Walter M. Kennedy School, Pell City	\$8,359,680
Ashville Middle School, Pell City	\$3,930,090
Ragland High School, Ragland	\$7,729,180
Eden Area Technical Center, Ashville	\$6,733,560
Ashville High School, Ashville	\$5,633,130
Steele Junior High School, Steele	\$2,245,770
Ruben Yancey Alternative School, Ashville	\$4,349,300
Ashville Elementary School, Ashville	\$6,060,580
Springville Elementary School, Springville	\$8,172,340
Springville Middle School, Springville	\$12,170,180
Springville High School, Springville	\$7,755,380
Odenville Elementary School, Odenville	\$9,415,560
Odenville Middle School, Odenville	\$712,657
St. Clair County High School, Odenville	\$683,836
St. Clair County Airport, Pell City	\$10,651,000
Waste Water Treatment Plant Lagoon, Ashville	\$599,400
Waste Water Treatment Plant, Moody	\$599,400
Dye Creek Waste Water Treatment Plant, Pell City	\$599,400
Kelly Waste Water Treatment Plant, Moody	\$599,400
Oneonta City Utilities Board, Allgood	\$599,400
Waste Water Treatment Plant Lagoon, Springville	\$599,400
Southern Natural Gas Compressor Plant, County Road 45, Pell City	\$981,000
Southern Natural Gas Compressor Plant, St. Clair County	\$981,000
Southern Natural Gas Compressor Plant, Highway 78, Pell City	\$981,000
Alabama Power Company Power Plant, Vincent	\$99,000,000

Alabama Power Company Logan Martin PGS WH Power Plant, Vincent	\$99,000,000
WBMG-LP CH 38, Moody	\$90,000
WURL 760, Moody	\$90,000
WFHK 1430, Pell City	\$90,000
St. Clair County EMA EOC	\$2,500,000
Total	\$422,129,933

(Sources: HAZUS MH 2.1)

Table 4-41: Critical Roadways Vulnerable to Flooding and Landslides

CRITICAL ROADWAYS		
NAME	TYPE	FLOOD TYPE
Interstate 65	Major Transportation Route	100-Year
U. S. 31	Major Transportation Route	100-Year
U. S. 82	Major Transportation Route	100-Year
AL Hwy. 22	Major Transportation Route	100 Year/Landslide Vulnerable Area
AL Hwy. 145	Major Transportation Route	100-Year
Interstate 59	8 miles of Interstate thru the City of Argo (Bridge over RR at the 150 mile marker)	100-Year
U. S. Hwy. 11	7 miles of highway thru the City of Argo; 3 miles of highway thru the City of Springville	100-Year
Train Tracks	9 miles of Tracks thru the City of Argo	
Interstate 20	Bridge included in Riverside	
Hwy. 78	Bridge included in Riverside	
Mountain View Road at U. S. Hwy 11	Major Transportation Route	10-Year
Village Springs Road (Area between Camp Road and Cole Drive)	Major Transportation Route	25-Year
AL Hwy. 174 @ Shanghi Road	Major Transportation Route	100-Year

(Source: Local)

SECTION 5: MITIGATION STRATEGY

Mitigation Strategy

This section remains the same as stated in the 2010 plan update. During the 2015 update planning process, the St. Clair County Hazard Mitigation Planning Committee reaffirmed the county's overall hazard mitigation strategy:

- Reduce risks through actions and policies that limit the effects of natural hazards on the physical assets and citizens of St. Clair County.

Hazard Mitigation Goals

This section remains the same as stated in the 2010 plan update.

The following goals remain the same as stated in the 2010 plan update:

1. Establish a comprehensive countywide hazard mitigation system
2. Reduce St. Clair County's risk from natural hazards
3. Reduce vulnerability of new and future development
4. Reduce St. Clair County's vulnerability to natural hazards
5. Foster public support and acceptance of hazard mitigation

These goals are accompanied by objectives and actions that are designed to support the implementation of the goals. A multi-stage process was used to identify, evaluate, and prioritize the goals, objectives, and actions. The selection and prioritization process remained the same as was used for the 2010 plan update. In the selection and prioritization of mitigation actions, each member was asked to consider the following: funding options, political support, public support, legality, preservation of the environment, and staff capability. The committee then looked at each strategy in terms of costs and benefits. Not only were direct costs and benefits considered, but indirect costs and benefits were also acknowledged. Indirect costs and/or benefits are often intangible attributes such as social effects.

The Community Rating System (CRS) Program implemented by the Federal Emergency

Management Agency (FEMA) through the National Flood Insurance Program (NFIP) allows policy holders within participating communities to receive a discount on NFIP policies. Any NFIP community may apply for inclusion in the CRS Program and be credited for a range of flood hazard mitigation activities that exceed NFIP minimum standards. Through the Insurance Services Office (ISO), a community applicant is graded based on criteria set forth in CRS guidelines for flood hazard mitigation. The grade assigned to each community results in a CRS classification. The CRS class determines the applicable insurance discount for the policy holders within the community. The CRS class rating is a scale of one through ten, with Class 1 communities receiving a 45 percent discount and Class 10 communities receiving no discount. **Table 5-1** summarizes each CRS class and the applicable discount.

Table 5-1 CRS Class and Discount

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

According to data compiled by FEMA through October 1, 2006, Alabama has 12 communities participating and three communities whose eligibility was rescinded for non-compliance with continuing program eligibility requirements. All remaining NFIP communities are deemed Class 10. St. Clair County is a participant in the NFIP.

According to FEMA, each community must submit a recertification document by October 1 each year to maintain eligibility for the program. The recertification requirement includes documentation that mitigation program activities initially credited to the community have continued, in addition to documenting any new strategies implemented since the previous October 1. Any community that has received a Class 9 or better classification will revert to Class 10 on the following May 1 unless it submits the signed recertification worksheet by October 1 of each year. If the recertification does not include all the needed documentation, the community may lose enough points to cause a

retrograde in its CRS classification. A repetitive loss community that fails to submit a copy of its annual outreach project or a community that fails to submit its annual progress report will revert to a Class 10.

Hazard Mitigation Actions

This section remains the same as stated in the 2010 plan update.

The St. Clair HMPC members were provided lists of the actions and associated objectives identified in the 2010 plan for their review and comment. Agencies provided feedback on completed, in progress, deferred, and/or deleted actions. Further, the planning committee reviewed the local plan to verify that goals and objectives identified within the plan were compatible with the goals and objectives identified at the state level.

Priority mitigation actions will be implemented only if they are cost beneficial; maximum benefits must outweigh the associated costs of the proposed actions. The committee performed a general evaluation of each mitigation measure which might require FEMA funds. The committee weighed the estimated costs for each mitigation measure against the projected benefits of the action. A more detailed benefit-cost analysis will be required for each priority action to determine economic feasibility during the project planning phase. Projects will also require a more detailed evaluation for eligibility and feasibility including social impact, environmental impact, technical feasibility, and other criteria that measure project effectiveness. This detailed evaluation of projects will be performed in the pre-application phase of a grant request. Further, implementation of actions will be subject to the availability of FEMA grants and other sources of funding from year-to-year.

The St. Clair County HMPC reviewed all mitigation actions, adjusted the priority based upon actions that were previously identified, and reevaluated the grant funding programs. The committee assessed the availability of grant funds and the state/federal governments' prioritization of these potential grants in order to establish the priorities for St. Clair County's planning strategy.

- A High ranking is the same as first in priority on an equal basis and requires continuous action and participations from the entire community.

- A Medium ranking is the same as second in priority on an equal basis and involves fewer people, effort, and area of the community.
- A Low ranking is the same as third in priority on an equal basis and involves a small number of people and plans for a specific action.

Since the 2010 Plan was adopted, St. Clair County was faced with a series of natural hazard threats. St. Clair County pursues, and continues to pursue, a variety of natural hazard mitigation actions that reduce the potential impact of these threats and the impact of future threats. Since adoptions of the 2010 Plan, there have been 321 hazardous events in St. Clair County as noted in **Table 4-4 through Table 4-16**. These events played a significant role in shaping the hazard mitigation priorities within St. Clair County over the last five years. Each disaster revealed strengths and weaknesses within the hazard mitigation program, and the county adjusted its subsequent mitigation actions to address these weaknesses accordingly. Social media, such as Facebook and Twitter, has become a large and important part of emergency notification efforts.

Mitigation Implementation

Mitigation Actions listed in the 2010 Plan will be benchmarked in this plan update. New mitigation actions will also be listed in this plan update.

Legend for the Mitigation Measure # as listed in the following tables:

- 1st # = Type #:
- 1 for Prevention
 - 2 for Property Protection
 - 3 for Public Education and Awareness
 - 4 for Natural Resource Protection
 - 5 for Emergency Services Protection
 - 6 for Structural Projects
- 2nd # = Goal #:
- 1 for “Establish a comprehensive countywide hazard mitigation system”
 - 2 for “Reduce St. Clair County’s risk from natural hazards”
 - 3 for “Reduce vulnerability of new and future development”
 - 4 for “Reduce St. Clair County’s vulnerability to natural hazards”
 - 5 for “Foster public support and acceptance of hazard mitigation”
- 3rd # = Actions: The number of mitigation measures with the same type # and goal #

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Table 5-2: St. Clair County Mitigation Actions

Mitigation Action 1.1.1	Seek a countywide update of all FIRMs in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer; Flood Plain Manager
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	FEMA Map Update Program
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.2	Train local flood plain managers through programs offered through the State Flood Plain Manager and FEMA's training center in Emmitsburg, Maryland.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	Staff from our County Engineering Department has taken the Flood Insurance Rate Map and other FEMA courses. They are preparing to take the E 273 Managing Floodplain Development course at EMI.

Mitigation Action 1.1.3	Maintain a library of technical assistance and guidance materials to support the local flood plain manager.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	The Hazard Mitigation Planning Committee are developing a system to store and maintain guidance materials to support our community.
Mitigation Action 1.1.4	Promote the adoption of a uniform flood hazard prevention ordinance with higher regulatory standards that discourage flood plain development and seek to maintain the natural and beneficial functions of flood plains.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.6	Consider the adoption of a uniform storm water management ordinance that maintains pre-development runoff rates.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.7	Apply for and maintain membership in the CRS Program.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	Our Community Officials are working towards applying for the Community Rating Systems. We have educated our County Commission by providing them with the brochure found on the FEMA website.

Mitigation Action 1.1.8	Continue to participate in the NFIP.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	As required
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	St. Clair County is a participating member of the NFIP and plans to continue.
Mitigation Action 1.5.1	Encourage CRS communities to conduct joint public outreach programs.
Type	Prevention
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	Outreach programs are taking place to inform the citizens of our jurisdictions how important the Community Rating System Program is. We have passed out a lot of brochures at our “Be Ready Day”, City Fest Day, “Preparedness Day”, and many more functions.

Mitigation Action 2.2.1	Seek funding sources, such as Community Development Block Grant funds, to assist low income home owners with building retrofits to protect against flood damage.
Type	Property Protection
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	CDBG; Local
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 2.4.1	Provide technical assistance to owners of pre- FIRM buildings to advise on available retrofits to protect against flood damage.
Type	Property Protection
Goal	Reduce St. Clair County's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Low
Benchmark:	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.1.1	Promote the purchase of insurance coverage by property owners and renters for flooding, sinkhole, and earthquake damages in high risk areas.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods, Earthquakes, Sinkholes
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager; EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	The county has posted information on their Facebook page and in Public Information presentations.
Mitigation Action 3.1.2	Encourage the Multiple Listing Service (MLS) to require flood plain location disclosure as a condition for each real estate listing.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Local Government
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.3.1	Consider the enactment of a local ordinance or state law to require flood plain location disclosure when a property is listed for sale.
Type	Public Education and Awareness
Goal	Reduce vulnerability of new and future development
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Local Government
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.1	Distribute FEMA Publication 320 - Taking Shelter From the Storm: Building a Safe Room in Your House - through building permit and inspection offices.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	Since our funding has been cut, we have provided the FEMA 320 link on our facebook page for interested citizens to download.

Mitigation Action 3.5.2	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.3	Continue the active programs and activities of the St. Clair County EMA to promote mitigation and severe weather awareness.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	St. Clair County has distributed public information materials for the CSEPP Campaign to include: brochures in English and Spanish; zone maps; school

	<p>brochures; school videos; all hazard videos; newspaper ads; television ads; radio ads; I-20 billboard; football program ads; and stadium fence sign ads. In addition: numerous newspaper articles about any subject concerning the safety and well-being of county residents, especially weather safety and weather events, CSEPP activities, hazardous materials accidents, training activities, etc.; full page newspaper ad (Be Prepared); Duran Jr. High volleyball team flyer; church flyer, Are You Prepared?; Food World pharmacy bags; Amateur Radio Field Day flyer; Webpage on county website; On Hold phone messages; county newsletter; Emergency Information Guide; 72 & You logo design; County Health Fairs; PR items distributed – pens, notebooks, rulers, bags, etc.; Special Pops items included: Caregivers Resource Guide and Masters of Disaster kits; and submitted and/or approved all special needs newsletters/info sheets/flyers.</p> <p>New since 2010: Facebook and Twitter postings of articles, charts and tables, and other emergency and preparedness information. Participation in radio talk shows.</p>
Mitigation Action 3.5.4	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Animal Emergency Planning Brochures were ordered and made available to the public.

Mitigation Action 3.5.5	Maintain local library repositories with the latest available publications.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Per coordination with each library, items are made available to the public.
Mitigation Action 3.5.6	Distribute hazard mitigation brochures to area schools for distribution to students.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Brochures in the form of coloring books were distributed to schools.

Mitigation Action 3.5.7	Promote the use of weather radios in households and businesses.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA; Flood Plain Manager
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	Weather Alert Radios were distributed to all residents of St. Clair County as part of the 2009 CSEP Program Closeout. Radios were distributed until depleted in 2013. The EMA strongly promoted the use of weather alert radios on radio talk shows, during public presentations, in newspaper article and on Facebook and Twitter. See Also Benchmark on 5.2.2
Mitigation Action 4.1.1	Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMPs) for channel and drainage system maintenance.
Type	Natural Resource Protection
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2018

Estimated Cost	
Funding Sources	HMGP
Priority	Medium
Benchmark	A representative from the Alabama Cooperative Extension System provided great technical assistance.
Mitigation Action 5.2.2	Support the Alabama Skywarn Foundation efforts to distribute weather radios to low- income households, especially in rural areas outside of siren coverage areas.
Type	Emergency Services Protection
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	The EMA is not aware of any weather alert radios being distributed in St. Clair County by the Alabama Skywarn Foundation; however, St. Clair County EMA distributed these radios to all residents of the county as part of the CSSEP Program Closeout in 2009 and 2010 until the stock was depleted in 2013.
Mitigation Action 5.2.3	Purchase, install, and test emergency warning sirens, as needed. Upgrade existing equipment as needed.
Type	Emergency Services Protection
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2010-2015
Estimated Cost	
Funding Sources	\$25K HMGP/ADECA
Priority	High
Benchmark	In 2005 and 2006, St. Clair County used HMGP funds to install 8 Vortex Sirens and 1 Tone Only Vortex

	Siren. In 2010, St. Clair County upgraded 25 sirens from WPS 2800 to WPS 2900 series. In 2012, St. Clair County sent county employees to Whelen to learn basic siren maintenance to reduce overall maintenance cost and to be able to more quickly address siren issues. St. Clair County purchased a bucket truck and tools to perform maintenance on siren systems.
Mitigation Action 5.4.1	Purchase emergency generators for post- disaster mitigation and conduct routine tests on backup generators for all critical facilities.
Type	Emergency Services Protection
Goal	Reduce St. Clair County's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2010-2015
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	St. Clair County acquired several generators as part of the CSEP Program Closeout and signed them over to County and Municipal entities to include: County Commission for use at the County Administration Annex, City of Springville, and the City of Pell City. A generator was also acquired/installed by the Coosa Valley Water Supply.
Mitigation Action 6.2.1	Encourage the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA; Local Governments
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; ADECA

Priority	High
Benchmark	Municipalities and schools strongly encouraged to install storm shelters and community safe rooms. Several community safe rooms and storm shelters were installed by schools and municipalities.
Mitigation Action 6.2.2	Continue program to subsidize safe room construction in existing homes.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-ground), and in new homes.
Mitigation Action 6.2.3	Construct freestanding public safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly as funding is available
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 6.2.4	Encourage the construction of safe rooms in new and existing construction.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly as funding is available
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	Strong media push to make residents aware of HMGP Storm Shelter grants as well as the importance of having a storm shelter were made on the radio and during public presentations, in newspaper articles, and posts on Facebook. In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-ground), and in new homes.
Mitigation Action 6.2.5	Continue to provide adequate safe rooms and community shelters.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly as funding is available
Estimated Cost	
Funding Sources	HMGP; ADECA; Local

Priority	High
Benchmark	In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-ground), and in new homes. The City of Margaret installed a community safe room.
Mitigation Action 6.4.1	Identify feasible structural projects to reduce flood damages along at problem areas throughout the county, in particular, the Trout Creek area along Hwy. 144 and the Hwy. 411 area in Odenville.
Type	Structural Projects
Goal	Reduce St. Clair County's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.4.2	Prepare and implement standard operating procedures for drainage system maintenance.
Type	Structural Projects
Goal	Reduce St. Clair County's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.

SECTION 6: JURISDICTIONAL ASSESSMENTS

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CITY OF ARGO

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Table 6-1: City of Argo Risk and Vulnerability Overview			
Natural Hazards	Hazard Identification	Prioritized Occurrence Threat	Vulnerability
Thunderstorm	X	3	H
Lightning	X	7	M
Hail	X	5	L
Tornado	X	7	H
Flood/Flash Flood	X	4	H
Drought/Extreme Heat	X	2	L
Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	X	4	M
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	X	3	M
Sinkhole/Expansive Soil	X	7	L
Landslide	X	7	L
Earthquake	X	7	L
Wildfire	X	1	L
Dam/Levee Failure	X	6	L
<i>Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions</i>			
<p>KEY</p> <p><u>Hazard Identification:</u> X Affects the Jurisdiction, N/A Not a threat to the jurisdiction</p> <p><u>Priority:</u> Hazards are prioritized with the highest threat of occurrence assigned number one based on hazardous events that have occurred within each jurisdiction over the past ten years, with the exception of wildfires that were based on events that have occurred over the past three years. Some natural hazards have equal threats to a jurisdiction; therefore, their threat number will be the same.</p> <p><u>Vulnerability:</u> NA – Not Applicable; not a hazard to the jurisdiction</p> <p>L – Low Risk; little damage potential (damage to less than 5% of the jurisdiction)</p> <p>M – Medium Risk; moderate damage potential (damage to 5-10% of jurisdiction, infrequent occurrence)</p> <p>H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)</p>			

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Table 6-2: Argo's Thunderstorm Events

10 Thunderstorm Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	02/22/2003	03:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/11/2003	14:10	CST	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/22/2004	17:17	CST	Thunderstorm Wind	50 kts. EG	0	0	12.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	04/30/2005	03:38	CST	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/17/2011	11:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	0.50K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:40	CST-6	Thunderstorm Wind	60 kts. EG	0	0	1.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:54	CST-6	Thunderstorm Wind	45 kts. EG	0	0	2.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/22/2011	16:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/26/2011	15:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	40.50K	0.00K

Table 6-3: Argo's Lightning Events

0 Lightning Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

No lightning events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-4: Argo's Hail Events

3 Hail Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	05/02/2003	17:12	CST	Hail	1.75 in.	0	0	40.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/15/2011	21:24	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
Totals:								0	0	40.00K	0.00K

Table 6-5: Argo's Tornado Events

0 Tornado Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

No tornado events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-6: Argo's Flood/Flash Flood Events

9 Flood/Flash Flood Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/06/2003	16:00	CST	Flood		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/18/2003	05:00	CST	Flood		0	0	0.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/05/2003	21:30	CST	Flash Flood		0	0	25.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/07/2003	14:00	CST	Flash Flood		0	0	1.000M	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	07/01/2003	10:00	CST	Flash Flood		0	0	17.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2004	02:02	CST	Flash Flood		0	0	5.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	09/16/2004	09:00	CST	Flash Flood		0	0	50.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	11/24/2004	05:45	CST	Flash Flood		1	0	400.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2006	16:30	CST	Flash Flood		0	0	3.00K	0.00K
Totals:								1	0	1.50M	0.00K

Table 6-7: Argo's Drought/Extreme Heat Events

20 Drought/Extreme Heat Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-8: Argo's Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events

9 Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/09/2011	15:50	CST-6	Winter Storm		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/25/2010	07:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/17/2013	12:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/12/2010	13:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2010	08:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/26/2010	03:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-9: Argo's Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events

10 Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events
 – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	42.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/29/2005	19:00	CST	Tropical Storm		0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/16/2004	10:45	CST	High Wind	52 kts. EG	0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/05/2011	18:20	CST-6	High Wind	52 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/09/2006	18:00	CST	Strong Wind	40 kts. EG	0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2007	22:40	CST-6	Strong Wind	35 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/20/2007	17:30	CST-6	Strong Wind	30 kts. EG	0	0	10.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/11/2009	11:50	CST-6	Strong Wind	43 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	268.00K	0.00K

Table 6-10: Argo's Sinkhole Events

0 Sinkhole Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Sources: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)
 No sinkhole events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-11: Argo's Landslide Events

0 Landslide Event – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No landslide events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-12: Argo's Earthquake Events

0 Earthquake Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)

No earthquake events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-13: Countywide Wildfire Events

93 Wildfire Events – 2010 thru 2013

(Source: Alabama Forestry Commission)

County	Total # of Fires 2010-2013	Average # of Fires Per Year	Total Acres Burned 2010- 2013	Average Acres Burned Per Year	Average Fire Size in Acres
St. Clair	93	31	1,785.45	594.89	19.19

Table 6-14: Argo's Dam/Levee Failure Events

1 Dam/Levee Failure Event – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/flash flood)

Location	County/Zone	St	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Countywide (Dam failed near the Friendship Community)	St. Clair County	AL	11/24/2004	5:45 p.m.		Dam Failure		1	0	0.00K	0.00K
Totals:								1	0	0.00K	0.00K

Table 6-15: City of Argo Hazard Probability Assessment				
Natural Hazards	Number of Historical Occurrences	Probability of Future Occurrence	Extent	Area Affected
Thunderstorm	10	100%	>10%	Citywide
Lightning	0	Unknown	5-10%	Citywide
Hail	3	30%	<5%	Citywide
Tornado	0	Unknown	>10%	Citywide
Flood/Flash Flood	9	90%	>10%	Citywide
Drought/Extreme Heat	20	>100%	<5%	Citywide
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	9	90%	5-10%	Citywide
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	10	100%	5-10%	Citywide
Sinkhole/Expansive Soil	0	Unknown	<5%	Citywide
Landslide	0	Unknown	<5%	Citywide
Earthquake	0	Unknown	<5%	Citywide
Wildfire (3 year study period)	93	>100%	<5%	Citywide
Dam/Levee Failure	1	10%	<5%	Citywide
Source: NOAA NCDC; U. S. Inflation Calculator/Consumer Price Index; USGS ; Local Input; USDA Census of Agriculture; Alabama Forestry Commission; and National Forestry Service; Participating Jurisdictions				
Methodology: Number of historical occurrences is those reported by NOAA NCDC during the 10 year study period, with the exception of wildfire that is a 3 year study period. Probability is expressed by dividing the total number of occurrences by the study period in years. Extent is expressed as the percentage assigned by the jurisdictions' ranking in the vulnerability overview (Table 6-1). Zero denotes no data available to determine the probability, extent, or affected area.				

Table 6-16: Argo's Critical Facilities

CRITICAL FACILITIES – ARGO	
FACILITY TYPE	REPLACEMENT VALUE
Argo City Hall	
Municipal Complex/Fire Station #2, 8885 Gadsden Hwy, Trussville	\$300,000
Municipal Complex/Fire Station #1, 100 Black Jack Rd., Trussville	\$900,000
40x60 Utility Building, 100 Black Jack Rd., Trussville	\$40,000
Total	\$1,240,000

(Source: Local; HAZUS 2.1)

Table 6-17: Argo Estimated Loss Projections from Specified Hazards						
Natural Hazards	Average Occurrences (per year)	Total Deaths	Total Injuries	Average Death and Injury Loss (per event)	Average Crop and Property Loss (per event)	Projected Loss (per event)
Thunderstorm	1.0	0	0	\$0	\$4,050	\$4,415
Lightning	0	0	0	\$0	\$0	Unknown
Hail	0.3	0	0	\$0	\$4,000	\$4,360
Tornado	0	0	0	\$0	\$0	Unknown
Flood/Flash Flood	0.9	1	0	\$366,600	\$150,000	\$563,094
Drought/Extreme Heat	2.0	0	0	\$0	\$0	Unknown
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	0.9	0	0	\$0	\$0	Unknown
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	1.0	0	0	\$0	\$26,800	\$29,212
Sinkhole/Expansive Soils	0	0	0	\$0	\$0	Unknown
Landslide	0	0	0	\$0	\$0	Unknown
Earthquake	0	0	0	\$0	\$0	Unknown
Wildfire (3 year study period)	31	0	0	\$0	\$36,461	\$39,743
Dam/Levee Failure	0.1	1	0	\$366,600	\$0	\$399,594
<i>Sources: NOAA NCDC; U.S. Inflation Calculator/Consumer Price Index; Local Input; USDA Census of Agriculture; Alabama Forestry Commission and National Forestry Service; Alabama Geological Survey</i>						
Methodology: Average occurrences were expressed annually by dividing the total number of occurrences by the ten-year period. Deaths and injuries were taken from the hazard event data. Average losses were calculated by dividing the total amount of all damages by the total number of occurrences during the ten-year period with the exception of wildfire which takes the average fire size as noted in Table 4-15 multiplied by average amount per acre (\$1,900). Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figure from a midpoint of 2008 dollars to 2014 dollars (\$1 in 2008 = \$1.09 in 2014...a cumulative rate of inflation of 9%). Zero and Unknown denote no data is available to determine the average occurrences, average loss or projected loss per event.						

City of Argo Mitigation Action Plan

The City of Argo recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated. The City of Argo is a member of the NFIP and has a Property Protection Classification of 3. Areas of Argo that experience repetitive flooding include: Old Springville Road and Katie Lane Bridge; the culvert located at the intersection of Argo Margaret Road and Venable Road; and Highway 11 and Hunter Drive and surrounding area, to include Argo Village Shopping Area. The main exit for the entire corner of the county is located at Ann Margaret Road (County Road 6) and has experienced flooding four times resulting in the road becoming impassable and having to be closed.

Mitigation Status

During the plan update, mitigation actions were reviewed in order to identify completed, deferred, or deleted actions from the previous plan and incorporate actions added during annual updates. **Table 6-18** shows the City of Argo's updated mitigation actions. During the plan update process, no new mitigation actions were identified and added to the plan.

Table 6-18: Argo's Mitigation Actions	
Mitigation Action 1.1.1	Detailed plans and targeted studies.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer; Flood Plain Manager
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	FEMA Map Update Program
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.2	Consider the adoption of a uniform storm water management ordinance that maintains pre-development runoff rates.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.8	Continue to participate in the NFIP
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark:	Argo is a participating member of the NFIP and plans to continue.

Mitigation Action 2.4.1	Provide technical assistance to owners of pre-FIRM buildings to advise on available retrofits to protect against flood damage.
Type	Property Protection
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.1.1	Promote the purchase of insurance coverage by property owners and renters for flooding, sinkhole, and earthquake damages in high risk areas.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods, earthquakes, Sinkholes
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager; EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	The county has posted information on their Facebook page and in Public Information presentations.

Mitigation Action 3.5.1	Distribute FEMA Publication 320 – Taking Shelter from the Storm: Building a Safe Room in your House – through building permit and inspection offices.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.3	Continue the active programs and activities of the St. Clair County EMA to promote mitigation and severe weather awareness.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	The St. Clair County EMA covered this action during the past five years. St. Clair County has distributed public information materials for the CSEPP Campaign to include: brochures in English and Spanish; zone maps; school brochures; school videos; all hazard videos; newspaper ads; television ads; radio ads; I-20 billboard; football program ads; and stadium fence sign ads. In addition: numerous newspaper articles about any subject concerning the safety and well-being of county residents, especially weather safety and weather events, CSEPP activities, hazardous

	<p>materials accidents, training activities, etc.; full page newspaper ad (Be Prepared); Duran Jr. High volleyball team flyer; church flyer, Are You Prepared?; Food World pharmacy bags; Amateur Radio Field Day flyer; Webpage on county website; On Hold phone messages; county newsletter; Emergency Information Guide; 72 & You logo design; County Health Fairs; PR items distributed – pens, notebooks, rulers, bags, etc.; Special Pops items included: Caregivers Resource Guide and Masters of Disaster kits; and submitted and/or approved all special needs newsletters/info sheets/flyers.</p> <p>New since 2010: Facebook and Twitter postings of articles, charts and tables, and other emergency and preparedness information. Participation in radio talk shows.</p>
Mitigation Action 3.5.4	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	The St. Clair County EMA covered this action response during the past five years. Animal Emergency Planning Brochures were ordered and made available to the public.

Mitigation Action 3.5.5	Maintain local library repositories with the latest available publications.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Per coordination with each library, items are made available to the public.
Mitigation Action 3.5.6	Distribute hazard mitigation brochures to area schools for distribution to students
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	The St. Clair County EMA covered this action response during the past five years. Brochures in the form of coloring books were distributed to schools.

Mitigation Action 3.5.7	Promote the use of weather radios in households and businesses
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and existing
Local Planning Mechanism	EMA; Flood Plain Manager
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	The St. Clair County EMA covered this action during the past five years. Weather Alert Radios were distributed to all residents of St. Clair County as part of the 2009 CSEP Program Closeout. Radios were distributed until depleted in 2013. The EMA strongly promoted the use of weather alert radios on radio talk shows, during public presentations, in newspaper article and on Facebook and Twitter.
Mitigation Action 4.1.1	Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMP's) for channel and drainage system maintenance.
Type	Natural Resource Protection
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 5.2.2	Support the Alabama Skywarn Foundation efforts to distribute weather radios to low-income households, especially in rural areas outside of siren coverage areas.
Type	Emergency Services Protection
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	The St. Clair County EMA covered this action response during the past five years. The EMA is not aware of any weather alert radios being distributed in St. Clair County by the Alabama Skywarn Foundation; however, St. Clair County EMA distributed these radios to all residents of the county as part of the CSEP Program Closeout in 2009 and 2010 until the stock was depleted in 2013.
Mitigation Action 5.2.3	Purchase, install, and test emergency warning sirens, as needed. Upgrade existing equipment as needed.
Type	Emergency Services Protection
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2010-2015
Estimated Cost	
Funding Sources	\$25K HMGP/ ADECA
Priority	High
Benchmark	In 2005 and 2006, St. Clair County used HMGP funds to install 8 Vortex Sirens and 1 Tone Only Vortex Siren. In 2010, St. Clair County upgraded 25 sirens from WPS 2800 to WPS 2900 series. In 2012, St. Clair County sent county employees to Whelen to learn basic siren

	maintenance to reduce overall maintenance cost and to be able to more quickly address siren issues. St. Clair County purchased a bucket truck and tools to perform maintenance on siren systems.
Mitigation Action 5.4.1	Purchase emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities, to include fire stations
Type	Emergency Services Protection
Goal	Reduce St. Clair County's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly as funding becomes available
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.2.1	Encourage the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA; Local Governments
Estimated Time Frame for Completion	Yearly as funding becomes available
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 6.2.2	Continue program to subsidize safe room construction in existing homes.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly as funding becomes available
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.2.3	Construct freestanding public community safe rooms in vulnerable locations
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly as funding becomes available
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Low
Benchmark	A community safe room was installed using HMGP funding.

Mitigation Action 6.2.4	Encourage the construction/installation of safe rooms in new and existing construction, to include the fire stations and police stations
Type	Structtural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly as funding becomes available
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.2.5	Continue to provide adequate safe rooms and community shelters
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	
Estimated Time Frame for Completion	Yearly as funding becomes available
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 6.4.2	Prepare and implement standard operating procedures for drainage system maintenance. Particularly, the Argo Margaret Road's (County Road 6) main exit for the entire corner of the county needs to be widened and overhead foliage removed.
Type	Structural Projects
Goal	Reduce St. Clair County's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.

CITY OF ASHVILLE

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**Table 6-19: City of Ashville
Risk and Vulnerability Overview**

Natural Hazards	Hazard Identification	Prioritized Occurrence Threat	Vulnerability
Thunderstorm	X	3	H
Lightning	X	8	M
Hail	X	6	L
Tornado	X	8	H
Flood/Flash Flood	X	5	H
Drought/Extreme Heat	X	2	L
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	X	5	M
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	X	4	M
Sinkhole/Expansive Soil	X	8	L
Landslide	X	8	L
Earthquake	X	8	L
Wildfire	X	1	L
Dam/Levee Failure	X	7	H
<i>Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions</i>			
<p>KEY Hazard Identification: X Affects the Jurisdiction, N/A Not a threat to the jurisdiction Priority: Hazards are prioritized with the highest threat of occurrence assigned number one based on hazardous events that have occurred within each jurisdiction over the past ten years, with the exception of wildfires that were based on events that have occurred over the past three years. Some natural hazards have equal threats to a jurisdiction; therefore, their threat number will be the same. Vulnerability: NA – Not Applicable; not a hazard to the jurisdiction L – Low Risk; little damage potential (damage to less than 5% of the jurisdiction) M – Medium Risk; moderate damage potential (damage to 5-10% of jurisdiction, infrequent occurrence) H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)</p>			

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Table 6-20: Ashville's Thunderstorm Events

19 Thunderstorm Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	SL	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	02/22/2003	03:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	05/05/2003	18:40	CST	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/11/2003	14:10	CST	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	08/27/2003	16:31	CST	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/22/2004	17:17	CST	Thunderstorm Wind	50 kts. EG	0	0	12.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	04/30/2005	03:38	CST	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	06/08/2005	13:30	CST	Thunderstorm Wind	52 kts. EG	0	0	8.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	07/29/2006	15:21	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	06/30/2007	15:03	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	05/11/2008	12:40	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	04/02/2009	21:09	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
ST CLAIR	ST. CLAIR CO.	AL	05/20/2010	19:14	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/17/2011	11:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	0.50K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:40	CST-6	Thunderstorm Wind	60 kts. EG	0	0	1.00K	0.00K

ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:54	CST-6	Thunderstorm Wind	45 kts. EG	0	0	2.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/22/2011	16:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/26/2011	15:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	07/17/2013	16:53	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Totals:								0	0	68.50K	0.00K

Table 6-21: Ashville's Lightning Events

0 Lightning Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

No lightning events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-22: Ashville's Hail Events

8 Hail Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	05/02/2003	17:12	CST	Hail	1.75 in.	0	0	40.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	04/22/2005	15:55	CST	Hail	1.00 in.	0	0	1.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	04/19/2006	16:10	CST	Hail	0.75 in.	0	0	0.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	05/26/2011	15:00	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/15/2011	21:24	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ASHVILLE	ST. CLAIR CO.	AL	07/17/2013	16:54	CST-6	Hail	0.88 in.	0	0	0.00K	0.00K

ASHVILLE	ST. CLAIR CO.	AL	07/17/2013	16:55	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
Totals:								0	0	41.00K	0.00K

Table 6-23: Ashville's Tornado Events

0 Tornado Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

No tornado events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-24: Ashville's Flood/Flash Flood Events

9 Flood/Flash Flood Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/06/2003	16:00	CST	Flood		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/18/2003	05:00	CST	Flood		0	0	0.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/05/2003	21:30	CST	Flash Flood		0	0	25.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/07/2003	14:00	CST	Flash Flood		0	0	1.000M	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	07/01/2003	10:00	CST	Flash Flood		0	0	17.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2004	02:02	CST	Flash Flood		0	0	5.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	09/16/2004	09:00	CST	Flash Flood		0	0	50.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	11/24/2004	05:45	CST	Flash Flood		1	0	400.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2006	16:30	CST	Flash Flood		0	0	3.00K	0.00K

Totals:								1	0	1.500M	0.00K
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Table 6-25: Ashville's Drought/Extreme Heat Events

20 Drought/Extreme Heat Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-26: Asheville's Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events

9 Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/09/2011	15:50	CST-6	Winter Storm		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/25/2010	07:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/17/2013	12:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/12/2010	13:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2010	08:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/26/2010	03:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-27: Ashville's Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events

10 Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events
 – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	42.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/29/2005	19:00	CST	Tropical Storm		0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/16/2004	10:45	CST	High Wind	52 kts. EG	0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/05/2011	18:20	CST-6	High Wind	52 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/09/2006	18:00	CST	Strong Wind	40 kts. EG	0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2007	22:40	CST-6	Strong Wind	35 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/20/2007	17:30	CST-6	Strong Wind	30 kts. EG	0	0	10.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/11/2009	11:50	CST-6	Strong Wind	43 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	268.00K	0.00K

Table 6-28: Ashville's Sinkhole Events

0 Sinkhole Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No sinkhole events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-29: Ashville's Landslide Events

0 Landslide Event – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No landslide events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-30: Ashville's Earthquake Events

0 Earthquake Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)

No earthquake events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-31: Countywide Wildfire Events

93 Wildfire Events – 2010 thru 2013

(Source: Alabama Forestry Commission)

County	Total # of Fires 2010-2013	Average # of Fires Per Year	Total Acres Burned 2010- 2013	Average Acres Burned Per Year	Average Fire Size in Acres
St. Clair	93	31	1,785.45	594.89	19.19

Table 6-32: Dam/Levee Failure Events

1 Dam/Levee Failure Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/flash flood)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Countywide (Dam failed near the Friendship Community)	St. Clair County	AL	11/24/2004	5:45 p.m.		Dam Failure		1	0	0.00K	0.00K
Totals:								1	0	0.00K	0.00K

Table 6-33: City of Ashville Hazard Probability Assessment				
Natural Hazards	Number of Historical Occurrences	Probability of Future Occurrence	Extent	Area Affected
Thunderstorm	19	>100%	>10%	Citywide
Lightning	0	Unknown	5-10%	Citywide
Hail	8	80%	<5%	Citywide
Tornado	0	Unknown	>10%	Citywide
Flood/Flash Flood	9	90%	>10%	Citywide
Drought/Extreme Heat	20	>100%	<5%	Citywide
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	9	90%	5-10%	Citywide
Hurricane/Tropical Storm/Tropical Depression/High Wind/ Strong Wind	10	100%	5-10%	Citywide
Sinkhole/Expansive Soil	0	Unknown	<5%	Citywide
Landslide	0	Unknown	<5%	Citywide
Earthquake	0	Unknown	<5%	Citywide
Wildfire (3 year study period)	93	>100%	<5%	Citywide
Dam/Levee Failure	1	10%	>10%	Citywide
Source: NOAA NCDC; U. S. Inflation Calculator/Consumer Price Index; USGS ; Local Input; USDA Census of Agriculture; Alabama Forestry Commission; and National Forestry Service; Participating Jurisdictions				
Methodology: Number of historical occurrences is those reported by NOAA NCDC during the 10 year study period, with the exception of wildfire that is a 3 year study period. Probability is expressed by dividing the total number of occurrences by the study period in years. Extent is expressed as the percentage assigned by the jurisdictions' ranking in the vulnerability overview (Table 6-19). Zero denotes no data available to determine the probability, extent, or affected area.				

Table 6-34: Ashville's Critical Facilities

CRITICAL FACILITIES – ASHVILLE	
FACILITY TYPE	REPLACEMENT VALUE
Shoal Creek VFD and Rescue, Ashville	\$
St. Clair Sheriff's Office, Ashville	\$1,260,000
Ashville PD, Ashville	\$1,260,000
Eden Area Technical Center, Ashville	\$6,733,560
Ashville High School, Ashville	\$5,633,130
Ruben Yancey Alternative School, Ashville	\$4,349,300
Ashville Elementary School, Ashville	\$6,060,580
Waste Water Treatment Plant Lagoon, Ashville	\$599,400
Total	\$25,895,970

(Source: HAZUS 2.1)

Table 6-35: Town of Ashville Estimated Loss Projections from Specified Hazards						
Natural Hazards	Average Occurrences (per year)	Total Deaths	Total Injuries	Average Death and Injury Loss (per event)	Average Crop and Property Loss (per event)	Projected Loss (per event)
Thunderstorm	1.9	0	0	\$0	\$6,850	\$7,467
Lightning	0	0	0	\$0	\$0	Unknown
Hail	0.8	0	0	\$0	\$4,100	\$4,469
Tornado	0	0	0	\$0	\$0	Unknown
Flood/Flash Flood	0.9	1	0	\$366,600	\$150,000	\$563,094
Drought/Extreme Heat	2.0	0	0	\$0	\$0	Unknown
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	0.9	0	0	\$0	\$0	Unknown
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	1.0	0	0	\$0	\$26,800	\$29,212
Sinkhole/Expansive Soils	0	0	0	\$0	\$0	Unknown
Landslide	0	0	0	\$0	\$0	Unknown
Earthquake	0	0	0	\$0	\$0	Unknown
Wildfire (3 year study period)	31	0	0	\$0	\$36,461	\$39,743
Dam/Levee Failure	0.1	1	0	\$366,600	\$0	\$399,594
<i>Sources: NOAA NCDC; U.S. Inflation Calculator/Consumer Price Index; Local Input; USDA Census of Agriculture; Alabama Forestry Commission and National Forestry Service; Alabama Geological Survey</i>						
Methodology: Average occurrences were expressed annually by dividing the total number of occurrences by the ten-year period. Deaths and injuries were taken from the hazard event data. Average losses were calculated by dividing the total amount of all damages by the total number of occurrences during the ten-year period with the exception of wildfire which takes the average fire size as noted in Table 4-15 multiplied by average amount per acre (\$1,900). Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figure from a midpoint of 2008 dollars to 2014 dollars (\$1 in 2008 = \$1.09 in 2014...a cumulative rate of inflation of 9%). Zero and Unknown denote there is no data available to determine the average occurrences, average loss or projected loss per event.						

City of Ashville Mitigation Action Plan

The City of Ashville recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated.

Mitigation Status

During the plan update, mitigation actions were reviewed in order to identify completed, deferred, or deleted actions from the previous plan and incorporate actions added during annual updates. **Table 6-36** shows the City of Ashville's updated mitigation actions. During the plan update process no new mitigations actions were identified and priorities remain the same as was in the 2010 plan revision.

Table 6-36: Ashville's Mitigation Actions	
Mitigation Action 1.1.1	Seek an update of all FIRM'S in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer; Flood Plain Manager
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	FEMA Map Update Program
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.2	Train local flood plain managers through programs offered through the State Flood Plain Manager and FEMA'S training center in Emmitsburg, Maryland.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.3	Maintain a library of technical assistance and guidance materials to support the local flood plain manager.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark:	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.4	Promote the adoption of a uniform flood hazard prevention ordinance with higher regulatory standards that discourage flood plain development and seek to maintain the natural and beneficial functions of flood plains
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.6	Consider the adoption of a uniform storm water management ordinance that maintains pre-development runoff rates
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.7	Apply for and maintain membership in the CRS Program.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2020
Estimated Cost	
Funding Sources	HMGP; ADECA; local
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.8	Continue to participate in the NFIP
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	Ashville is a participating member of the NFIP and plans to continue.

Mitigation Action 1.3.1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of “hurricane clips”
Type	Prevention
Goal	Reduce vulnerability of new and future development
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Local Government
Estimated Time Frame for Completion	2020
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.4.1	Promote good construction practices and proper code enforcement to eliminate most structural problems during natural hazard events
Type	Prevention
Goal	Reduce Asheville’s vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New
Local Planning Mechanism	Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 2.2.1	Seek funding sources, such as Community Development Block Grant funds, to assist low income homeowners with building retrofits to protect against flood damage
Type	Property Protection
Goal	Reduce Ashville's risk from natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	CDBG; ADECA; Local
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 2.4.1	Provide technical assistance to owners of pre-FIRM buildings to advise on available retrofits to protect against flood damage
Type	Property Protection
Goal	Reduce Ashville's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.1.1	Promote the purchase of insurance coverage by property owners and renters for flooding, sinkhole, and earthquake damages in high risk areas.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods, Earthquakes, Sinkholes
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	The county has posted information on their Facebook page and in Public Information presentations.
Mitigation Action 3.1.2	Encourage the Multiple Listing Service (MLS) to require Flood Plain location disclosure as a condition for each real estate listing.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Local Government
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.5.1	Distribute FEMA Publication 320 – Taking Shelter From the Storm: Building a safe room in your house – through building permit and inspection offices.
Type	Public Education and Awareness
Goal	Reduce St. Clair County’s vulnerability to natural hazards
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local; HMGP
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.2	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.5.3	Continue the active programs and activities of the St. Clair County EMA to promote mitigation and severe weather awareness.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	<p>St. Clair County EMA provided this action response. St. Clair County has distributed public information materials for the CSEPP Campaign to include: brochures in English and Spanish; zone maps; school brochures; school videos; all hazard videos; newspaper ads; television ads; radio ads; I-20 billboard; football program ads; and stadium fence sign ads. In addition: numerous newspaper articles about any subject concerning the safety and well-being of county residents, especially weather safety and weather events, CSEPP activities, hazardous materials accidents, training activities, etc.; full page newspaper ad (Be Prepared); Duran Jr. High volleyball team flyer; church flyer, Are You Prepared?; Food World pharmacy bags; Amateur Radio Field Day flyer; Webpage on county website; On Hold phone messages; county newsletter; Emergency Information Guide; 72 & You logo design; County Health Fairs; PR items distributed – pens, notebooks, rulers, bags, etc.; Special Pops items included: Caregivers Resource Guide and Masters of Disaster kits; and submitted and/or approved all special needs newsletters/info sheets/flyers.</p> <p>New since 2010: Facebook and Twitter</p>

	postings of articles, charts and tables, and other emergency and preparedness information. Participation in radio talk shows.
Mitigation Action 3.5.4	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	St. Clair County EMA provided this action response. Animal Emergency Planning Brochures were ordered and made available to the public.
Mitigation Action 3.5.5	Maintain local library repositories with the latest available publications.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	Local
Priority	Low
Benchmark	Per coordination with each library, items are made available to the public.

Mitigation Action 3.5.6	Distribute hazard mitigation brochures to area schools for distribution to students.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	St. Clair County EMA provided this action. Brochures in the form of coloring books were distributed to schools.
Mitigation Action 3.5.7	Promote the use of weather radios in households and businesses
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA; Flood Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	The St. Clair County EMA provided this action response. Weather Alert Radios were distributed to all residents of St. Clair County as part of the 2009 CSEP Program Closeout. Radios were distributed until depleted in 2013. The EMA strongly promoted the use of weather alert radios on radio talk shows, during public presentations, in newspaper article and on Facebook and Twitter.

Mitigation Action 4.1.1	Seek technical assistance through the Alabama Cooperative Extension System with Best management practices (BMPs) for channel and drainage system maintenance.
Type	Natural Resource Protection
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 5.2.2	Support the Alabama Skywarn Foundation efforts to distribute weather radios to low-income households, especially in rural areas outside of siren coverage areas.
Type	Emergency Services Protection
Goal	Reduce Ashville's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMPG; ADECA; Local
Priority	High
Benchmark	The EMA is not aware of any weather alert radios being distributed in St. Clair County by the Alabama Skywarn Foundation; however, St. Clair County EMA distributed these radios to all residents of the county as part of the CSEP Program Closeout in 2009 and 2010 until the stock was depleted in 2013.

Mitigation Action 5.2.3	Purchase, install, and test emergency warning sirens, as needed. Upgrade existing equipment as needed.
Type	Emergency Services Protection
Goal	Reduce Asheville's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$30,000 each
Funding Sources	\$25K HGMP/ADECA
Priority	High
Benchmark	In 2005 and 2006, St. Clair County used HMGP funds to install 8 Vortex Sirens and 1 Tone Only Vortex Siren. In 2010, St. Clair County upgraded 25 sirens from WPS 2800 to WPS 2900 series. In 2012, St. Clair County sent county employees to Whelen to learn basic siren maintenance to reduce overall maintenance cost and to be able to more quickly address siren issues. St. Clair County purchased a bucket truck and tools to perform maintenance on siren systems.
Mitigation Action 5.4.1	Purchase emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities
Type	Emergency Services Protection
Goal	Reduce Asheville's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 6.2.1	Encourage the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.
Type	Structural Projects
Goal	Reduce Ashville's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA; Local Governments
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	Local government and education were strongly encouraged to install storm shelters and community safe rooms.
Mitigation Action 6.2.2	Continue program to subsidize safe room construction in existing homes.
Type	Structural Projects
Goal	Reduce Ashville's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$10,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	St. Clair County EMA provided this action response. In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-ground), and in new homes.

Mitigation Action 6.2.3	Construct freestanding public community safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce Ashville's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$150,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.2.4	Encourage the construction of safe rooms in new and existing construction.
Type	Structural Projects
Goal	Reduce Ashville's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	\$5,000 - \$10,000
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	St. Clair County EMA provided this action response. Strong media push to make residents aware of HMGP Storm Shelter grants as well as the importance of having a storm shelter were made on the radio and during public presentations, in newspaper articles, and posts on Facebook. In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-

	ground), and in new homes.
Mitigation Action 6.2.5	Continue to provide adequate storm shelters and community shelters
Type	Structural Projects
Goal	Reduce Ashville's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Local Government; EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$150,000 each
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-ground), and in new homes. No community safe rooms were constructed/installed.
Mitigation Action 6.4.2	Prepare and implement standard operating procedures for drainage system maintenance.
Type	Structural Projects
Goal	Reduce Ashville's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

CITY OF MARGARET

**Table 6-37: Margaret
Risk and Vulnerability Overview**

Natural Hazards	Hazard Identification	Prioritized Occurrence Threat	Vulnerability
Thunderstorm	X	3	H
Lightning	X	8	M
Hail	X	6	L
Tornado	X	7	H
Flood/Flash Flood	X	3	H
Drought/Extreme Heat	X	2	L
Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	X	5	M
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	X	4	M
Sinkhole/Expansive Soil	X	8	L
Landslide	X	8	L
Earthquake	X	8	L
Wildfire	X	1	L
Dam/Levee Failure	X	7	L
<i>Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions</i>			
<p>KEY Hazard Identification: X Affects the Jurisdiction, N/A Not a threat to the jurisdiction Priority: Hazards are prioritized with the highest threat of occurrence assigned number one based on hazardous events that have occurred within each jurisdiction over the past ten years, with the exception of wildfires that were based on events that have occurred over the past three years. Some natural hazards have equal threats to a jurisdiction; therefore, their threat number will be the same. Vulnerability: NA – Not Applicable; not a hazard to the jurisdiction L – Low Risk; little damage potential (damage to less than 5% of the jurisdiction) M – Medium Risk; moderate damage potential (damage to 5-10% of jurisdiction, infrequent occurrence) H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)</p>			

Table 6-38: Margaret's Thunderstorm Events

11 Thunderstorm Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	02/22/2003	03:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/11/2003	14:10	CST	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/22/2004	17:17	CST	Thunderstorm Wind	50 kts. EG	0	0	12.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	04/30/2005	03:38	CST	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K
ST. CLAIR	ST. CLAIR CO.	AL	05/20/2010	19:14	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/17/2011	11:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	0.50K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:40	CST-6	Thunderstorm Wind	60 kts. EG	0	0	1.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:54	CST-6	Thunderstorm Wind	45 kts. EG	0	0	2.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/22/2011	16:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/26/2011	15:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	45.50K	0.00K

Table 6-39: Margaret's Lightning Events

0 Lightning Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

No lightning events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-40: Margaret's Hail Events

6 Hail Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
MARGARET	ST. CLAIR CO.	AL	04/25/2003	15:29	CST	Hail	0.75 in.	0	0	0.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/02/2003	17:12	CST	Hail	1.75 in.	0	0	40.00K	0.00K
MARGARET	ST. CLAIR CO.	AL	06/01/2008	11:53	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/15/2011	21:24	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
MARGARET	ST. CLAIR CO.	AL	03/02/2012	19:33	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
Totals:								0	0	40.00K	0.00K

Table 6-41: Margaret's Tornado Events

1 Tornado Event – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
MARGARET	ST. CLAIR CO.	AL	01/23/2012	04:16	CST-6	Tornado	EF1	0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-42: Margaret's Flood/Flash Flood Events

11 Flood/Flash Flood Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/06/2003	16:00	CST	Flood		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/18/2003	05:00	CST	Flood		0	0	0.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/05/2003	21:30	CST	Flash Flood		0	0	25.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/07/2003	14:00	CST	Flash Flood		0	0	1.000M	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	07/01/2003	10:00	CST	Flash Flood		0	0	17.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2004	02:02	CST	Flash Flood		0	0	5.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	09/16/2004	09:00	CST	Flash Flood		0	0	50.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	11/24/2004	05:45	CST	Flash Flood		1	0	400.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2006	16:30	CST	Flash Flood		0	0	3.00K	0.00K
MARGARET	ST. CLAIR CO.	AL	09/17/2009	19:17	CST-6	Flash Flood		0	0	0.00K	0.00K
MARGARET	ST. CLAIR CO.	AL	09/17/2009	20:20	CST-6	Flash Flood		0	0	50.00K	0.00K
Totals:								1	0	1.550M	0.00K

Table 6-43: Margaret's Drought/Extreme Heat Events

20 Drought/Extreme Heat Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-44: Margaret's Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events

9 Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/09/2011	15:50	CST-6	Winter Storm		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/25/2010	07:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/17/2013	12:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/12/2010	13:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2010	08:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/26/2010	03:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-45: Margaret's Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events

10 Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events
 – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	42.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/29/2005	19:00	CST	Tropical Storm		0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/16/2004	10:45	CST	High Wind	52 kts. EG	0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/05/2011	18:20	CST-6	High Wind	52 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/09/2006	18:00	CST	Strong Wind	40 kts. EG	0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2007	22:40	CST-6	Strong Wind	35 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/20/2007	17:30	CST-6	Strong Wind	30 kts. EG	0	0	10.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/11/2009	11:50	CST-6	Strong Wind	43 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	268.00K	0.00K

Table 6-46: Margaret's Sinkhole Events

0 Sinkhole Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No sinkhole events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-47: Margaret's Landslide Events

0 Landslide Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No landslide events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-48: Margaret's Earthquake Events

0 Earthquake Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)

No earthquake events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-49: Countywide Wildfire Events

93 Wildfire Events – 2010 thru 2013

(Source: Alabama Forestry Commission)

County	Total # of Fires 2010-2013	Average # of Fires Per Year	Total Acres Burned 2010- 2013	Average Acres Burned Per Year	Average Fire Size in Acres
St. Clair	93	31	1,785.45	594.89	19.19

Table 6-50: Dam/Levee Failure Events

1 Dam/Levee Failure Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/flash flood)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Countywide (Dam failed near the Friendship Community)	St. Clair County	AL	11/24/2004	5:45 p.m.		Dam Failure		1	0	0.00K	0.00K
Totals:								1	0	0.00K	0.00K

Table 6-51: Margaret Hazard Probability Assessment				
Natural Hazards	Number of Historical Occurrences	Probability of Future Occurrence	Extent	Area Affected
Thunderstorm	11	>100%	>10%	Citywide
Lightning	0	Unknown	5-10%	Citywide
Hail	6	60%	<5%	Citywide
Tornado	1	10%	>10%	Citywide
Flood/Flash Flood	11	>100%	>10%	Citywide
Drought/Extreme Heat	20	>100%	<5%	Citywide
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	9	90%	5-10%	Citywide
Hurricane/Tropical Storm/Tropical Depression/High Wind/ Strong Wind	10	100%	5-10%	Citywide
Sinkhole/Expansive Soil	0	Unknown	<5%	Citywide
Landslide	0	Unknown	<5%	Citywide
Earthquake	0	Unknown	<5%	Citywide
Wildfire (3 year study period)	93	>100%	<5%	Citywide
Dam/Levee Failure	1	10%	<5%	Citywide
<i>Source: NOAA NCDC; U. S. Inflation Calculator/Consumer Price Index; USGS ; Local Input; USDA Census of Agriculture; Alabama Forestry Commission; and National Forestry Service; Participating Jurisdictions</i>				
Methodology: Number of historical occurrences is those reported by NOAA NCDC during the 10 year study period, with the exception of wildfire that is a 3 year study period. Probability is expressed by dividing the total number of occurrences by the study period in years. Extent is expressed as the percentage assigned by the jurisdictions' ranking in the vulnerability overview (Table 6-37). Zero denotes no data available to determine the probability, extent, or affected area.				

Table 6-52: Margaret's Critical Facilities

CRITICAL FACILITIES – MARGARET	
FACILITY TYPE	REPLACEMENT VALUE
Margaret Fire and Rescue, Margaret	
Total	\$

(Source: HAZUS – MH 2.1)

**Table 6-53: Margaret
Estimated Loss Projections from Specified Hazards**

Natural Hazards	Average Occurrences (per year)	Total Deaths	Total Injuries	Average Death and Injury Loss (per event)	Average Crop and Property Loss (per event)	Projected Loss (per event)
Thunderstorm	1.1	0	0	\$0	\$4,550	\$4,960
Lightning	0	0	0	\$0	\$0	Unknown
Hail	0.6	0	0	\$0	\$4,000	\$4,360
Tornado	0.1	0	0	\$0	\$0	Unknown
Flood/Flash Flood	1.1	1	0	\$366,600	\$155,000	\$568,544
Drought/Extreme Heat	2.0	0	0	\$0	\$0	Unknown
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	0.9	0	0	\$0	\$0	Unknown
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	1.0	0	0	\$0	\$26,800	\$29,212
Sinkhole/Expansive Soils	0	0	0	\$0	\$0	Unknown
Landslide	0	0	0	\$0	\$0	Unknown
Earthquake	0	0	0	\$0	\$0	Unknown
Wildfire (3 year study period)	31	0	0	\$0	\$36,461	\$39,743
Dam/Levee Failure	0.1	1	0	\$366,600	\$0	\$399,594
<i>Sources: NOAA NCDC; U.S. Inflation Calculator/Consumer Price Index; Local Input; USDA Census of Agriculture; Alabama Forestry Commission and National Forestry Service; Alabama Geological Survey</i>						

Methodology: Average occurrences were expressed annually by dividing the total number of occurrences by the ten-year period. Deaths and injuries were taken from the hazard event data. Average losses were calculated by dividing the total amount of all damages by the total number of occurrences during the ten-year period with the exception of wildfire which takes the average fire size as noted in Table 4-15 multiplied by average amount per acre (\$1,900). Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figure from a midpoint of 2008 dollars to 2014 dollars (\$1 in 2008 = \$1.09 in 2014...a cumulative rate of inflation of 9%). Zero and Unknown denote no data available to determine the average occurrences, average loss or projected loss per event.

City of Margaret's Mitigation Action Plan

The City of Margaret recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated.

Mitigation Status

During the plan update, mitigation actions were reviewed in order to identify completed, deferred, or deleted actions from the previous plan and incorporate actions added during annual updates. **Table 6-54** shows the City of Margaret's updated mitigation actions. During the plan update process, no new mitigation actions were identified and priorities remain the same as was in the 2010 plan.

Table 6-54: Margaret's Mitigation Actions

Mitigation Action 1.1.1	Seek a county update of all FIRMs in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer; Flood Plain Manager
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	FEMA Map Update Program
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.5	Enact a flood hazard prevention ordinance and establish Margaret as regular members of the NFIP.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Flood/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.6	Consider the adoption of a uniform storm water management ordinance that maintains predevelopment runoff rates.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.8	Make application and/or commit to participate in the NFIP
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	The City of Margaret is a member of the NFIP and will continue to participate.
Mitigation Action 1.3.1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of hurricane clips.
Type	Prevention
Goal	Reduce vulnerability of new and future development
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.4.1	Promote good construction practices and proper code enforcement to eliminate most structural problems during natural hazard events.
Type	Prevention
Goal	Reduce Margaret's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New
Local Planning Mechanism	Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 2.2.1	Seek funding sources, such as Community Development Block Grant Funds, to assist low income home owners with building retrofits to protect against flood damages.
Type	Property Protection
Goal	Reduce Margaret's risk from natural hazards.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	CDBG; ADECA; Local
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.1.1	Promote the purchase of insurance coverage by property owners and renters for flooding, sinkhole, and earth quake damages in high risk areas.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods, Earthquakes, Sinkholes
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	The county has posted information on their Facebook page and in Public Information presentations.
Mitigation Action 3.1.2	Encourage the Multiple Listing Service (MLS) to require flood plain location disclosure as a condition for each real estate listing.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Local Government
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.5.1	Distribute FEMA Publication 320 – Taking Shelter From the Storm: Building a Safe Room in your House – through building permit and inspection offices.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	Low
Benchmark	The City Clerk, Public Works Manager, and Building Inspector have and will continue distributing FEMA publications.
Mitigation Action 3.5.2	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.
Type	Public Education Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.5.3	Continue the active programs and activities of the St. Clair County EMA to promote mitigation and severe weather awareness.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	<p>St. Clair County EMA provided this action response. St. Clair County has distributed public information materials for the CSEPP Campaign to include: brochures in English and Spanish; zone maps; school brochures; school videos; all hazard videos; newspaper ads; television ads; radio ads; I-20 billboard; football program ads; and stadium fence sign ads. In addition: numerous newspaper articles about any subject concerning the safety and well-being of county residents, especially weather safety and weather events, CSEPP activities, hazardous materials accidents, training activities, etc.; full page newspaper ad (Be Prepared); Duran Jr. High volleyball team flyer; church flyer, Are You Prepared?; Food World pharmacy bags; Amateur Radio Field Day flyer; Webpage on county website; On Hold phone messages; county newsletter; Emergency Information Guide; 72 & You logo design; County Health Fairs; PR items distributed – pens, notebooks, rulers, bags, etc.; Special Pops items included: Caregivers Resource Guide and Masters of Disaster kits; and submitted and/or approved all special needs newsletters/info sheets/flyers.</p> <p>New since 2010: Facebook and Twitter postings of articles, charts and tables, and other emergency and preparedness information. Participation in radio talk</p>

	shows.
Mitigation Action 3.5.4	Obtain free publications from FEMA, NWS.USGS, and other federal and state agencies and deposit these materials with local libraries.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	St. Clair County EMA provided this action response. Animal Emergency Planning Brochures were ordered and made available to the public.
Mitigation Action 3.5.5	Maintain local library repositories with the latest available publications.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	Local
Priority	Low
Benchmark	Per coordination with each library, items are made available to the public.

Mitigation Action 3.5.6	Distribute hazard mitigation brochures to area schools for distribution to students.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	St. Clair County EMA provided this action response. Brochures in the form of coloring books were distributed to schools.
Mitigation Action 3.5.7	Promote the use of weather radios in households and busines
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	ALL
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA; Flood Plain Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	Weather Alert Radios were distributed to all residents of St. Clair County as part of the 2009 CSEP Program Closeout. Radios were distributed until depleted in 2013. The EMA strongly promoted the use of weather alert radios on radio talk shows, during public presentations, in newspaper article and on Facebook and Twitter.

Mitigation Action 5.2.2	Support the Alabama Skywarn Foundation efforts to distribute weather radios to low-income households, especially in rural areas outside of siren coverage areas.
Type	Emergency Services Protection
Goal	Reduce Margaret's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	The EMA is not aware of any weather alert radios being distributed in St. Clair County by the Alabama Skywarn Foundation; however, St. Clair County EMA distributed these radios to all residents of the county as part of the CSEP Program Closeout in 2009 and 2010 until the stock was depleted in 2013.
Mitigation Action 5.2.3	Purchase, install, and test emergency warning sirens, as needed. Upgrade existing equipment as needed.
Type	Emergency Services Protection
Goal	Reduce Margaret's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	One year from funding availability
Estimated Cost	\$30,000 each
Funding Sources	Local; HMGP; ADECA
Priority	High
Benchmark	The city tested the existing warning sirens on a monthly basis. They wish to upgrade sirens on an as needed basis.

Mitigation Action 5.4.1	Purchase emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities.
Type	Emergency Services Protection
Goal	Reduce Margaret's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	One year from funding availability
Estimated Cost	\$5,000 - \$15,000 each
Funding Sources	Local; HMGP; ADECA
Priority	High
Benchmark	The Margaret Fire and Rescue Station #1 currently has a backup generator in place that is tested and inspected periodically to ensure reliability. The city itself possesses several emergency generators that are in place for a post disaster mitigation event.
Mitigation Action 6.2.1	Encourage the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.
Type	Structural Projects
Goal	Reduce Margaret's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA; Local Governments
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	Margaret installed a community safe room.

Mitigation Action 6.2.2	Continue program to subsidize safe room construction in existing homes.
Type	Structural Projects
Goal	Reduce Margaret's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$10,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-ground), and in new homes.
Mitigation Action 6.2.3	Construct freestanding public community safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce Margaret's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$150,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	Margaret installed a community safe room.

Mitigation Action 6.2.4	Encourage the construction of safe rooms in new and existing construction.
Type	Structural Projects
Goal	Reduce Margaret's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	\$5,000 - \$10,000
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	Strong media push to make residents aware of HMGP Storm Shelter grants as well as the importance of having a storm shelter were made on the radio and during public presentations, in newspaper articles, and posts on Facebook.
Mitigation Action 6.2.5	Continue to provide adequate safe rooms and community shelters
Type	Structural Projects
Goal	Reduce Margaret's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Local Government; EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$150,000 each
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-ground), and in new homes. A community safe room was installed in Margaret.

Mitigation Action 6.4.2	Prepare and implement standard operating procedures for drainage system maintenance.
Type	Structural Projects
Goal	Reduce Margaret's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

CITY OF MOODY

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Table 6-55: Moody Risk and Vulnerability Overview			
Natural Hazards	Hazard Identification	Prioritized Occurrence Threat	Vulnerability
Thunderstorm	X	2	H
Lightning	X	7	M
Hail	X	5	L
Tornado	X	6	H
Flood/Flash Flood	X	4	H
Drought/Extreme Heat	X	3	L
Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	X	5	M
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	X	4	M
Sinkhole/Expansive Soil	X	7	L
Landslide	X	7	L
Earthquake	X	7	L
Wildfire	X	1	L
Dam/Levee Failure	X	6	L
Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions			
<p>KEY</p> <p><u>Hazard Identification:</u> X Affects the Jurisdiction, N/A Not a threat to the jurisdiction</p> <p><u>Priority:</u> Hazards are prioritized with the highest threat of occurrence assigned number one based on hazardous events that have occurred within each jurisdiction over the past ten years, with the exception of wildfires that were based on events that have occurred over the past three years. Some natural hazards have equal threats to a jurisdiction; therefore, their threat number will be the same.</p> <p><u>Vulnerability:</u> NA – Not Applicable; not a hazard to the jurisdiction</p> <p>L – Low Risk; little damage potential (damage to less than 5% of the jurisdiction)</p> <p>M – Medium Risk; moderate damage potential (damage to 5-10% of jurisdiction, infrequent occurrence)</p> <p>H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)</p>			

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Table 6-56: Moody's Thunderstorm Events

21 Thunderstorm Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	02/22/2003	03:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
MOODY	ST. CLAIR CO.	AL	05/07/2003	12:52	CST	Thunderstorm Wind	50 kts. EG	0	0	50.00K	0.00K
MOODY	ST. CLAIR CO.	AL	05/07/2003	15:07	CST	Thunderstorm Wind	55 kts. EG	0	0	17.00K	0.00K
MOODY	ST. CLAIR CO.	AL	05/16/2003	16:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/11/2003	14:10	CST	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/22/2004	17:17	CST	Thunderstorm Wind	50 kts. EG	0	0	12.00K	0.00K
MOODY	ST. CLAIR CO.	AL	12/07/2004	07:25	CST	Thunderstorm Wind	52 kts. EG	0	0	3.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	04/30/2005	03:38	CST	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K
MOODY	ST. CLAIR CO.	AL	07/05/2008	15:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
ST. CLAIR	ST. CLAIR CO.	AL	05/20/2010	19:14	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
MOODY	ST. CLAIR CO.	AL	02/25/2011	00:25	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
MOODY	ST. CLAIR CO.	AL	04/27/2011	05:03	CST-6	Thunderstorm Wind	78 kts. EG	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/17/2011	11:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	0.50K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:40	CST-6	Thunderstorm Wind	60 kts. EG	0	0	1.00K	0.00K

ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:54	CST-6	Thunderstorm Wind	45 kts. EG	0	0	2.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/22/2011	16:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/26/2011	15:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
MOODY	ST. CLAIR CO.	AL	08/09/2012	10:35	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	03/18/2013	14:33	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	03/18/2013	14:34	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Totals:								0	0	120.50K	0.00K

Table 6-57: Moody's Lightning Events

0 Lightning Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

No lightning events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-58: Moody's Hail Events

9 Hail Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	05/02/2003	17:12	CST	Hail	1.75 in.	0	0	40.00K	0.00K
MOODY	ST. CLAIR CO.	AL	03/30/2005	22:44	CST	Hail	0.88 in.	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	05/20/2005	14:15	CST	Hail	0.75 in.	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	03/13/2006	20:09	CST	Hail	0.75 in.	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	04/03/2006	02:25	CST	Hail	0.88 in.	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	04/11/2008	16:00	CST-6	Hail	0.75 in.	0	0	0.00K	0.00K
MOODY	ST. CLAIR CO.	AL	03/28/2011	00:53	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/15/2011	21:24	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
Totals:								0	0	40.00K	0.00K

Table 6-59: Moody's Tornado Events

1 Tornado Event – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
MOODY	ST. CLAIR CO.	AL	05/07/2003	14:21	CST	Tornado	F0	0	0	5.00K	0.00K
Totals:								0	0	5.00K	0.00K

Table 6-60: Moody's Flood/Flash Flood Events

10 Flood/Flash Flood Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/06/2003	16:00	CST	Flood		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/18/2003	05:00	CST	Flood		0	0	0.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/05/2003	21:30	CST	Flash Flood		0	0	25.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/07/2003	14:00	CST	Flash Flood		0	0	1.000M	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	07/01/2003	10:00	CST	Flash Flood		0	0	17.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2004	02:02	CST	Flash Flood		0	0	5.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	09/16/2004	09:00	CST	Flash Flood		0	0	50.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	11/24/2004	05:45	CST	Flash Flood		1	0	400.00K	0.00K
MOODY	ST. CLAIR CO.	AL	07/14/2005	16:05	CST	Flash Flood		0	0	2.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2006	16:30	CST	Flash Flood		0	0	3.00K	0.00K
Totals:								1	0	1.502M	0.00K

Table 6-61: Moody's Drought/Extreme Heat Events

20 Drought/Extreme Heat Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-62: Moody's Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events

9 Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/09/2011	15:50	CST-6	Winter Storm		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/25/2010	07:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/17/2013	12:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/12/2010	13:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2010	08:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/26/2010	03:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-63: Moody's Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events

10 Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events
 – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	42.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/29/2005	19:00	CST	Tropical Storm		0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/16/2004	10:45	CST	High Wind	52 kts. EG	0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/05/2011	18:20	CST-6	High Wind	52 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/09/2006	18:00	CST	Strong Wind	40 kts. EG	0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2007	22:40	CST-6	Strong Wind	35 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/20/2007	17:30	CST-6	Strong Wind	30 kts. EG	0	0	10.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/11/2009	11:50	CST-6	Strong Wind	43 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	268.00K	0.00K

Table 6-64: Moody's Sinkhole Events

0 Sinkhole Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)
 No sinkhole events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-65: Moody's Landslide Events

0 Landslide Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No landslide events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-66: Moody's Earthquake Events

0 Earthquake Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)

No earthquake events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-67: Countywide Wildfire Events

93 Wildfire Events – 2010 thru 2013

(Source: Alabama Forestry Commission) **93 Wildfire Events** – 2010 thru 2013

County	Total # of Fires 2010-2013	Average # of Fires Per Year	Total Acres Burned 2010- 2013	Average Acres Burned Per Year	Average Fire Size in Acres
St. Clair	93	31	1,785.45	594.89	19.19

Table 6-68: Moody's Dam/Levee Failure Events

1 Dam/Levee Failure Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/flash flood)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Countywide (Dam failed near the Friendship Community)	St. Clair County	AL	11/24/2004	5:45 p.m.		Dam Failure		1	0	0.00K	0.00K
Totals:								1	0	0.00K	0.00K

Table 6-69: Moody Hazard Probability Assessment				
Natural Hazards	Number of Historical Occurrences	Probability of Future Occurrence	Extent	Area Affected
Thunderstorm	21	>100%	>10%	Citywide
Lightning	0	Unknown	5-10%	Citywide
Hail	9	90%	<5%	Citywide
Tornado	1	10%	>10%	Citywide
Flood/Flash Flood	10	100%	>10%	Citywide
Drought/Extreme Heat	20	>100%	<5%	Citywide
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	9	90%	5-10%	Citywide
Hurricane/Tropical Storm/Tropical Depression/High Wind/ Strong Wind	10	100%	5-10%	Citywide
Sinkhole/Expansive Soil	0	Unknown	<5%	Citywide
Landslide	0	Unknown	<5%	Citywide
Earthquake	0	Unknown	<5%	Citywide
Wildfire (3 year study period)	93	>100%	<5%	Citywide
Dam/Levee Failure	1	10%	<5%	Citywide
<i>Source: NOAA NCDC; U. S. Inflation Calculator/Consumer Price Index; USGS ; Local Input; USDA Census of Agriculture; Alabama Forestry Commission; and National Forestry Service; Participating Jurisdictions</i>				
Methodology: Number of historical occurrences is those reported by NOAA NCDC during the 10 year study period, with the exception of wildfire that is a 3 year study period. Probability is expressed by dividing the total number of occurrences by the study period in years. Extent is expressed as the percentage assigned by the jurisdictions' ranking in the vulnerability overview (Table 6-55). Zero denotes no data available to determine the probability, extent, or affected area.				

Table 6-70: Moody's Critical Facilities

CRITICAL FACILITIES – MOODY	
FACILITY TYPE	REPLACEMENT VALUE
Moody Fire and Rescue, Moody	
Moody Middle School, Moody	\$6,900,120
Moody Elementary School, Moody	\$9,943,510
Moody Junior High School, Moody	\$3,952,550
Moody High School, Moody	\$8,772,530
Waste Water Treatment Plant, Moody	\$599,400
WBMG-LP CH 38, Moody	\$90,000
WURL 760, Moody	\$90,000
Total	\$30,348,110

(Source: HAZUS 2.1)

**Table 6-71: Moody
Estimated Loss Projections from Specified Hazards**

Natural Hazards	Average Occurrences (per year)	Total Deaths	Total Injuries	Average Death and Injury Loss (per event)	Average Crop and Property Loss (per event)	Projected Loss (per event)
Thunderstorm	2.1	0	0	\$0	\$12,050	\$13,135
Lightning	0	0	0	\$0	\$0	Unknown
Hail	0.9	0	0	\$0	\$4,000	\$4,360
Tornado	0.1	0	0	\$0	\$500	\$545
Flood/Flash Flood	1.0	1	0	\$366,600	\$150,200	\$563,312
Drought/Extreme Heat	2.0	0	0	\$0	\$0	Unknown
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	0.9	0	0	\$0	\$0	Unknown
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	1.0	0	0	\$0	\$26,800	\$29,212
Sinkhole/Expansive Soils	0	0	0	\$0	\$0	Unknown
Landslide	0	0	0	\$0	\$0	Unknown
Earthquake	0	0	0	\$0	\$0	Unknown
Wildfire (3 year study period)	31.0	0	0	\$0	\$36,461	\$39,743
Dam/Levee Failure	0	1	0	\$366,600	\$0	\$399,594
<i>Sources: NOAA NCDC; U.S. Inflation Calculator/Consumer Price Index; Local Input; USDA Census of Agriculture; Alabama Forestry Commission and National Forestry Service; Alabama Geological Survey</i>						

Methodology: Average occurrences were expressed annually by dividing the total number of occurrences by the ten-year period. Deaths and injuries were taken from the hazard event data. Average losses were calculated by dividing the total amount of all damages by the total number of occurrences during the ten-year period with the exception of wildfire which takes the average fire size as noted in Table 4-15 multiplied by average amount per acre (\$1,900). Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figure from a midpoint of 2008 dollars to 2014 dollars (\$1 in 2008 = \$1.09 in 2014...a cumulative rate of inflation of 9%). Zero and Unknown denote there is no data available to determine the average occurrences, average loss or projected loss per event.

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City of Moody Mitigation Action Plan

The City of Moody recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated.

Mitigation Status

During the plan update, mitigation actions were reviewed in order to identify completed, deferred, or deleted actions from the previous plan and incorporate actions added during annual updates. **Table 6-72** shows the City of Moody's updated mitigation actions. During the plan update process, one new mitigation action (1.1.9) was identified. Priorities remained the same as was in the 2010 plan revision with the exception of 6.2.3 (Construct freestanding public community safe rooms in vulnerable locations) which changed from a low priority to a high priority.

Table 6-72: Moody's Mitigation Actions

Mitigation Action 1.1.1	Seek a countywide update of all FIRMs in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer; Flood Plain Manager
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	FEMA Map Update Program
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.2	Train local flood plain managers through programs offered through the State Flood Manager and FEMA's training center in Emmitsburg, Maryland.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.3	Maintain a library of technical assistance and guidance materials to support the local flood plain manager.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.4	Promote the adoption of a uniform flood hazard prevention ordinance with higher regulatory standards that discourage flood plain development and seek to maintain the natural and beneficial functions of flood plains.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.6	Consider the adoption of a uniform storm water management ordinance that maintains pre-development runoff rates.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.7	Apply for and maintain membership in the CRS Program.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2020
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.8	Continue to participate in the NFIP
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	Moody is a participating member of the NFIP and plans to continue.
Mitigation Action 1.1.9 NEW	Develop a cyber security plan
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Human Caused
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local; HMGP
Priority	High
Benchmark	New Mitigation Action for 2015 Plan Update

Mitigation Action 1.3.1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of hurricane clips. Upgrade ordinances and building codes
Type	Prevention
Goal	Reduce vulnerability of new and future development
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2020
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.4.1	Promote good construction practices and proper code enforcement to eliminate most structural problems during natural hazard events; upgrade ordinances and building codes
Type	Prevention
Goal	Reduce Moody's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 2.2.1	Seek funding sources, such as Community Development Block Grant Funds, to assist low income home owners with building retrofits to protect against flood damage.
Type	Property Protection
Goal	Reduce Moody's risk from natural hazards
Hazard(s) Addressed	Flood/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	CDBG; Local; ADECA
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 2.4.1	Provide technical assistance to owners of pre-FIRM buildings to advise on available retrofits to protect against flood damage
Type	Property Protection
Goal	Reduce Moody's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.1.1	Promote the purchase of insurance coverage by property owners and renters for flooding, sinkhole, and earthquake damages in high risk areas.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods, Earthquakes, Sinkholes
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	The county has posted information on their Facebook page and in Public Information presentations.
Mitigation Action 3.1.2	Encourage the Multiple Listing Service (MLS) to require flood plain location disclosure as a condition for each real estate listing.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.5.1	Distribute FEMA publication 320 – Taking Shelter From the Storm: Building a Safe Room in your house – through building permit and inspection offices.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.3	Continue the active programs and activities of the St Clair County EMA to promote mitigation and severe weather awareness.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMPG; Local
Priority	High
Benchmark	St. Clair County has distributed public information materials for the CSEPP Campaign to include: brochures in English and Spanish; zone maps; school brochures; school videos; all hazard videos; newspaper ads; television ads; radio ads; I-20 billboard; football program ads; and stadium fence sign ads. In addition: numerous newspaper articles about any subject concerning the safety and well-being of county residents, especially weather safety and weather events, CSEPP activities, hazardous materials accidents, training activities, etc.; full page newspaper ad (Be Prepared); Duran Jr. High volleyball team flyer; church flyer, Are You Prepared?; Food World pharmacy bags; Amateur Radio Field Day flyer; Webpage on county website; On Hold phone messages; county newsletter; Emergency Information Guide; 72 & You logo design;

	<p>County Health Fairs; PR items distributed – pens, notebooks, rulers, bags, etc.; Special Pops items included: Caregivers Resource Guide and Masters of Disaster kits; and submitted and/or approved all special needs newsletters/info sheets/flyers.</p> <p>New since 2010: Facebook and Twitter postings of articles, charts and tables, and other emergency and preparedness information. Participation in radio talk shows.</p>
Mitigation Action 3.5.4	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	St. Clair County EMA provided this action response. Animal Emergency Planning Brochures were ordered and made available to the public.
Mitigation Action 3.5.5	Maintain local library repositories with the latest available publications.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	Local
Priority	Low
Benchmark	Per coordination with each library, items are made available to the public.
Mitigation Action 3.5.6	Distribute hazard mitigation brochures to area schools

	for distribution to students.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	St. Clair County EMA provide this action response. Brochures in the form of coloring books were distributed to schools.
Mitigation Action 3.5.7	Promote the use of weather radios in households and businesses.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	EMA; Flood Manager
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	Weather Alert Radios were distributed to all residents of St. Clair County as part of the 2009 CSEP Program Closeout. Radios were distributed until depleted in 2013. The EMA strongly promoted the use of weather alert radios on radio talk shows, during public presentations, in newspaper article and on Facebook and Twitter.
Mitigation Action 4.1.1	Seek technical assistance through the Alabama

	Cooperative Extension System with Best Management Practices (BMPs) for channel and drainage system maintenance
Type	Natural Resources Protection
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMPG
Priority	High
Benchmark	Moody has purchased an excavator and bull dozer for cleaning drainage areas.
Mitigation Action 5.2.1	Install four new outdoor warning systems in Moody
Type	Emergency Services Protection
Goal	Reduce Moody's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	
Estimated Cost	\$60,000
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	No outdoor warning systems have been installed in the past five years due to lack of funding.
Mitigation Action 5.2.2	Support the Alabama Skywarn Foundation efforts to

	distribute weather radios to low-income households, especially in rural areas outside of siren coverage areas.
Type	Emergency Services Protection
Goal	Reduce Moody's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	The EMA is not aware of any weather alert radios being distributed in St. Clair County by the Alabama Skywarn Foundation; however, St. Clair County EMA distributed these radios to all residents of the county as part of the CSEP Program Closeout in 2009 and 2010 until the stock was depleted in 2013.
Mitigation Action 5.2.3	Purchase, install, and test emergency warning sirens, as needed. Upgrade existing equipment as needed.
Type	Emergency Services Protection
Goal	Reduce Moody's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$30,000 each
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	No emergency warning sirens have been purchased in the past five years. The city continues seeking equipment and maintenance assistance.
Mitigation Action 5.4.1	Purchase emergency generators for post-disaster

	mitigation and conduct routine tests on back-up generators for all critical facilities. Upgrade existing generators.
Type	Emergency Services Protection
Goal	Reduce Moody's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 each
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	No generators have been purchased or upgraded in the past five years due to lack of funding.
Mitigation Action 6.2.1	Encourage the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.
Type	Structural Projects
Goal	Reduce Moody's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Point of Contact Person for this Action	EMA; Local Governments
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	No community safe rooms have been installed in the past five years due to lack of funding.
Mitigation Action 6.2.2	Continue program to subsidize storm shelter

	construction in existing homes.
Type	Structural Projects
Goal	Reduce Moody's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$10,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	Nine individual storm shelters have been constructed/installed in the past five years.
Mitigation Action 6.2.3	Construct freestanding public community safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce Moody's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$150,000 each
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	No community safe rooms have been installed in the past five years due to lack of funding.
Mitigation Action 6.2.4	Encourage the construction of safe rooms in new and existing construction.
Type	Structural Projects
Goal	Reduce Moody's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	\$5,000 - \$10,000
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No community safe rooms have been installed in the past five years due to lack of funding.
Mitigation Action 6.2.5	Continue to provide adequate storm shelters and

	community safe rooms.
Type	Structural Projects
Goal	Reduce Moody's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Local Government; EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$150,000 each
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	Nine individual storm shelters have been constructed/installed in the past five years. No community safe rooms have been installed in the past five years due to lack of funding.
Mitigation Action 6.4.2	Prepare and implement standard operating procedures for drainage system maintenance.
Type	Structural Projects
Goal	Reduce Moody's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

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CITY OF ODENVILLE

(Includes Branchville)

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**Table 6-73: Odenville
Risk and Vulnerability Overview**

Natural Hazards	Hazard Identification	Prioritized Occurrence Threat	Vulnerability
Thunderstorm	X	3	H
Lightning	X	8	M
Hail	X	4	L
Tornado	X	7	H
Flood/Flash Flood	X	5	H
Drought/Extreme Heat	X	2	L
Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	X	6	M
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	X	5	M
Sinkhole/Expansive Soil	X	8	L
Landslide	X	8	L
Earthquake	X	8	L
Wildfire	X	1	L
Dam/Levee Failure	X	7	L
<i>Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions</i>			
<p>KEY Hazard Identification: X Affects the Jurisdiction, N/A Not a threat to the jurisdiction Priority: Hazards are prioritized with the highest threat of occurrence assigned number one based on hazardous events that have occurred within each jurisdiction over the past ten years, with the exception of wildfires that were based on events that have occurred over the past three years. Some natural hazards have equal threats to a jurisdiction; therefore, their threat number will be the same. Vulnerability: NA – Not Applicable; not a hazard to the jurisdiction L – Low Risk; little damage potential (damage to less than 5% of the jurisdiction) M – Medium Risk; moderate damage potential (damage to 5-10% of jurisdiction, infrequent occurrence) H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)</p>			

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Table 6-74: Odenville's Thunderstorm Events

18 Thunderstorm Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	02/22/2003	03:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/11/2003	14:10	CST	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	11/18/2003	13:30	CST	Thunderstorm Wind	55 kts. EG	0	0	8.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/22/2004	17:17	CST	Thunderstorm Wind	50 kts. EG	0	0	12.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	04/30/2005	03:38	CST	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	04/19/2006	16:30	CST	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	04/19/2006	16:55	CST	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	06/01/2008	12:00	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	06/14/2009	10:54	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
ST CLAIR	ST. CLAIR CO.	AL	05/20/2010	19:14	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/17/2011	11:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	0.50K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:40	CST-6	Thunderstorm Wind	60 kts. EG	0	0	1.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:54	CST-6	Thunderstorm Wind	45 kts. EG	0	0	2.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/22/2011	16:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K

ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/26/2011	15:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	07/05/2012	17:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	03/18/2013	14:35	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Totals:								0	0	60.50K	0.00K

Table 6-75: Odenville's Lightning Events

0 Lightning Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

No lightning events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-76: Odenville's Hail Events

13 Hail Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	05/02/2003	17:12	CST	Hail	1.75 in.	0	0	40.00K	0.00K
BRANCHVILLE	ST. CLAIR CO.	AL	04/22/2005	15:57	CST	Hail	0.88 in.	0	0	1.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	04/19/2006	16:27	CST	Hail	0.75 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	04/19/2006	16:40	CST	Hail	0.75 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	04/19/2006	16:51	CST	Hail	1.00 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	09/22/2006	13:55	CST	Hail	0.75 in.	0	0	0.00K	0.00K
BRANCHVILLE	ST. CLAIR CO.	AL	06/01/2008	11:53	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	06/01/2008	11:56	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K

ST. CLAIR CO.	ST. CLAIR CO.	AL	06/15/2011	21:24	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	03/02/2012	19:34	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	07/01/2012	16:43	CST-6	Hail	1.75 in.	0	0	0.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	03/18/2013	14:35	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
Totals:								0	0	41.00K	0.00K

Table 6-77: Odenville's Tornado Events

1 Tornado Event – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
BRANCHVILLE	ST. CLAIR CO.	AL	04/27/2011	05:16	CST-6	Tornado	EF2	0	5	865.00K	0.00K
Totals:								0	5	865.00K	0.00K

Table 6-78: Odenville's Flood/Flash Flood Events

10 Flood/Flash Flood Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/06/2003	16:00	CST	Flood		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/18/2003	05:00	CST	Flood		0	0	0.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/05/2003	21:30	CST	Flash Flood		0	0	25.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/07/2003	14:00	CST	Flash Flood		0	0	1.000M	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	07/01/2003	10:00	CST	Flash Flood		0	0	17.00K	0.00K

COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2004	02:02	CST	Flash Flood		0	0	5.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	09/16/2004	09:00	CST	Flash Flood		0	0	50.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	11/24/2004	05:45	CST	Flash Flood		1	0	400.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2006	16:30	CST	Flash Flood		0	0	3.00K	0.00K
ODENVILLE	ST. CLAIR CO.	AL	09/17/2009	19:20	CST-6	Flash Flood		0	0	5.00K	0.00K
Totals:								1	0	1.505M	0.00K

Table 6-79: Odenville's Drought/Extreme Heat Events

20 Drought/Extreme Heat Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-80: Odenville's Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events

9 Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/09/2011	15:50	CST-6	Winter Storm		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/25/2010	07:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR	ST. CLAIR	AL	01/17/2013	12:00	CST-	Heavy Snow		0	0	0.00K	0.00K

(ZONE)	(ZONE)				6						
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/12/2010	13:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2010	08:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/26/2010	03:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-81: Odenville's Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events

10 Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events
– 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	42.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/29/2005	19:00	CST	Tropical Storm		0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/16/2004	10:45	CST	High Wind	52 kts. EG	0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/05/2011	18:20	CST-6	High Wind	52 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/09/2006	18:00	CST	Strong Wind	40 kts. EG	0	0	2.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2007	22:40	CST-6	Strong Wind	35 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/20/2007	17:30	CST-6	Strong Wind	30 kts. EG	0	0	10.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/11/2009	11:50	CST-6	Strong Wind	43 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	268.00K	0.00K

Table 6-82: Odenville's Sinkhole Events

0 Sinkhole Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No sinkhole events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-83: Odenville's Landslide Events

0 Landslide Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No landslide events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-84: Odenville's Earthquake Events

0 Earthquake Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)

No earthquake events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-85: Countywide Wildfire Events

93 Wildfire Events – 2010 thru 2013

(Source: Alabama Forestry Commission)

County	Total # of Fires 2010-2013	Average # of Fires Per Year	Total Acres Burned 2010- 2013	Average Acres Burned Per Year	Average Fire Size in Acres
St. Clair	93	31	1,785.45	594.89	19.19

Table 6-86: Dam/Levee Failure Events

1 Dam/Levee Failure Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/Local Input)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
Countywide (Dam failed near the Friendship Community)	St. Clair County	AL	11/24/2004	5:45 p.m.		Dam Failure		1	0	0.00K	0.00K
Totals:								1	0	0.00K	0.00K

Table 6-87: Odenville Hazard Probability Assessment				
Natural Hazards	Number of Historical Occurrences	Probability of Future Occurrence	Extent	Area Affected
Thunderstorm	18	>100%	>10%	Citywide
Lightning	0	Unknown	5-10%	Citywide
Hail	13	>100%	<5%	Citywide
Tornado	1	10%	>10%	Citywide
Flood/Flash Flood	10	100%	>10%	Citywide
Drought/Extreme Heat	20	>100%	<5%	Citywide
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	9	90%	5-10%	Citywide
Hurricane/Tropical Storm/Tropical Depression/High Wind/ Strong Wind	10	100%	5-10%	Citywide
Sinkhole/Expansive Soil	0	Unknown	<5%	Citywide
Landslide	0	Unknown	<5%	Citywide
Earthquake	0	Unknown	<5%	Citywide
Wildfire (3 year study period)	93	>100%	<5%	Citywide
Dam/Levee Failure	1	10%	<5%	Citywide
Source: NOAA NCDC; U. S. Inflation Calculator/Consumer Price Index; USGS ; Local Input; USDA Census of Agriculture; Alabama Forestry Commission; and National Forestry Service; Participating Jurisdictions				
Methodology: Number of historical occurrences is those reported by NOAA NCDC during the 10 year study period, with the exception of wildfire that is a 3 year study period. Probability is expressed by dividing the total number of occurrences by the study period in years. Extent is expressed as the percentage assigned by the jurisdictions' ranking in the vulnerability overview (Table 6-73). Zero denotes no data available to determine the probability, extent, or affected area.				

Table 6-88: Odenville's Critical Facilities

CRITICAL FACILITIES – ODENVILLE	
FACILITY TYPE	REPLACEMENT VALUE
Odenville City Hall, 183 Alabama Street, Odenville	
Odenville Fire Station #1, 12618 U. S. Highway 411, Odenville	
Odenville Fire Station #2, 4931 County Road 12, Odenville	
Odenville Fire Station #3, 1501 AL Highway 174, Springville	
Odenville Police Annex, 12600 U. S. Highway 411, Odenville	
Odenville Public Works, 1515 Simpson Road, Odenville	
Odenville Utility Board, 14292 U. S. Highway 411, Odenville	
Water Treatment Plants	
Waste Water Treatment Plants	
Windstream Switching Station, 14224 U. S. Highway 411, Odenville	
Odenville Fire Department, Odenville	
Branchville PD, Odenville	\$1,260,000
Odenville Elementary School, Odenville	\$9,415,560
Odenville Middle School, Odenville	\$712,657
St. Clair County High School, Odenville	\$683,836
Total	\$12,072,053

(Source: HAZUS 2.1)

Table 6-89: Odenville Estimated Loss Projections from Specified Hazards						
Natural Hazards	Average Occurrences (per year)	Total Deaths	Total Injuries	Average Death and Injury Loss (per event)	Average Crop and Property Loss (per event)	Projected Loss (per event)
Thunderstorm	1.8	0	0	\$0	\$6,050	\$6,595
Lightning	0	0	0	\$0	\$0	Unknown
Hail	1.3	0	0	\$0	\$4,100	\$4,469
Tornado	0.1	0	5	\$11,588	\$86,500	\$106,916
Flood/Flash Flood	1.0	1	0	\$366,600	\$150,500	\$563,639
Drought/Extreme Heat	2.0	0	0	\$0	\$0	Unknown
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	0.9	0	0	\$0	\$0	Unknown
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	1.0	0	0	\$0	\$26,800	\$29,212
Sinkhole/Expansive Soils	0	0	0	\$0	\$0	Unknown
Landslide	0	0	0	\$0	\$0	Unknown
Earthquake	0	0	0	\$0	\$0	Unknown
Wildfire (3 year study period)	31.0	0	0	\$0	\$36,461	\$39,743
Dam/Levee Failure	0.1	1	0	\$366,600	\$0	\$399,594
<i>Sources: NOAA NCDC; U.S. Inflation Calculator/Consumer Price Index; Local Input; USDA Census of Agriculture; Alabama Forestry Commission and National Forestry Service; Alabama Geological Survey</i>						

Methodology: Average occurrences were expressed annually by dividing the total number of occurrences by the ten-year period. Deaths and injuries were taken from the hazard event data. Average losses were calculated by dividing the total amount of all damages by the total number of occurrences during the ten-year period with the exception of wildfire which takes the average fire size as noted in Table 4-15 multiplied by average amount per acre (\$1,900). Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figure from a midpoint of 2008 dollars to 2014 dollars (\$1 in 2008 = \$1.09 in 2014...a cumulative rate of inflation of 9%). Zero and Unknown denote there is no data available to determine the average occurrences, average loss or projected loss per event.

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City of Odenville Mitigation Action Plan

The City of Odenville recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated.

Mitigation Status

During the plan update, mitigation actions were reviewed in order to identify completed, deferred, or deleted actions from the previous plan and incorporate actions added during annual updates. **Table 6-90** shows the City of Odenville's updated mitigation actions. During the plan update process, no new mitigation actions were identified and priorities remained the same as was in the 2010 plan update.

Table 6-90: Odenville's Mitigation Actions

Mitigation Action 1.1.1	Seek a countywide update of all FIRMs in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer; Flood Plain Manager
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	FEMA Map Update Program
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.2	Train local flood plain managers through programs offered through the State Flood Manager and FEMA's training center in Emmitsburg, Maryland.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.3	Maintain a library of technical assistance and guidance materials to support the local flood plain manager.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.4	Promote the adoption of a uniform flood hazard prevention ordinance with higher regulatory standards that discourage flood plain development and seek to maintain the natural and beneficial functions of flood plains.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.6	Consider the adoption of a uniform storm water management ordinance that maintains pre-development runoff rates.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.7	Apply for and maintain membership in the CRS Program.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer
Estimated Time Frame for Completion	2020
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.8	Continue to participate in the NFIP
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	The City of Odenville is a participating member of the NFIP and plans to continue.

Mitigation Action 1.3.1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of “hurricane clips”
Type	Prevention
Goal	Reduce vulnerability of new and future development
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2020
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.4.1	Promote good construction practices and proper code enforcement to eliminate most structural problems during natural hazard events
Type	Prevention
Goal	Reduce Odenville’s vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 2.2.1	Seek funding sources, such as Community Development Block Grant funds, to assist low income homeowners with building retrofits to protect against flood damage
Type	Property Protection
Goal	Reduce Odenville's risk from natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	CDBG; Local
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 2.4.1	Provide technical assistance to owners of pre-FIRM buildings to advise on available retrofits to protect against flood damage
Type	Property Protection
Goal	Reduce Odenville's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.1.1	Promote the purchase of insurance coverage by property owners and renters for flooding, sinkhole, and earthquake damages in high risk areas.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods, Earthquakes, Sinkholes
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	The county has posted information on their Facebook page and in Public Information presentations.
Mitigation Action 3.1.2	Encourage the Multiple Listing Service (MLS) to require flood plain location disclosure as a condition for each real estate listing.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.5.1	Distribute FEMA Publication 320 – Taking Shelter From the Storm: Building a safe room in your house – through building permit and inspection offices.
Type	Public Education and Awareness
Goal	Reduce St. Clair County’s vulnerability to natural hazards
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local; HMGP
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.2	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.5.3	Continue the active programs and activities of the St. Clair County EMA to promote mitigation and severe weather awareness.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	<p>St. Clair County has distributed public information materials for the CSEPP Campaign to include: brochures in English and Spanish; zone maps; school brochures; school videos; all hazard videos; newspaper ads; television ads; radio ads; I-20 billboard; football program ads; and stadium fence sign ads. In addition: numerous newspaper articles about any subject concerning the safety and well-being of county residents, especially weather safety and weather events, CSEPP activities, hazardous materials accidents, training activities, etc.; full page newspaper ad (Be Prepared); Duran Jr. High volleyball team flyer; church flyer, Are You Prepared?; Food World pharmacy bags; Amateur Radio Field Day flyer; Webpage on county website; On Hold phone messages; county newsletter; Emergency Information Guide; 72 & You logo design; County Health Fairs; PR items distributed – pens, notebooks, rulers, bags, etc.; Special Pops items included: Caregivers Resource Guide and Masters of Disaster kits; and submitted and/or approved all special needs newsletters/info sheets/flyers.</p> <p>New since 2010: Facebook and Twitter postings of articles, charts and tables, and other emergency and preparedness information. Participation in radio talk shows.</p>

Mitigation Action 3.5.4	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Animal Emergency Planning Brochures were ordered and made available to the public.
Mitigation Action 3.5.5	Maintain local library repositories with the latest available publications.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Per coordination with each library, items are made available to the public.

Mitigation Action 3.5.6	Distribute hazard mitigation brochures to area schools for distribution to students.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Brochures in the form of coloring books were distributed to schools.
Mitigation Action 3.5.7	Promote the use of weather radios in households and businesses.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	Weather Alert Radios were distributed to all residents of St. Clair County as part of the 2009 CSEP Program Closeout. Radios were distributed until depleted in 2013. The EMA strongly promoted the use of weather alert radios on radio talk shows, during public presentations, in newspaper article and on Facebook and Twitter.

Mitigation Action 4.1.1	Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMPs) for channel and drainage system maintenance.
Type	Natural Resource Protection
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 5.2.2	Support the Alabama Skywarn Foundation efforts to distribute weather radios to low- income households, especially in rural areas outside of siren coverage areas.
Type	Emergency Services Protection
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	The EMA is not aware of any weather alert radios being distributed in St. Clair County by the Alabama Skywarn Foundation; however, St. Clair County EMA distributed these radios to all residents of the county as part of the CSEP Program Closeout in 2009 and 2010 until the stock was depleted in 2013.

Mitigation Action 5.2.3	Purchase, install, and test emergency warning sirens, as needed. Upgrade existing equipment as needed.
Type	Emergency Services Protection
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2010-2015
Estimated Cost	
Funding Sources	\$25K HMGP/ADECA
Priority	High
Benchmark	In 2005 and 2006, St. Clair County used HMGP funds to install 8 Vortex Sirens and 1 Tone Only Vortex Siren. In 2010, St. Clair County upgraded 25 sirens from WPS 2800 to WPS 2900 series. In 2012, St. Clair County sent county employees to Whelen to learn basic siren maintenance to reduce overall maintenance cost and to be able to more quickly address siren issues. St. Clair County purchased a bucket truck and tools to perform maintenance on siren systems.
Mitigation Action 5.4.1	Purchase emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities.
Type	Emergency Services Protection
Goal	Reduce St. Clair County's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2010-2015
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 6.2.1	Encourage the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA; Local Governments
Estimated Time Frame for Completion	Yearly as funding becomes available
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	One community safe room has been installed.
Mitigation Action 6.2.2	Continue program to subsidize storm shelter construction in existing homes.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly as funding becomes available.
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.2.3	Construct freestanding public safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Low
Benchmark	One community safe room was installed.

Mitigation Action 6.2.4	Encourage the construction of safe rooms in new and existing construction.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly as funding becomes available
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	One community safe room was installed.
Mitigation Action 6.2.5	Continue to provide adequate safe rooms and community shelters.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly as funding becomes available.
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	One community safe room was installed.
Mitigation Action 6.4.2	Prepare and implement standard operating procedures for drainage system maintenance.
Type	Structural Projects
Goal	Reduce St. Clair County's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer; Local Public Works
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.

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PELL CITY

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**Table 6-91: Pell City
Risk and Vulnerability Overview**

Natural Hazards	Hazard Identification	Prioritized Occurrence Threat	Vulnerability
Thunderstorm	X	2	H
Lightning	X	8	M
Hail	X	6	L
Tornado	X	7	H
Flood/Flash Flood	X	5	H
Drought/Extreme Heat	X	3	L
Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	X	5	M
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	X	4	M
Sinkhole/Expansive Soil	X	8	L
Landslide	X	8	L
Earthquake	X	8	L
Wildfire	X	1	L
Dam/Levee Failure	X	7	L
<i>Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions</i>			
<p>KEY Hazard Identification: X Affects the Jurisdiction, N/A Not a threat to the jurisdiction Priority: Hazards are prioritized with the highest threat of occurrence assigned number one based on hazardous events that have occurred within each jurisdiction over the past ten years, with the exception of wildfires that were based on events that have occurred over the past three years. Some natural hazards have equal threats to a jurisdiction; therefore, their threat number will be the same. Vulnerability: NA – Not Applicable; not a hazard to the jurisdiction L – Low Risk; little damage potential (damage to less than 5% of the jurisdiction) M – Medium Risk; moderate damage potential (damage to 5-10% of jurisdiction, infrequent occurrence) H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)</p>			

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Table 6-92: Pell City's Thunderstorm Events

22 Thunderstorm Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	02/22/2003	03:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	05/06/2003	19:15	CST	Thunderstorm Wind	55 kts. EG	0	0	5.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	05/07/2003	13:19	CST	Thunderstorm Wind	50 kts. EG	0	0	28.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	05/07/2003	13:40	CST	Thunderstorm Wind	50 kts. EG	0	0	6.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/11/2003	14:10	CST	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/22/2004	17:17	CST	Thunderstorm Wind	50 kts. EG	0	0	12.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	07/06/2004	19:38	CST	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	07/26/2004	13:45	CST	Thunderstorm Wind	55 kts. EG	0	0	15.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	04/30/2005	03:38	CST	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	04/08/2006	00:58	CST	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	06/28/2007	14:50	CST-6	Thunderstorm Wind	50 kts. EG	0	0	50.00K	0.00K
ST CLAIR	ST. CLAIR CO.	AL	05/20/2010	19:14	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	02/25/2011	00:40	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	04/27/2011	05:15	CST-6	Thunderstorm Wind	78 kts. EG	1	0	0.00K	0.00K

ST. CLAIR CO.	ST. CLAIR CO.	AL	06/17/2011	11:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	0.50K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:40	CST-6	Thunderstorm Wind	60 kts. EG	0	0	1.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:54	CST-6	Thunderstorm Wind	45 kts. EG	0	0	2.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/22/2011	16:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/26/2011	15:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	07/05/2012	21:09	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	03/18/2013	14:45	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Totals:								1	0	155.50K	0.00K

Table 6-93: Pell City's Lightning Events

0 Lightning Event – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Table 6-94: Pell City's Hail Events

6 Hail Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	05/02/2003	17:12	CST	Hail	1.75 in.	0	0	40.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	07/07/2004	16:30	CST	Hail	0.88 in.	0	0	0.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	04/19/2006	16:55	CST	Hail	1.75 in.	0	0	0.00K	0.00K
PELL CITY	ST. CLAIR CO.	AL	04/04/2008	14:05	CST-6	Hail	0.88 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/15/2011	21:24	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
Totals:								0	0	40.00K	0.00K

Table 6-95: Pell City's Tornado Events

1 Tornado Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
PELL CITY	ST. CLAIR CO.	AL	05/07/2003	13:10	CST	Tornado	F1	0	0	85.00K	0.00K
Totals:								0	0	85.00K	0.00K

Table 6-96: Pell City's Flood/Flash Flood Events

9 Flood/Flash Flood Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/06/2003	16:00	CST	Flood		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/18/2003	05:00	CST	Flood		0	0	0.00K	0.00K

COUNTYWIDE	ST. CLAIR CO.	AL	05/05/2003	21:30	CST	Flash Flood		0	0	25.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/07/2003	14:00	CST	Flash Flood		0	0	1.000M	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	07/01/2003	10:00	CST	Flash Flood		0	0	17.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2004	02:02	CST	Flash Flood		0	0	5.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	09/16/2004	09:00	CST	Flash Flood		0	0	50.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	11/24/2004	05:45	CST	Flash Flood		1	0	400.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2006	16:30	CST	Flash Flood		0	0	3.00K	0.00K
Totals:								1	0	1.500M	0.00K

Table 6-97: Pell City's Drought/Extreme Heat Events

20 Drought/Extreme Heat Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-98: Pell City's Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events

9 Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/09/2011	15:50	CST-6	Winter Storm		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/25/2010	07:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/17/2013	12:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/12/2010	13:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2010	08:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/26/2010	03:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-99: Pell City's Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events

10 Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events
 – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	42.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/29/2005	19:00	CST	Tropical Storm		0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/16/2004	10:45	CST	High Wind	52 kts. EG	0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/05/2011	18:20	CST-6	High Wind	52 kts. EG	0	0	5.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/09/2006	18:00	CST	Strong Wind	40 kts. EG	0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2007	22:40	CST-6	Strong Wind	35 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/20/2007	17:30	CST-6	Strong Wind	30 kts. EG	0	0	10.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/11/2009	11:50	CST-6	Strong Wind	43 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	268.00K	0.00K

Table 6-100: Pell City's Sinkhole Events

0 Sinkhole Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: (Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No sinkhole events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-101: Pell City's Landslide Events

0 Landslide Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: (Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No landslide events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-102: Pell City's Earthquake Events

0 Earthquake Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)

No earthquake events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-103: Countywide Wildfire Events

93 Wildfire Events – 2010 thru 2013
(Source: Alabama Forestry Commission)

County	Total # of Fires 2010-2013	Average # of Fires Per Year	Total Acres Burned 2010- 2013	Average Acres Burned Per Year	Average Fire Size in Acres
St. Clair	93	31	1,785.45	594.89	19.19

Table 6-104: Pell City's Dam/Levee Failure Events

1 Dam/Levee Failure Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database/flash flood)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Countywide (Dam failed near the Friendship Community)	St. Clair County	AL	11/24/2004	5:45 p.m.		Dam Failure		1	0	0.00K	0.00K
Totals:								1	0	0.00K	0.00K

Table 6-105: Pell City Hazard Probability Assessment				
Natural Hazards	Number of Historical Occurrences	Probability of Future Occurrence	Extent	Area Affected
Thunderstorm	22	>100%	>10%	Citywide
Lightning	0	Unknown	5-10%	Citywide
Hail	6	60%	<5%	Citywide
Tornado	1	10%	>10%	Citywide
Flood/Flash Flood	9	90%	>10%	Citywide
Drought/Extreme Heat	20	>100%	<5%	Citywide
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	9	90%	5-10%	Citywide
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	10	10%	5-10%	Citywide
Sinkhole/Expansive Soil	0	Unknown	<5%	Citywide
Landslide	0	Unknown	<5%	Citywide
Earthquake	0	Unknown	<5%	Citywide
Wildfire (3 year study period)	93	>100%	<5%	Citywide
Dam/Levee Failure	1	Unknown	<5%	Citywide
Source: NOAA NCDC; U. S. Inflation Calculator/Consumer Price Index; USGS ; Local Input; USDA Census of Agriculture; Alabama Forestry Commission; and National Forestry Service; Participating Jurisdictions				
Methodology: Number of historical occurrences is those reported by NOAA NCDC during the 10 year study period, with the exception of wildfire that is a 3 year study period. Probability is expressed by dividing the total number of occurrences by the study period in years. Extent is expressed as the percentage assigned by the jurisdictions' ranking in the vulnerability overview (Table 6-91). Zero denotes no data available to determine the probability, extent, or affected area.				

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Table 6-106: Pell City's Critical Facilities

CRITICAL FACILITIES – PELL CITY	
FACILITY TYPE	REPLACEMENT VALUE
City Hall, 1905 1 st Ave. N., Pell City	Building: \$3,630,000 Contents: \$276,846
Fire Station 1, 3040 Cogswell Ave., Pell City	Building: \$486,249 Contents: \$69,211
Fire Station 2, 2710 Bubba Wyatt Rd., Pell City	Building: \$225,817 Contents: \$20,763
Fire Station 3, 5200 Mayes Bend Rd., Pell City	Building: \$408,876 Contents: \$39,143
Fire Station 4, 304 Cogswell Ave., Pell City	Building: \$359,901 Contents: \$20,763
City Shop/Maintenance, 417 19 th St., S., Pell City	Building: \$388,800 Contents: \$69,211
WWTP Office, 1680 Golf Course Rd., Pell City	\$125,952
WWTP Head Works, 1680 Golf Course Rd., Pell City	\$69,211
Water Pump, 1680 Golf Course Rd., Pell City	\$75,195
Generator Building, 1680 Golf Course Rd., Pell City	\$173,030
Chlorine Building, 1680 Golf Course Rd., Pell City	\$124,581
Wastewater Treatment Plant, 1680 Golf Course Rd., Pell City	\$1,490,051
WWTP Solid Hands Building, 1680 Golf Course Rd., Pell City	\$3,278,181
WWTP Holding Tank, 1680 Golf Course Rd., Pell City	\$2,185,454
Lift Station S-11, 519 Wolf Creek Rd., Pell City	\$1,300,000
Lift Station S-12/Radio, 101 West Trail, Pell City	\$1,218,499
Lift Station S-9/Harris, 811 17 th St. N., Pell City	\$400,000
Lift Station S-2/Fishing, 105 Bamberg Dr., Pell City	\$1,623,433
Lift Station S-20/Civic Center, 2712 Bubba Wyatt Rd., Pell City	\$13,842
Lift Station S-8/Bankhead, Hazelwood Dr., Pell City	\$1,200,000
Lift Station S-35/Bankhead, Vaughn Ln., Pell City	\$815,450
Lift Station S-24/Ingram, 115 Ingram Ln., Pell City	\$48,751
Lift Station S-19/King Cir, 804 Kings Cir., Pell City	\$11,839
Lift Station S-22/Pavil, 20 Lakeside Park Dr., Pell City	\$6,923

Lift Station S-23/Pavil, 300 Lakeside Park Dr., Pell City	\$6,923
Lift Station S-16/17 th St., 811 17 th St. S., Pell City	\$50,751
Lift Station S-13/Railroad, 102 Old Wolf Creek Rd., Pell City	\$37,551
Lift Station S-15/Metro, 806 Martin St., Pell City	\$39,451
Lift Station S-17/15 th Ave., 2613 15 th Ave. S., Pell City	\$140,721
Lift Station S-1/Truss Fe, 825 Golf Course Rd., Pell City	\$46,879
Lift Station S-3/Tyus, 4102 Cogswell Ave., Pell City	\$27,685
Lift Station S-10, 415 Whitesville Rd., Pell City	\$27,685
Lift Station S-14/Rosedale, 103 Rosedale Dr., Pell City	\$27,685
Lift Station S-18/King Cl, 411 Kings Cir., Pell City	\$28,817
Lift Station S-25/Hardwic, 2275 Hardwick Rd., Pell City	\$98,817
Lift Station S-26/Morning, 1725 Golf Course Rd., Pell City	\$53,439
Lift Station S-27/Baseball, Sports Complex, Pell City	\$16,721
Lift Station S-28/Soccer, Soccer Bathhouse, Pell City	\$16,721
Lift Station S-30/Coosa V, 3618 Martin St., S., Pell City	\$189,000
Lift Station S-31/Brookhill, Brookhill Apartments, Pell City	\$46,879
Lift Station S-9/Harris, 811 17 th St., N., Pell City	\$400,000
Lift Station S-33/Fox H, 395 Oak Leaf Cir., Pell City	\$1,618,800
Lift Station S-34/Fox H, 901 Fox Hollow Blvd., Pell City	\$278,000
Lift Station S-36/Heriz, 5909 Horizons Pkwy, Pell City	\$820,000
Lift Station S-32/Images, 2404 Blue Springs Rd., Pell City	\$650,000
Water Tank, 25 15 th St., N., Pell City	\$415,270
Water Tank, 25 15 th St., N., Pell City	\$346,058
Water Tank, 25 15 th St., N., Pell City	\$346,058
Well A/Water Pump, 1695 Golf Course Rd., Pell City	\$83,055
Well B, 1901 16 th St. S., Pell City	\$803,757

Water Tank C, Mayes Bend Rd., Pell City	\$207,684
Well Pump C, Mayes Bend Rd., Pell City	\$317,195
Booster Pump C, Mayes Bend Rd., Pell City	\$18,721
Well D/Avondale Mills, 1608 Martin St., S., Pell City	\$1,125,509
Fishing Creek Generator 501 Bamberg Dr., Pell City	\$772,500
Wolf Creek Generator, 519 Wolf Creek Rd., N., Pell City	\$750,000
Woodhill Water Tank, 4300 Woodhill Rd., Pell City	\$875,500
Lift Station S-32/Images, 2404 Blue Springs Rd., Pell City	\$650,000
Whelen 10 Stack Sirens, Various Locations, Pell City	\$442,595
Civic Center, 2801 Stemley Bridge Rd., Pell City	Building: \$3,560,000 Contents: \$69,211
Community Center/Red, 317 S. 19 th St., Pell City	Building: \$248,400 Contents: \$8,306
Senior Citizens Center, 801 Comer Ave., Pell City	Building: \$297,612 Contents: \$48,448
Chamber of Commerce, 1618 Cogswell Ave., Pell City	\$684,000
National Guard Armory, 405 19 th St., Pell City	\$864,000
Boys/Girls Club, 1816 3 rd Ave., S., Pell City	Building: \$387,586 Contents: \$55,370
Library, 1921 1 st Ave., N., Pell City	Building: \$712,000 Contents: \$415,270
Glenn City Rec Hall, 903 16 th St., Pell City	Building: \$259,200 Contents: \$3,461
Animal Shelter, 1071 Airport Rd., Pell City	\$556,896
Old Health Department, 205 Edwin Holiday Place, Pell City	\$368,962
Old Eden City Hall- Vacant, 13 Second St., Pell City	\$48,280
St. Clair Regional Hospital, Pell City	\$16,495,910
Pell City Fire and Rescue, Pell City	
Wolf Creek VFD, Pell City	
Sheriff's Department – Dispatch Center, Pell City	\$1,260,000
St. Clair County Sheriff's Office, Pell City	\$1,260,000
Pell City PD, 1 st Ave. North, Pell City	\$1,260,000
Pell City PD, 19 th St. South, Pell City	\$1,260,000
Bible Methodist Christian School, Pell City	\$1,165,930

Mountain View Adventist, Pell City	\$235,810
Victory Christian School, Pell City	\$6,707,360
First Baptist Kindergarten, Pell City	\$121,650
Iola Roberts Elementary School, Pell City	\$4,272,380
Eden Elementary School, Pell City	\$7,388,950
Duran South, Pell City	\$3,436,020
Duran Junior High School, Pell City	\$9,802,770
Pell City High School, Pell City	\$22,270,520
Walter M. Kennedy School, Pell City	\$8,359,680
Ashville Middle School, Pell City	\$3,930,090
St. Clair County Airport, Pell City	\$10,651,000
WFHK 1430, Pell City	\$90,000
Total	\$140,113,728

(Sources: HAZUS 2.1; Local)

**Table 6-107: City of Pell City
Estimated Loss Projections from Specified Hazards**

Natural Hazards	Average Occurrences (per year)	Total Deaths	Total Injuries	Average Death and Injury Loss (per event)	Average Crop and Property Loss (per event)	Projected Loss (per event)
Thunderstorm	2.2	1	0	\$366,600	\$15,550	\$416,544
Lightning	0	0	0	\$0	\$0	Unknown
Hail	0.6	0	0	\$0	\$4,000	\$4,360
Tornado	0.1	0	0	\$0	\$8,500	\$9,265
Flood/Flash Flood	0.9	1	0	\$366,600	\$150,000	\$563,094
Drought/Extreme Heat	2.0	0	0	\$0	\$0	Unknown
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	0.9	0	0	\$0	\$0	Unknown
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	1.0	0	0	\$0	\$26,800	\$29,212
Sinkhole/Expansive Soils	0	0	0	\$0	\$0	Unknown
Landslide	0	0	0	\$0	\$0	Unknown
Earthquake	0	0	0	\$0	\$0	Unknown
Wildfire (3 year study period)	31	0	0	\$0	\$36,461	\$39,743
Dam/Levee Failure	0.1	0	0	\$366,600	\$0	\$399,594

Sources: NOAA NCDC; U.S. Inflation Calculator/Consumer Price Index; Local Input; USDA Census of Agriculture; Alabama Forestry Commission and National Forestry Service; Alabama Geological Survey

Methodology: Average occurrences were expressed annually by dividing the total number of occurrences by the ten-year period. Deaths and injuries were taken from the hazard event data. Average losses were calculated by dividing the total amount of all damages by the total number of occurrences during the ten-year period with the exception of wildfire which takes the average fire size as noted in Table 6-103 multiplied by average amount per acre (\$1,900). Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figure from a midpoint of 2008 dollars to 2014 dollars (\$1 in 2008 = \$1.09 in 2014...a cumulative rate of inflation of 9%). Zero or Unknown denotes no data available to determine the average occurrences, average loss or projected loss per event.

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Pell City Mitigation Action Plan

Pell City recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated. Pell City is a member of the NFIP and as of May 2012 has a Community Rating System Program Class 8 – receives a 10% premium discount on flood insurance. The ISO Fire Suppression Rating is 3 – 70 to 79.99 points on a 100 point scale. Pell City has an engineer on a contract basis; employs a full-time Certified Floodplain Manager; and, a full-time building inspector on staff. Pell City does not have any repetitive loss properties.

Mitigation Status

During the plan update, mitigation actions were reviewed in order to identify completed, deferred, or deleted actions from the previous plan and incorporate actions added during annual updates. **Table 6-108** shows the Pell City's updated mitigation actions. During the plan update process, no new mitigation actions were identified and added to the plan.

Table 6-108: Pell City's Mitigation Actions	
Mitigation Action 1.1.1	Seek a countywide update of all FIRMs in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer; Flood Plain Manager
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	FEMA Map Update Program
Priority	High
Benchmark	No action in the past five years due to lack of funding.

Mitigation Action 1.1.2	Train local flood plain managers through programs offered through the State Flood Manager and FEMA's training center in Emmitsburg, Maryland.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action in the past five years due to lack of funding.
Mitigation Action 1.1.3	Maintain a library of technical assistance and guidance materials to support the local flood plain manager.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Medium
Benchmark	No action in the past five years due to lack of funding.

Mitigation Action 1.1.4	Promote the adoption of a uniform flood hazard prevention ordinance with higher regulatory standards that discourage flood plain development and seek to maintain the natural and beneficial functions of flood plains.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action in the past five years due to lack of funding.
Mitigation Action 1.1.6	Consider the adoption of a uniform storm water management ordinance that maintains pre-development runoff rates.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action in the past five years due to lack of funding.

Mitigation Action 1.1.7	Apply for and maintain membership in the CRS Program.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2020
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	No action in the past five years due to lack of funding.
Mitigation Action 1.1.8	Continue to participate in the NFIP
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	Pell City continued membership in the NFIP in the past five years and wishes to do so in the next five years.

Mitigation Action 1.3.1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of hurricane clips.
Type	Prevention
Goal	Reduce vulnerability of new and future development
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2020
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action in the past five years due to lack of funding.
Mitigation Action 1.4.1	Promote good construction practices and proper code enforcement to eliminate most structural problems during natural hazard events.
Type	Prevention
Goal	Reduce Pell City's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High

Benchmark	No action in the past five years due to lack of funding.
Mitigation Action 2.2.1	Seek funding sources, such as Community Development Block Grant Funds, to assist low income home owners with building retrofits to protect against flood damage.
Type	Property Protection
Goal	Reduce Pell City's risk from natural hazards
Hazard(s) Addressed	Flood/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	CDBG; Local; ADECA
Priority	Low
Benchmark	No action in the past five years due to lack of funding.
Mitigation Action 2.4.1	Provide technical assistance to owners of pre-FIRM buildings to advise on available retrofits to protect against flood damage
Type	Property Protection
Goal	Reduce Pell City's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	No action in the past five years due to lack of

	funding.
Mitigation Action 3.1.1	Promote the purchase of insurance coverage by property owners and renters for flooding, sinkhole, and earthquake damages in high risk areas.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods, Earthquakes, Sinkholes
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	The county has posted information on their Facebook page and in Public Information presentations.
Mitigation Action 3.1.2	Encourage the Multiple Listing Service (MLS) to require flood plain location disclosure as a condition for each real estate listing.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2016
Estimated Cost	

Funding Sources	HMGP; Local
Priority	High
Benchmark	No action in the past five years due to lack of funding.
Mitigation Action 3.5.1	Distribute FEMA publication 320 – Taking Shelter From the Storm: Building a Safe Room in your house – through building permit and inspection offices.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action in the past five years due to lack of funding.
Mitigation Action 3.5.2	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA

Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	Medium
Benchmark	No action in the past five years due to lack of funding.
Mitigation Action 3.5.3	Continue the active programs and activities of the St. Clair County EMA to promote mitigation and severe weather awareness.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	St. Clair County has distributed public information materials for the CSEPP Campaign to include: brochures in English and Spanish; zone maps; school brochures; school videos; all hazard videos; newspaper ads; television ads; radio ads; I-20 billboard; football program ads; and stadium fence sign ads. In addition: numerous newspaper articles about any subject concerning the safety and well-being of county residents, especially weather safety and weather events, CSEPP activities, hazardous materials accidents, training activities, etc.; full page newspaper ad (Be Prepared); Duran Jr. High volleyball team flyer; church flyer, Are You Prepared?; Food World pharmacy bags; Amateur Radio Field Day flyer; Webpage on county website; On Hold phone messages;

	<p>county newsletter; Emergency Information Guide; 72 & You logo design; County Health Fairs; PR items distributed – pens, notebooks, rulers, bags, etc.; Special Pops items included: Caregivers Resource Guide and Masters of Disaster kits; and submitted and/or approved all special needs newsletters/info sheets/flyers.</p> <p>New since 2010: Facebook and Twitter postings of articles, charts and tables, and other emergency and preparedness information. Participation in radio talk shows.</p>
Mitigation Action 3.5.4	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Animal Emergency Planning Brochures were ordered and made available to the public.
Mitigation Action 3.5.5	Maintain local library repositories with the latest available publications.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	Local
Priority	Low
Benchmark	Per coordination with each library, items are

	made available to the public.
Mitigation Action 3.5.6	Distribute hazard mitigation brochures to area schools for distribution to students.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Brochures in the form of coloring books were distributed to schools.
Mitigation Action 3.5.7	Promote the use of weather radios in households and businesses
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Fire Department; EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	The Fire Department has promoted the use of weather radios in households and businesses by

	distributing weather radios. They would like to continue this practice. Weather Alert Radios were distributed to all residents of St. Clair County as part of the 2009 CSEP Program Closeout. Radios were distributed until depleted in 2013. The EMA strongly promoted the use of weather alert radios on radio talk shows, during public presentations, in newspaper article and on Facebook and Twitter.
Mitigation Action 4.1.1 DELETED	Seek technical assistance through the Alabama Cooperative Extension System with Best management practices (BMPs) for channel and drainage system maintenance.
Type	Natural Resource Protection
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP
Priority	High
Benchmark	The city did not seek assistance during the past five years, as local government did not choose to do so. This mitigation action is being deleted from the 2015 plan update.
Mitigation Action 5.2.2 DELETED	Support the Alabama Skywarn Foundation efforts to distribute weather radios to low-income households, especially in rural areas outside of siren coverage areas.
Type	Emergency Services Protection
Goal	Reduce Pell City's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2017

Estimated Cost	
Funding Sources	HMPG; ADECA; Local
Priority	High
Benchmark	The fire department distributed weather radios during the past five years. This mitigation action is being deleted from the 2015 plan update.
Mitigation Action 5.2.3	Purchase, install, and test emergency warning sirens, as needed. Upgrade existing equipment as needed.
Type	Emergency Services Protection
Goal	Reduce Pell City's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA; Fire Department
Estimated Time Frame for Completion	2020
Estimated Cost	\$30,000 each
Funding Sources	\$25K HGMP/ADECA
Priority	High
Benchmark	The fire department tests the sirens. No sirens were purchased or installed during the past five years due to lack of funding.
Mitigation Action 5.4.1	Purchase emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities
Type	Emergency Services Protection
Goal	Reduce Pell City's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 each
Funding Sources	HMGP; ADECA

Priority	High
Benchmark	No generators were purchased during the past five years due to lack of funding. St. Clair County acquired several generators as part of the CSEP Program Closeout and signed them over to County and Municipal entities to include: County Commission for use at the County Administration Annex, City of Springville, and the City of Pell City.
Mitigation Action 6.2.1	Encourage the construction/installation of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.
Type	Structural Projects
Goal	Reduce Pell City's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA; Local Governments
Estimated Time Frame for Completion	One year from grant award of funding
Estimated Cost	\$100,000 - \$125,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No safe rooms were constructed/installed during the past five years due to lack of funding.
Mitigation Action 6.2.2	Continue program to subsidize storm shelter construction in existing homes.
Type	Structural Projects
Goal	Reduce Pell City's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$10,000 each
Funding Sources	HMGP; ADECA
Priority	High

Benchmark	In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-ground), and in new homes.
Mitigation Action 6.2.3	Construct/install freestanding public community safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce Pell City's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$150,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No safe rooms were constructed/installed during the past five years due to lack of funding.
Mitigation Action 6.2.4	Encourage the construction of safe rooms in new and existing construction.
Type	Structural Projects
Goal	Reduce Pell City's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	\$5,000 - \$10,000
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	Strong media push to make residents aware of

	HMGP Individual Storm Shelter and Community Safe Room grants as well as their importance were made on the radio and during public presentations, in newspaper articles, and posts on Facebook.
Mitigation Action 6.2.5	Continue to provide adequate storm shelters and community safe rooms
Type	Structural Projects
Goal	Reduce Pell City's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Local Government; EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$150,000 each
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-ground), and in new homes. No community safe room was constructed or installed due to lack of funding.
Mitigation Action 6.4.2	Prepare and implement standard operating procedures for drainage system maintenance.
Type	Structural Projects
Goal	Reduce Pell City's vulnerability to natural hazards

Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Street Department
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	The Street Department is actively working on maintaining drainage system.

RAGLAND

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**Table 6-109: Ragland
Risk and Vulnerability Overview**

Natural Hazards	Hazard Identification	Prioritized Occurrence Threat	Vulnerability
Thunderstorm	X	3	H
Lightning	X	8	M
Hail	X	6	L
Tornado	X	8	H
Flood/Flash Flood	X	4	M
Drought/Extreme Heat	X	2	L
Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	X	5	L
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	X	4	M
Sinkhole/Expansive Soil	X	8	L
Landslide	X	8	L
Earthquake	X	7	L
Wildfire	X	1	L
Dam/Levee Failure	X	7	L
<i>Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions</i>			
<p>KEY Hazard Identification: X Affects the Jurisdiction, N/A Not a threat to the jurisdiction Priority: Hazards are prioritized with the highest threat of occurrence assigned number one based on hazardous events that have occurred within each jurisdiction over the past ten years, with the exception of wildfires that were based on events that have occurred over the past three years. Some natural hazards have equal threats to a jurisdiction; therefore, their threat number will be the same. Vulnerability: NA – Not Applicable; not a hazard to the jurisdiction L – Low Risk; little damage potential (damage to less than 5% of the jurisdiction) M – Medium Risk; moderate damage potential (damage to 5-10% of jurisdiction, infrequent occurrence) H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)</p>			

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Table 6-110: Ragland's Thunderstorm Events

18 Thunderstorm Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	02/22/2003	03:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/11/2003	14:10	CST	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/22/2004	17:17	CST	Thunderstorm Wind	50 kts. EG	0	0	12.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	04/30/2005	03:38	CST	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	04/20/2006	15:44	CST	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	06/30/2007	15:03	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	07/29/2008	17:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	08/02/2008	17:59	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	04/02/2009	21:20	CST-6	Thunderstorm Wind	55 kts. EG	0	0	1.00K	0.00K
ST. CLAIR	ST. CLAIR CO.	AL	05/20/2010	19:14	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	04/27/2011	05:30	CST-6	Thunderstorm Wind	70 kts. EG	0	0	15.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/17/2011	11:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	0.50K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:40	CST-6	Thunderstorm Wind	60 kts. EG	0	0	1.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:54	CST-6	Thunderstorm Wind	45 kts. EG	0	0	2.00K	0.00K

ST. CLAIR CO.	ST. CLAIR CO.	AL	06/22/2011	16:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/26/2011	15:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	07/02/2012	04:50	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Totals:								0	0	67.50K	0.00K

Table 6-111: Ragland's Lightning Events

0 Lightning Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

No lightning events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-112: Ragland's Hail Events

5 Hail Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	05/02/2003	17:12	CST	Hail	1.75 in.	0	0	40.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	07/29/2008	17:14	CST-6	Hail	0.88 in.	0	0	0.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	02/18/2009	16:29	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/15/2011	21:24	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
Totals:								0	0	40.00K	0.00K

Table 6-113: Ragland's Tornado Events

0 Tornado Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

No tornado events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-114: Ragland's Flood/Flash Flood Events

10 Flood/Flash Flood Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/06/2003	16:00	CST	Flood		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/18/2003	05:00	CST	Flood		0	0	0.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/05/2003	21:30	CST	Flash Flood		0	0	25.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/07/2003	14:00	CST	Flash Flood		0	0	1.000M	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	07/01/2003	10:00	CST	Flash Flood		0	0	17.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2004	02:02	CST	Flash Flood		0	0	5.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	09/16/2004	09:00	CST	Flash Flood		0	0	50.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	11/24/2004	05:45	CST	Flash Flood		1	0	400.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2006	16:30	CST	Flash Flood		0	0	3.00K	0.00K
RAGLAND	ST. CLAIR CO.	AL	03/23/2012	11:15	CST-6	Flash Flood		0	0	0.00K	0.00K
Totals:								1	0	1.5M	0.00K

Table 6-115: Ragland's Drought/Extreme Heat Events

20 Drought/Extreme Heat Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-116: Ragland's Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events

9 Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/09/2011	15:50	CST-6	Winter Storm		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/25/2010	07:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/17/2013	12:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/12/2010	13:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2010	08:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/26/2010	03:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-117: Ragland's Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events

10 Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events
 – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	42.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/29/2005	19:00	CST	Tropical Storm		0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/16/2004	10:45	CST	High Wind	52 kts. EG	0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/05/2011	18:20	CST-6	High Wind	52 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/09/2006	18:00	CST	Strong Wind	40 kts. EG	0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2007	22:40	CST-6	Strong Wind	35 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/20/2007	17:30	CST-6	Strong Wind	30 kts. EG	0	0	10.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/11/2009	11:50	CST-6	Strong Wind	43 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	268.00K	0.00K

Table 6-118: Ragland's Sinkhole Events

0 Sinkhole Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No sinkhole events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-119: Ragland's Landslide Events

0 Landslide Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No landslide events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-120: Ragland's Earthquake Events

1 Earthquake Event – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Ragland	St. Clair County	AL	3/17/2009	11:27 p.m.		Earthquake	2.5	0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

No earthquake events occurred or were reported to NOAA NCDC or U. S./AL Geological Survey during 01/01/2003 thru 12/31/2013.

Table 6-121: Countywide Wildfire Events

93 Wildfire Events – 2010 thru 2013

(Source: Alabama Forestry Commission)

County	Total # of Fires 2010-2013	Average # of Fires Per Year	Total Acres Burned 2010- 2013	Average Acres Burned Per Year	Average Fire Size in Acres
St. Clair	93	31	1,785.45	594.89	19.19

Table 6-122: Ragland's Dam/Levee Failure Events

1 Dam/Levee Failure Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/flash flood)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Countywide (Dam failed near the Friendship Community)	St. Clair County	AL	11/24/2004	5:45 p.m.		Dam Failure		1	0	0.00K	0.00K
Totals:								1	0	0.00K	0.00K

Table 6-123: Ragland Hazard Probability Assessment				
Natural Hazards	Number of Historical Occurrences	Probability of Future Occurrence	Extent	Area Affected
Thunderstorm	18	>100%	>10%	Town wide
Lightning	0	Unknown	<5%	Town wide
Hail	5	50%	<5%	Town wide
Tornado	0	Unknown	>10%	Town wide
Flood/Flash Flood	10	10%	5-10%	Town wide
Drought/Extreme Heat	20	>100%	<5%	Town wide
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	9	90%	<5%	Town wide
Hurricane/Tropical Storm/Tropical Depression/High Wind/ Strong Wind	10	100%	5-10%	Town wide
Sinkhole/Expansive Soil	2	20%	<5%	Town wide
Landslide	2	20%	<5%	Town wide
Earthquake	1	10%	<5%	Town wide
Wildfire (3 year study period)	93	>100%	<5%	Town wide
Dam/Levee Failure	1	10%	<5%	Town wide
<i>Source: NOAA NCDC; U. S. Inflation Calculator/Consumer Price Index; USGS ; Local Input; USDA Census of Agriculture; Alabama Forestry Commission; and National Forestry Service; Participating Jurisdictions</i>				
Methodology: Number of historical occurrences is those reported by NOAA NCDC during the 10 year study period, with the exception of wildfire that is a 3 year study period. Probability is expressed by dividing the total number of occurrences by the study period in years. Extent is expressed as the percentage assigned by the jurisdictions' ranking in the vulnerability overview (Table 6-109). Zero denotes no data available to determine the probability, extent, or affected area.				

Table 6-124: Ragland's Critical Facilities

CRITICAL FACILITIES – RAGLAND	
FACILITY TYPE	REPLACEMENT VALUE
Wattsville FD, Ragland	
Ragland High School, Ragland	\$7,729,180
Total	\$7,729,180

(Source: HAZUS MH 2.1)

Table 6-125: Ragland Estimated Loss Projections from Specified Hazards						
Natural Hazards	Average Occurrences (per year)	Total Deaths	Total Injuries	Average Death and Injury Loss (per event)	Average Crop and Property Loss (per event)	Projected Loss (per event)
Thunderstorm	1.8	0	0	\$0	\$6,750	\$7,358
Lightning	0	0	0	\$0	\$0	Unknown
Hail	0.5	0	0	\$0	\$4,000	\$4,360
Tornado	0	0	0	\$0	\$0	Unknown
Flood/Flash Flood	1.0	1	0	\$366,600	\$150,000	\$563,094
Drought/Extreme Heat	2.0	0	0	\$0	\$0	Unknown
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	0.9	0	0	\$0	\$0	Unknown
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	1.0	0	0	\$0	\$26,800	\$29,212
Sinkhole/Expansive Soils	0	0	0	\$0	\$0	Unknown
Landslide	0	0	0	\$0	\$0	Unknown
Earthquake	0.1	0	0	\$0	\$0	Unknown
Wildfire (3 year study period)	31	0	0	\$0	\$36,461	\$39,743
Dam/Levee Failure	0.1	0	0	\$366,600	\$0	\$399,594
<i>Sources: NOAA NCDC; U.S. Inflation Calculator/Consumer Price Index; Local Input; USDA Census of Agriculture; Alabama Forestry Commission and National Forestry Service; Alabama Geological Survey</i>						

Methodology: Average occurrences were expressed annually by dividing the total number of occurrences by the ten-year period. Deaths and injuries were taken from the hazard event data. Average losses were calculated by dividing the total amount of all damages by the total number of occurrences during the ten-year period with the exception of wildfire which takes the average fire size as noted in Table 6-121 multiplied by average amount per acre (\$1,900). Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figure from a midpoint of 2008 dollars to 2014 dollars (\$1 in 2008 = \$1.09 in 2014...a cumulative rate of inflation of 9%). Zero and Unknown denote no data available to determine the average occurrences, average loss or projected loss per event.

Ragland Mitigation Action Plan

Ragland recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated. Ragland is a member of the NFIP.

Mitigation Status

During the plan update, mitigation actions were reviewed in order to identify completed, deferred, or deleted actions from the previous plan and incorporate actions added during annual updates. **Table 6-126** shows the Ragland's updated mitigation actions. During the plan update process, no new mitigation actions were identified and added to the plan.

Table 6-126: Ragland's Mitigation Actions	
Mitigation Action 1.1.1	Seek a countywide update of all FIRMs in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer; Flood Plain Manager
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	FEMA Map Update Program
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.5	Enact a flood hazard prevention ordinance and establish Ragland as regular members of the NFIP.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Flood/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	Local; HMGP
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.6 COMPLETED	Consider the adoption of a uniform storm water management ordinance that maintains predevelopment runoff rates.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	Completed

Mitigation Action 1.1.8	Make application and/or commit to participate in the NFIP
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	Ragland is a participating member of the NFIP and plans to continue.
Mitigation Action 1.3.1 DELETED	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of hurricane clips.
Type	Prevention
Goal	Reduce vulnerability of new and future development
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	Local jurisdiction has decided against this mitigation action; therefore, action is being deleted from this plan update.

Mitigation Action 1.4.1 DELETED	Promote good construction practices and proper code enforcement to eliminate most structural problems during natural hazard events.
Type	Prevention
Goal	Reduce Ragland's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New
Local Planning Mechanism	Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	Local jurisdiction has decided against this mitigation action, as they have no Building Inspector; therefore, action is being deleted from this plan update.
Mitigation Action 2.2.1 COMPLETED	Seek funding sources, such as Community Development Block Grant Funds, to assist low income home owners with building retrofits to protect against flood damages.
Type	Property Protection
Goal	Reduce Ragland's risk from natural hazards.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	CDBG; ADECA; Local
Priority	Medium
Benchmark	Completed

Mitigation Action 3.1.1 COMPLETED	Promote the purchase of insurance coverage by property owners and renters for flooding, sinkhole, and earth quake damages in high risk areas.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods, Earthquakes, Sinkholes
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	Completed
Mitigation Action 3.1.2 COMPLETED	Encourage the Multiple Listing Service (MLS) to require flood plain location disclosure as a condition for each real estate listing.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Local Government
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	Completed

Mitigation Action 3.5.1	Distribute FEMA publication 320 – Taking Shelter From the Storm: Building a Safe Room in your house – through building permit and inspection offices.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.2 DELETED	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	Medium

Benchmark	Local jurisdiction has decided against this mitigation action; therefore, action is being deleted from this plan update.
Mitigation Action 3.5.3	Continue the active programs and activities of the St. Clair County EMA to promote mitigation and severe weather awareness.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	St. Clair County has distributed public information materials for the CSEPP Campaign to include: brochures in English and Spanish; zone maps; school brochures; school videos; all hazard videos; newspaper ads; television ads; radio ads; I-20 billboard; football program ads; and stadium fence sign ads. In addition: numerous newspaper articles about any subject concerning the safety and well-being of county residents, especially weather safety and weather events, CSEPP activities, hazardous materials accidents, training activities, etc.; full page newspaper ad (Be Prepared); Duran Jr. High volleyball team flyer; church flyer, Are You Prepared?; Food World pharmacy bags; Amateur Radio Field Day flyer; Webpage on county website; On Hold phone messages; county newsletter; Emergency Information Guide; 72 & You logo design; County Health Fairs; PR items distributed – pens, notebooks, rulers, bags, etc.; Special Pops items included: Caregivers

	<p>Resource Guide and Masters of Disaster kits; and submitted and/or approved all special needs newsletters/info sheets/flyers.</p> <p>New since 2010: Facebook and Twitter postings of articles, charts and tables, and other emergency and preparedness information. Participation in radio talk shows.</p>
Mitigation Action 3.5.4	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Animal Emergency Planning Brochures were ordered and made available to the public.
Mitigation Action 3.5.5	Maintain local library repositories with the latest available publications.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Per coordination with each library, items are made available to the public.

Mitigation Action 3.5.6	Distribute hazard mitigation brochures to area schools for distribution to students.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Brochures in the form of coloring books were distributed to schools.
Mitigation Action 3.5.7	Promote the use of weather radios in households and businesses.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA; Flood Plain Manager
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	Weather Alert Radios were distributed to all residents of St. Clair County as part of the 2009 CSEP Program Closeout. Radios were distributed until depleted in 2013. The EMA strongly promoted the use of weather alert

	radios on radio talk shows, during public presentations, in newspaper article and on Facebook and Twitter.
Mitigation Action 4.1.1	Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMPs) for channel and drainage system maintenance.
Type	Natural Resource Protection
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP
Priority	Medium
Benchmark	The town continually seeks technical assistance for channel and drainage system maintenance, as they keep ditches and storm drains cleared.
Mitigation Action 5.2.2	Support the Alabama Skywarn Foundation efforts to distribute weather radios to low-income households, especially in rural areas outside of siren coverage areas.
Type	Emergency Services Protection
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High

Benchmark	The EMA is not aware of any weather alert radios being distributed in St. Clair County by the Alabama Skywarn Foundation; however, St. Clair County EMA distributed these radios to all residents of the county as part of the CSEP Program Closeout in 2009 and 2010 until the stock was depleted in 2013.
Mitigation Action 5.2.3	Purchase, install, and test emergency warning sirens, as needed. Upgrade existing equipment as needed.
Type	Emergency Services Protection
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2010-2015
Estimated Cost	
Funding Sources	\$25K HMGP/ADECA
Priority	High
Benchmark	In 2005 and 2006, St. Clair County used HMGP funds to install 8 Vortex Sirens and 1 Tone Only Vortex Siren. In 2010, St. Clair County upgraded 25 sirens from WPS 2800 to WPS 2900 series. In 2012, St. Clair County sent county employees to Whelen to learn basic siren maintenance to reduce overall maintenance cost and to be able to more quickly address siren issues. St. Clair County purchased a bucket truck and tools to perform maintenance on siren systems.
Mitigation Action 5.4.1	Purchase emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities.
Type	Emergency Services Protection
Goal	Reduce St. Clair County's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing

Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2010-2015
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	The Town of Ragland has applied several times for grants, but no responses were received. It is our assumption that these projects were not prioritized high enough by the state EMA to be awarded.
Mitigation Action 6.2.1	Encourage the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA; Local Governments
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.2.2	Continue program to subsidize safe room construction in existing homes.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter

	grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-ground), and in new homes.
Mitigation Action 6.2.3 DELETED	Construct freestanding public safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Low
Benchmark	Local jurisdiction has decided against this mitigation action; therefore, action is being deleted from this plan update.
Mitigation Action 6.2.4	Encourage the construction of safe rooms in new and existing construction.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 6.2.5	Continue to provide adequate safe rooms and community shelters.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly as funding becomes available
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-ground), and in new homes. No community safe rooms were installed/constructed.
Mitigation Action 6.4.2	Prepare and implement standard operating procedures for drainage system maintenance.
Type	Structural Projects
Goal	Reduce St. Clair County's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2019

Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.

RIVERSIDE

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**Table 6-127: Riverside
Risk and Vulnerability Overview**

Natural Hazards	Hazard Identification	Prioritized Occurrence Threat	Vulnerability
Thunderstorm	X	3	H
Lightning	X	8	M
Hail	X	6	L
Tornado	X	8	H
Flood/Flash Flood	X	4	M
Drought/Extreme Heat	X	2	L
Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	X	5	L
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	X	4	M
Sinkhole/Expansive Soil	X	8	L
Landslide	X	8	L
Earthquake	X	8	L
Wildfire	X	1	L
Dam/Levee Failure	X	7	L
<i>Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions</i>			
<p>KEY</p> <p><u>Hazard Identification:</u> X Affects the Jurisdiction, N/A Not a threat to the jurisdiction</p> <p><u>Priority:</u> Hazards are prioritized with the highest threat of occurrence assigned number one based on hazardous events that have occurred within each jurisdiction over the past ten years, with the exception of wildfires that were based on events that have occurred over the past three years. Some natural hazards have equal threats to a jurisdiction; therefore, their threat number will be the same.</p> <p><u>Vulnerability:</u> NA – Not Applicable; not a hazard to the jurisdiction</p> <p>L – Low Risk; little damage potential (damage to less than 5% of the jurisdiction)</p> <p>M – Medium Risk; moderate damage potential (damage to 5-10% of jurisdiction, infrequent occurrence)</p> <p>H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)</p>			

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Table 6-128: Riverside's Thunderstorm Events

11 Thunderstorm Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	02/22/2003	03:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/11/2003	14:10	CST	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/22/2004	17:17	CST	Thunderstorm Wind	50 kts. EG	0	0	12.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	04/30/2005	03:38	CST	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K
ST. CLAIR	ST. CLAIR CO.	AL	05/20/2010	19:14	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/17/2011	11:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	0.50K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:40	CST-6	Thunderstorm Wind	60 kts. EG	0	0	1.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:54	CST-6	Thunderstorm Wind	45 kts. EG	0	0	2.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/22/2011	16:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/26/2011	15:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	45.50K	0.00K

Table 6-129: Riverside's Lightning Events

0 Lightning Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Table 6-130: Riverside's Hail Events

6 Hail Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	05/02/2003	17:12	CST	Hail	1.75 in.	0	0	40.00K	0.00K
RIVERSIDE	ST. CLAIR CO.	AL	10/19/2004	09:02	CST	Hail	0.88 in.	0	0	0.00K	0.00K
RIVERSIDE	ST. CLAIR CO.	AL	04/19/2006	17:00	CST	Hail	1.75 in.	0	0	0.00K	0.00K
RIVERSIDE	ST. CLAIR CO.	AL	04/19/2006	17:15	CST	Hail	1.75 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/15/2011	21:24	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
Totals:								0	0	40.00K	0.00K

Table 6-131: Riverside's Tornado Events

0 Tornado Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Table 6-132: Riverside's Flood/Flash Flood Events

9 Flood/Flash Flood Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/06/2003	16:00	CST	Flood		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/18/2003	05:00	CST	Flood		0	0	0.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/05/2003	21:30	CST	Flash Flood		0	0	25.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/07/2003	14:00	CST	Flash Flood		0	0	1.000M	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	07/01/2003	10:00	CST	Flash Flood		0	0	17.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2004	02:02	CST	Flash Flood		0	0	5.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	09/16/2004	09:00	CST	Flash Flood		0	0	50.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	11/24/2004	05:45	CST	Flash Flood		1	0	400.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2006	16:30	CST	Flash Flood		0	0	3.00K	0.00K
Totals:								1	0	1.5M	0.00K

Table 6-133: Riverside's Drought/Extreme Heat Events

20 Drought/Extreme Heat Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-134: Riverside's Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events

9 Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/09/2011	15:50	CST-6	Winter Storm		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/25/2010	07:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/17/2013	12:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/12/2010	13:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2010	08:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/26/2010	03:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-135: Riverside's Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events

10 Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events
 – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	42.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/29/2005	19:00	CST	Tropical Storm		0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/16/2004	10:45	CST	High Wind	52 kts. EG	0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/05/2011	18:20	CST-6	High Wind	52 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/09/2006	18:00	CST	Strong Wind	40 kts. EG	0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2007	22:40	CST-6	Strong Wind	35 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/20/2007	17:30	CST-6	Strong Wind	30 kts. EG	0	0	10.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/11/2009	11:50	CST-6	Strong Wind	43 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	268.00K	0.00K

Table 6-136: Riverside's Sinkhole Events

0 Sinkhole Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No sinkhole events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-137: Riverside's Landslide Events

0 Landslide Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No landslide events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-138: Riverside's Earthquake Events

0 Earthquake Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)

No earthquake events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-139: Countywide Wildfire Events

93 Wildfire Events – 2010 thru 2013

(Source: Alabama Forestry Commission)

County	Total # of Fires 2010-2013	Average # of Fires Per Year	Total Acres Burned 2010- 2013	Average Acres Burned Per Year	Average Fire Size in Acres
St. Clair	93	31	1,785.45	594.89	19.19

Table 6-140: Riverside's Dam/Levee Failure Events

1 Dam/Levee Failure Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/flash flood)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Countywide (Dam failed near the Friendship Community)	St. Clair County	AL	11/24/2004	5:45 p.m.		Dam Failure		1	0	0.00K	0.00K
Totals:								1	0	0.00K	0.00K

Table 6-141: Riverside Hazard Probability Assessment				
Natural Hazards	Number of Historical Occurrences	Probability of Future Occurrence	Extent	Area Affected
Thunderstorm	11	>100%	>10%	Citywide
Lightning	0	Unknown	<5%	Citywide
Hail	6	60%	<5%	Citywide
Tornado	0	Unknown	>10%	Citywide
Flood/Flash Flood	9	90%	5-10%	Citywide
Drought/Extreme Heat	20	>100%	<5%	Citywide
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	9	90%	<5%	Citywide
Hurricane/Tropical Storm/Tropical Depression/High Wind/ Strong Wind	10	10%	5-10%	Citywide
Sinkhole/Expansive Soil	0	Unknown	<5%	Citywide
Landslide	0	Unknown	<5%	Citywide
Earthquake	0	Unknown	<5%	Citywide
Wildfire (3 year study period)	93	>100%	<5%	Citywide
Dam/Levee Failure	1	10%	<5%	Citywide
<i>Source: NOAA NCDC; U. S. Inflation Calculator/Consumer Price Index; USGS ; Local Input; USDA Census of Agriculture; Alabama Forestry Commission; and National Forestry Service; Participating Jurisdictions</i>				
Methodology: Number of historical occurrences is those reported by NOAA NCDC during the 10 year study period, with the exception of wildfire that is a 3 year study period. Probability is expressed by dividing the total number of occurrences by the study period in years. Extent is expressed as the percentage assigned by the jurisdictions' ranking in the vulnerability overview (Table 6-139). Zero denotes no data available to determine the probability, extent, or affected area.				

Table 6-142: Riverside's Critical Facilities

CRITICAL FACILITIES – RIVERSIDE	
FACILITY TYPE	REPLACEMENT VALUE
Riverside Town Hall, 379 Depot St., Riverside	\$731,908
Riverside Community Safe Room, 379 Depot St., Riverside	\$392,518
Riverside Fire Station, 379 Depot St., Riverside	\$200,274
Riverside Public Works Building, 379 Depot St., Riverside	\$114,255
Water Well Pump #1, 363 McKesie Road, Riverside	\$98,345
Water Well Pump #2, 400 McKesie Road, Riverside	\$98,345
Water Storage Facility (2) Tanks & Repeater Site, Tank Road, Riverside	\$598,817
Riverside PD, Riverside	\$1,260,000
Total	\$3,494,462

(Source: Local and HAZUS-MH 2.1)

Table 6-143: Riverside Estimated Loss Projections from Specified Hazards						
Natural Hazards	Average Occurrences (per year)	Total Deaths	Total Injuries	Average Death and Injury Loss (per event)	Average Crop and Property Loss (per event)	Projected Loss (per event)
Thunderstorm	1.1	0	0	\$0	\$4,550	\$4,960
Lightning	0	0	0	\$0	\$0	Unknown
Hail	0.6	0	0	\$0	\$4,000	\$4,360
Tornado	0	0	0	\$0	\$0	Unknown
Flood/Flash Flood	0.9	1	0	\$366,600	\$150,000	\$563,094
Drought/Extreme Heat	2.0	0	0	\$0	\$0	Unknown
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	0.9	0	0	\$0	\$0	Unknown
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	1.0	0	0	\$0	\$26,800	\$29,212
Sinkhole/Expansive Soils	0	0	0	\$0	\$0	Unknown
Landslide	0	0	0	\$0	\$0	Unknown
Earthquake	0	0	0	\$0	\$0	Unknown
Wildfire (3 year study period)	31	0	0	\$0	\$36,461	\$39,743
Dam/Levee Failure	0.1	0	0	\$366,600	\$0	\$399,594
<i>Sources: NOAA NCDC; U.S. Inflation Calculator/Consumer Price Index; Local Input; USDA Census of Agriculture; Alabama Forestry Commission and National Forestry Service; Alabama Geological Survey</i>						
Methodology: Average occurrences were expressed annually by dividing the total number of occurrences by the ten-year period. Deaths and injuries were taken from the hazard event data. Average losses were calculated by dividing the total amount of all damages by the total number of occurrences during the ten-year period with the exception of wildfire which takes the average fire size as noted in Table 6-139 multiplied by average amount per acre (\$1,900). Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figure from a midpoint of 2008 dollars to 2014 dollars (\$1 in 2008 = \$1.09 in 2014...a cumulative rate of inflation of 9%). Zero denotes no data available to determine the average occurrences, average loss or projected loss per event.						

Riverside Mitigation Action Plan

Riverside recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated. The City of Riverside is a member of the NFIP.

Mitigation Status

During the plan update, mitigation actions were reviewed in order to identify completed, deferred, or deleted actions from the previous plan and incorporate actions added during annual updates. **Table 6-144** shows Riverside's updated mitigation actions. During the plan update process, no new mitigation actions were identified and added to the plan.

Table 6-144: Riverside's Mitigation Actions	
Mitigation Action 1.1.1	Seek a countywide update of all FIRMs in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer; Flood Plain Manager
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	FEMA Map Update Program
Priority	High
Benchmark	No action in past five years due to lack of funding.

Mitigation Action 1.1.2	Train local flood plain managers through programs offered through the State Flood Plain Manager and FEMA's training center in Emmitsburg, Maryland.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action in past five years due to lack of funding.
Mitigation Action 1.1.3	Maintain a library of technical assistance and guidance materials to support the local flood plain manager.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action in past five years due to lack of funding.

Mitigation Action 1.1.4	Promote the adoption of a uniform flood hazard prevention ordinance with higher regulatory standards that discourage flood plain development and seek to maintain the natural and beneficial functions of flood plains.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action in past five years due to lack of funding.
Mitigation Action 1.1.6	Consider the adoption of a uniform storm water management ordinance that maintains pre-development runoff rates.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Medium
Benchmark	No action in past five years due to lack of funding.

Mitigation Action 1.1.8	Continue to participate in the NFIP.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	The City of Riverside is a participating member of the NFIP and plans to continue.
Mitigation Action 1.1.9	Apply for and maintain membership in the CRS Program.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	FL
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	NFIP Coordinator
Estimated Time Frame for Completion	2019
Estimated Cost	N/A
Funding Sources	Local
Priority	Medium
Benchmark	No action in past five years due to lack of funding.

Mitigation Action 1.3.1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of hurricane clips.
Type	Prevention
Goal	Reduce vulnerability of new and future development
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2020
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action in past five years due to lack of funding.
Mitigation Action 1.4.1	Promote good construction practices and proper code enforcement to eliminate most structural problems during natural hazard events
Type	Prevention
Goal	Reduce Riverside's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New
Local Planning Mechanism	Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action in past five years due to lack of funding.

Mitigation Action 2.2.1	Seek funding sources, such as Community Development Block Grant funds, to assist low income homeowners with building retrofits to protect against flood damage
Type	Property Protection
Goal	Reduce Riverside's risk from natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	CDBG; ADECA; Local
Priority	Medium
Benchmark	No action in past five years due to lack of funding.
Mitigation Action 2.4.1	Provide technical assistance to owners of pre-FIRM buildings to advise on available retrofits to protect against flood damage
Type	Property Protection
Goal	Reduce Riverside's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	No action in past five years due to lack of funding.

Mitigation Action 3.1.1	Promote the purchase of insurance coverage by property owners and renters for flooding, sinkhole, and earthquake damages in high risk areas.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods, Earthquakes, Sinkholes
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	The county has posted information on their Facebook page and in Public Information presentations.
Mitigation Action 3.4.5	Encourage the Multiple Listing Service (MLS) to require flood plain location disclosure as a condition for each real estate listing.
Type	Public Education and Awareness
Goal	Reduce Riverside's vulnerability to natural hazards.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action in past five years due to lack of funding.

Mitigation Action 3.5.1	Distribute FEMA Publication 320 – Taking Shelter From the Storm: Building a safe room in your house – through building permit and inspection offices.
Type	Public Education and Awareness
Goal	Reduce Riverside’s vulnerability to natural hazards
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local; HMGP
Priority	Low
Benchmark	No action in past five years due to lack of funding.
Mitigation Action 3.5.2	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	Medium
Benchmark	No action in past five years due to lack of funding.

Mitigation Action 3.5.3	Continue the active programs and activities of the St. Clair County EMA to promote mitigation and severe weather awareness.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	<p>St. Clair County has distributed public information materials for the CSEPP Campaign to include: brochures in English and Spanish; zone maps; school brochures; school videos; all hazard videos; newspaper ads; television ads; radio ads; I-20 billboard; football program ads; and stadium fence sign ads. In addition: numerous newspaper articles about any subject concerning the safety and well-being of county residents, especially weather safety and weather events, CSEPP activities, hazardous materials accidents, training activities, etc.; full page newspaper ad (Be Prepared); Duran Jr. High volleyball team flyer; church flyer, Are You Prepared?; Food World pharmacy bags; Amateur Radio Field Day flyer; Webpage on county website; On Hold phone messages; county newsletter; Emergency Information Guide; 72 & You logo design; County Health Fairs; PR items distributed – pens, notebooks, rulers, bags, etc.; Special Pops items included: Caregivers Resource Guide and Masters of Disaster kits; and submitted and/or approved all special needs newsletters/info sheets/flyers.</p> <p>New since 2010: Facebook and Twitter postings of articles, charts and tables, and other emergency and preparedness information.</p>

	Participation in radio talk shows.
Mitigation Action 3.5.4	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Animal Emergency Planning Brochures were ordered and made available to the public.
Mitigation Action 3.5.6	Distribute hazard mitigation brochures to area schools for distribution to students.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Brochures in the form of coloring books were distributed to schools.

Mitigation Action 3.5.7	Promote the use of weather radios in households and businesses.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA; Flood Manager
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	Weather Alert Radios were distributed to all residents of St. Clair County as part of the 2009 CSEP Program Closeout. Radios were distributed until depleted in 2013. The EMA strongly promoted the use of weather alert radios on radio talk shows, during public presentations, in newspaper article and on Facebook and Twitter.
Mitigation Action 3.5.5	Maintain local library repositories with the latest available publications.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	Per coordination with each library, items are made available to the public.

Mitigation Action 4.1.1	Seek technical assistance through the Alabama Cooperative Extension System with Best management practices (BMPs) for channel and drainage system maintenance.
Type	Natural Resource Protection
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP
Priority	High
Benchmark	No action in past five years due to lack of funding.
Mitigation Action 5.2.2	Support the Alabama Skywarn Foundation efforts to distribute weather radios to low-income households, especially in rural areas outside of siren coverage areas.
Type	Emergency Services Protection
Goal	Reduce Ashville's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMPG; ADECA; Local
Priority	High
Benchmark	The EMA is not aware of any weather alert radios being distributed in St. Clair County by the Alabama Skywarn Foundation; however, St. Clair County EMA distributed these radios to all residents of the county as part of the CSEP Program Closeout in 2009 and 2010 until the stock was depleted in 2013.

Mitigation Action 5.2.3	Purchase, install, and test emergency warning sirens, as needed. Upgrade existing equipment as needed.
Type	Emergency Services Protection
Goal	Reduce Riverside's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$30,000 each
Funding Sources	\$25K HGMP/ADECA
Priority	High
Benchmark	In 2005 and 2006, St. Clair County used HMGP funds to install 8 Vortex Sirens and 1 Tone Only Vortex Siren. In 2010, St. Clair County upgraded 25 sirens from WPS 2800 to WPS 2900 series. In 2012, St. Clair County sent county employees to Whelen to learn basic siren maintenance to reduce overall maintenance cost and to be able to more quickly address siren issues. St. Clair County purchased a bucket truck and tools to perform maintenance on siren systems.
Mitigation Action 5.4.1	Purchase emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities
Type	Emergency Services Protection
Goal	Reduce Riverside's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	The Fire Department has secured a natural gas generator for the fire station and is awaiting hookup to the building. One of the two pump

	houses has been outfitted with a generator and is operational.
Mitigation Action 6.2.1	Encourage the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.
Type	Structural Projects
Goal	Reduce Riverside's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA; Local Governments
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	The city has completed one FEMA approved community safe room at the City Complex.
Mitigation Action 6.2.2	Continue program to subsidize safe room construction in existing homes.
Type	Structural Projects
Goal	Reduce Riverside's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$10,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	The city received 3 individual storm shelter applications and 1 individual storm shelter has been successfully constructed.

Mitigation Action 6.2.3	Construct freestanding public community safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce Riverside's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$150,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	The city has completed one FEMA approved community safe room at the City Complex.
Mitigation Action 6.2.4	Encourage the construction of safe rooms in new and existing construction.
Type	Structural Projects
Goal	Reduce Riverside's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	\$5,000 - \$10,000
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	The city has completed one FEMA approved community safe room at the City Complex.

Mitigation Action 6.2.5	Continue to provide adequate safe rooms and community shelters
Type	Structural Projects
Goal	Reduce Riverside's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Local Government; EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$150,000 each
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	The city has completed one FEMA approved community safe room at the City Complex. The city received 3 individual storm shelter applications and 1 individual storm shelter has been successfully constructed.
Mitigation Action 6.4.2	Prepare and implement standard operating procedures for drainage system maintenance.
Type	Structural Projects
Goal	Reduce Riverside's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action in past five years due to lack of funding.

SPRINGVILLE

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Table 6-145: Springville Risk and Vulnerability Overview			
Natural Hazards	Hazard Identification	Prioritized Occurrence Threat	Vulnerability
Thunderstorm	X	2	H
Lightning	X	7	M
Hail	X	6	L
Tornado	X	8	H
Flood/Flash Flood	X	4	M
Drought/Extreme Heat	X	3	L
Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	X	5	L
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	X	4	M
Sinkhole/Expansive Soil	X	8	L
Landslide	X	8	L
Earthquake	X	8	L
Wildfire	X	1	L
Dam/Levee Failure	X	7	L
Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions			
<p>KEY</p> <p>Hazard Identification: X Affects the Jurisdiction, N/A Not a threat to the jurisdiction</p> <p>Priority: Hazards are prioritized with the highest threat of occurrence assigned number one based on hazardous events that have occurred within each jurisdiction over the past ten years, with the exception of wildfires that were based on events that have occurred over the past three years. Some natural hazards have equal threats to a jurisdiction; therefore, their threat number will be the same.</p> <p>Vulnerability: NA – Not Applicable; not a hazard to the jurisdiction</p> <p>L – Low Risk; little damage potential (damage to less than 5% of the jurisdiction)</p> <p>M – Medium Risk; moderate damage potential (damage to 5-10% of jurisdiction, infrequent occurrence)</p> <p>H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)</p>			

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Table 6-146: Springville's Thunderstorm Events

23 Thunderstorm Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	02/22/2003	03:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/11/2003	14:10	CST	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/22/2004	17:17	CST	Thunderstorm Wind	50 kts. EG	0	0	12.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	04/30/2005	03:38	CST	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	07/19/2005	16:45	CST	Thunderstorm Wind	52 kts. EG	0	0	4.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	07/29/2006	15:00	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	06/30/2007	14:42	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	07/20/2007	11:15	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	05/20/2008	15:38	CST-6	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	09/08/2008	15:00	CST-6	Thunderstorm Wind	39 kts. EG	0	0	2.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	04/02/2009	20:53	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.50K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	06/15/2009	20:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
ST CLAIR	ST. CLAIR CO.	AL	05/20/2010	19:14	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/17/2011	11:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	0.50K	0.00K

ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:40	CST-6	Thunderstorm Wind	60 kts. EG	0	0	1.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:54	CST-6	Thunderstorm Wind	45 kts. EG	0	0	2.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/22/2011	16:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/26/2011	15:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	07/05/2012	20:55	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	07/10/2012	17:19	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	03/18/2013	14:32	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	06/17/2013	13:36	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Totals:								0	0	74.0K	0.00K

Table 6-147: Springville's Lightning Events

1 Lightning Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
SPRINGVILLE	ST. CLAIR CO.	AL	06/19/2010	11:40	CST-6	Lightning		0	0	2.00K	0.00K
Totals:								0	0	2.00K	0.00K

Table 6-148: Springville's Hail Events

5 Hail Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	05/02/2003	17:12	CST	Hail	1.75 in.	0	0	40.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	02/18/2009	16:13	CST-6	Hail	0.75 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/15/2011	21:24	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	03/02/2012	17:37	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
Totals:								0	0	40.00K	0.00K

Table 6-149: Springville's Tornado Events

0 Tornado Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

No tornado events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-150: Springville's Flood/Flash Flood Events

10 Flood/Flash Flood Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/06/2003	16:00	CST	Flood		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/18/2003	05:00	CST	Flood		0	0	0.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/05/2003	21:30	CST	Flash Flood		0	0	25.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/07/2003	14:00	CST	Flash Flood		0	0	1.000M	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	07/01/2003	10:00	CST	Flash Flood		0	0	17.00K	0.00K

COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2004	02:02	CST	Flash Flood		0	0	5.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	09/16/2004	09:00	CST	Flash Flood		0	0	50.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	11/24/2004	05:45	CST	Flash Flood		1	0	400.00K	0.00K
SPRINGVILLE	ST. CLAIR CO.	AL	07/19/2005	17:00	CST	Flash Flood		0	0	4.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2006	16:30	CST	Flash Flood		0	0	3.00K	0.00K
Totals:								1	0	1.504M	0.00K

Table 6-151: Springville's Drought/Extreme Heat Events

20 Drought/Extreme Heat Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-152: Springville's Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events

9 Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/09/2011	15:50	CST-6	Winter Storm		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/25/2010	07:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/17/2013	12:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/12/2010	13:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2010	08:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/26/2010	03:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-153: Springville's Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events

10 Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events
 – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	42.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/29/2005	19:00	CST	Tropical Storm		0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/16/2004	10:45	CST	High Wind	52 kts. EG	0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/05/2011	18:20	CST-6	High Wind	52 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/09/2006	18:00	CST	Strong Wind	40 kts. EG	0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2007	22:40	CST-6	Strong Wind	35 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/20/2007	17:30	CST-6	Strong Wind	30 kts. EG	0	0	10.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/11/2009	11:50	CST-6	Strong Wind	43 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	268.00K	0.00K

Table 6-154: Springville's Sinkhole Events

0 Sinkhole Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)
 No sinkhole events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-155: Springville's Landslide Events

Landslide Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No landslide events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-156: Springville's Earthquake Events

0 Earthquake Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)

No earthquake events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-157: Countywide Wildfire Events

93 Wildfire Events – 2010 thru 2013

(Source: Alabama Forestry Commission)

County	Total # of Fires 2010-2013	Average # of Fires Per Year	Total Acres Burned 2010- 2013	Average Acres Burned Per Year	Average Fire Size in Acres
St. Clair	93	31	1,785.45	594.89	19.19

Table 6-158: Springville's Dam/Levee Failure Events

0 Dam/Levee Failure Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/Local Input)

No dam/levee failure events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-159: Springville Hazard Probability Assessment				
Natural Hazards	Number of Historical Occurrences	Probability of Future Occurrence	Extent	Area Affected
Thunderstorm	23	>100%	>10%	Citywide
Lightning	1	10%	<5%	Citywide
Hail	5	50%	<5%	Citywide
Tornado	0	Unknown	>10%	Citywide
Flood/Flash Flood	10	100%	5-10%	Citywide
Drought/Extreme Heat	20	>100%	<5%	Citywide
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	9	90%	<5%	Citywide
Hurricane/Tropical Storm/Tropical Depression/High Wind/ Strong Wind	10	100%	5-10%	Citywide
Sinkhole/Expansive Soil	0	Unknown	<5%	Citywide
Landslide	0	Unknown	<5%	Citywide
Earthquake	0	Unknown	<5%	Citywide
Wildfire (3 year study period)	93	>100%	<5%	Citywide
Dam/Levee Failure	1	10%	<5%	Citywide
<i>Source: NOAA NCDC; U. S. Inflation Calculator/Consumer Price Index; USGS ; Local Input; USDA Census of Agriculture; Alabama Forestry Commission; and National Forestry Service; Participating Jurisdictions</i>				
Methodology: Number of historical occurrences is those reported by NOAA NCDC during the 10 year study period, with the exception of wildfire that is a 3 year study period. Probability is expressed by dividing the total number of occurrences by the study period in years. Extent is expressed as the percentage assigned by the jurisdictions' ranking in the vulnerability overview (Table 6-145). Zero denotes no data available to determine the probability, extent, or affected area.				

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Table 6-160: Springville's Critical Facilities

CRITICAL FACILITIES – SPRINGVILLE	
FACILITY TYPE	FACILITY VALUE
City Hall, 6327 U. S. Hwy. 11, Springville	\$788,975
City Hall Annex, 635 U. S. Hwy. 11, Springville	\$816,946
Fire Station #1, 200 Walker Drive, Springville	\$1,492,565
Fire Station #2, 1616 Mountain View Road, Odenville	\$955,242
Public Works Admin. Office/Warehouse, 201 Industrial Drive, Springville	\$1,046,686
Public Works Main Pump House, 475 Robinson Street, Springville	\$160,472
Public Works Pump House #2, 797 Robinson Street, Springville	\$96,283
Public Works Pump House #3, 665 Village Springs Road, Springville	\$80,235
Public Works Water Tank #1, 797 Robinson Street, Springville	\$456,902
Public Works Water Tank #2, Camp Road, Springville	\$152,992
Public Works Water Tank #3, U. S. Highway 11, Springville	\$567,000
Public Works Sewer Lagoon, 1342 AL Hwy. 174, Springville	\$1,750,000
Public Works Sewer Pump Station #1, Marietta Road, Springville	\$154,183
Public Works Sewer Pump Station #3, 161 Springville Station Blvd., Springville	\$100,000
Community Center (Old VFW Bldg), 587 Village Springs Road, Springville	\$206,000
Sports Complex, 101 Camp Road, Springville	\$714,386
Big Springs Park, 75 Old Talladega Road, Springville	\$525,226
District #1 Park, 44 Woodie Street, Springville	\$120,000
Public Library, 6496 U. S. Hwy. 11, Springville	\$388,616
New Sports Complex, 400 Springville Station Blvd., Springville	\$188,490

Community Storm Shelter, 585 Village Springs Road, Springville	\$80,340
Police Department, 150 Walker Drive, Springville	\$437,750
Senior Center, 209 Robinson Street, Springville	\$192,816
Fire Department Storage Bldg., 200 Walker Drive, Springville	\$174,042
Fire Department Training Facilit, 200 Walker Drive, Springville	\$258,900
Public Works Sewer Pump #4, U. S. Hwy. 11 behind the Gardens Subdivision, Springville	\$100,000
Pearl Lake Christian Academy, Springville	\$262,010
Calvary Christian Academy, Springville	\$510,910
Springville Elementary School, Springville	\$8,172,340
Springville Middle School, Springville	\$12,170,180
Springville High School, Springville	\$7,755,380
Total	\$40,875,867

(Sources: Local Input; HAZUS-MH 2.1)

Table 6-161: Springville Estimated Loss Projections from Specified Hazards						
Natural Hazards	Average Occurrences (per year)	Total Deaths	Total Injuries	Average Death and Injury Loss (per event)	Average Crop and Property Loss (per event)	Projected Loss (per event)
Thunderstorm	2.3	0	0	\$0	\$7,400	\$8,066
Lightning	0.1	0	0	\$0	\$200	\$218
Hail	0.5	0	0	\$0	\$4,000	\$4,360
Tornado	0	0	0	\$0	\$0	Unknown
Flood/Flash Flood	1.0	1	0	\$366,600	\$150,400	\$563,530
Drought/Extreme Heat	2.0	0	0	\$0	\$0	Unknown
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	0.9	0	0	\$0	\$0	Unknown
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	1.0	0	0	\$0	\$26,800	\$29,212
Sinkhole/Expansive Soils	0	0	0	\$0	\$0	Unknown
Landslide	0	0	0	\$0	\$0	Unknown
Earthquake	0	0	0	\$0	\$0	Unknown
Wildfire (3 year study period)	31	0	0	\$0	\$36,461	\$39,743
Dam/Levee Failure	0.1	0	0	\$366,600	\$0	\$399,594
<i>Sources: NOAA NCDC; U.S. Inflation Calculator/Consumer Price Index; Local Input; USDA Census of Agriculture; Alabama Forestry Commission and National Forestry Service; Alabama Geological Survey</i>						
Methodology: Average occurrences were expressed annually by dividing the total number of occurrences by the ten-year period. Deaths and injuries were taken from the hazard event data. Average losses were calculated by dividing the total amount of all damages by the total number of occurrences during the ten-year period with the exception of wildfire which takes the average fire size as noted in Table 4-15 multiplied by average amount per acre (\$1,900). Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figure from a midpoint of 2008 dollars to 2014 dollars (\$1 in 2008 = \$1.09 in 2014...a cumulative rate of inflation of 9%). Zero and Unknown denote there is no data available to determine the average occurrences, average loss or projected loss per event.						

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Springville Mitigation Action Plan

Springville recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated. Springville has a building code effectiveness grade schedule rating assigned by the ISO of Class 8 and a property protection classification rating assigned by the ISO of Class 2. The city is a member of the National Flood Insurance Program. Zoning Ordinance 2011-12 was adopted November 21, 2011; Subdivision Regulations Ordinance 2007-2012 was adopted October 15, 2007; and Building and Technical Codes Ordinance 2012-11 was adopted June 2012. A building inspector is employed by the city. The city's comprehensive plan was revised and adopted on October 21, 2008. Springville has no repetitive loss properties.

Mitigation Status

During the plan update, mitigation actions were reviewed in order to identify completed, deferred, or deleted actions from the previous plan and incorporate actions added during annual updates. **Table 6-162** shows the Springville's updated mitigation actions. During the plan update process, no new mitigation actions were identified and added to the plan.

Table 6-162: Springville's Mitigation Actions	
Mitigation Action 1.1.1	Seek a countywide update of all FIRMs in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer; Flood Plain Manager
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	FEMA Map Update Program
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.2	Train local flood plain managers through programs offered through the State Flood Manager and FEMA's training center in Emmitsburg, Maryland.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.3	Maintain a library of technical assistance and guidance materials to support the local flood plain manager.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.4	Promote the adoption of a uniform flood hazard prevention ordinance with higher regulatory standards that discourage flood plain development and seek to maintain the natural and beneficial functions of flood plains.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.6	Consider the adoption of a uniform storm water management ordinance that maintains pre-development runoff rates.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.7	Apply for and maintain membership in the CRS Program.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2020
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.8	Continue to participate in the NFIP
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	Springville is a participating member of the NFIP and plans to continue.
Mitigation Action 1.3.1	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of hurricane clips.
Type	Prevention
Goal	Reduce vulnerability of new and future development
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2020
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.4.1	Promote good construction practices and proper code enforcement to eliminate most structural problems during natural hazard events.
Type	Prevention
Goal	Reduce Springville's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 2.2.1	Seek funding sources, such as Community Development Block Grant Funds, to assist low income home owners with building retrofits to protect against flood damage.
Type	Property Protection
Goal	Reduce Springville's risk from natural hazards
Hazard(s) Addressed	Flood/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	CDBG; Local; ADECA
Priority	Low
Benchmark	Applied for a CDBG to mitigate some flooding/drainage issues in the area of Mountain Drive and Cross Street.

Mitigation Action 2.4.1	Provide technical assistance to owners of pre-FIRM buildings to advise on available retrofits to protect against flood damage
Type	Property Protection
Goal	Reduce Springville's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.1.1	Promote the purchase of insurance coverage by property owners and renters for flooding, sinkhole, and earthquake damages in high risk areas.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods, Earthquakes, Sinkholes
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local

Priority	High
Benchmark	The county has posted information on their Facebook page and in Public Information presentations.
Mitigation Action 3.1.2	Encourage the Multiple Listing Service (MLS) to require flood plain location disclosure as a condition for each real estate listing.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.1	Distribute FEMA publication 320 – Taking Shelter From the Storm: Building a Safe Room in your house – through building permit and inspection offices.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA

Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.2	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications, newspaper announcements, city's website, and other social media.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; Local
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.3	Continue the active programs and activities of the St. Clair County EMA to promote mitigation and severe weather awareness.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly

Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	<p>St. Clair County has distributed public information materials for the CSEPP Campaign to include: brochures in English and Spanish; zone maps; school brochures; school videos; all hazard videos; newspaper ads; television ads; radio ads; I-20 billboard; football program ads; and stadium fence sign ads. In addition: numerous newspaper articles about any subject concerning the safety and well-being of county residents, especially weather safety and weather events, CSEPP activities, hazardous materials accidents, training activities, etc.; full page newspaper ad (Be Prepared); Duran Jr. High volleyball team flyer; church flyer, Are You Prepared?; Food World pharmacy bags; Amateur Radio Field Day flyer; Webpage on county website; On Hold phone messages; county newsletter; Emergency Information Guide; 72 & You logo design; County Health Fairs; PR items distributed – pens, notebooks, rulers, bags, etc.; Special Pops items included: Caregivers Resource Guide and Masters of Disaster kits; and submitted and/or approved all special needs newsletters/info sheets/flyers.</p> <p>New since 2010: Facebook and Twitter postings of articles, charts and tables, and other emergency and preparedness information. Participation in radio talk shows.</p>
Mitigation Action 3.5.4	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local

Priority	Medium
Benchmark	Animal Emergency Planning Brochures were ordered and made available to the public.
Mitigation Action 3.5.5	Maintain local library repositories with the latest available publications.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Low
Benchmark	Per coordination with each library, items are made available to the public.
Mitigation Action 3.5.6	Distribute hazard mitigation brochures to area schools for distribution to students.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	Local
Priority	Medium

Benchmark	Brochures in the form of coloring books were distributed to schools.
Mitigation Action 3.5.7	Promote the use of weather radios in households and businesses
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA; Flood Manager
Estimated Time Frame for Completion	Yearly
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	Weather Alert Radios were distributed to all residents of St. Clair County as part of the 2009 CSEP Program Closeout. Radios were distributed until depleted in 2013. The EMA strongly promoted the use of weather alert radios on radio talk shows, during public presentations, in newspaper article and on Facebook and Twitter.
Mitigation Action 4.1.1	Seek technical assistance through the Alabama Cooperative Extension System with Best management practices (BMPs) for channel and drainage system maintenance.
Type	Natural Resource Protection
Goal	Establish a comprehensive countywide hazard mitigation system

Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 5.2.2	Support the Alabama Skywarn Foundation efforts to distribute weather radios to low-income households, especially in rural areas outside of siren coverage areas.
Type	Emergency Services Protection
Goal	Reduce Springville's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMPG; ADECA; Local
Priority	High
Benchmark	The EMA is not aware of any weather alert radios being distributed in St. Clair County by the Alabama Skywarn Foundation; however, St. Clair County EMA distributed these radios to all residents of the county as part of the CSEP Program Closeout in 2009 and 2010 until the stock was depleted in 2013.
Mitigation Action 5.2.3	Purchase, install, and test emergency warning sirens, as needed. Upgrade existing equipment as needed.
Type	Emergency Services Protection
Goal	Reduce Springville's risk from natural hazards
Hazard(s) Addressed	All

Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$30,000 each
Funding Sources	\$25K HGMP/ADECA
Priority	High
Benchmark	In 2005 and 2006, St. Clair County used HMGP funds to install 8 Vortex Sirens and 1 Tone Only Vortex Siren. In 2010, St. Clair County upgraded 25 sirens from WPS 2800 to WPS 2900 series. In 2012, St. Clair County sent county employees to Whelen to learn basic siren maintenance to reduce overall maintenance cost and to be able to more quickly address siren issues. St. Clair County purchased a bucket truck and tools to perform maintenance on siren systems.
Mitigation Action 5.4.1	Purchase emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities
Type	Emergency Services Protection
Goal	Reduce Springville's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	St. Clair County acquired several generators as part of the CSEP Program Closeout and signed them over to County and Municipal entities to include: County Commission for use at the County Administration Annex, City of Springville, and the City of Pell City.
Mitigation Action 6.2.1	Encourage the construction/installation of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible, to include fire stations, police stations, and utility facilities, etc.

Type	Structural Projects
Goal	Reduce Springville's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA; Local Governments
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.2.2	Continue program to subsidize safe room construction in existing homes.
Type	Structural Projects
Goal	Reduce Springville's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$10,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	In 2011/2012, St. Clair County applied for and was awarded 7 HMGP Individual Storm Shelter grants resulting in 69 approved individual storm shelter applications. 47 of the 69 approved shelters have been installed as of March 2014. These shelters went into existing homes, outside of existing homes (in-ground), and in new homes.
Mitigation Action 6.2.3	Construct freestanding public community safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce Springville's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New

Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$150,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	Completed construction of community safe room on Village Springs Road.
Mitigation Action 6.2.4	Encourage the construction/installation of safe rooms in new and existing construction, to include fire stations, police stations, and utility facilities, etc.
Type	Structural Projects
Goal	Reduce Springville's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	\$5,000 - \$10,000
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	Completed installation of storm shelter at Fire Station #2 for fire department personnel. In process of constructing two additional community safe rooms: one located at Fire Station #1 and the other at the new sports complex on Springville Station Blvd. Completed installation of four individual storm shelters by citizens and the 5 th one is underway.
Mitigation Action 6.2.5	Continue to provide adequate safe rooms and community shelters, to include fire stations, police stations, and utility facilities, etc.
Type	Structural Projects

Goal	Reduce Springville's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Local Government; EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$150,000 each
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	Both community safe rooms and individual storm shelters have been installed/constructed. The City wishes to continue this practice as funding becomes available.
Mitigation Action 6.4.2	Prepare and implement standard operating procedures for drainage system maintenance. Make drainage improvements near the Elementary and Middle Schools.
Type	Structural Projects
Goal	Reduce Springville's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	Completed stormwater abatement project along Hwy. 11 at Old Talladega Road.

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STEELE

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**Table 6-163: Steele
Risk and Vulnerability Overview**

Natural Hazards	Hazard Identification	Prioritized Occurrence Threat	Vulnerability
Thunderstorm	X	3	H
Lightning	X	8	M
Hail	X	6	L
Tornado	X	8	H
Flood/Flash Flood	X	5	M
Drought/Extreme Heat	X	2	L
Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	X	5	L
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	X	4	M
Sinkhole/Expansive Soil	X	8	L
Landslide	X	8	L
Earthquake	X	8	L
Wildfire	X	1	L
Dam/Levee Failure	X	7	L
<i>Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions</i>			
<p>KEY Hazard Identification: X Affects the Jurisdiction, N/A Not a threat to the jurisdiction Priority: Hazards are prioritized with the highest threat of occurrence assigned number one based on hazardous events that have occurred within each jurisdiction over the past ten years, with the exception of wildfires that were based on events that have occurred over the past three years. Some natural hazards have equal threats to a jurisdiction; therefore, their threat number will be the same. Vulnerability: NA – Not Applicable; not a hazard to the jurisdiction L – Low Risk; little damage potential (damage to less than 5% of the jurisdiction) M – Medium Risk; moderate damage potential (damage to 5-10% of jurisdiction, infrequent occurrence) H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)</p>			

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Table 6-164: Steele's Thunderstorm Events

17 Thunderstorm Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	02/22/2003	03:30	CST	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/11/2003	14:10	CST	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	06/22/2004	17:17	CST	Thunderstorm Wind	50 kts. EG	0	0	12.00K	0.00K
STEELE	ST. CLAIR CO.	AL	07/14/2004	16:29	CST	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	04/30/2005	03:38	CST	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K
STEELE	ST. CLAIR CO.	AL	07/10/2007	13:58	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
STEELE	ST. CLAIR CO.	AL	04/02/2009	21:11	CST-6	Thunderstorm Wind	55 kts. EG	0	0	2.00K	0.00K
STEELE	ST. CLAIR CO.	AL	06/15/2009	20:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
STEELE	ST. CLAIR CO.	AL	06/15/2009	20:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
STEELE	ST. CLAIR CO.	AL	06/15/2009	20:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
ST CLAIR	ST. CLAIR CO.	AL	05/20/2010	19:14	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/17/2011	11:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	0.50K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:40	CST-6	Thunderstorm Wind	60 kts. EG	0	0	1.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/21/2011	14:54	CST-6	Thunderstorm Wind	45 kts. EG	0	0	2.00K	0.00K

ST. CLAIR CO.	ST. CLAIR CO.	AL	06/22/2011	16:23	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/26/2011	15:10	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	64.50K	0.00K

Table 6-165: Steele's Lightning Events

0 Lightning Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database)

No lightning events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-166: Steele's Hail Events

6 Hail Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
COUNTYWIDE	ST. CLAIR CO.	AL	05/02/2003	17:12	CST	Hail	1.75 in.	0	0	40.00K	0.00K
STEELE	ST. CLAIR CO.	AL	05/18/2004	13:42	CST	Hail	0.88 in.	0	0	0.00K	0.00K
STEELE	ST. CLAIR CO.	AL	04/20/2006	15:23	CST	Hail	0.88 in.	0	0	0.00K	0.00K
STEELE	ST. CLAIR CO.	AL	04/20/2006	15:55	CST	Hail	1.75 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/15/2011	21:24	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
ST. CLAIR CO.	ST. CLAIR CO.	AL	06/24/2011	16:20	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
Totals:								0	0	40.00K	0.00K

Table 6-167: Steele's Tornado Events

0 Tornado Events – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

No tornado events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-168: Steele's Flood/Flash Flood Events

9 Flood/Flash Flood Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/06/2003	16:00	CST	Flood		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/18/2003	05:00	CST	Flood		0	0	0.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/05/2003	21:30	CST	Flash Flood		0	0	25.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	05/07/2003	14:00	CST	Flash Flood		0	0	1.000M	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	07/01/2003	10:00	CST	Flash Flood		0	0	17.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2004	02:02	CST	Flash Flood		0	0	5.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	09/16/2004	09:00	CST	Flash Flood		0	0	50.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	11/24/2004	05:45	CST	Flash Flood		1	0	400.00K	0.00K
COUNTYWIDE	ST. CLAIR CO.	AL	02/06/2006	16:30	CST	Flash Flood		0	0	3.00K	0.00K
Totals:								1	0	1.500M	0.00K

Table 6-169: Steele's Drought/Extreme Heat Events

20 Drought/Extreme Heat Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-170: Steele's Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events

9 Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold Events – 01/01/2003 thru 12/31/2013 (4018 days)
(Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/09/2011	15:50	CST-6	Winter Storm		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/25/2010	07:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/17/2013	12:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/12/2010	13:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2010	08:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/26/2010	03:00	CST-6	Winter Weather		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
Totals:								0	0	0.00K	0.00K

Table 6-171: Steele's Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events

10 Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind Events
 – 01/01/2003 thru 12/31/2013 (4018 days)
 (Source: NOAA NCDC Storm Events Database)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	42.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/29/2005	19:00	CST	Tropical Storm		0	0	100.00K	0.00K

ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	08/23/2008	12:00	CST- 6	Tropical Depression		0	0	0.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	11/09/2009	14:00	CST- 6	Tropical Depression		0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/16/2004	10:45	CST	High Wind	52 kts. EG	0	0	100.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	09/05/2011	18:20	CST- 6	High Wind	52 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	03/09/2006	18:00	CST	Strong Wind	40 kts. EG	0	0	2.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/15/2007	22:40	CST- 6	Strong Wind	35 kts. EG	0	0	5.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	12/20/2007	17:30	CST- 6	Strong Wind	30 kts. EG	0	0	10.00K	0.00K
ST. CLAIR (ZONE)	ST. CLAIR (ZONE)	AL	02/11/2009	11:50	CST- 6	Strong Wind	43 kts. EG	0	0	2.00K	0.00K
Totals:								0	0	268.00K	0.00K

Table 6-172: Steele's Sinkhole Events

0 Sinkhole Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No sinkhole events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-173: Steele's Landslide Events

1 Landslide Event – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. and AL Geological Survey)

No landslide events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-174: Steele's Earthquake Events

0 Earthquake Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)

No earthquake events occurred or were reported during 01/01/2003 thru 12/31/2013.

Table 6-175: Countywide Wildfire Events

93 Wildfire Events – 2010 thru 2013

(Source: Alabama Forestry Commission)

County	Total # of Fires 2010-2013	Average # of Fires Per Year	Total Acres Burned 2010- 2013	Average Acres Burned Per Year	Average Fire Size in Acres
St. Clair	93	31	1,785.45	594.89	19.19

Table 6-176: Dam/Levee Failure Events

0 Dam/Levee Failure Events – 01/01/2003 thru 12/31/2013 (4018 days)

(Source: NOAA NCDC Storm Events Database/flash flood)

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Countywide (Dam failed near the Friendship Community)	St. Clair County	AL	11/24/2004	5:45 p.m.		Dam Failure		1	0	0.00K	0.00K
Totals:								1	0	0.00K	0.00K

Table 6-177: Steele Hazard Probability Assessment				
Natural Hazards	Number of Historical Occurrences	Probability of Future Occurrence	Extent	Area Affected
Thunderstorm	17	>100%	>10%	Town wide
Lightning	0	Unknown	<5%	Town wide
Hail	6	60%	<5%	Town wide
Tornado	0	Unknown	>10%	Town wide
Flood/Flash Flood	9	90%	5-10%	Town wide
Drought/Extreme Heat	20	>100%	<5%	Town wide
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold	9	90%	<5%	Town wide
Hurricane/Tropical Storm/Tropical Depression/High Wind/ Strong Wind	10	100%	>5-10%	Town wide
Sinkhole/Expansive Soil	0	Unknown	<5%	Town wide
Landslide	0	Unknown	<5%	Town wide
Earthquake	0	Unknown	<5%	Town wide
Wildfire (3 year study period)	93	>100%	<5%	Town wide
Dam/Levee Failure	1	10%	<5%	Town wide
Source: NOAA NCDC; U. S. Inflation Calculator/Consumer Price Index; USGS ; Local Input; USDA Census of Agriculture; Alabama Forestry Commission; and National Forestry Service; Participating Jurisdictions				
Methodology: Number of historical occurrences is those reported by NOAA NCDC during the 10 year study period, with the exception of wildfire that is a 3 year study period. Probability is expressed by dividing the total number of occurrences by the study period in years. Extent is expressed as the percentage assigned by the jurisdictions' ranking in the vulnerability overview (Table 6-163). Zero denotes no data available to determine the probability, extent, or affected area.				

Table 6-178: Steele's Critical Facilities

CRITICAL FACILITIES – STEELE	
FACILITY TYPE	REPLACEMENT VALUE
Chandler Mountain VFD, Steele	
Whitney Fire and Rescue, Steele	
Steele Junior High School, Steele	\$2,245,770
Total	\$2,245,770

(Source: HAZUS-MH 2.1)

Table 6-179: Steele Estimated Loss Projections from Specified Hazards						
Natural Hazards	Average Occurrences (per year)	Total Deaths	Total Injuries	Average Death and Injury Loss (per event)	Average Crop and Property Loss (per event)	Projected Loss (per event)
Thunderstorm	1.7	0	0	\$0	\$6,450	\$7,031
Lightning	0	0	0	\$0	\$0	Unknown
Hail	0.6	0	0	\$0	\$4,000	\$4,360
Tornado	0	0	0	\$0	\$0	Unknown
Flood/Flash Flood	0.9	1	0	\$366,600	\$150,400	\$563,530
Drought/Extreme Heat	2.0	0	0	\$0	\$0	Unknown
Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold	0.9	0	0	\$0	\$0	Unknown
Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind	1.0	0	0	\$0	\$26,800	\$29,212
Sinkhole/Expansive Soils	0	0	0	\$0	\$0	Unknown
Landslide	0	0	0	\$0	\$0	Unknown
Earthquake	0	0	0	\$0	\$0	Unknown
Wildfire (3 year study period)	31	0	0	\$0	\$36,461	\$39,743
Dam/Levee Failure	0.1	0	0	\$366,600	\$0	\$399,594
<i>Sources: NOAA NCDC; U.S. Inflation Calculator/Consumer Price Index; Local Input; USDA Census of Agriculture; Alabama Forestry Commission and National Forestry Service; Alabama Geological Survey</i>						
<p>Methodology: Average occurrences were expressed annually by dividing the total number of occurrences by the ten-year period. Deaths and injuries were taken from the hazard event data. Average losses were calculated by dividing the total amount of all damages by the total number of occurrences during the ten-year period with the exception of wildfire which takes the average fire size as noted in Table 6-175 multiplied by average amount per acre (\$1,900). Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figure from a midpoint of 2008 dollars to 2014 dollars (\$1 in 2008 = \$1.09 in 2014...a cumulative rate of inflation of 9%). Zero denotes no data available to determine the average occurrences, average loss or projected loss per event.</p>						

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Steele's Mitigation Action Plan

Steele recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated. Steele is a participating member of the NFIP.

Mitigation Status

During the plan update, mitigation actions were reviewed in order to identify completed, deferred, or deleted actions from the previous plan and incorporate actions added during annual updates. **Table 6-180** shows Steele's updated mitigation actions. During the plan update process, no new mitigation actions were identified and added to the plan.

Table 6-180: Steele's Mitigation Actions	
Mitigation Action 1.1.1	Seek a countywide update of all FIRMs in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer; Flood Plain Manager
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	FEMA Map Update Program
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.2	Train local flood plain managers through programs offered through the State Flood Manager and FEMA's training center in Emmitsburg, Maryland.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2018
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.3	Maintain a library of technical assistance and guidance materials to support the local flood plain manager.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.4	Promote the adoption of a uniform flood hazard prevention ordinance with higher regulatory standards that discourage flood plain development and seek to maintain the natural and beneficial functions of flood plains.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; Local Government
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.6	Consider the adoption of a uniform storm water management ordinance that maintains pre-development runoff rates.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	County Engineer
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 1.1.7	Apply for and maintain membership in the CRS Program.
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2020
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 1.1.8	Continue to participate in the NFIP
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	Steele is a participating member of the NFIP and plans to continue.

Mitigation Action 2.2.1	Seek funding sources, such as Community Development Block Grant Funds, to assist low income home owners with building retrofits to protect against flood damage.
Type	Property Protection
Goal	Reduce Steele's risk from natural hazards
Hazard(s) Addressed	Flood/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	CDBG; Local; ADECA
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 2.4.1	Provide technical assistance to owners of pre-FIRM buildings to advise on available retrofits to protect against flood damage.
Type	Property Protection
Goal	Reduce Steele's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Flood Plain Manager
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	HMGP; ADECA; Local
Priority	Low
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 3.1.1	Promote the purchase of insurance coverage by property owners and renters for flooding, sinkhole, and earthquake damages in high risk areas.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods, Earthquakes, Sinkholes
Applies to new/existing asset(s)	New and Existing
Point of Contact Person for this Action	Flood Plain Manager; EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	The county has posted information on their Facebook page and in Public Information presentations.
Mitigation Action 3.1.2	Encourage the Multiple Listing Service (MLS) to require flood plain location disclosure as a condition for each real estate listing.
Type	Public Education and Awareness
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	Local Government
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High

Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.1	Distribute FEMA publication 320 – Taking Shelter From the Storm: Building a Safe Room in your house – through building permit and inspection offices.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	Thunderstorms, Tornadoes, Hurricanes, Tropical Storms, Tropical Depressions, High Winds, Strong Winds
Applies to new/existing asset(s)	Existing
Point of Contact Person for this Action	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.2	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	

Funding Sources	HMGP; Local
Priority	Medium
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 3.5.3	Continue the active programs and activities of the St. Clair County EMA to promote mitigation and severe weather awareness.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	St. Clair County has distributed public information materials for the CSEPP Campaign to include: brochures in English and Spanish; zone maps; school brochures; school videos; all hazard videos; newspaper ads; television ads; radio ads; I-20 billboard; football program ads; and stadium fence sign ads. In addition: numerous newspaper articles about any subject concerning the safety and well-being of county residents, especially weather safety and weather events, CSEPP activities, hazardous materials accidents, training activities, etc.; full page newspaper ad (Be Prepared); Duran Jr. High volleyball team flyer; church flyer, Are You Prepared?; Food World pharmacy bags; Amateur Radio Field Day flyer; Webpage on county website; On Hold phone messages; county newsletter; Emergency Information Guide; 72 & You logo design; County Health

	<p>Fairs; PR items distributed – pens, notebooks, rulers, bags, etc.; Special Pops items included: Caregivers Resource Guide and Masters of Disaster kits; and submitted and/or approved all special needs newsletters/info sheets/flyers.</p> <p>New since 2010: Facebook and Twitter postings of articles, charts and tables, and other emergency and preparedness information. Participation in radio talk shows.</p>
Mitigation Action 3.5.4	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Animal Emergency Planning Brochures were ordered and made available to the public.
Mitigation Action 3.5.5	Maintain local library repositories with the latest available publications.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation.
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	Local
Priority	Low
Benchmark	Per coordination with each library, items are made available to the public.

Mitigation Action 3.5.6	Distribute hazard mitigation brochures to area schools for distribution to students.
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2016
Estimated Cost	
Funding Sources	Local
Priority	Medium
Benchmark	Brochures in the form of coloring books were distributed to schools.
Mitigation Action 3.5.7	Promote the use of weather radios in households and businesses
Type	Public Education and Awareness
Goal	Foster public support and acceptance of hazard mitigation
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA; Flood Manager
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; Local
Priority	High
Benchmark	Weather Alert Radios were distributed to all residents of St. Clair County as part of the 2009 CSEP Program Closeout. Radios were distributed until depleted in 2013. The EMA

	strongly promoted the use of weather alert radios on radio talk shows, during public presentations, in newspaper article and on Facebook and Twitter.
Mitigation Action 4.1.1	Seek technical assistance through the Alabama Cooperative Extension System with Best management practices (BMPs) for channel and drainage system maintenance.
Type	Natural Resource Protection
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMGP
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 5.2.2	Support the Alabama Skywarn Foundation efforts to distribute weather radios to low-income households, especially in rural areas outside of siren coverage areas.
Type	Emergency Services Protection
Goal	Reduce Springville's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2017
Estimated Cost	
Funding Sources	HMPG; ADECA; Local
Priority	High
Benchmark	The EMA is not aware of any weather alert

	radios being distributed in St. Clair County by the Alabama Skywarn Foundation; however, St. Clair County EMA distributed these radios to all residents of the county as part of the CSEP Program Closeout in 2009 and 2010 until the stock was depleted in 2013.
Mitigation Action 5.2.3	Purchase, install, and test emergency warning sirens, as needed. Upgrade existing equipment as needed.
Type	Emergency Services Protection
Goal	Reduce Steele's risk from natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$30,000 each
Funding Sources	\$25K HGMP/ADECA
Priority	High
Benchmark	In 2005 and 2006, St. Clair County used HMGP funds to install 8 Vortex Sirens and 1 Tone Only Vortex Siren. In 2010, St. Clair County upgraded 25 sirens from WPS 2800 to WPS 2900 series. In 2012, St. Clair County sent county employees to Whelen to learn basic siren maintenance to reduce overall maintenance cost and to be able to more quickly address siren issues. St. Clair County purchased a bucket truck and tools to perform maintenance on siren systems.
Mitigation Action 5.4.1	Purchase emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities
Type	Emergency Services Protection
Goal	Reduce Steele's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA

Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.2.1	Encourage the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.
Type	Structural Projects
Goal	Reduce Steele's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA; Local Governments
Estimated Time Frame for Completion	2015
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.2.2	Continue program to subsidize safe room construction in existing homes.
Type	Structural Projects
Goal	Reduce Steele's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$10,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

Mitigation Action 6.2.3	Construct freestanding public community safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce Steele's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$150,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.2.4	Encourage the construction of safe rooms in new and existing construction.
Type	Structural Projects
Goal	Reduce Steele's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2015
Estimated Cost	\$5,000 - \$10,000
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.2.5	Continue to provide adequate safe rooms and

	community shelters
Type	Structural Projects
Goal	Reduce Steele's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	Local Government; EMA
Estimated Time Frame for Completion	2020
Estimated Cost	\$5,000 - \$150,000 each
Funding Sources	HMGP; ADECA; Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.
Mitigation Action 6.4.2	Prepare and implement standard operating procedures for drainage system maintenance.
Type	Structural Projects
Goal	Reduce Steele's vulnerability to natural hazards
Hazard(s) Addressed	Floods/Flash Floods
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	County Engineer
Estimated Time Frame for Completion	2019
Estimated Cost	
Funding Sources	Local
Priority	High
Benchmark	No action was taken during the past five years due to lack of available funding.

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PELL CITY SCHOOLS

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Pell City Schools' Mitigation Action Plan

The Pell City School System recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated.

Mitigation Status

During the plan update, mitigation actions were identified. **Table 6-198** shows the Pell City Schools' mitigation actions.

Table 6-181: Pell City Schools' Mitigation Actions	
Mitigation Action 5.4.1	Purchase emergency generators for post- disaster mitigation and conduct routine tests on backup generators for all critical educational facilities.
Type	Emergency Services Protection
Goal	Reduce the Pell City School System's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2010-2015
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	NEW ACTION
Mitigation Action 6.2.1	Encourage the construction of safe rooms within new school buildings, where feasible.
Type	Structural Projects
Goal	Reduce Pell City School System's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA; Local Governments
Estimated Time Frame for Completion	
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	NEW ACTION

Mitigation Action 6.2.2	Continue program to subsidize safe room construction in existing schools. Construct storm retrofits to educational buildings
Type	Structural Projects
Goal	Reduce Pell City School System's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	
Estimated Cost	\$400,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	NEW ACTION
Mitigation Action 6.2.3	Install freestanding public safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce Pell City School System's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	
Estimated Cost	\$100,000 - \$125,000 each
Funding Sources	HMGP; ADECA
Priority	Low
Benchmark	NEW ACTION
Mitigation Action 6.2.4	Encourage the construction of storm shelters in new and existing construction. Construct/install individual storm shelters to educational buildings.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	
Estimated Cost	\$5,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	NEW ACTION

ST. CLAIR COUNTY BOARD OF EDUCATION

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St. Clair County BOE's Mitigation Action Plan

The St. Clair County BOE recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated.

Mitigation Status

During the plan update, mitigation actions were identified. **Table 6-199** shows the St. Clair County BOE's mitigation actions.

Table 6-182: St. Clair County BOE Mitigation Actions	
Mitigation Action 1.1.10	Install security measures at educational facilities
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Manmade
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	St. Clair Co. BOE
Estimated Time Frame for Completion	One year from funding availability
Estimated Cost	\$500,000
Funding Sources	Local; HMGP
Priority	Medium
Benchmark	NEW ACTION

Mitigation Action 5.4.1	Purchase emergency generators for post- disaster mitigation and conduct routine tests on backup generators for all critical educational facilities.
Type	Emergency Services Protection
Goal	Reduce the St. Clair County BOE's vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2010-2015
Estimated Cost	\$25,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	NEW ACTION
Mitigation Action 6.2.1	Encourage the construction of safe rooms within new school buildings, where feasible.
Type	Structural Projects
Goal	Reduce St. Clair County BOE's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA; Local Governments
Estimated Time Frame for Completion	One year from funding availability
Estimated Cost	
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	NEW ACTION
Mitigation Action 6.2.2	Continue program to subsidize safe room construction in existing schools. Construct storm retrofits to educational buildings
Type	Structural Projects
Goal	Reduce St. Clair County BOE's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	One year from funding availability
Estimated Cost	\$400,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	NEW ACTION

Mitigation Action 6.2.3	Install freestanding public safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce St. Clair County BOE's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	One year from funding availability
Estimated Cost	\$100,000 - \$125,000 each
Funding Sources	HMGP; ADECA
Priority	Low
Benchmark	NEW ACTION
Mitigation Action 6.2.4	Encourage the construction of storm shelters in new and existing construction. Construct/install individual storm shelters to educational buildings.
Type	Structural Projects
Goal	Reduce St. Clair County's risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	One year from funding availability
Estimated Cost	\$5,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	NEW ACTION

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ST. VINCENTS

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St. Vincents' Mitigation Action Plan

St. Vincents recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated.

Mitigation Status

During the plan update, mitigation actions were identified. **Table 6-200** shows the St. Vincents' mitigation actions.

Table 6-183: St. Vincents' Mitigation Actions	
Mitigation Action 1.1.10	Install security measures at St. Vincents
Type	Prevention
Goal	Establish a comprehensive countywide hazard mitigation system
Hazard(s) Addressed	Manmade
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	St. Vincents
Estimated Time Frame for Completion	One year from funding availability
Estimated Cost	\$500,000
Funding Sources	Local; HMGP
Priority	Medium
Benchmark	NEW ACTION
Mitigation Action 5.4.1	Purchase emergency generators for post- disaster mitigation and conduct routine tests on backup generators for all critical medical facilities.
Type	Emergency Services Protection
Goal	Reduce the St. Vincents' vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	2010-2015
Estimated Cost	\$25,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	NEW ACTION

Mitigation Action 6.2.6	Construct storm retrofits to medical buildings
Type	Structural Projects
Goal	Reduce St. Vincents' risk from natural hazards
Hazard(s) Addressed	Thunderstorms, Tornados, High and Strong Winds
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	St. Vincents
Estimated Time Frame for Completion	One year from funding availability
Estimated Cost	\$400,000 each
Funding Sources	Grants, local
Priority	Medium
Benchmark	NEW ACTION

WATER AND SEWER AUTHORITIES

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Water and Sewer Authorities' Mitigation Action Plan

The Water and Sewer Authorities in St. Clair County have their own financial accounts; therefore, serve as their own applicant for hazard mitigation grants. Representatives participated in this plan update by attending meetings, personal contact, email, facsimile, and/or regular mail. The following Water and Sewer Authorities recognizes the importance of mitigation planning and will incorporate mitigation planning in planning documents as they are revised or initiated:

- Ashville Water and Sewer Authority
- Camp Sumatanga
- Chandler Mountain Water Authority
- Cook Springs Water Authority
- Margaret Water Authority
- Margaret Sewer Authority
- Moody Kelly Creek Waste Water Treatment Plant
- New London Water and Sewer Authority
- N. E. St. Clair Water Authority
- N. W. St. Clair Water System
- Odenville Utilities Board (Water and Sewer)
- Pell City Water Quality (Sewage – Bacteriological)
- Pell City Water
- Pinedale Water and Sewer Authority
- Ragland Water Works Board (Water)
- Riverside Utility Board (Water)
- Wattsville Water Authority (Water)
- Wolf Creek Water, Sewer, and Fire (Water/Sewage)
- Town of Steele Waterworks Board

Mitigation Status

During the plan update, mitigation actions were identified. **Table 6-201** shows the Water and Sewer Authorities's mitigation actions.

Table 6-184: Water/Sewer Authorities' Mitigation Actions	
Mitigation Action 6.2.3 NEW	Install freestanding community safe rooms in vulnerable locations.
Type	Structural Projects
Goal	Reduce risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail, High Wind, Strong Wind
Applies to new/existing asset(s)	New
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	One year from funding availability
Estimated Cost	\$100,000 - \$125,000 each
Funding Sources	HMGP; ADECA
Priority	Low
Benchmark	NEW ACTION
Mitigation Action 6.2.4 NEW	Encourage the construction of storm shelters in new and existing construction. Construct/install individual storm shelters as needed at water facilities.
Type	Structural Projects
Goal	Reduce risk from natural hazards
Hazard(s) Addressed	Tornadoes, Thunderstorms, Hail, High Wind, Strong Wind
Applies to new/existing asset(s)	New and Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	One year from funding availability
Estimated Cost	\$5,000 each
Funding Sources	HMGP; ADECA
Priority	High
Benchmark	NEW ACTION
Mitigation Action 5.4.1 NEW	Purchase emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities, to include lift stations.
Type	Emergency Services Protection
Goal	Reduce the water and sewer authorities' vulnerability to natural hazards
Hazard(s) Addressed	All
Applies to new/existing asset(s)	Existing
Local Planning Mechanism	EMA
Estimated Time Frame for Completion	One year from available funding
Estimated Cost	\$5,000 - \$30,000 each

Funding Sources	HMGP; ADECA
Priority	High
Benchmark	

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SECTION 7: MITIGATION PLAN MAINTENANCE

Annual Review and Monitoring

The FR Subsection 201.6 (d) (3) (4) requires the County Hazard Mitigation Plan to be revised and updated every five years. “A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within 5 years in order to continue to be eligible for mitigation project grant funding.....Managing states will review the plans within 45 days of receipt of the plans, whenever possible, and provide a copy of the approved plans to the Regional Office.”

The plan may be reviewed at any time at the request of any local government at the discretion of the St. Clair County EMA Director in coordination with the Hazard Mitigation Planning Committee. Local governments may submit a formal letter to the St. Clair County EMA Director requesting a review of the plan. The public may also request review of the plan by submitting a formal letter to the St. Clair County EMA Director. The Hazard Mitigation Planning Committee may re-evaluate the plan after a disaster has occurred to make sure that mitigation of a particular hazard was addressed properly.

The method for monitoring the plan remains the same. Regular plan monitoring will be achieved through the St. Clair County EMA’s efforts to track mitigation activities. The Director of the St. Clair County EMA is the responsible person for the review of the plan to include monitoring, evaluating, and updating of the plan, reconvening the committee only if additional information is available or the EMA Director requires assistance. The annual review of the plan occurs in June of each year following this plan update. Although the entire plan’s progress was monitored, evaluated, and updated on a continuous basis throughout the five-year timeframe, the annual review is initiated by the St. Clair County EMA Director or LHA representative emailing an Annual Review and Monitoring Survey Form, as shown in **Figure 7-1**, to the Hazard Mitigation Planning Committee members asking them for their input and giving them a two-week deadline on returning the information. Following the two-week deadline, the St. Clair County EMA Director consolidates the survey forms and acts upon the findings as needed.

Figure 7-1: Annual Review and Monitoring Survey Form

ANNUAL REVIEW AND MONITORING SURVEY FORM FOR THE _____ COUNTY HAZARD MITIGATION PLAN		
County:	HMPC Member:	Date:
Have there been any changes in the level of risk to citizens? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, please explain.		
Have there been any changes in laws, policies, or regulations at your level? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, please list.		
Have there been any changes in your agency/jurisdiction or in procedures that will affect how mitigation programs or funds are administered? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, please explain.		
Have there been significant changes in funding sources or capabilities? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, please explain.		
Have there been any changes in your agency/jurisdiction in regards to representation on this committee? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, list new representative(s).		
<p>Please review the mitigation projects for your agency/jurisdiction and complete the information beginning on the next page: (This form can be completed on a computer or hand-written [print clearly] using additional paper if necessary.)</p> <p>Instructions on accessing your plan online: Go to www.ema.alabama.gov. Click on the "County EMA" tab at the top left of screen. Scroll to your county and click on "View Hazard Mitigation Plan" at the far right of your screen.</p>		

Mitigation Measure #:	Has project been accomplished? Yes <input type="checkbox"/> No <input type="checkbox"/>	Should project continue or be removed from plan? Continue <input type="checkbox"/> Remove <input type="checkbox"/> If project is to be removed, please explain the reason(s) for removal.	Updated status on the project? List tasks that have and have not been completed on this project. For those tasks not completed, explain why.
Mitigation Measure #:	Has project been accomplished? Yes <input type="checkbox"/> No <input type="checkbox"/>	Should project continue or be removed from plan? Continue <input type="checkbox"/> Remove <input type="checkbox"/> If project is to be removed, please explain the reason(s) for removal.	Updated status on the project? List tasks that have and have not been completed on this project. For those tasks not completed, explain why.

The following samples represent the messages that accompanied the annual survey forms:

TO: _____ County HMPC Members:

It is time to conduct an annual review of the ---- County Hazard Mitigation Plan. If you have information that needs to be updated in the current Hazard Mitigation Plan (plan is on file at the ----- County EMA Office) or changed in any way, please send this information to the -----County EMA Office with a copy (mail, fax, or email) to Renee Helms of Lee Helms Associates at the contact info below.

There is a copy of the plan for review at the ---- County EMA Office; however, you can view the plan online by going to www.ema.alabama.gov, click on “Links” and under County Information click on “County EMAs.” Once you reach the page for County EMAs, go to the county you want to view (-----, in this case!) and on the far right you can click on “View Mitigation Plan.”

If you have any questions, you may contact your local EMA Office or Renee Helms of LHA. Thank you for your cooperation!

TO: LOCAL COUNTY EMAs

The --- County EMA is conducting an annual review of their Hazard Mitigation Plan and offering the surrounding counties a chance to participate in this process. If you have information that needs to be updated in their current Hazard Mitigation Plan or changed in any way, please send this information to the --- County EMA Office and a copy (mail, fax, or email) to Renee Helms of Lee Helms Associates at the contact info below.

There is a copy of the plan for review at the ---- County EMA Office; however, you can view the plan online by going to www.ema.alabama.gov, click on “Links” and under County Information click on “County EMAs.” Once you reach the page for County EMAs, go to the county you want to view (-----, in this case!) and on the far right you can click on “View Mitigation Plan.”

If you have any questions, you may contact your local EMA Office or Renee Helms of LHA. Thank you for your cooperation!

The City of Odenville, City of Margaret, and Town of Ragland were the only jurisdictions that submitted responses from annual reviews in the past five years and they are as follows:

At the minimum, the St. Clair County EMA Director will annually monitor and evaluate this plan, making amendments in coordination with the Hazard Mitigation Planning Committee if necessary. The St. Clair County EMA Director will document the annual evaluation and note the findings, if any. In the event modifications to the plan are warranted as a result of the annual review or other conditions, the St. Clair County EMA Director in coordination with the Hazard Mitigation Planning Committee will oversee and approve all revisions to the plan. Conditions which might warrant revisions to this plan would include, but not be limited to, special opportunities for funding, a response to a natural disaster, and changes in jurisdictions' capabilities to implement the plan. Before any revisions are submitted to the jurisdictions for adoption, a notice will be placed in the local newspaper or publicly posted, allowing an opportunity for the public to review the proposed amendments at the EMA offices, submit written comments, and present comments at a public meeting. The Hazard Mitigation Planning Committee will then submit all revisions for adoption by jurisdictions affected by the changes. A copy of the plan revisions will be submitted to all holders of the original plan in a timely manner.

The EMA Director will serve as the point of contact for all amendments to the plan and will coordinate all additions, deletions or amendments of actions to the plan, as needed. The EMA Director will be responsible for informing the local governing bodies of any amendments made to the plan. Any local government seeking to add an action to the plan will be responsible for providing support for the action in the form of a resolution if, and only if, the funding source(s) requires so. The entire plan will be updated on a five-year planning cycle.

The method and schedule of the five-year update of the plan will be determined by the St. Clair County EMA Director. The EMA Director will elect to either contract the update of the plan or utilize St. Clair County EMA staff to perform the update. The plan update will be scheduled well in advance of the plan expiration date in order to allow adequate time for the planning process to be completed.

Submissions received from annual reviews are as follows:

City of Odenville:

ANNUAL REVIEW AND MONITORING SURVEY FORM FOR THE ST. CLAIR COUNTY HAZARD MITIGATION PLAN		
County: St. Clair	HMPC Member: City of Odenville	Date: 8/16/12
Have there been any changes in the level of risk to citizens? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain.		
Have there been any changes in laws, policies, or regulations at your level? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, please list.	Adopted New Floodplain Ordinance, NO-06252012	
Have there been any changes in your agency/jurisdiction or in procedures that will affect how mitigation programs or funds are administered? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain.		
Have there been significant changes in funding sources or capabilities? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain.		
Have there been any changes in your agency/jurisdiction in regards to representation on this committee? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, list new representative(s).		
<p>Please review the mitigation projects for your agency/jurisdiction and complete the information beginning on the next page: (This form can be completed on a computer or hand-written [print clearly] using additional paper if necessary.)</p> <p>Instructions on accessing your plan online: Go to www.ema.alabama.gov. Click on the "County EMA" tab at the top left of screen. Scroll to your county and click on "View Hazard Mitigation Plan" at the far right of your screen. Go to Section 6, Sub-Section "6.3.2 Mitigation Actions" to view the Mitigation Measures for each jurisdiction and countywide.</p>		

Mitigation Measure #:	Has project been accomplished?	Should project continue or be removed from plan?	Updated status on the project? List tasks that have and have not been completed on this project. For those tasks not completed, explain why.
	Yes <input type="checkbox"/> No <input type="checkbox"/>	Continue <input type="checkbox"/> Remove <input type="checkbox"/> If project is to be removed, please explain the reason(s) for removal.	

I have attached a copy of all ongoing Actions from the 2005HMP as well as new actions added in the 2010 Plan. Currently none of the actions have been completed and are still ongoing. Progress on a few of these items is as follows:

1.1.4 The City has adopted an updated uniform food hazard prevention ordinance as of June 25, 2012.

5.2.3 The City has continues to maintain its existing three emergency warning sirens.

6.2.3 The City has applied for grant funding on behalf of eight individual property owners for construction and/or installation of safe rooms in existing residences.

6.2.3 The City has received notification of award for construction of a Community Safe Room near our existing Library. Engineering and bid specifications are being drafted at this time, with completion due last quarter of 2012.

6.2.4 The City is in the process of completing a new four bay fire station on U. S. Highway 411.

Town of Steele:

*From: Bryan Schaefers [bryans@stcema.org]
Sent: Wednesday, March 19, 2014 3:06 PM
To: renee@leehelmsllc.com
Subject: FW: Hazard Mitigation Plan*

Town of Steele – 2012

*Bryan Schaefers, ALEM, MEP
Emergency Management Planner
St Clair County EMA
office: 205-884-6800
cell: 256-452-8238
fax: 205-884-6807
bryans@stcema.org*

*From: Pat Coffee [mailto:townofsteele@bellsouth.net]
Sent: Wednesday, August 15, 2012 3:57 PM
To: Bryan Schaefers
Subject: Re: Hazard Mitigation Plan*

*Our plan has not changed since the one we completed
9/23/11. Incorporation into Existing Planning Mechanisms*

City of Margaret:

HAZARD MITIGATION PLAN REVIEW FOR 2011

CITY OF MARGARET, AL

*The following report was completed by Kyle B. Robertson, Captain for the Margaret Fire & Rescue Service in collaboration with the following people:

- Jeffrey G. Wilson...Mayor
- Thomas E. Dixon, Jr....Fire Chief
- Isaac C. Howard, III...Public Works Manager
- Marelyn Johnson...City Clerk
- Gene Barker...Building Inspector

***The following statements are made to further assess and review the New Actions listed for the 2010-2015 Plan as it pertains to the City of Margaret:

1.1.8 “Make application and/or commit to participate in the NFIP”: Ongoing through the Public Works Manager.

3.5.1 “Distribute FEMA Publication 320 – Taking Shelter from the Storm: Building a Safe Room in Your House – through building permit and inspection offices: Ongoing through the City Clerk, Public Works Manager and Building Inspector.

5.2.3 “Purchase, install, and test emergency warning sirens, as needed. Upgrade existing equipment as needed”: The warning sirens that the City already has in place are tested monthly and will be upgraded on an as needed basis.

5.4.1 “Purchase emergency generators for post-disaster mitigation and conduct routine tests on backup generators for all critical facilities”: The Margaret Fire & Rescue Station #1 currently has a back-up generator in place that is tested and inspected periodically to ensure reliability. The City itself possesses several emergency generators that are in place in the event of a post disaster mitigation event.

Table 6.8-16 Ragland
Completed/Ongoing Actions from the 2005 County Hazard Mitigation Plan

Ragland				
Type	Goal	Completed/Ongoing Actions from 2005 Plan	Hazard Addressed	Status
Prevention	1	1.1.1 Seek a countywide update of all FIRMs in digital format, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.	Flood	Ongoing
	1	1.1.5 Enact a flood hazard prevention ordinance and establish Ragland and Margaret as regular members of the NFIP.	Flood	Ongoing
	1	1.1.6 Consider the adoption of a uniform storm water management ordinance that maintains pre-development runoff rates.	Flood	Completed
	3	1.3.1 Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of hurricane clips.	T, SS, H	Not Completing
	4	1.4.1 Promote good construction practices and proper code enforcement to eliminate most structural problems during natural hazard events.	T, SS, H	We do NOT have a Building Inspector.
Property Protection	2	2.2.1 Seek funding sources, such as Community Development Block Grant funds, to assist low income home owners with building retrofits to protect against flood damage.	Flood	Complete
Public Education and Awareness	1	3.1.1 Promote the purchase of insurance coverage by property owners and renters for flooding, sinkhole, and earthquake damages in high risk areas.	Flood, EQ, SH	Complete
	1	3.1.2 Encourage the Multiple Listing Service (MLS) to require flood plain location disclosure as a condition for each real estate listing.	Flood	Complete
	5	3.5.2 Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	Flood	Not Completing
	5	3.5.3 Continue the active programs and activities of the St. Clair County EMA to promote mitigation and severe weather awareness.	All	Ongoing
		3.5.4 Obtain free publications from FEMA, NWS,		

Ragland				
Type	Goal	Completed/Ongoing Actions from 2005 Plan	Hazard Addressed	Status
	5	USGS, and other federal and state agencies and deposit these materials with local libraries.	All	Ongoing
	5	3.5.5 Maintain local library repositories with the latest available publications.	All	Ongoing
	5	3.5.6 Distribute hazard mitigation brochures to area schools for distribution to students.	All	Ongoing
	5	3.5.7 Promote the use of weather radios in households and businesses.	All	Ongoing
Natural Resources Protection	1	4.1.1 Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMPs) for channel and drainage system maintenance.	Flood	Ongoing- we keep ditches and storm drains cleared.
Emergency Services Protection	2	5.2.2 Support the Alabama Skywarn Foundation efforts to distribute weather radios to low-income households, especially in rural areas outside of siren coverage areas.	All	Ongoing
Structural Projects	2	6.2.1 Encourage the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	T, SS, H	Ongoing
	2	6.2.2 Continue program to subsidize safe room construction in existing homes.	T, SS, H	Ongoing
	2	6.2.3 Construct freestanding public safe rooms in vulnerable locations.	T, SS, H	Not completing
	2	6.2.4 Encourage the construction of safe rooms in new and existing construction.	T, SS, H	Ongoing
	2	6.2.5 Provide adequate safe rooms and community shelters.	T, SS, H	Ongoing
	4	6.4.2 Prepare and implement standard operating procedures for drainage system maintenance.	Flood	Ongoing

Table 6.8-17 Ragland
New Actions for the 2010 County Hazard Mitigation Plan

Ragland				
Type	Goal	New Actions for 2010 Plan	Hazard Addressed	Status
Prevention	1	1.1.8 Continue to participate in the NFIP	Flood	2010-2015

Ragland				
Type	Goal	New Actions for 2010 Plan	Hazard Addressed	Status
Public Education & Awareness	5	3.5.1 Distribute FEMA Publication 320 - <u>Taking Shelter From the Storm: Building a Safe Room in Your House</u> - through building permit and inspection offices.	T, SS, H	2010-2015
Emergency Services Protection	2	5.2.3 Purchase and install emergency warning sirens, as needed.	All	2010-2015
	4	5.4.1 Purchase emergency generators for post-disaster mitigation, as needed. (We have applied several times for grants, but NO responses received.)	All	2010-2015

Incorporation into Existing Planning Mechanisms

The St. Clair County Hazard Mitigation Plan is administered by the St. Clair County Emergency Management Agency. The St. Clair County Hazard Mitigation Plan update has also been incorporated into the Regional Planning Commission of Greater Birmingham's (RPCGB) Comprehensive Economic Development Strategy.

Incorporation of the hazard mitigation plan will vary for each jurisdiction based on existing planning methods and processes. Jurisdictions with planning commissions and respective zoning ordinances and building codes will incorporate mitigation plan elements as appropriate into their review of new developments.

Many jurisdictions have no zoning or existing plans of any type other than this mitigation plan (see Table 1-1) and do not have the resources or funding to prepare them. In these cases, where applicable, the mitigation plan elements will be incorporated into local development decisions by the appropriate local coordinating body in order to determine funding, prioritization, and review of new development activities. At such time as the jurisdiction does adopt zoning and building codes they will reflect the goals and objectives set forth in this plan. Further, any jurisdiction preparing or updating a comprehensive plan will reflect their hazard mitigation goals and objectives in their plan. These updates will occur as budget and time allow.

Continued Public Participation

The plan will be available for the public to view at the St. Clair County Emergency Operations Center. The St. Clair County EMA will hold public meetings annually that coincide with the Local Emergency Planning Committee (LEPC) meetings to keep the public involved in the planning process. The notification of meetings will include, but not be limited to, advertisement in a paper of local circulation. Meeting advertisements will include contact information for those wishing to submit comments.

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SECTION 8: APPROVAL AND IMPLEMENTATION

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APPROVAL & IMPLEMENTATION

The purpose of hazard mitigation is to implement action that eliminate the risk from hazards, or reduce the severity of the effects of hazards on people and property. Mitigation actions are both short-term and long-term activities that reduce the cause or occurrence of hazards; reduce exposure to hazards; or reduce effects of hazards through various means to include preparedness, response and recovery measures.

This plan update applies to all local agencies, boards, commissions, and departments assigned mitigation responsibilities, and to others as designated by the St. Clair County Commission or Director of the St. Clair County Emergency Management Agency.

The St. Clair County Hazard Mitigation Plan update was prepared in compliance with Public Law 106-390, *Disaster Mitigation Act of 2000*, as amended. This plan update implements hazard mitigation measures intended to eliminate or reduce the effects of future disasters throughout St. Clair County, and was developed in a joint and cooperative venture by members of the St. Clair County Hazard Mitigation Planning Committee.

St. Clair County will comply with all applicable state and federal statutes and regulations in effect with respect to the periods for which it receives grant funding, in compliance with 44 Code of Federal Regulations (CFR) 13.11c. St. Clair County will amend its plan whenever necessary to reflect changes in local/state and/or federal laws and statutes as required in 44 CFR, 13.11d. At a minimum, the St. Clair County EMA will review and if necessary, update the plan every five years from the date of approval in accordance with 44 CFR, 201.6 (5) (d) (3) in order to continue program eligibility.

As the Director of the St. Clair County Emergency Management Agency, I hereby adopt this plan update in accordance to the powers delegated to me and accept this plan update for implementation in order to protect the lives and property of the citizens of St. Clair County, Alabama.

Date

Ellen Tanner, Director
St. Clair County Emergency Management Agency

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County of St. Clair

2015 St. Clair County Hazard Mitigation Plan Update

Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the County of St. Clair participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the County of St. Clair is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the County of St. Clair has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the County Commission that the County of St. Clair adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the County Commission.

Chairman, St. Clair County Commission

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City of Argo

2015 St. Clair County Hazard Mitigation Plan Update

Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the City of Argo participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the City of Argo is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the City of Argo has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the City Council that the City of Argo adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the City Council.

Mayor, City of Argo

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City of Ashville

2015 St. Clair County Hazard Mitigation Plan Update

Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the City of Ashville participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the City of Ashville is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the City of Ashville has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the City Council that the City of Ashville adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the City Council.

Mayor, City of Ashville

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City of Margaret
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the City of Margaret participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the City of Margaret is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the City of Margaret has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the City Council that the City of Margaret adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the City Council.

Mayor, City of Margaret

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City of Moody
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the City of Moody participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the City of Moody is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the City of Moody has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the City Council that the City of Moody adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the City Council.

Mayor, City of Moody

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City of Odenville
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the City of Odenville participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the City of Odenville is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the City of Odenville has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the City Council that the City of Odenville adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the City Council.

Mayor, City of Odenville

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City of Pell City
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the City of Pell City participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the City of Pell City is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the City of Pell City has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the City Council that the City of Pell City adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the City Council.

Mayor, City of Pell City

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Town of Ragland
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the Town of Ragland participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the Town of Ragland is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the Town of Ragland has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Town Council that the Town of Ragland adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Town Council.

President, Ragland Town Council

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City of Riverside
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the City of Riverside participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the City of Riverside is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the City of Riverside has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the City Council that the City of Riverside adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the City Council.

Mayor, City of Riverside

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City of Springville
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the City of Springville participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the City of Springville is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the City of Springville has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the City Council that the City of Springville adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the City Council.

Mayor, City of Springville

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Town of Steele
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the Town of Steele participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the Town of Steele is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the Town of Steele has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Town Council that the Town of Steele adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Town Council.

Mayor, Town of Steele

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Pell City Schools
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the Pell City Schools participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the Pell City School System is a local special school district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the Pell City School System has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the School Board that the Pell City Schools adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Pell City School System.

Superintendent, Pell City School Board

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St. Clair County Board of Education
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, the St. Clair County BOE participated in the updating of a multi-jurisdictional plan, the St. Clair County Hazard Mitigation Plan; and

WHEREAS, the St. Clair County BOE is a local special school district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, the St. Clair County BOE has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the St. Clair County BOE adopts the 2015 St. Clair County Hazard Mitigation Plan update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the St. Clair County BOE.

Superintendent, St. Clair County BOE

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St. Vincent's St. Clair
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, St. Vincent's St. Clair participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, St. Vincent's St. Clair is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, St. Vincent's has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the _____ that St. Vincent's St. Clair adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the St. Vincent's St. Clair _____.

St. Vincent's St. Clair

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Ashville Water and Sewer Authority
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Ashville Water and Sewer Authority participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Ashville Water and Sewer Authority is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Ashville Water and Sewer Authority has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Ashville Water and Sewer Authority adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Ashville Water and Sewer Authority Board.

Ashville Water and Sewer Authority

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Camp Sumatanga Water Authority
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Camp Sumatanga Water Authority participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Camp Sumatanga Water Authority is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Camp Sumatanga Water Authority has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Camp Sumatanga Water Authority adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Camp Sumatanga Water Authority.

Camp Sumatanga Water Authority

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Chandler Mountain Water Authority
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Chandler Mountain Water Authority participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Chandler Mountain Water Authority is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Chandler Mountain Water Authority has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Chandler Mountain Water Authority adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Chandler Mountain Water Authority.

Chandler Mountain Water Authority

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Cook Springs Water Authority
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Cook Springs Water Authority participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Cook Springs Water Authority is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Cook Water Authority has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Cook Springs Water Authority adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Cook Springs Water Authority.

Chandler Mountain Water Authority

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Margaret Water Authority
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Margaret Water Authority participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Margaret Water Authority is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Margaret Water Authority has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Margaret Water Authority adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Margaret Water Authority.

Margaret Water Authority

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Margaret Sewer Authority
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Margaret Sewer Authority participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Margaret Sewer Authority is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Margaret Sewer Authority has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Margaret Sewer Authority adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Margaret Sewer Authority.

Margaret Sewer Authority

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Moody Kelly Creek Waste Water Treatment Plant
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Moody Kelly Creek Waste Water Treatment Plant participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Moody Kelly Creek Waste Water Treatment Plant is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Moody Kelly Creek Waste Water Treatment Plant has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Moody Kelly Creek Waste Water Treatment Plant adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the Board Meeting of the Moody Kelly Creek Waste Water Treatment Plant.

Moody Kelly Creek Waste Water Treatment Plant

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New London Water and Sewer Authority
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, New London Water and Sewer Authority participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, New London Water and Sewer Authority is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, New London Water and Sewer Authority has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the New London Water and Sewer Authority adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the New London Water and Sewer Authority.

New London Water and Sewer Authority

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Northeast St. Clair Water Authority
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Northeast St. Clair Water Authority participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Northeast St. Clair Water Authority is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Northeast St. Clair Water Authority has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Northeast St. Clair Water Authority adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Northeast St. Clair Water Authority.

Northeast St. Clair Water Authority

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Northwest St. Clair Water System
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Northwest St. Clair Water System participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Northwest St. Clair Water System is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Northwest St. Clair Water System has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Northwest St. Clair Water System adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Northwest St.Clair Water System.

Northwest St. Clair Water System

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Odenville Utilities Board
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Odenville Utilities Board participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Odenville Utilities Board is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Odenville Utilities Board has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Odenville Utilities Board adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Odenville Utilities Board.

Odenville Utilities Board

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Pell City Water Quality
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Pell City Water Quality participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Pell City Water Quality is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Pell City Water Quality has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Pell City Water Quality adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Pell City Water Quality.

Pell City Water Quality

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Pell City Water Authority
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Pell City Water Authority participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Pell City Water Authority is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Pell City Water Authority has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Pell City Water Authority adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Pell City Water Authority.

Margaret Sewer Authority

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Pinedale Water and Sewer Authority
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Pinedale Water and Sewer Authority participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Pinedale Water and Sewer Authority is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Pinedale Water and Sewer Authority has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Pinedale Water and Sewer Authority adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Pinedale Water and Sewer Authority.

Pinedale Water and Sewer Authority

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Ragland Water Works Board
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Ragland Water Works Board participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Ragland Water Works Board is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Ragland Water Works Board has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that Ragland Water Works adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Ragland Water Works Board.

Ragland Water Works Board

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Riverside Utility Board
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Riverside Utility Board participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Riverside Utility Board is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Riverside Utility Board Board has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that Riverside Utility adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Riverside Utility Board.

Riverside Utility Board

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Wattsville Water Authority
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Wattsville Water Authority participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Wattsville Water Authority is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Wattsville Water Authority has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that Wattsville Water Authority adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Wattsville Water Authority Board.

Wattsville Water Authority

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Wolf Creek Water, Sewer, and Fire
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Wolf Creek Water, Sewer, and Fire participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Wolf Creek Water, Sewer, and Fire is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Wolf Creek Water, Sewer, and Fire has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that Wolf Creek Water, Sewer, and Fire adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the Board Meeting of the Wolf Creek Water, Sewer, and Fire.

Wolf Creek Water, Sewer, and Fire

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Town of Steele Waterworks Board
2015 St. Clair County Hazard Mitigation Plan Update
Resolution of Adoption

WHEREAS, the St. Clair County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, Town of Steele Waterworks Board participated in the updating of a multi-jurisdictional plan, St. Clair County Hazard Mitigation Plan; and

WHEREAS, Town of Steele Waterworks Board is a local special district that has afforded the citizens an opportunity to comment and provide input in the plan and the actions in the plan; and

WHEREAS, Town of Steele Waterworks Board has reviewed the plan and affirms that the plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by the Board that the Town of Steele Waterworks adopts the 2015 St. Clair County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this _____ day of _____, 2015 at the meeting of the Town of Steele Waterworks Board.

Town of Steele Waterworks Board

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APPENDIX I

Local Mitigation Plan Review Tool

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APPENDIX I:

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: St. Clair County, Alabama	Title of Plan: 2015 St. Clair County Natural Hazards Mitigation Plan	Date of Plan: 2015
Local Point of Contact: Ellen Tanner	Address: 1610 Cogswell Ave. Suite B-10 Pell City, AL 35125	
Title: Director		
Agency: St. Clair County EMA		
Phone Number: 205-884-6800		
		E-Mail: etanner@stcema.org

State Reviewer:	Title:	Date:
FEMA Reviewer:	Title:	Date:
Date Received in FEMA Region (insert #)		
Plan Not Approved		
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		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or		
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))	Section 2: Page 20-21; Page 25 email inviting surrounding counties; Pages 30-34 and 37-39 sign in sheets; and Pages 555-621 Adoption Resolutions		✓	
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 2: Pages 23-24 newspaper advertisements; Page 25 all surrounding counties and Page 26-29 local municipalities were invited and encouraged to attend the HMPC meetings		✓	

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or		
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Section 2: Page 20-21; Page 25 email inviting surrounding counties; Pages 30-34 and 37-39 sign in sheets; Page 40-42 Citizen Input on Hazard Mitigation Planning; Page 43; and Pages 555-621 Adoption Resolutions	✓		
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Section 2: Page 44; Page 48 Table 2-1	✓		
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 7: Page 551	✓		
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 7: Page 538; Past review replies on pages 544-548	✓		
ELEMENT A: REQUIRED REVISIONS				
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT				

1. REGULATION CHECKLIST		Location in Plan		Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or			
<p>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))</p> <p>The referenced events under each hazard profile are the ones that resulted in the most damages, deaths, and injuries during the past ten year period and serves as the extent/range of magnitude or severity that could be experienced by St. Clair County due to the specific event.</p> <p>In the cases where there have been no county experiences in the last 10 years, it is not possible to determine a more factual probability of occurrences for the St. Clair County planning area.</p> <p>Primary Effects and Hazardous Results of each hazard are also listed as the extent of the hazard.</p>		<p>Section 4: Hazard Profiles beginning on Page 86 Thunderstorms; Page 90 Lightning; Page 94 Hail; Page 98 Tornadoes; Page 106 Floods/Flash Floods; Page 114 Drought/Extreme Heat; Page 122 Winter Storms/Frost Freezes/Heavy Snows/Ice Storms/Winter Weather/Extreme Cold; Page 126 Hurricanes/Tropical Storms/Tropical Depressions/High Winds/Strong Winds; Page 132 Sinkholes/Expansive Soils; Page 138 Landslides; Page 144 Earthquakes; Page 156 Wildfires; Page 160 Dam/Levee Failures</p> <p>Section 4: Table 4-30 on page 171 summarizes the annual potential loss estimates for each hazard</p>		✓	

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or		
<p>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))</p> <p>In the cases where there have been no county experiences in the last 10 years, it is not possible to determine a more factual probability of occurrences for the St. Clair County planning area.</p> <p>The following example is listed under each hazard:</p> <p>St. Clair County experienced 18 flood/flash flood events in a 10 year period resulting in a greater than 100% probability that a flood/flash flood event will occur on an annual basis. The total amount of damages for the 18 flood/flash flood events was \$1,571,000 with 12 flood/flash flood events causing damage resulting in an estimated \$130,917 of expected annual damages from future events.</p>	<p>Section 4: Hazard Profiles beginning on Page 86 Thunderstorms; Page 90 Lightning; Page 94 Hail; Page 98 Tornadoes; Page 106 Floods/Flash Floods; Page 114 Drought/Extreme Heat; Page 122 Winter Storms/Frost Freezes/Heavy Snows/Ice Storms/Winter Weather/Extreme Cold; Page 126 Hurricanes/Tropical Storms/Tropical Depressions/High Winds/Strong Winds; Page 132 Sinkholes/Expansive Soils; Page 138 Landslides; Page 144 Earthquakes; Page 156 Wildfires; Page 160 Dam/Levee Failures</p>	✓		
<p>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)(iii))</p>	<p>Section 6: Risk and Vulnerability Overview Tables on pages 212, 238, 267, 294, 326, 358, 394, 422, 452, and 488</p>	✓		
<p>B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))</p>	<p>Section 4: Page 112 – There are four homes in the City of Moody that have suffered repetitive losses due to flooding in the crawl space.</p>	✓		
ELEMENT B: REQUIRED REVISIONS				
ELEMENT C. MITIGATION STRATEGY				

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or		
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 1: Page 18; Section 2: Page 44; Table 2-1 on page 48	✓	
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: Table 4-22 on page 113	✓	
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))		Section 5: St. Clair County Table 5-2 on page 192 Section 6: Argo Table 6-18 on page 224, Ashville Table 6-36 on page 250, Margaret Table 6-54 on page 278, Moody Table 6-72 on page 307, Odenville Table 6-90 on page 340, Pell City Table 6-108 on page 376, Ragland Table 6-126 on page 406, Riverside Table 6-144 on page 434, Springville Table 6-162 on page 469, Steele Table 6-180 on page 502, Pell City Schools Table 6-181 on page 520; St. Clair County BOE Table 6-182 on page 524, St. Vincents Table 6-183 on page 530, Water and Sewer Authorities Table 6-184 on page 535	✓	

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or		
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))	<p>Section 5: St. Clair County Table 5-2 on page 192</p> <p>Section 6: Argo Table 6-18 on page 224, Ashville Table 6-36 on page 250, Margaret Table 6-54 on page 278, Moody Table 6-72 on page 307, Odenville Table 6-90 on page 340, Pell City Table 6-108 on page 376, Ragland Table 6-126 on page 406, Riverside Table 6-144 on page 434, Springville Table 6-162 on page 469, Steele Table 6-180 on page 502, Pell City Schools Table 6-181 on page 520; St. Clair County BOE Table 6-182 on page 524, St. Vincents Table 6-183 on page 530, Water and Sewer Authorities Table 6-184 on page 535</p>	✓		

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or		
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: St. Clair County Table 5-2 on page 192	✓		
Identified under each mitigation action item.	Section 6: Argo Table 6-18 on page 224, Ashville Table 6-36 on page 250, Margaret Table 6-54 on page 278, Moody Table 6-72 on page 307, Odenville Table 6-90 on page 340, Pell City Table 6-108 on page 376, Ragland Table 6-126 on page 406, Riverside Table 6-144 on page 434, Springville Table 6-162 on page 469, Steele Table 6-180 on page 502, Pell City Schools Table 6-181 on page 520; St. Clair County BOE Table 6-182 on page 524, St. Vincents Table 6-183 on page 530, Water and Sewer Authorities Table 6-184 on page 535			
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 2: Page 44; Page 48 Table 2-1	✓		
ELEMENT C: REQUIRED REVISIONS				
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)				
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Section 3: Page 50 Section 4: Pages 171 and 180	✓		

1. REGULATION CHECKLIST		Location in Plan		Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or			
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	<p>Section 5: St. Clair County Table 5-2 on page 192</p> <p>Section 6: Argo Table 6-18 on page 224, Ashville Table 6-36 on page 250, Margaret Table 6-54 on page 278, Moody Table 6-72 on page 307, Odenville Table 6-90 on page 340, Pell City Table 6-108 on page 376, Ragland Table 6-126 on page 406, Riverside Table 6-144 on page 434, Springville Table 6-162 on page 469, Steele Table 6-180 on page 502, Pell City Schools Table 6-181 on page 520; St. Clair County BOE Table 6-182 on page 524, St. Vincents Table 6-183 on page 530, Water and Sewer Authorities Table 6-184 on page 535</p>			✓	

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or		
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	<p>Section 5: St. Clair County Table 5-2 on page 192</p> <p>Section 6: Argo Table 6-18 on page 224, Ashville Table 6-36 on page 250, Margaret Table 6-54 on page 278, Moody Table 6-72 on page 307, Odenville Table 6-90 on page 340, Pell City Table 6-108 on page 376, Ragland Table 6-126 on page 406, Riverside Table 6-144 on page 434, Springville Table 6-162 on page 469, Steele Table 6-180 on page 502, Pell City Schools Table 6-181 on page 520; St. Clair County BOE Table 6-182 on page 524, St. Vincents Table 6-183 on page 530, Water and Sewer Authorities Table 6-184 on page 535</p> <p>Mitigation Action Prioritizations have been updated and Table 4-3 Prioritized Occurrence Threat has been added in Section 4 on page 68</p>	✓		
ELEMENT D: REQUIRED REVISIONS				
ELEMENT E. PLAN ADOPTION				

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or		
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))	Section 8: Approval and Implementation beginning on page 553 Adopting Resolutions (will be added upon FEMA's approval pending adoption)		✓	
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	Section 8: Approval and Implementation beginning on page 553 Adopting Resolutions (will be added upon FEMA's approval pending adoption)		✓	
ELEMENT E: REQUIRED REVISIONS				
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

How does the Plan go above and beyond minimum requirements to document the planning process with respect to:

- *Involvement of stakeholders (elected officials/decision makers, plan implementers, business owners, academic institutions, utility companies, water/sanitation districts, etc.);*
- *Involvement of Planning, Emergency Management, Public Works Departments or other planning agencies (i.e., regional planning councils);*
- *Diverse methods of participation (meetings, surveys, online, etc.); and*
- *Reflective of an open and inclusive public involvement process.*

Element B: Hazard Identification and Risk Assessment

In addition to the requirements listed in the Regulation Checklist, 44 CFR 201.6 Local Mitigation Plans identifies additional elements that should be included as part of a plan's risk assessment. The plan should describe vulnerability in terms of:

- 1) A general description of land uses and future development trends within the community so that mitigation options can be considered in future land use decisions;*
- 2) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; and*
- 3) A description of potential dollar losses to vulnerable structures, and a description of the methodology used to prepare the estimate.*

How does the Plan go above and beyond minimum requirements to document the Hazard Identification and Risk Assessment with respect to:

- *Use of best available data (flood maps, HAZUS, flood studies) to describe significant hazards;*
- *Communication of risk on people, property, and infrastructure to the public (through tables, charts, maps, photos, etc.);*
- *Incorporation of techniques and methodologies to estimate dollar losses to vulnerable structures;*
- *Incorporation of Risk MAP products (i.e., depth grids, Flood Risk Report, Changes Since Last FIRM, Areas of Mitigation Interest, etc.); and*
- *Identification of any data gaps that can be filled as new data became available.*

Element C: Mitigation Strategy

How does the Plan go above and beyond minimum requirements to document the Mitigation Strategy with respect to:

- *Key problems identified in, and linkages to, the vulnerability assessment;*
- *Serving as a blueprint for reducing potential losses identified in the Hazard Identification and Risk Assessment;*
- *Plan content flow from the risk assessment (problem identification) to goal setting to mitigation action development;*
- *An understanding of mitigation principles (diversity of actions that include structural projects, preventative measures, outreach activities, property protection measures, post-disaster actions, etc);*
- *Specific mitigation actions for each participating jurisdictions that reflects their unique risks and capabilities;*
- *Integration of mitigation actions with existing local authorities, policies, programs, and resources; and*
- *Discussion of existing programs (including the NFIP), plans, and policies that could be used to implement mitigation, as well as document past projects.*

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

How does the Plan go above and beyond minimum requirements to document the 5-year Evaluation and Implementation measures with respect to:

- *Status of previously recommended mitigation actions;*
- *Identification of barriers or obstacles to successful implementation or completion of mitigation actions, along with possible solutions for overcoming risk;*
- *Documentation of annual reviews and committee involvement;*
- *Identification of a lead person to take ownership of, and champion the Plan;*
- *Reducing risks from natural hazards and serving as a guide for decisions makers as they commit resources to reducing the effects of natural hazards;*
- *An approach to evaluating future conditions (i.e. socio-economic, environmental, demographic, change in built environment etc.);*
- *Discussion of how changing conditions and opportunities could impact community resilience in the long term; and*
- *Discussion of how the mitigation goals and actions support the long-term community vision for increased resilience.*

B. Resources for Implementing Your Approved Plan

Ideas may be offered on moving the mitigation plan forward and continuing the relationship with key mitigation stakeholders such as the following:

- *What FEMA assistance (funding) programs are available (for example, Hazard Mitigation Assistance (HMA)) to the jurisdiction(s) to assist with implementing the mitigation actions?*
- *What other Federal programs (National Flood Insurance Program (NFIP), Community Rating System (CRS), Risk MAP, etc.) may provide assistance for mitigation activities?*
- *What publications, technical guidance or other resources are available to the jurisdiction(s) relevant to the identified mitigation actions?*
- *Are there upcoming trainings/workshops (Benefit-Cost Analysis (BCA), HMA, etc.) to assist the jurisdictions(s)?*
- *What mitigation actions can be funded by other Federal agencies (for example, U.S. Forest Service, National Oceanic and Atmospheric Administration (NOAA), Environmental Protection Agency (EPA) Smart Growth, Housing and Urban Development (HUD) Sustainable Communities, etc.) and/or state and local agencies?*

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 Requirements
1	St. Clair	County	Ellen Tanner, EMA Director	1610 Cogswell Avenue, Suite B-10, Pell City, AL 35125	etanner@stce-ma.org	205-884-6800	✓	✓	✓	✓		

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2	Argo	City	Mike Platts, Fire Chief	100 Blackjack Road, Trussville, AL 35173	Ofdchief901@gmail.com	205-965-5521	✓	✓	✓	✓		
3	Ashville	City	D. Matthews, Police Chief	P. O. Drawer 70, Ashville, AL 35953	Dmatthews002@yahoo.com	205-594-4152	✓	✓	✓	✓		
4	Margaret	City	Clay Morgan, Police Chief	P. O. Box 309, Margaret, AL 35112	margaretpolicedepartment@gmail.com	205-629-5501	✓	✓	✓	✓		
5	Moody	City	Cletus Beard	670 Park Avenue, Moody, AL 35004	jnobles@moodyalabama.gov	205-640-0357	✓	✓	✓	✓		

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6	Odenville	City	Carter Franklin, Fire Chief	P. O. Box 113, Odenville, AL 35120	odenchief@windstream.net	205-629-2232	✓	✓	✓	✓		
7	Pell City	City	Freddy Hazelwood, Utility Manager	1905 First Avenue North, Pell City, AL 35125	freddyhazelwood@cityofpellcity.net	205-338-3886	✓	✓	✓	✓		
8	Ragland	Town	Tim McKinney, Ragland Water Manager	220 Fredia Street, Suite 102, Ragland, AL 35131	waterworks@ragland.net	205-472-0409	✓	✓	✓	✓		

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9	Riverside	City	Tim Kurzejeski, Fire Chief	P. O. Box 130, Riverside, AL 35135	firechief@riverside-al.com	205-338-7692	✓	✓	✓	✓		
10	Springville	City	Richard Harvey, Fire Chief	P. O. Box 919, Springville, AL 35146	springvillefc@windstream.net	205-467-2703	✓	✓	✓	✓		
11	Steele	Town	John Wilcox, Mayor	P. O. Box 425, Steele, AL 35987	townofsteele@bellsouth.net	256-538-8145	✓	✓	✓	✓		
12	Pell City Schools	School District	Tony Morris, Transportation Supervisor	3105 15th Avenue North, Pell City, AL 35125	morristrn@yahoo.com	205-884-4800	✓	✓	✓	✓		

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13	St. Clair County BOE	School District	Phillip Johnson, Principal	410 Roy Drive, Ashville, AL 35953	Phillip.johnson@sccboe.org	205-594-2242	✓	✓	✓	✓		
14	St. Vincents St. Clair	Special District	Sarah White, Emergency Department Director or Jimmy Vaughn, Plant Operations Director	7063 Veterans Parkway, Pell City, AL 35125	Sarah.white@stvhs.com or jimmy.vaughn@stvhs.com	205-814-2105	✓	✓	✓	✓		
15	Ashville Water and Sewer Board	Special District	Chrystal St. John/Mike Berry/Dennis Matthews	P. O. Drawer 1448, Ashville, AL 35953		205-594-4152	✓	✓	✓	✓		

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16	Camp Sumatanga	Special District	Laura Belding	3616 Sumatanga Road, Gallant, AL 35972		256-538-9860	✓	✓	✓	✓		
17	Chandler Mountain Water Authority	Special District	Lynn Burton	P. O. Box 61, Steele, AL 35987		256-538-6736	✓	✓	✓	✓		
18	Cook Springs Water Authority	Special District	Brenda Capps, Office Manager	P. O. Drawer D, Cook Springs, AL 35052		205-338-4220 or cell 205-753-0715	✓	✓	✓	✓		
19	Margaret Water Authority	Special District	Isaac Howard	P. O. Box 207, Margaret, AL 35112	margaretpublicworks@windstream.net	205-629-7001 or cell 205-369-6795	✓	✓	✓	✓		

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20	Margaret Sewer Authority	Special District	Dewayne Adams, Manager and *Dave Tredwell, City of Moody	670 Park Avenue, Moody, AL 35004		205-640-5121	✓	✓	✓	✓		
21	Moody Kelly Creek Waste Water Treatment Plant	Special District	Dewayne Adams, Manager and *Dave Tredwell, City of Moody	670 Park Avenue, Moody, AL 35004		205-640-5121	✓	✓	✓	✓		
22	New London Water and Sewer Authority	Special District	Alison Tate	4040 Logan Martin Dam Road, Cropwell, AL 35054		205-525-5177	✓	✓	✓	✓		

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23	Northeast St. Clair Water Authority	Special District	Rich Hull, Fire Chief	12855 Co. Rd. 24, Ashville, AL 35953	hitundra681@cs.com	Fax 205-594-4228	✓	✓	✓	✓		
24	Northwest St. Clair Water System	Special District	Toby Reed	18 Flatwoods Drive, Steele, AL 35987		205-594-7196	✓	✓	✓	✓		
25	Odenville Utilities Board	Special District	Jimmy C. Bailey, Superintendent	P. O. Box 88, Odenville, AL 35120	mayorprotem@msn.com	205-629-5801	✓	✓	✓	✓		

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26	Pell City Water Quality	Special District	Joe Dan Harmon, Jr.	1680 Golf Course Road, Pell City, AL 35128	derkwtp@centurytel.net	205-365-5509	✓	✓	✓	✓		
27	Pell City Water	Special District	Joe Dan Harmon, Jr.	1680 Golf Course Road, Pell City, AL 35128	derkwtp@centurytel.net	205-365-5509	✓	✓	✓	✓		
28	Pinedale Water and Sewer Authority	Special District	Michael Carrier, Manager	P. O. Box 1191, Ashville, AL 35953		205-594-4640 or cell 256-312-3642	✓	✓	✓	✓		

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29	Ragland Water Works Board	Special District	Donna Poe	220 Fredia Street, Suite 101, Ragland, AL 35131	Clerk01@ragland.net	205-472-0409	✓	✓	✓	✓		
30	Riverside Utility Board	Special District	Chrystal Womack	379 Depot Street, Riverside, AL 35135	riversidewater@centurytel.net	205-338-7692	✓	✓	✓	✓		
31	Wattsville Water Authority	Special District	Amber Mikell	P. O. Box 4, Wattsville, AL 35182	wattsvillewater@centurytel.net	205-338-3725	✓	✓	✓	✓		
32	Wolf Creek Water, Sewer, and Fire	Special District	Danny Wright, Fire Chief		wcvfd@centurytel.net; wolfh20@centurytel.net	205-338-6000	✓	✓	✓	✓		

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							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requirements
33	Town of Steele Waterworks Board	Special District	Michael Carrier	P. O. Box 425, Steele, AL 35987	townofsteele@bellsouth.net	256-538-8145 or cell 256-312-3642	✓	✓	✓	✓		

