

# **Bibb County Hazard Mitigation Plan**



## **2015 Plan Update**

Prepared under the direction of the Hazard Mitigation Planning Committee, the Local Emergency Planning Committee and the Bibb County Emergency Management Agency  
by:



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# Bibb County Hazard Mitigation Plan

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## **Introduction**

### ***Bibb County Hazard Mitigation Plan***

The Bibb County Hazard Mitigation Plan is a multi-jurisdictional, multi-hazard mitigation plan. This plan fulfills the requirements set forth by the Federal Disaster Mitigation Act of 2000 (DMA 2000). It meets all eligibility requirements set forth by the Federal Emergency Management Agency (FEMA) for grant assistance. To date, assistance is available from the following grant programs: the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance Program (FMA), and Pre-Disaster Mitigation Program (PDM). The Biggert-Waters Flood Insurance Reform Act of 2012 eliminated the Repetitive Flood Claims Grant Program (RFC) and Severe Repetitive Loss Program (SRL) and incorporated these elements into the FMA Program. The FMA Program now allows for up to 100% federal cost share for severe repetitive loss properties; 90% federal cost share for repetitive loss properties; and 75% federal cost share for repetitive loss properties.

This plan covers the entire county including all unincorporated areas, the Cities of Brent and Centreville, the Towns of West Blocton, Woodstock, and those portions of the Town of Vance that lie in Bibb County. The plan update marks the inclusion of the Town of Vance. Primarily situated in Tuscaloosa County, Vance also has two areas in northern Bibb County. The initial 2005 plan and the 2009 plan revision did not include Vance; however, the town elected to participate in future plan updates and be included in the Bibb County Hazard Mitigation Plan as well as the Tuscaloosa County Hazard Mitigation Plan. Other local governments that elected to participate in and adopt the plan are: the Bibb County School Board and the Bibb County Fire Association.

### ***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 Bibb County Emergency Management Agency (AEMA) and Lee Helms Associates, L. L. C. entered into an agreement to update the 2009 plan.

### ***Scope***

The Bibb County Hazard Mitigation Plan includes all incorporated and unincorporated areas in Bibb County. All hazards that may affect Bibb County and its residents are identified. 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***

“Mitigation is the cornerstone of emergency management. It's the ongoing effort to lessen the impact disasters have on people's lives and property through damage prevention and flood insurance (<http://www.fema.gov/fima/>).” The Bibb County Hazard Mitigation Plan is an effort to identify mitigation strategies that address the hazards to which Bibb County is the most vulnerable. This plan is only one of many actions Bibb County will take to achieve a safer, more hazard resistant environment for its residents.

## **Section One: Planning Process**

### ***Plan update process***

The hazard mitigation planning update process began in March of 2014 after Bibb County EMA was awarded a planning grant from the Alabama Emergency Management Agency (AEMA). The Bibb County EMA received 75 percent funding from the Federal Emergency Management Agency (FEMA). The remaining 25 percent was provided locally through in-kind services.

The Bibb County mitigation plan is the representation of the County's commitment to reduce risks from natural and man-made hazards. In doing this, the number, location, extent and probability of natural and manmade disasters occurring within the area was assessed. Previous 2009 plan information was provided to each jurisdiction/local government Hazard Mitigation Planning Committee members participating in the plan update. This information, which included updating of each jurisdiction's data tables, critical facilities and mitigation strategies, were the basis for the plan. Next, actions that would reduce the loss of life or property in the area were considered. In doing this, all jurisdictions, local governments, private-non-profits, first responders (police, fire and medical), neighboring counties, and the general public were invited and encouraged to participate. All jurisdictions, planning committee members, the public, and neighboring communities actively participated by attending meetings and providing input by phone, fax, email, postal mail and one-on-one contacts made by the EMA Director or the consultant revising the plan.

### ***Continued Public Participation***

After the initial plan was completed in 2005 and revision made in 2009, it was made available for ongoing public view and comment at the Bibb County Emergency Operations Center, all City and Town Halls, the Bibb County Commission, the Brent-Centreville Public Library, and the West Alabama Regional Commission. Each local government was instructed that amendments or additions could be made to that plan at any time. Additional opportunities for comment were provided at quarterly meetings held by the Bibb County EMA. No meeting notes or sign-in sheets were

created and saved for these past meetings; however, they will be a requirement and placed in the next plan revision.

In the future, the County EMA will strive to gain more public participation in the maintenance and updates of the county's hazard mitigation plan by encouraging Parent Teacher Organizations, Senior Citizens Clubs, Chamber of Commerce, Kiwanis Club, etc. by mail, telephone, and personal contacts. In addition, the County EMA will encourage the county and municipalities with websites to place the 2015 plan on their site and offer the public a place to comment on the plan. Jurisdictions having websites are: Bibb County - [www.bibbal.com](http://www.bibbal.com); Brent - [www.cityofbrentalabama.com](http://www.cityofbrentalabama.com); Centreville - [www.centrevillealabama.homestead.com](http://www.centrevillealabama.homestead.com); Woodstock - [www.woodstockalabama.com](http://www.woodstockalabama.com); Bibb County BOE - [www.bibbed.org](http://www.bibbed.org); and Bibb County Medical Center - [www.bibbmedicalcenter.com](http://www.bibbmedicalcenter.com). Jurisdictions not having websites are: Bibb County EMA; West Blocton; Vance; and the Bibb County Fire Association.

### ***Hazard Mitigation Planning Committee***

Before beginning the plan update process, LHA staff coordinated with Mr. Wayne Hayes, Bibb County EMA Director, to review the hazard mitigation planning committee. Existing members were confirmed to continue service. Replacements were made to fill vacancies as needed and new members were added to represent local governments participating in the plan for the first time. Mr. Hayes assumed the responsibility as Chairman of the Hazard Mitigation Planning Committee and also invited the Local Emergency Planning Committee (LEPC) to participate in the planning process. The Hazard Mitigation Committee consisted of the following members:

## Bibb County

Wayne Hayes, Bibb County EMA Director/Homeland Security/E911/Randolph

Water Board

Keefe Burt, Bibb County Commission District 1

Ricky Hubbard, Bibb County Commission District 2

Sammy Holdsambeck, Bibb County Commission District 3

James Kelly, Bibb County Commission District 4

Rodney Stabler, Bibb County Commission District 5

Kirk Smith, Bibb County Commission Compliance Officer

Mark Tyner, Bibb County Administrator

Jerry Pow, Bibb County Probate Judge/Bibb County Fire Department

Jeff McKinney, Bibb County Engineer

Keith Hannah, Bibb County Sheriff

Kenneth Weems, Bibb County Sheriff, Chief Deputy

David Jones, Bibb County Sheriff, Captain

Russell Price, Bibb County Sheriff, Deputy

Kevin Lawrence, Bibb County Sheriff, Public Information Officer

Jennifer Hare, Bibb County Health Department, Nursing Supervisor

Rena Thompson, Bibb County E911

Greg Blake, Superintendent of the Bibb County Board of Education

Richard Cash, Bibb County Board of Education/Transportation

Oscar Mims, Bibb County Board of Education/Facilities Director

## City of Brent

Dennis Stripling, Mayor/Bibb County Volunteer Fire Association

Rosalyn Adams, Town Clerk

Terry Nichols, Police Chief

Billy Kornegay, Public Works

Wade Snipes, Utility Superintendent

City of Centreville

Mike Hobson, Mayor  
Stephanie Scott, City Clerk  
Mike Nichols, Police Chief  
Larry Oikle, Water/Street Superintendent

Town of Vance

Keith Mahaffey, Mayor  
Tracy Burt, Town Clerk  
Joel Henderson, Superintendent

Town of West Blocton

Gary Donner, Mayor  
Pam Morse, Town Clerk  
Jerry Fondren, Public Works  
Keith Watley, Police Chief

Town of Woodstock

Rickey Kornegay, Mayor  
Faye Gamble, Town Clerk  
Len Price, Police Chief  
Larry West, Building Inspector

Others

Sammy Holdsambeck, Alabama Forestry Commission  
Joe Marchant, Bibb Medical Center/Human Resources  
David Nagel, Bibb Medical Center/Safety Director  
Matthew Thomas, Bibb Medical Center/Safety Officer  
Sonny Weaver, AmServ EMS Director  
Margie Bates, Randolph Water System Clerk  
Donald Bates, Randolph Water System/Randolph Volunteer Fire Department  
Greenpond Water System  
Tommy Dockery, Alabama Department of Public Health Area 3- EP Coordinator

### ***Participation Guidelines***

The Chairman of the Hazard Mitigation Planning Committee set forth a list of participation guidelines for the Hazard Mitigation Planning Committee:

1. At least one appointed representative from each participating local government should attend all committee meetings. In the event of extenuating circumstances, the local government may send a non-appointed representative. If a committee member cannot attend the meetings, he or she will be contacted in person, by phone, by email, or by mail in order to obtain the jurisdiction's participation in the plan revision. Committee members are also encouraged to attend neighboring communities' HMPC meetings and participate in their plan updates. Each local government should submit requested information to Bibb County EMA or LHA in a timely manner. Local governments should meet timeframes and deadlines established by the committee. In the event of extenuating circumstances, the Hazard Mitigation Planning Committee Chairman may approve late submissions.
2. Committee members should fully cooperate with the Bibb County EMA and LHA staff during the update and finalization of the Bibb County Hazard Mitigation Plan by providing the best available information necessary to complete the plan.
3. Each participating local government must submit a list of prioritized mitigation actions. The local government must provide mitigation measures and the method used to prioritize the actions. The selected actions must identify the hazard(s) being mitigated.

### ***Committee and Public Meeting Schedule and Participation***

Each local government was invited to participate in each of the committee meetings. In the event they were unable to attend the meetings they were required to obtain meeting materials from the Bibb County EMA or LHA prior to or immediately following the missed meeting. Meeting materials were completed and returned via mail, fax, email, or by scheduling an individual meeting with the Bibb County EMA and/or LHA for the local government to be counted as an active participant in the planning process. Surrounding neighbors were invited by email, with the exception of Jefferson

who were invited by telephone, and encouraged to attend all committee meetings and provide input. The public was also invited and encouraged to participate in all meetings. Public meeting notices were published in the Centreville Press two weeks prior to the meeting date and included contact information for assistance. In the event a meeting was rescheduled, a copy of the email to committee members telling of the new date and pertinent meeting information was placed on the door of the Rock Building for interested citizens; and if time permitted, was also advertised in the Centreville Press. The Rock Building, as it is known to all Bibb County citizens, is the government headquarters for Bibb County and is located at 157 S. W. Davidson Drive, in Centreville.

Attendees at the meetings were asked to group themselves by jurisdiction in order to review and complete meeting materials that required collaboration, and provide other needed data. Some individuals participated with and contributed to more than one jurisdiction as deemed appropriate. A “Citizen Input on Hazard Mitigation Plan” form (sample found in this section) was available at all meetings for general public citizens to complete. Committee representatives were asked to take these forms and for their concerned citizens to complete. No forms were completed during the planning process.

The initial public meeting of the Bibb County Hazard Mitigation Planning Committee was held on March 18, 2014 at 10 a.m. in The Rock Building located at 157 S. W. Davidson Drive, Centreville, Alabama. No public citizens attended the meeting.

The mid-term public meeting of the Bibb County Hazard Mitigation Planning Committee was held on May 14, 2014 at 10 a.m. in The Rock Building located at 157 S. W. Davidson Drive, Centreville, Alabama. No public citizens attended the meeting.

The final public meeting of the Bibb County Hazard Mitigation Planning Committee was held during a regular Bibb County Commission Meeting on July 13, 2015 at 10 a.m. in The Rock Building located at 157 S. W. Davidson Drive, Centreville, Alabama.

Robert Kelly, of Chelsea, Alabama, is 64 years old and has been shooting these Civil War weapons for 32 years.

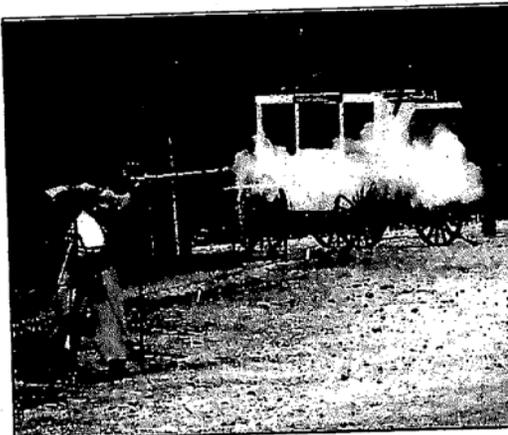
"I realized just the other day," said Kelly, "that I have been doing this for half my life! It's fun. I'm interested in aspects of the Civil War and the guns of the period are one of those aspects."

At Saturday's shooting event, Kelly was shooting an 1848 smoothbore musket.

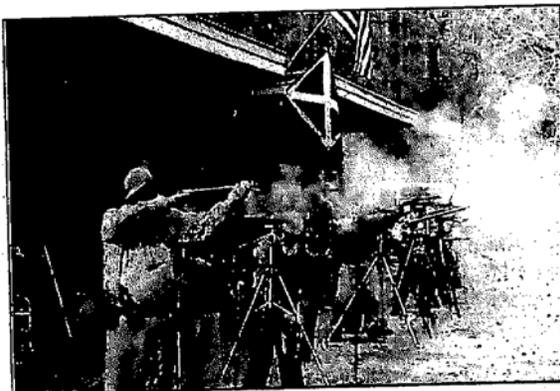
The NSSA does not reenact specific Civil War battles, but is more interested in promoting the accurate shooting of Civil War era firearms. Members of the organization will be at Brierfield again April 25-27.

While guns were smoking at Brierfield, arrows were flying at Tannehill Ironworks Historical State Park as AllSouth Archery Associ-

Eight-year-old Leah Haynes, of Huntsville, demonstrates her archery skills during the AllSouth Archery Association's Pre-Spring Arrow Fling held this past weekend at Tannehill Ironworks State Park.



Robert Kelley competed in Saturday's Shoot-Off with 1848 smoothbore musket.



Members of North-South Skirmish Association competed in this past weekend's Shoot-Off at Brierfield Ironworks Historical Park.



## PUBLIC MEETING

The Bibb County Emergency Management Agency is scheduling a public meeting on March 18, 2014

At 10 a.m. to update its Hazard Mitigation Plan.

The meeting will take place at 157 S.W. Davidson Drive, Centreville, AL 35042 (The Rock Building).

The public, private non-profits, municipalities, school boards, universities/colleges, water/sewer boards, fire departments and elected officials are among those invited and encouraged to attend.

Participation is required in order to apply for federal hazard mitigation grants in the future.

FOR YOU  
The Ce

NOW



Thanks Sammie

## Brent Council Meeting

### *Brent Council from page 1A*

In other matters, Councilman Chad Jones expressed concern about the \$5,000 contribution the City made to Cahaba Sports. Councilman Jones said that Cahaba Sports' Chip Burke approached the Council with the request that a contribution be made to help pay back a bank loan on the property. Jones said the property, though leased to Cahaba Sports, belongs to the City of Centreville, and Brent should not be helping Centreville purchase property.

Mayor Dennis Stripling said the donation has already been made for this year, but that it was made without stipulating how it should be spent. He said he requested that Cahaba Sports provide documentation of how its money is spent before the City of Brent makes a donation next year.

Mayor Stripling provided an update on the Brent Mini Mart.

Brent Police Chief Terry Nichols provided the police report and said that February had more activity than January did. Councilwoman Bobbie White said additional patrols need to be done around BI Way.

The Council reappointed Roberta Lawrence and Danny Russell to the Utility Board. Terms for this Board are 6-years long.

The Council designated Mayor Stripling as the Voting Del-

egate for the Alabama League of Municipalities convention in Mobile, and Council members White and Jerry Conway as first and second alternates. Councilman Tracy Sanders will also attend the convention.

Approval was given for the Minutes of the previous meeting and for the invoices.

All members were present. The next meeting of the Brent City Council is scheduled for March 17, 2014.



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## PUBLIC MEETING

The Bibb County Emergency Management Agency is scheduling a public meeting on March 18, 2014

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The meeting will take place at 157 S.W. Davidson Drive, Centreville, AL 35042 (The Rock Building).

The public, private non-profits, municipalities, school boards, universities/colleges, water/sewer boards, fire departments and elected officials are among those invited and encouraged to attend.

Participation is required in order to apply for federal hazard mitigation grants in the future.

**Renee Helms**

---

**From:** Renee Helms [renee@leehelmsllc.com]  
**Sent:** Friday, March 14, 2014 12:33 PM  
**To:** 'David Hartin'; 'hharvey@shelbyal.com'; 'Chilton Co Ema'; Perry Co. EMA; Hale Co. EMA  
**Cc:** 'bcema0207@bellsouth.net'  
**Subject:** Bibb County's Hazard Mitigation Planning Committee Meeting  
**Attachments:** Announcement to HMPC.docx

**Importance:** High

Please see the attached document concerning the Bibb County EMA's public meeting to update its Hazard Mitigation Plan. Your attendance is requested and encouraged on March 18, 2014, 10 a.m. in The Rock Building!

*Renee Helms*, Manager  
Lee Helms Associates, L. L. C.  
236 Town Mart  
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Office: 205-280-3027  
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Website: [www.leehelmsllc.com](http://www.leehelmsllc.com)



**Renee Helms**

---

**From:** Renee Helms [renee@leehelmsllc.com]  
**Sent:** Friday, March 14, 2014 4:30 PM  
**To:** 'keefeb@kykenkee.com'; 'bibbcounty2@bellsouth.net'; 'bibbcounty3@bellsouth.net'; 'bibbcounty4@bellsouth.net'; 'bibbcounty5@bellsouth.net'; 'markt07@bellsouth.net'; 'jeffmckinney@bellsouth.net'; 'khannahbibb700@yahoo.com'; 'bibbcountye911@bellsouth.net'; 'mayor@cityofbrentalabama.com'; 'cityofbrent@bellsouth.net'; 'brentutilities@bellsouth.net'; 'clerk@cityofcentreville.com'; 'larry@cityofcentreville.com'; 'tburt@townofvance.com'; 'gdonner@bellsouth.net'; 'pmorse@bellsouth.net'; 'rickeykw@aol.com'; 'fgambletclerk@aol.com'; 'bmchr@bibbmedicalcenter.com'; 'mayor@cityofbrentalabama.com'; 'Tommy.Dockery@adph.state.al.us'; 'Jennifer.hare@adph.state.al.us'; 'blakeg@bibbed.org'; 'cashr@bibbed.org'; 'mimso@bibbed.org'; 'brentpd@bellsouth.net'; 'mayor@cityofcentreville.com'; 'centreville101@live.com'; 'kmahaffey@townofvance.com'; 'jhenderson@townofvance.com'; 'jfondren@bellsouth.net'; 'lcpricejr@aol.com'; 'larrywest@hiwaay.net'; 'gsmitherman1079@gmail.com'; 'bibb.county@forestry.alabama.gov'; 'mbates13@bellsouth.net'; 'bcema0207@bellsouth.net'  
**Cc:**  
**Subject:** Needed Information for the Bibb County Hazard Mitigation Plan Update  
**Attachments:** NEEDED INFORMATION.docx  
**Importance:** High

Hello All,

Please see the attached document for you to bring to Tuesday's meeting. Feel free and encouraged to update any information you can before Tuesday's meeting and bring it with you to the meeting! You can also fax 205-280-0543 or email [renee@leehelmsllc.com](mailto:renee@leehelmsllc.com) me your updates. For questions, call Renee at 205-280-3027.

Additional information will be given out at Tuesday's meeting. Thanks for your cooperation! Remember to be eligible for federal hazard mitigation grants in the next 5 years, you have to participate in the planning meetings!

*Renee Helms*, Manager  
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Website: [www.leehelmsllc.com](http://www.leehelmsllc.com)



## Renee Helms

---

**From:** Renee Helms [renee@leehelmsllc.com]  
**Sent:** Wednesday, March 12, 2014 12:12 PM  
**To:** 'bibb.county@forestry.alabama.gov'  
**Subject:** FW: Bibb County Hazard Mitigation Planning Committee Meeting  
**Attachments:** Announcement to HMPC.docx

**Importance:** High

*Renee Helms*, Manager  
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Email: [renee@leehelmsllc.com](mailto:renee@leehelmsllc.com)  
Website: [www.leehelmsllc.com](http://www.leehelmsllc.com)



---

**From:** Renee Helms [<mailto:renee@leehelmsllc.com>]  
**Sent:** Wednesday, March 12, 2014 11:59 AM  
**To:** 'keefeb@kykenkee.com'; 'bibbcounty2@bellsouth.net'; 'bibbcounty3@bellsouth.net'; 'bibbcounty4@bellsouth.net'; 'bibbcounty5@bellsouth.net'; 'markt07@bellsouth.net'; 'jeffmckinney@bellsouth.net'; 'khannahbibb700@yahoo.com'; 'bibbcountye911@bellsouth.net'; 'mayor@cityofbrentalabama.com'; 'cityofbrent@bellsouth.net'; 'brentutilities@bellsouth.net'; 'clerk@cityofcentreville.com'; 'larry@cityofcentreville.com'; 'tburt@townofvance.com'; 'gdonner@bellsouth.net'; 'pmorse@bellsouth.net'; 'rickeykw@aol.com'; 'fgambletclerk@aol.com'; 'bmchr@bibbmedicalcenter.com'; 'mayor@cityofbrentalabama.com'; 'Tommy.Dockery@adph.state.al.us'; 'Jennifer.hare@adph.state.al.us'; 'blakeg@bibbed.org'; 'cashr@bibbed.org'; 'mimso@bibbed.org'; 'brentpd@bellsouth.net'; 'mayor@cityofcentreville.com'; 'centreville101@live.com'; 'kmahaffey@townofvance.com'; 'jhenderson@townofvance.com'; 'jfondren@bellsouth.net'; 'lwest@aol.com'; 'lcpricejr@aol.com'; 'larrywest@hiwaay.net'; 'gsmitherman1079@gmail.com'; 'bibbcounty@forestry.alabama.gov'  
**Cc:** 'bcema0207@bellsouth.net'  
**Subject:** Bibb County Hazard Mitigation Planning Committee Meeting  
**Importance:** High

Please see the attached document concerning the Bibb County EMA's public meeting to update its Hazard Mitigation Plan. Your attendance is requested and encouraged on March 18, 2014, 10 a.m. in The Rock Building!

*Renee Helms*, Manager  
Lee Helms Associates, L. L. C.  
236 Town Mart  
Clanton, AL 35045  
Office: 205-280-3027  
Fax: 205-280-0543  
Email: [renee@leehelmsllc.com](mailto:renee@leehelmsllc.com)  
Website: [www.leehelmsllc.com](http://www.leehelmsllc.com)



**TO:** Bibb County Hazard Mitigation Planning Committee

**FROM:** Lee Helms, Lee Helms Associates, L. L. C.  
Wayne Hayes, Bibb County EMA

**SUBJECT:** Bibb County Hazard Mitigation Planning Committee Meeting  
Tuesday, March 18, 2014 at 10 a.m.

The Bibb County Hazard Mitigation Planning Committee (HMPC) is in the process of revising the current Bibb County Hazard Mitigation Plan. You are invited and encouraged to attend this meeting as you have been identified and have served as your entity's point of contact for completion of hazard mitigation planning for the county. The mission of this meeting is to update the 2009 plan information, discuss in-kind contributions for the local match to this planning grant, and provide the public an opportunity to comment on the plan. You are welcome to bring any entity specific information that you would like to include in this plan update; otherwise, needed information will be discussed at this meeting.

In order to comply with federal and state regulations involving funding that might be available to Bibb County for natural hazards mitigation, the Bibb County EMA will hold a public meeting of the HMPC at 10 a.m. on Tuesday, March 18, 2014. The meeting will be held at the Bibb County EMA Office located at 157 S. W. Davidson Drive, Centreville, AL 35042.

Mr. Lee Helms of Lee Helms Associates, L. L. C. (LHA) of Clanton, Alabama will be conducting this meeting, as well as all other meetings regarding the update of the Bibb County Hazard Mitigation Plan. LHA will ensure all federal and state requirements are met. The Bibb County HMPC Meeting will not last longer than one hour. Your attendance and input is required for your department/agency/municipality to be eligible to receive future funding for any mitigation projects.

If you have any questions, please contact the LHA Office at 205-280-3027, email to [renee@leehelmsllc.com](mailto:renee@leehelmsllc.com), or fax 205-280-0543.

## BIBB COUNTY

Tuesday, March 18, 2014 at 10 a.m. – 157 S. W. Davidson Drive, Centreville, AL 35042 - The Rock Building  
**INITIAL HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET**

*(PLEASE PRINT CLEARLY)*

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Rosalyn Adams	Agency: City of Brent Job Title: City Clerk	Phone: 205-926-4643 Fax: 205-926-6061	cityofbrent@bellsouth.net
Tommy Dockery	Agency: ADPH - EP Job Title: coordinator	Phone: (205) 554-4539 Fax: (205) 556-2701	tommy.dockery@adph.state.al.us
Lee Helms	Agency: Lee Helms Assoc. Job Title:	Phone: Fax:	
	Agency: Job Title:	Phone: Fax:	
	Agency: Job Title:	Phone: Fax:	
	Agency: Job Title:	Phone: Fax:	



## BIBB COUNTY

Tuesday, March 18, 2014 at 10 a.m. - 157 S. W. Davidson Drive, Centreville, AL 35042 - The Rock Building  
**INITIAL HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET**

(PLEASE PRINT CLEARLY)

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Larry West	Agency: Town of Woodstock Job Title: Building Official	Phone: 205-938-7004 Fax: 205-938-9796	larrywest@hiway.net
LEN C. PRICE JR	Agency: Town of Woodstock Job Title: Police Chief	Phone: 205-938-9790 Fax: 205-938-9796	lcpricejr@aol.com
Jennifer Price	Agency: Bibb Co. E-911 Job Title: Assistant Director	Phone: (605) 926-1911 Fax: (605) 926-3135	bibbcounty.e911@bellsouth.net
STEVE JOHNSON	Agency: BIBB CO. HEALTH DEPT. Job Title: ENVIRONMENTALIST	Phone: 205-926-9702 Fax: 205-926-6536	steve.johnson@adph.state.al.us
Billy KORNEGAY	Agency: City of Brent / Edline Fire Dept Job Title: Street Super ASST. Chief	Phone: 361-6315 Fax:	
Dennis Stripling	Agency: City of Brent / Bibb Co. Fire Assoc. Job Title: Mayor / President	Phone: 205-926-4643 Fax: 205-926-6061	mayor@cityofbrentalabama.com



## BIBB COUNTY

Tuesday, March 18, 2014 at 10 a.m. - 157 S. W. Davidson Drive, Centreville, AL 35042 - The Rock Building  
**INITIAL HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET**

*(PLEASE PRINT CLEARLY)*

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
David Jones	Agency: BCSO Job Title: Captain	Phone: 205 926-4683 Fax: 205 926 310	Capd.jones.702@yahoo.com
Matthew Thomas	Agency: Bibb Medical Job Title: Safety Officer	Phone: 926-3232 Fax: 926-3242	mthomas@bibbmedicalcenter.com
Soumy Wpam	Agency: Am.Serv EMS Job Title: Director	Phone: 926-5211 Fax: 926-3271	swpam0261@gmail.com
Jeff McKinney	Agency: Bibb County Commission Job Title: County Engineer	Phone: 926-3111 Fax: 926-3133	jeffmckinney@bellsouth.net
JERRY FOWDREW	Agency: WEST BROOKTON Job Title: WATER SUPT.	Phone: 938-7622 Fax: 938-7403	
Faye Gamble	Agency: Woodstock Job Title: Town Clerk	Phone: 938-9790 Fax: 938-9796	fgambleTclerk@aol.com



## BIBB COUNTY

Tuesday, March 18, 2014 at 10 a.m. - 157 S. W. Davidson Drive, Centreville, AL 35042 - The Rock Building  
**INITIAL HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET**

*(PLEASE PRINT CLEARLY)*

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Terry Nichols	Agency: Brent P.D. Job Title: Chief	Phone: 205-976-4647 Fax: 205-926-6061	brent.pd@bellsouth.net
Joel Henderson	Agency: TOWN of Vance Job Title: Superintendent	Phone: 205-553-8278 Fax: 205-553-8270	JHenderson@ townofVance.com
Wade Snipes	Agency: City of Brent Utility Job Title: Superintendent	Phone: 205-926-4643 Fax: 205-926-6061	Brentutilities@bellsouth.net
Marjory Bates	Agency: <del>City</del> Randolph Water Job Title: Clerk	Phone: 334-366-0084 Fax:	mbates13@bellsouth.net
Donald Bates	Agency: Randolph Vol Fire Dept Randolph Water Sys Job Title: Chief	Phone: 334-366-0084 Fax:	mbates13@bellsouth.net
Mike Nichols	Agency: Centreville Pd Job Title: Chief of Police	Phone: 205-926-5052 Fax:	Centreville101@live.com



## BIBB COUNTY

Tuesday, March 18, 2014 at 10 a.m. – 157 S. W. Davidson Drive, Centreville, AL 35042 - The Rock Building  
**INITIAL HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET**

*(PLEASE PRINT CLEARLY)*

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Keith Hannah	Agency: BIBB CO SO	Phone: 205 926 4683	KHannah.B.B.B 700
	Job Title: SHERIFF	Fax: 205-926-3110	@761100.com
Kenneth Weems	Agency: Bibb Co. Sheriff Off.	Phone: 926-4683	chiefdeputyweems701
	Job Title: Chief Deputy	Fax: 926-3110	@yahoo.com
MARK TYNER	Agency: BIBB CO. COMMISSION	Phone: 926-3114	markt07@bellsouth.net
	Job Title: ADM.	Fax: 926-3119	
Greg Blake	Agency: BOE	Phone: 926-9881	Blakeg@bibb.co.
	Job Title: Superintendent	Fax:	
Jerry Paw	Agency: Bibb Co. Fire Dept	Phone: 205-926-3108	jerry.paw@att.net
	Job Title: Probate Judge	Fax: 205-926-3131	
Keith Whitley	Agency: West Blocton Pd	Phone: 938-7622	Whitley300@bellsouth.net
	Job Title: Chief of police	Fax:	



## BIBB COUNTY

Tuesday, March 18, 2014 at 10 a.m. – 157 S. W. Davidson Drive, Centreville, AL 35042 - The Rock Building  
**INITIAL HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET**

(PLEASE PRINT CLEARLY)

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Wayne Hayes	Agency: E.M.A. BIBB/HS/911 BOARD Job Title: Director	Phone: 205-926-3113 Fax: 205-926-3119	bc.ema.0207@bellsouth.net
Sammy HOLDSAMBECK	Agency: Alabama Forestry Comm. Job Title: Forestry Specialist	Phone: 205-926-4917 Fax: 205-926-6442	bibb_county_forestry@alabama.gov
Kevin Lawrence	Agency: Bibb County Sheriff Job Title: Public Information Officer	Phone: 205-926-4683 Fax:	pbibb@al.sheriff@gmail.com
Larry D. Oikle	Agency: City of Centreville Job Title: Superintendent Water/Street	Phone: 205-926-5443 Fax:	larry@cityofcentreville.com
Richard Cash	Agency: Bibb Co. Bd of Ed Job Title: Transportation Supervisor	Phone: 205-926-9611 Fax: 205-926-7578	cashr@bibbed.org
Oscar Mims	Agency: Bibb County BOE Job Title: Facilities Director	Phone: 205-926-2662- <del>ext 6056</del> Fax:	mimso@bibbed.org





## INITIAL MEETING AGENDA

### 2014 BIBB COUNTY HAZARD MITIGATION PLAN UPDATE

Tuesday, March 18, 2014 @ 10 a.m.

157 S. W. Davidson Drive, Centreville, AL 35042 (The Rock Building)

1. Introductions
  - Sign-in sheets – please print and make sure your email is on the form
2. Project Background
  - 2009 plan update was prepared by the West Alabama Planning Commission under the direction of the Hazard Mitigation Planning Committee, the Local Emergency Planning Committee, and the Bibb County Emergency Management Agency and adopted by:
    - Bibb County – Unincorporated
    - Brent - City
    - Centreville - City
    - West Blocton - Town
    - Vance - Town
    - Bibb County Fire Association – Special District
    - Bibb County School Board – School District
    - West AL Regional Commission – Public Authority
    - Woodstock - Town
  - 2014-2015 plan update will be prepared by Lee Helms Associates, L. L. C. under the direction of the Hazard Mitigation Planning Committee, the Local Emergency Planning Committee, and the Bibb County Emergency Management Agency
3. Project Participation
  - Identify opportunities for public input into the 2014 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 November 15, 2014
  - Period of Performance for the grant is November 18, 2013 – November 18, 2014
  - Goal date for draft plan to be submitted in order to be approved before current plan expires: Thursday, July 3, 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](tel:205-280-0543) or email to [renee@leehelmsllc.com](mailto: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
  - Update 2009 plan information – see handouts
  - Discuss in-kind contributions for local match to this planning grant
  - Set date and location for next meeting (Suggested: Monday, April 28 or Tuesday, April 29)

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CITIZEN INPUT ON HAZARD MITIGATION PLANNING

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		
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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?

**Tuesday, March 18, 2014 at 10 a.m.**

**The Rock Building, 157 S. W. Davidson Drive, Centreville, AL 35042**

**Bibb County Hazard Mitigation Planning Committee Meeting 1**

The Chairman of the Hazard Mitigation Planning Committee, Mr. Wayne Hayes, opened the meeting. Lee Helms Associates, L. L. C. reviewed the 2009 plan with committee members and attendees and explained the update process. Attendees were given worksheets and other materials related to the agenda topics in order to review and provide data for the update. A total of 32 committee members or designees attended the meeting, along with 1 LHA representative. No members of the general public were in attendance. Those in attendance included:

- Rosalyn Adams, Clerk, City of Brent
- Tommy Dockery, ADPH EP Coordinator
- Lee Helms, LHA Owner
- Larry West, Building Official, Town of Woodstock
- Len Price, Police Chief, Town of Woodstock
- Jennifer Price, Assistant Director, Bibb County E-911
- Steve Johnson, Environmentalist, Bibb County Health Dept.
- Billy Kornegay, Street Supt., City of Brent/Asst. Chief, Eoline Fire Dept.
- Dennis Stripling, Mayor, City of Brent/ President, Bibb Co. Fire Assoc.
- David Jones, Captain, Bibb Co. Sheriff's Office
- Matthew Thomas, Safety Officer, Bibb Medical Center
- Sonny Weaver, Director, AmServ EMS
- Jeff McKinney, Bibb County Engineer
- Jerry Fondren, Water Supt., West Blocton
- Faye Gamble, Clerk, Town of Woodstock
- Terry Nichols, Chief, Brent PD
- Joel Henderson, Supt., Town of Vance
- Wade Snipes, Utility Supt., City of Brent

- Marjory Bates, Clerk, Randolph Water System
- Donald Bates, Randolph Water System/Randolph Volunteer FD
- Mike Nichols, Chief, Centreville PD
- Keith Hannah, Sheriff, Bibb County
- Kenneth Weems, Chief Deputy, Bibb County Sheriff's Office
- Mark Tyner, Administrator, Bibb County Commission
- Greg Blake, Supt., Bibb County BOE
- Jerry Pow, Bibb County Probate Judge/Bibb Co. FD
- Keith Whatley, Chief, West Blocton PD
- Wayne Hayes, EMA & HS Director/E-911 Board/Randolph Water
- Sammy Holdsambeck, Forestry Specialist, Alabama Forestry Commission
- Kevin Lawrence, PIO, Bibb County Sheriff's Office
- Larry Oikle, Water & Street Supt., City of Centreville
- Richard Cash, Transportation Supv., Bibb County BOE
- Oscar Mims, Facilities Director, Bibb County BOE

## Renee Helms

---

**From:** Renee Helms [renee@leehelmsllc.com]  
**Sent:** Monday, April 28, 2014 10:57 AM  
**To:** 'bibb.county@forestry.alabama.gov'; 'bibbcounty2@bellsouth.net'; 'bibbcounty3@bellsouth.net'; 'bibbcounty4@bellsouth.net'; 'bibbcounty5@bellsouth.net'; 'bibbcounty911@bellsouth.net'; 'blakeg@bibbed.org'; 'brentpd@bellsouth.net'; 'brentutilities@bellsouth.net'; 'captjones702@yahoo.com'; 'cashr@bibbed.org'; 'centreville101@live.com'; 'chiefdeputyweems701@yahoo.com'; 'cityofbrent@bellsouth.net'; 'Cory.johnson@westal.org'; 'fgambletclerk@aol.com'; 'gdonner@bellsouth.net'; 'gsmitherman1079@gmail.com'; 'jeffmckinney@bellsouth.net'; 'Jennifer.hare@adph.state.al.us'; 'jerrypow@att.net'; 'jfondren@bellsouth.net'; 'jhenderson@townofvance.com'; 'keefeb@kykenkee.com'; 'khannahbibb700@yahoo.com'; 'kmahaffey@townofvance.com'; 'larry@cityofcentreville.com'; 'larrywest@hiwaay.net'; 'lcpricejr@aol.com'; 'markt07@bellsouth.net'; 'mayor@cityofbrentalabama.com'; 'mbates13@bellsouth.net'; 'mimso@bibbed.org'; 'mthomas@bibbmedicalcenter.com'; 'piobibbalsheriff@gmail.com'; 'pmorse@bellsouth.net'; 'rickeykw@aol.com'; 'steve.johnson@adph.state.al.us'; 'sweaver0261@gmail.com'; 'tburt@townofvance.com'; 'Tommy.dockery@adph.state.al.us'; 'whatley300@bellsouth.net'; 'bcema0207@bellsouth.net'; 'Lee Helms'  
**Cc:**  
**Subject:** Rescheduling of the Hazard Mitigation Plan Revision Meeting  
**Importance:** High

**TO:** ALL BIBB COUNTY HAZARD MITIGATION PLANNING COMMITTEE (HMPC)  
**MEMBERS:**

**FROM:** Wayne Hayes, Bibb County EMA Director  
Lee Helms, Lee Helms Associates, L. L. C.

**SUBJECT:** Hazard Mitigation Plan Revision Meeting

Due to the threat of severe weather, the Bibb County Hazard Mitigation Plan Revision Meeting that was to be held tomorrow, April 29, 2014, at 10 a.m. will be postponed until Wednesday, May 14, 2014 at 10 a.m. in the Rock Building located at 157 S.W. Davidson Drive in Centreville, AL 35042.

Sorry for any inconvenience. Thank you for your cooperation.

*Renee Helms*, Manager  
Lee Helms Associates, L. L. C.  
236 Town Mart  
Clanton, AL 35045  
Office: 205-280-3027  
Fax: 205-280-0543  
Email: [renee@leehelmsllc.com](mailto:renee@leehelmsllc.com)  
Website: [www.leehelmsllc.com](http://www.leehelmsllc.com)



## Renee Helms

---

**From:** Renee Helms [renee@leehelmsllc.com]  
**Sent:** Tuesday, May 13, 2014 2:09 PM  
**To:** 'bcema0207@bellsouth.net'; 'bibb.county@forestry.alabama.gov'; 'bibbcounty2@bellsouth.net'; 'bibbcounty3@bellsouth.net'; 'bibbcounty4@bellsouth.net'; 'bibbcounty5@bellsouth.net'; 'bibbcounty911@bellsouth.net'; 'blakeg@bibbed.org'; 'brentpd@bellsouth.net'; 'brentutilities@bellsouth.net'; 'captjdjones702@yahoo.com'; 'cashr@bibbed.org'; 'centreville101@live.com'; 'chiefdeputyweems701@yahoo.com'; 'cityofbrent@bellsouth.net'; 'cory.johnson@westal.org'; 'fgambletclerk@aol.com'; 'gdonner@bellsouth.net'; 'gsmitherman1079@gmail.com'; 'jeffmckinney@bellsouth.net'; 'Jennifer.hare@adph.state.al.us'; 'jerrypow@att.net'; 'jfondren@bellsouth.net'; 'jhenderson@townofvance.com'; 'keefeb@kykenkee.com'; 'khannahbibb700@yahoo.com'; 'kmahaffey@townofvance.com'; 'larry@cityofcentreville.com'; 'larrywest@hiwaay.net'; 'lcpricejr@aol.com'; 'markt07@bellsouth.net'; 'mayor@cityofbrentalabama.com'; 'mbates13@bellsouth.net'; 'mimso@bibbed.org'; 'mthomas@bibbmedicalcenter.com'; 'piobibbalsheriff@gmail.com'; 'pmorse@bellsouth.net'; 'rickeykw@aol.com'; 'steve.johnson@adph.state.al.us'; 'sweaver0261@gmail.com'; 'tburt@townofvance.com'; 'Tommy.dockery@adph.state.al.us'; 'whatley300@bellsouth.net'  
**Subject:** Hazard Mitigation Meeting Tomorrow  
**Attachments:** Bibb Co Info for Update.pdf; Brent Info for Update.pdf; Vance Info for Update.pdf; West Blocton Info for Update.pdf; Woodstock Info for Update.pdf  
**Importance:** High

TO: HAZARD MITIGATION PLANNING COMMITTEE (HMPC)

In order to comply with federal and state regulations involving funding that might be available to Bibb County for natural hazards mitigation, the Bibb County EMA will hold a second public meeting of the HMPC at 10 a.m. on Wednesday, May 14, 2014. The meeting will be held at the Bibb County EMA Office located at 157 S. W. Davidson Drive (The Rock Building), Centreville, AL 35042.

I have attached information pertinent to Bibb County and each municipality that needs your updating. Feel free to write on this document or you can make your updates on a separate document and give it to Lee Helms at the meeting tomorrow. If you are a new HMPC member and eligible applicant, please give Lee a list of projects you want to list in the plan for funding during the next 5 years.

Only one HMPC meeting remains and that meeting will be to review the draft plan for approval.

Thanks so much for your cooperation!

*Renee Helms*, Manager  
Lee Helms Associates, L. L. C.  
236 Town Mart  
Clanton, AL 35045  
Office: 205-280-3027  
Fax: 205-280-0543  
Email: [renee@leehelmsllc.com](mailto:renee@leehelmsllc.com)  
Website: [www.leehelmsllc.com](http://www.leehelmsllc.com)



## BIBB COUNTY

Wednesday, May 14, 2014 at 10 a.m. – 157 S. W. Davidson Drive, Centreville, AL 35042 - The Rock Building

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

(PLEASE PRINT CLEARLY)

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Lee Helms	Agency: Lee Helms Assoc. Job Title: Owner	Phone: 205-280-3027 Fax: 205-280-0543	lee@leehelmsllc.com
WAYNE HAYES	Agency: BIBB Co. EMA Job Title: Director	Phone: 205-926-3113 Fax: 205-926-3119	BCEMA0207@bellsouth.net
Larry D. Oikle	Agency: City of Centreville Job Title: Superintendent	Phone: 205-926-9561 Fax:	larry@cityofcentreville.com
Mike Nichols	Agency: Centreville Police Dept Job Title: Chief of Police	Phone: 205-926-5057 Fax: 205-926-5443	Centreville101@live.com
LEN PRICE	Agency: Woodstock PD Job Title: Police Chief	Phone: 205-938-9796 Fax: 205-938-9791	lcp@woodstockal.com
Jennifer Hare	Agency: Bibb Cty Health Dept Job Title: Nursing Supervisor	Phone: 205-926-9702 Fax: 205-926-6536	jennifer.hare@bcbh.state.al.us



## BIBB COUNTY

Wednesday, May 14, 2014 at 10 a.m. – 157 S. W. Davidson Drive, Centreville, AL 35042 - The Rock Building  
**MID-TERM HAZARD-MITIGATION PLANNING MEETING SIGN-IN SHEET**

*(PLEASE PRINT CLEARLY)*

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
Dennis Stripling	Agency: City of Brent Job Title: Mayor	Phone: 205-926-4643 Fax: 205-926-6061	mayor@cityofbrentalabama.com
Jerry C. Paw	Agency: City of Brent Fire Dept Job Title: Fire Chief	Phone: 205-976-3104 Fax: 205-976-3131	jerry.paw@att.net
Donald Bates	Agency: Randolph VFD Job Title:	Phone: 334-366-0084 Fax:	mbates13@bellsouth.net
Marjory Bates	Agency: Randolph Job Title:	Phone: 334-366-0084 Fax:	mbates13@bellsouth.net
	Agency: Job Title:	Phone: Fax:	
	Agency: Job Title:	Phone: Fax:	



## BIBB COUNTY

Wednesday, May 14, 2014 at 10 a.m. - 157 S. W. Davidson Drive, Centreville, AL 35042 - The Rock Building

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

(PLEASE PRINT CLEARLY)

NAME	AGENCY OR DEPARTMENT/ JOB TITLE	PHONE/ FAX	E-MAIL
KIRK SMITH	Agency: <i>Commissioner</i> Job Title: <i>Compliance Officer</i>	Phone: <i>205 316 1254</i> Fax:	<i>bibbcompliance@billsouth.net</i>
Larry West	Agency: <i>Town of Woodstock</i> Job Title: <i>Building Official</i>	Phone: <i>205-938-7001</i> Fax:	<i>larry.west@biwoody.net</i>
Faye Gamble	Agency: <i>Town of Woodstock</i> Job Title: <i>Town Clerk</i>	Phone: <i>205-938-9790</i> Fax:	<i>fgambleclerk@aol.com</i>
Russell Price	Agency: <i>Bibb Co. S.O.</i> Job Title: <i>Deputy</i>	Phone: <i>205 926 4683</i> Fax: <i>205 926 3110</i>	<i>russ4705@excite.com</i>
Terra Nichols	Agency: <i>Brent P.D.</i> Job Title: <i>Chief</i>	Phone: <i>205 526-4677</i> Fax: <i>205-526-6061</i>	<i>brentpd@billsouth.net</i>
Kenneth Weems	Agency: <i>Bibb County S.O.</i> Job Title: <i>Chief Deputy</i>	Phone: <i>926-4683</i> Fax: <i>926-3110</i>	<i>chiefdep.dyweems701@yahoo.com</i>



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## MID-TERM MEETING AGENDA

### 2014 BIBB COUNTY HAZARD MITIGATION PLAN UPDATE

Wednesday, May 14, 2014 @ 10 a.m.

157 S. W. Davidson Drive, Centreville, AL 35042 (The Rock Building)

1. Introductions
  - Sign-in sheets – please print and make sure your email is on the form.
2. Project Schedule Reminder
  - 2009 plan update expires November 15, 2014
  - Period of Performance for the grant is November 18, 2013 – November 18, 2014
  - **Goal date for draft plan to be submitted** in order to be approved before current plan expires: **Thursday, July 3, 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 [renee@leehelmsllc.com](mailto: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
  - Submit updates for the 2014 plan to LHA
  - If needed, discuss in-kind contributions for local match to this planning grant
  - Set date and location for next meeting (**preferably in June 2014**)



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**Wednesday, May 14, 2014 at 10 a.m.**

**The Rock Building, 157 S. W. Davidson Drive, Centreville, AL 35042**

**Bibb County Hazard Mitigation Planning Committee Meeting 2**

The Chairman of the Hazard Mitigation Committee, Mr. Wayne Hayes, opened the meeting. Lee Helms of Lee Helms Associates, L. L. C. reminded the committee members and attendees of the project schedule. Attendees were given worksheets and other materials related to the agenda topics in order to review and provide data for the update. These worksheets were previously emailed to participants with instructions on what information needs updating. A total of 15 committee members or designees attended the meeting, along with one LHA representative. No members of the general public attended. Those in attendance included:

- Lee Helms, LHA Owner
- Wayne Hayes, EMA & HS Director/E-911 Board/Randolph Water
- Larry Oikle, Water & Street Supt., City of Centreville
- Mike Nichols, Chief, Centreville PD
- Len Price, Police Chief, Town of Woodstock
- Dennis Stripling, Mayor, City of Brent/ President, Bibb Co. Fire Assoc.
- Jerry Pow, Bibb County Probate Judge/Bibb Co. FD
- Donald Bates, Randolph Water System/Randolph Volunteer FD
- Marjory Bates, Clerk, Randolph Water System
- Kirk Smith, Compliance Officer, Bibb Co. Commission
- Larry West, Building Official, Town of Woodstock
- Faye Gamble, Clerk, Town of Woodstock
- Russell Price, Deputy, Bibb Co. Sheriff's Office
- Terry Nichols, Chief, Brent PD
- Kenneth Weems, Chief Deputy, Bibb County Sheriff's Office

Attendees from the initial meeting returned their updated worksheets to LHA by email or fax. For the information that was missing, LHA contacted each participant by telephone and

gathered the information. Attendees of Meeting 2 were provided the same worksheets and will be responded to in the same way.

### *Interagency and Intergovernmental Coordination*

Interagency and intergovernmental coordination also played a vital part in the development of this plan. 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 development of the plan. All information provided was beneficial in completing the 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 2012 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. Department of Agriculture – Census of Agriculture provided land value per acre
- HAZUS-MH 2.1 2012 provided estimation information on potential damage, economic loss, and social impacts from natural disasters

#### 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

- West Alabama Regional Commission provided area planning and development and transportation planning information, as well as maps pertaining to plan information

## Local Agencies

- Bibb County Emergency Management Agency provided assistance in gathering data

## Academia

- University of Alabama - Department of Geology

Surrounding counties in Alabama (Shelby, Chilton, Perry, Hale, Tuscaloosa and Jefferson) were also invited and encouraged by email to participate in the development of the plan, with the exception of Jefferson being invited per telephone. None of the surrounding communities attended any of the meetings; however during mutual aid meetings and through our mutual aid agreement, all expressed their willingness to help in the event of a disaster.

## *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. **Table 1-1** provides a list of the existing plans by jurisdiction. Wherever appropriate, the West Alabama Regional Commission's (WARC) economic development planning efforts have been integrated into this plan revision. Of possible interest to those viewing this plan, the WARC also provides Bibb County with: 1) A Business Preparedness Toolkit and presentation that will help area businesses prepare for the effects of a disaster. The toolkit is tailored to Bibb County and provides a sample preparedness and continuity of operations plan, support materials, and a listing of local emergency resources. 2) Data Books containing information from the 2010 Census and the 2006-2010 American Community Survey for the county, tracts, and municipalities. Maps of the counties and tracts are also included.

### ***Plan Adoption***

All jurisdictions in Bibb County, along with the Bibb County School Board and the Bibb County Volunteer Fire Association, the Bibb Medical Center and the West Alabama Regional Commission have actively participated in the planning process by attending meetings and providing input. Representatives from each local government served on the Hazard Mitigation Planning Committee and attended the meetings. The committee was responsible for updating materials, reviewing sections of the plan, and recommending changes to the plan. Upon completion of the plan each of the five municipalities (Brent, Centreville, Vance, West Blocton, and Woodstock) along with the Bibb County Commission, Bibb County School Board, Bibb County Volunteer Fire Association, Bibb Medical Center and the West Alabama Regional Commission will pass formal resolutions adopting the Bibb County Hazard Mitigation Plan. By adopting this multi-jurisdictional hazard mitigation plan, Bibb County and the listed local governments within will be eligible applicants for mitigation grant funds through the Pre-Disaster Mitigation Program, Hazard Mitigation Grant Program, and the Flood Mitigation Assistance Program. Adopting Resolutions can be found in Appendix II.

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**Table 1-1: Bibb County  
Existing Plans by Jurisdiction**

<b>PLAN/POLICY</b>	<b>Brent</b>	<b>Centreville</b>	<b>Vance</b>	<b>West Blocton</b>	<b>Woodstock</b>	<b>County</b>
<b>Comprehensive Plan</b>	N	N	N	N	N	N
<b>Strategic Plan</b>	N	N	N	N	N	Y
<b>Growth Management Plan</b>	N	N	N	N	N	N
<b>Capital Improvement Plan</b>	N	N	N	N	N	N
<b>Zoning Ordinance</b>	N	Y	Y	Y	Y	N
<b>Building Code</b>	N	Y	Y	N	Y	Y
<b>Flood Plain Management Plan</b>	Y	N	Y	N	Y	N
<b>Elevation Certificates</b>	N	N	N	N	N	N
<b>Drainage Ordinance</b>	N	N	Y	N	N	Y
<b>Emergency Management Plan</b>	Y	Y	Y	Y	Y	Y
<b>Critical Facilities Map</b>	Y (water)	N	N	Y	N	N
<b>Existing Land Use Map</b>	N	N	Y	N	Y	Y
<b>State Plan</b>	N	N	N	N	N	N
<b>Hazard Mitigation</b>	Y	Y	Y	Y	Y	Y
<b>Strategic National Stockpile Plan</b>	N	N	N	N	N	Y
<b>Other</b>	N	N	N	N	N	N

*Source: Participating Jurisdictions*

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## **Section Two: General Characteristics**

Bibb County is located in West Central Alabama. Jefferson, Shelby, Chilton, Perry, Hale, and Tuscaloosa Counties border Bibb County. The county has 623 square miles of land area and approximately 3.14 square miles of water area as reported by the 2010 Census. Bibb County sits at an altitude of 224 feet above sea level. The county contains five municipalities: the City of Brent, City of Centreville, a portion of the Town of Vance, Town of West Blocton, and the Town of Woodstock. See **Map 2-1: Bibb County General Location**. Bibb County is governed by County Commissioners elected by citizens in their commission districts. The chairmanship rotates among the commissioners allowing each to serve as chairman. An elected mayor and council serve each municipality. The City of Centreville serves as the Bibb County seat and is the center for local business and trade. The Centreville Town Square which houses the Bibb County Courthouse, built in 1902, is listed on the National Historic Register.

Bibb County has one airport located in Centreville that has extended runway capability to handle corporate jets. The airport does not provide commercial service. Only a small portion in the northernmost area of the county is serviced by rail. Utilities in Bibb County include electricity, gas, water, sewer, and solid waste. Alabama Power provides electrical service and gas is supplied by Alabama Gas Corporation. AT&T provides telecommunication services. Water and sewer service is performed by municipal or rural systems. The Cities of Brent and Centreville operate a collaborative sewer system. The Town of West Blocton operates its own sewer system, and the Town of Woodstock has a collection system that pumps sewage to West Blocton for treatment. Most unincorporated areas are serviced only by septic tanks. Bibb County operates a solid waste collection program and inert landfill.

### ***Growth Trends***

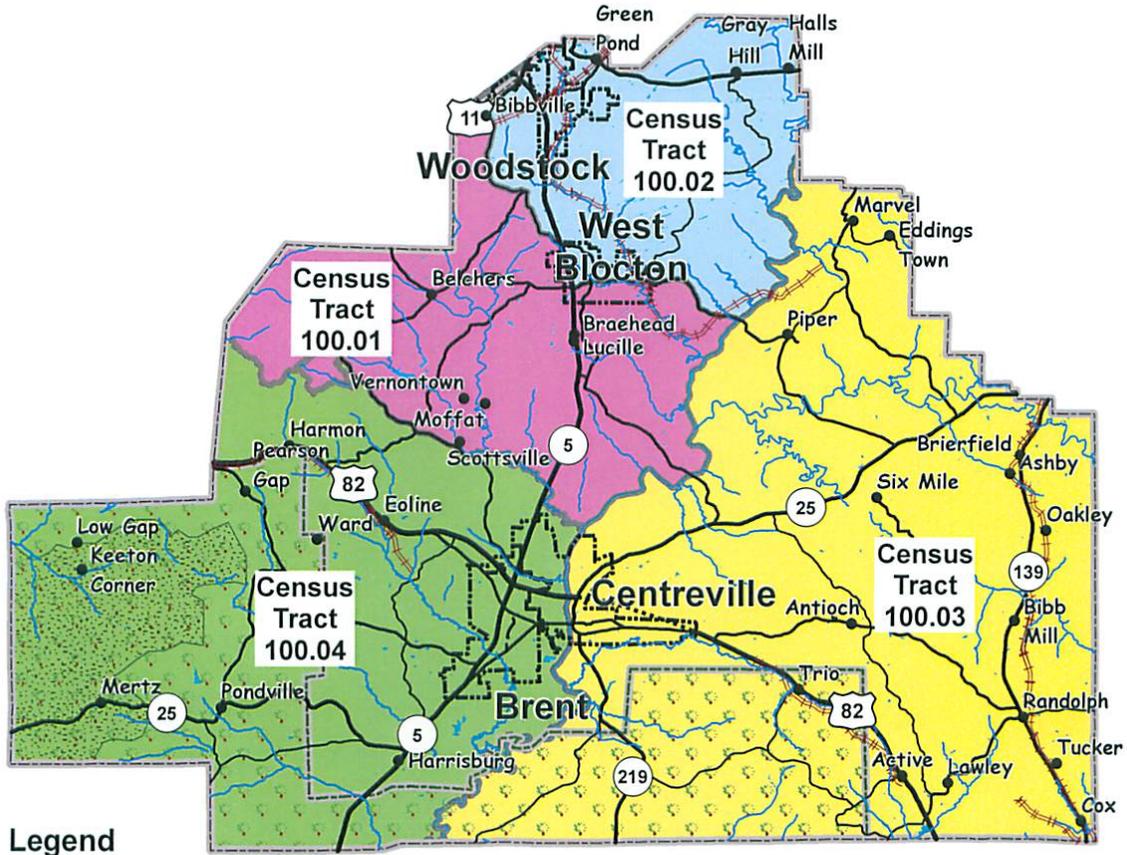
Bibb County's population has grown slightly over the past twenty-three years. **Map 2-1: Bibb County General Location** and **Map 2-2: Bibb County Population Density** depict the newest 2010 Census Tracts and population concentrations in Bibb County. **Table 2-1** below shows the growth trends for the county and its municipalities compared to the State of Alabama.

**Table 2-1: Growth Trends 1990-2013****Change 1990-2013**

	<b>4/1/1990</b>	<b>4/1/2000</b>	<b>4/1/2010</b>	<b>1/1/2013</b>	<b>Number</b>	<b>Percent</b>
<b>Brent</b>	2,854	4,292	4,947	5,105	2,251	79%
<b>Centreville</b>	2,263	2,436	2,778	2,767	504	22%
<b>Vance</b>	1,016	912	1,529	1,573	557	55%
<b>West Blocton</b>	965	1,195	1,240	1,208	243	25%
<b>Woodstock</b>	1,076	1,115	1,428	1,398	322	30%
<b>Bibb County</b>	16,494	20,854	22,915	22,698	6,204	38%
<b>Alabama</b>	4,041,281	4,447,032	4,779,736	4,841,486	800,205	20%
<i>Source: U.S. Bureau of Census; easidemographics.com; Calculations by LHA</i>						

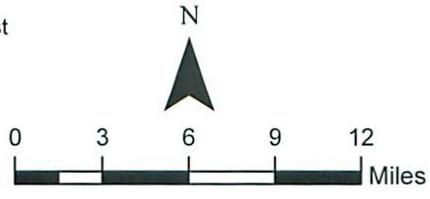
**MAP 2-1: BIBB COUNTY GENERAL LOCATION**

**2010 Census Tracts  
Bibb County**



**Legend**

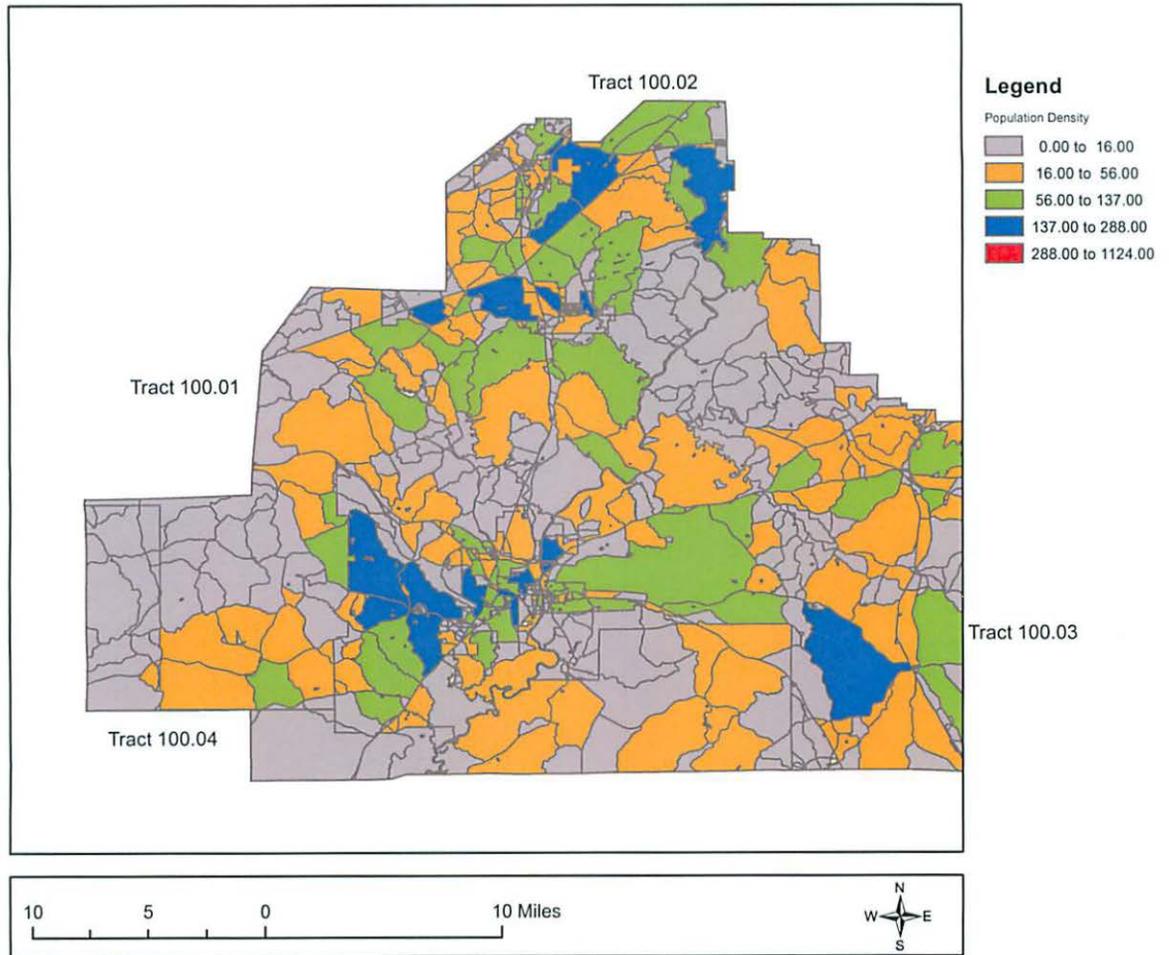
-  Wildlife Management Area
-  Talledega National Forest
-  Census Tract 100.01
-  Census Tract 100.02
-  Census Tract 100.03
-  Census Tract 100.04



This map was produced by the West Alabama Regional Commission (205 333-2990)  
 Sources: US Census Bureau Census 2010, Tiger line files and ALDOT Hwy classification map 2009.  
 This map is not a survey product and should not be used for conveyance.  
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MAP 2-2: BIBB COUNTY POPULATION DENSITY



(c) 1997-2011 FEMA



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## **General Geology**

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

Geologic units in Bibb County help determine the risks and vulnerabilities of earthquakes, landslides, sinkholes, and land subsidence events and their occurrences in the county. The county's geologic units are shown on **Map 2-3: Geology in Alabama** and include the following:

Talladega Group; Lay Dam Formation (Silurian-Devonian) at surface, covers < 0.1% of the area – is interbedded dark-green phyllite, medium-gray to light-brown and black metasilstone, dark-green feldspathic metagraywacke, and light-gray and dark-gray medium to coarse-grained arkosic quartzite and metaconglomerate; graphitic phyllite common in upper part. Lithology: phyllite; metasedimentary rock; quartzite; slate; meta-conglomerate.

Red Mountain Formation (Silurian) at surface, covers < 0.1% of the area – is 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. Lithology: sandstone; shale; siltstone; limestone

Pottsville Formation (upper part) (Pennsylvanian) at surface, covers 15% of the area - is interbedded dark-gray shale, siltstone, medium-gray sandstone, and coal in cyclic sequences. The members present in the Cahaba synclinorium in descending order include: the Straven Conglomerate Member, Rocky Ridge Sandstone Member, and Chestnut Sandstone Member. The members present in the Coosa synclinorium in descending order include: Straight Ridge Sandstone Member and Wolf Ridge Sandstone Member. Lithology: shale; siltstone; sandstone; coal.

Pottsville Formation (lower part) (Pennsylvanian) at surface, covers 0.7% of the area - is light-gray thick-bedded to massive pebbly quartzose sandstone, containing varying amounts of interbedded dark-gray shale, siltstone, and thin discontinuous coal. In both the Cahaba and Coosa synclinoria the members in descending order include: the Pine Sandstone Member and the Shades Sandstone Member. Top of unit is mapped at top of Pine Sandstone Member. Lithology: sandstone; shale; siltstone; coal.

Parkwood Formation and Floyd Shale undifferentiated (Pennsylvanian-Mississippian) at surface, covers 0.3% of the area – is 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; beds of partly bioclastic, partly argillaceous limestone. Lithology: shale; sandstone; mudstone; limestone; chert; mixed clastic/coal; clay or mud.

Parkwood Formation (Pennsylvanian-Mississippian) at surface, covers 1.0% of the area – is 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. Lithology: shale; sandstone; mudstone; limestone; clay or mud; mixed clastic/coal.

Newala Limestone (Ordovician) at surface, covers 0.9% of the area – is light to dark-gray thick-bedded micritic and peloidal limestone and minor dolomite. Lithology: limestone; dolostone (dolomite).

Longview Limestone (Ordovician) at surface, covers 0.7% of the area - is light to medium-gray thick-bedded cherty limestone and dolomite, locally sandy. Lithology: limestone; dolostone (dolomite).

Chepultepec and Copper Ridge Dolomites undifferentiated (Ordovician-Cambrian) at surface, covers 5% of the area – is light-gray to dark-bluish-gray thick-bedded dolomite and interbedded light-gray limestone; includes abundant chert. Lithology: dolostone (dolomite); limestone; chert.

Chickamauga Limestone (Ordovician) at surface, covers 0.2% of the area – is medium to dark-gray thick to thin-bedded partly argillaceous, locally fossiliferous limestone. Restricted to the western part of the Valley and Ridge province and Murphrees Valley and Wills Valley anticlines. 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. Lithology: limestone; conglomerate; chert; shale; dolostone (dolomite); quartzite.

Athens Shale and Lenoir Limestone undifferentiated (Ordovician) at surface, covers 0.8% of the area – Athens Shale is black graptolitic shale, locally contains interbedded dark-gray limestone. Lenoir Limestone is dark-gray medium to thick-bedded argillaceous limestone; locally contains an interval of fenestral mudstone at the base (Mosheim Limestone Member). Lithology: shale; limestone; mudstone.

Tuscumbia Limestone and Fort Payne Chert undivided (Mississippian) at surface, covers 0.2% of the area - Tuscumbia Limestone is light-gray partly oolitic limestone; very coarse bioclastic crinoidal limestone common; light-gray chert nodules and concretions locally abundant. Fort Payne Chert is very light to light-olive-gray, thin to thick-bedded fine to coarse-grained bioclastic (abundant pelmatozoans) limestone containing abundant nodules, lenses and beds of light to dark-grey chert. 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. Lenses of dark-gray siliceous shale occur locally at the base of the Fort Payne in Wills Valley. Commonly present below the Fort Payne is a light-olive-gray claystone or shale (Maury Formation) which is mapped with the Fort Payne. The Tuscumbia and Fort Payne are undifferentiated in Murphrees and Wills Valleys. Lithology: limestone; chert; siltstone; shale; claystone.

Floyd Shale (Mississippian) at surface, covers 0.3% of the area – is dark-gray shale, sideritic in part; thin beds of sandstone, limestone and chert are locally present; beds of partly bioclastic. Lithology: shale; sandstone; limestone; chert.

Kahatchee Mountain Group; Kalona Quartzite Member of Wash Creek Slate (Precambrian-Cambrian) at surface, covers < 0.1% of the area - Kalona Quartzite Member of Wash Creek Slate is light-brown to light-gray coarse-grained, feldspathic quartzite and metaconglomerate in lower part of Wash Creek Slate. Lithology: quartzite; meta-conglomerate. Kahatchee Mountain Group; Wash Creek Slate (Precambrian-Cambrian) at surface, covers < 0.1% of the area – is grayish-green to black micaceous, partly carbonaceous to graphitic slate and metasiltstone containing interbedded light-gray to light-brown fine to coarse-grained metasandstone. Lithology: slate; metasedimentary rock.

Tuscaloosa Group; Gordo Formation (Cretaceous) at surface, covers 4% of the area - Gordo Formation - (Tuscaloosa Group) is massive beds of cross-bedded sand, gravelly sand, and lenticular beds of locally carbonaceous partly mottled moderate-red and pale-red-purple clay; lower part is predominantly a gravelly sand consisting chiefly of chert and quartz pebbles. Not mapped east of the Tallapoosa River. Lithology: sand; clay or mud; gravel; chert.

Eutaw Formation (Cretaceous) at surface, covers 0.4% of the area – is light-greenish-gray to yellowish-gray cross-bedded, well-sorted, micaceous, fine to medium quartz sand that is fossiliferous and glauconitic in part and contains beds of greenish-gray micaceous, silty clay and medium-dark-gray carbonaceous clay. Light-gray glauconitic fossiliferous sand, thin beds of sandstone, and massive accumulations of fossil oyster shells occur locally in the upper part of the formation in Western AL (Tombigbee Sand Member). Lithology: sand; clay or mud; sandstone.

Tuscaloosa Group; Coker Formation (Cretaceous) at surface, covers 3% of the area – is light-colored micaceous very fine to medium sand, cross-bedded sand, varicolored micaceous clay, and a few thin gravel beds containing quartz and chert pebbles. Beds of thinly laminated finely glauconitic very fine to fine sand, silt and dark-gray carbonaceous clay (Eoline Member) occur locally in the lower part in Western AL. Locally quartz and chert gravels at the base of the formation range in size from very fine pebbles to large cobbles. Not mapped east of the Tallapoosa River. Lithology: sand; clay or mud; silt; gravel; chert.

Rome Formation (Cambrian) at surface, covers 0.5% of the area – is variegated thinly interbedded mudstone, shale, siltstone, and sandstone; limestone and dolomite occur locally. Quartzose sandstone commonly present near top of formation. Lithology: mudstone; shale; siltstone; sandstone; limestone; dolostone (dolomite).

Ketona Dolomite (Cambrian) at surface, covers 0.6% of the area – is light to medium-gray thick-bedded coarsely crystalline dolomite. Lithology: dolostone (dolomite).

Copper Ridge Dolomite (Cambrian) at surface, covers 0.8% of the area - is light-gray finely to coarsely crystalline, thick-bedded siliceous dolomite; characterized by abundant stromatolitic chert. Lithology: dolostone (dolomite); chert.

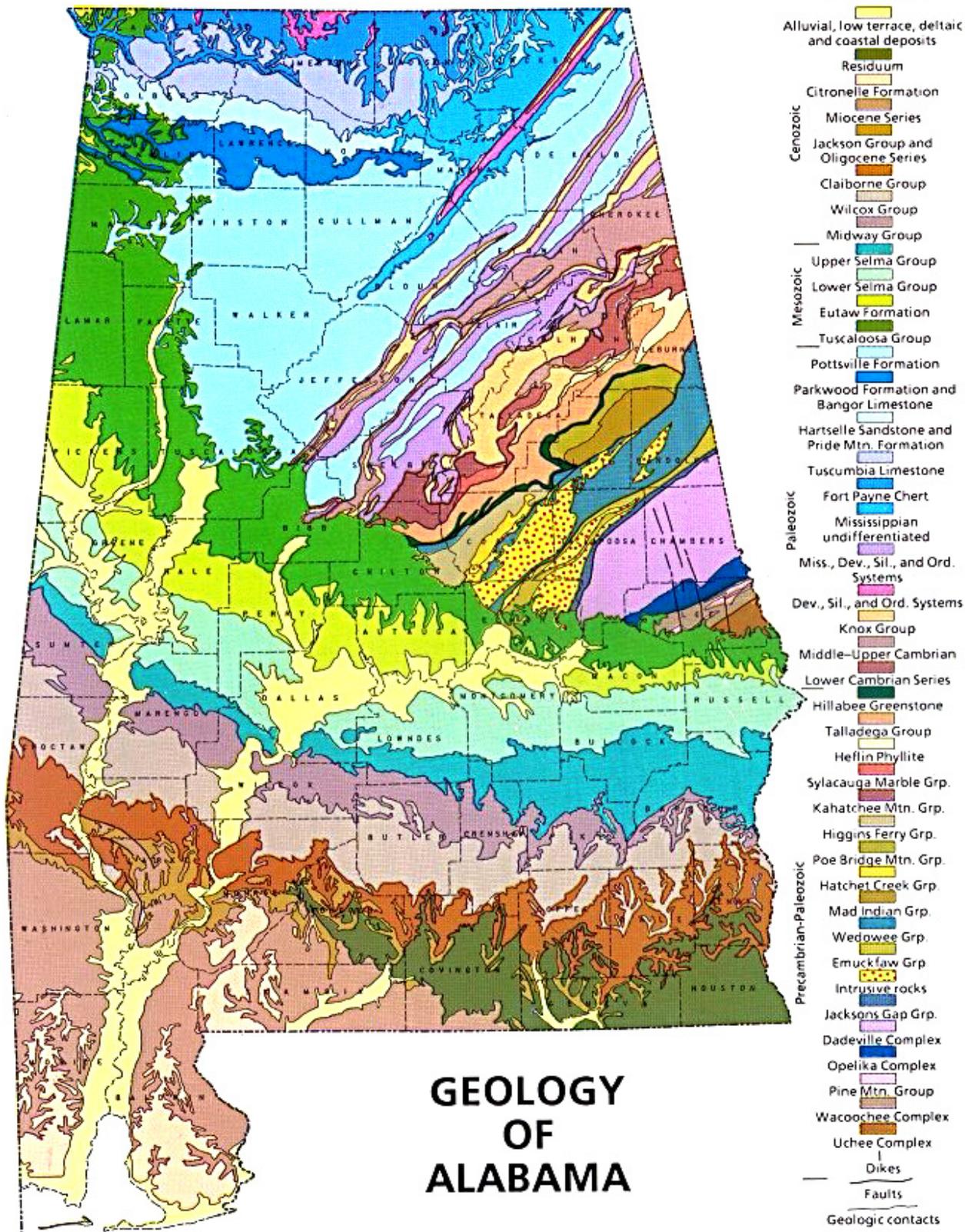
Conasauga Formation (Cambrian) at surface, covers 0.4% of the area – is medium-bluish-gray fine-grained, thin-bedded argillaceous limestone and interbedded dark-gray shale in varying proportions. Lithology: limestone; shale.

Brierfield Dolomite (Cambrian) at surface, covers 2% of the area – is medium to dark-bluish-gray thick-bedded siliceous dolomite; characterized by locally abundant chert with irregular cavities. Lithology: dolostone (dolomite); chert.

Bibb Dolomite (Cambrian) at surface, covers 0.5% of the area – is dark-gray thick-bedded siliceous dolomite; characterized by locally abundant chert containing irregular cavities. Lithology: dolostone (dolomite); chert.

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**Map 2-3: Geology of Alabama  
2015**



Source: The University of Alabama - Geology Department

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### Section Three: Risk Assessment

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

The county's Hazard Probability Assessment Summary is shown in **Table 3-1**. 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 Five of the plan.

**Table 3-2** 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. During the 2009 plan update and for subsequent plan updates, tsunami/volcano/ typhoon was removed from the plan based on committee consensus that the hazard(s) did not pose a threat to the county or its jurisdictions. Due to the nature of all man-made hazards being possible, however unlikely, each jurisdiction identified them as posing a threat.

**Table 3-3** 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 3-4** provides the mitigation actions prioritization by jurisdiction. Each jurisdiction was responsible for prioritizing their proposed mitigation actions for the next five years. The jurisdictions took into consideration the impacts of hazards they had experienced over the past five years, as well as the mitigation actions available to help protect their jurisdictions and citizens.

**Tables 3-5** 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 Five. 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 strength 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.

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;  $13 \div 6 = >100\%$

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 3-1: Bibb County  
Hazard Probability of Future Occurrence**

<b>Natural Hazards</b>	<b>Number of Occurrences Between 2003-2013</b>	<b>Probability of Future Occurrence</b>	<b>Area Affected</b>
<b>Thunderstorm</b>	38	>100%	Countywide
<b>Lightning</b>	0	Unknown	Countywide
<b>Hail</b>	27	>100%	Countywide
<b>Tornado</b>	11	>100%	Countywide
<b>Flood/Flash Flood</b>	10	>100%	Countywide
<b>Droughts/Extreme Heat</b>	27	>100%	Countywide
<b>Winter Storm/Frost Freeze/Heavy Snow/ Ice Storm/Winter Weather/Extreme Cold</b>	7	70%	Countywide
<b>Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind</b>	6	60%	Countywide
<b>Sinkhole/Expansive Soil</b>	0	Unknown	Countywide
<b>Landslide</b>	0	Unknown	Countywide
<b>Earthquake</b>	0	Unknown	Countywide
<b>Dam/Levee Failure</b>	0	Unknown	Unincorporated Areas
<b>Wildfire</b> (3-year study period – 1,095 days)	109	>100%	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 3-2: Bibb County  
Hazard Identification by Jurisdiction**

<b>Natural Hazards</b>	<b>Brent</b>	<b>Centreville</b>	<b>Vance</b>	<b>West Blocton</b>	<b>Woodstock</b>	<b>Unincorporated County</b>
<b>Thunderstorm</b>	X	X	X	X	X	X
<b>Lightning</b>	X	X	X	X	X	X
<b>Hail</b>	X	X	X	X	X	X
<b>Tornado</b>	X	X	X	X	X	X
<b>Flood/Flash Flood</b>	X	X	X	X	X	X
<b>Drought/Extreme Heat</b>	X	X	X	X	X	X
<b>Winter Storm/Frost Freeze/ Heavy Snow/ Ice Storm/ Winter Weather/Extreme Cold</b>	X	X	X	X	X	X
<b>Hurricane/Tropical Storm/ Tropical Depression/High Wind/Strong Wind</b>	X	X	X	X	X	X
<b>Sinkhole/Expansive Soil</b>	X	X	X	X	N/A	X
<b>Landslide</b>	X	X	X	X	N/A	X
<b>Earthquake</b>	X	X	X	X	X	X
<b>Wildfire</b>	X	X	X	X	X	X
<b>Dam/Levee Failure</b>	N/A	N/A	N/A	N/A	N/A	X
<b>Man-made Hazards</b>						
<b>Hazardous Material Release</b>	X	X	X	X	X	X
<b>Arson/Incendiary Attack</b>	X	X	X	X	X	X
<b>Armed Attack</b>	X	X	X	X	X	X
<b>Conventional Bomb</b>	X	X	X	X	X	X
<b>Chemical Agent</b>	X	X	X	X	X	X
<b>Cyberterrorism</b>	X	X	X	X	X	X
<b>Agriterrorism</b>	X	X	X	X	X	X
<b>Biological Agent</b>	X	X	X	X	X	X
<b>Radiological Agent</b>	X	X	X	X	X	X
<b>Nuclear Bomb</b>	X	X	X	X	X	X

*Source: Participating Jurisdictions*

Key: X = Affects the jurisdiction; N/A = Not a threat to the jurisdiction

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**Table 3-3: Bibb County  
Prioritized Occurrence Threat by Jurisdiction Based on Past Events**

<b>Natural Hazards</b>	<b>Brent</b>	<b>Centreville</b>	<b>Vance</b>	<b>West Blocton</b>	<b>Woodstock</b>	<b>Unincorporated County</b>
<b>Thunderstorm</b>	4	3	5	3	5	2
<b>Lightning</b>	5	7	7	8	7	10
<b>Hail</b>	4	5	6	6	6	3
<b>Tornado</b>	5	6	7	8	7	4
<b>Flood/Flash Flood</b>	4	5	4	7	5	5
<b>Drought/Extreme Heat</b>	2	2	2	2	2	3
<b>Winter Storm/Frost Freeze/ Heavy Snow/ Ice Storm/ Winter Weather/Extreme Cold</b>	3	4	3	4	3	6
<b>Hurricane/Tropical Storm/ Tropical Depression/High Wind/Strong Wind</b>	4	5	4	5	4	7
<b>Sinkhole/Expansive Soil</b>	5	7	7	8	7	9
<b>Landslide</b>	5	7	7	8	7	8
<b>Earthquake</b>	5	7	7	8	7	9
<b>Wildfire</b> (3-year study period)	1	1	1	1	1	1
<b>Dam/Levee Failure</b>	5	7	7	8	7	10
<b>Man-made Hazards</b>						
<b>Hazardous Material Release</b>	1	9	2	6	3	1
<b>Arson/Incendiary Attack</b>	6	1	4	1	4	2
<b>Armed Attack</b>	7	2	9	4	1	3
<b>Conventional Bomb</b>	2	5	5	5	2	4
<b>Chemical Agent</b>	3	3	3	2	7	5
<b>Cyber Terrorism</b>	5	10	1	7	6	6
<b>Agriterrorism</b>	8	8	8	8	9	7
<b>Biological Agent</b>	4	4	6	3	8	8
<b>Radiological Agent</b>	9	6	7	9	5	9
<b>Nuclear Bomb</b>	10	7	10	10	10	10

*Sources: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey*

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. These prioritized threats may or may not be the same as the mitigation actions prioritization.

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**Table 3-4: Bibb County  
Mitigation Actions Prioritization**

<b>Natural Hazards</b>	<b>Brent</b>	<b>Centreville</b>	<b>Vance</b>	<b>West Blocton</b>	<b>Woodstock</b>	<b>Unincorporated County</b>
<b>Thunderstorm</b>	1	2	1	2	1	1
<b>Lightning</b>	4	3	4	1	2	2
<b>Hail</b>	6	4	5	8	7	4
<b>Tornado</b>	2	1	3	4	3	3
<b>Flood/Flash Flood</b>	7	5	2	6	8	5
<b>Drought/Extreme Heat</b>	10	8	7	7	4	7
<b>Winter Storm/Frost Freeze/ Heavy Snow/ Ice Storm/ Winter Weather/Extreme Cold</b>	8	7	9	5	9	8
<b>Hurricane/Tropical Storm/ Tropical Depression/High Wind/Strong Wind</b>	3	6	8	12	6	13
<b>Sinkhole/Expansive Soil</b>	9	9	12	9	N/A	9
<b>Landslide</b>	12	10	10	11	N/A	12
<b>Earthquake</b>	11	12	11	10	10	10
<b>Wildfire</b>	5	11	6	3	5	6
<b>Dam/Levee Failure</b>	N/A	N/A	N/A	N/A	N/A	11
<b>Man-made Hazards</b>						
<b>Hazardous Material Release</b>	1	9	2	6	3	1
<b>Arson/Incendiary Attack</b>	6	1	4	1	4	2
<b>Armed Attack</b>	7	2	9	4	1	3
<b>Conventional Bomb</b>	2	5	5	5	2	4
<b>Chemical Agent</b>	3	3	3	2	7	5
<b>Cyberterrorism</b>	5	10	1	7	6	6
<b>Agriterrorism</b>	8	8	8	8	9	7
<b>Biological Agent</b>	4	4	6	3	8	8
<b>Radiological Agent</b>	9	6	7	9	5	9
<b>Nuclear Bomb</b>	10	7	10	10	10	10

*Source: Participating Jurisdictions*

*Hazards are prioritized by jurisdictions based on past hazard experiences, vulnerabilities, and available mitigation actions with the hazard having highest priority of mitigation assigned number one. The mitigation actions prioritization may or may not be the same as the prioritized occurrence threats.*

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**TABLE 3-5: BIBB COUNTY HAZARD EVENTS**

**38 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
<a href="#">LAWLEY</a>	BIBB CO.	AL	03/05/2003	19:44	CST	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	05/03/2003	06:50	CST	Thunderstorm Wind	55 kts. EG	0	0	75.00K	0.00K
<a href="#">BRIERFIELD</a>	BIBB CO.	AL	05/31/2004	03:47	CST	Thunderstorm Wind	60 kts. EG	0	0	70.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	06/22/2004	16:20	CST	Thunderstorm Wind	60 kts. EG	0	0	12.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	01/13/2005	10:15	CST	Thunderstorm Wind	50 kts. EG	0	0	4.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	04/30/2005	03:51	CST	Thunderstorm Wind	52 kts. EG	0	0	4.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	07/04/2005	13:47	CST	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
<a href="#">LAWLEY</a>	BIBB CO.	AL	06/22/2006	19:45	CST	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
<a href="#">MARVEL</a>	BIBB CO.	AL	11/30/2006	22:28	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	11/30/2006	22:28	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
<a href="#">BIBB CO ARPT</a>	BIBB CO.	AL	06/24/2007	14:11	CST-6	Thunderstorm Wind	30 kts. EG	0	0	20.00K	0.00K
<a href="#">CENTREVILLE FOX ARPT</a>	BIBB CO.	AL	02/17/2008	12:00	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	04/04/2008	14:45	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
<a href="#">FAIRDALE</a>	BIBB CO.	AL	05/08/2008	15:30	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
<a href="#">SIX MILE</a>	BIBB CO.	AL	01/06/2009	15:56	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
<a href="#">ASHBY</a>	BIBB CO.	AL	02/18/2009	19:35	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
<a href="#">LAWLEY</a>	BIBB CO.	AL	05/03/2009	13:15	CST-6	Thunderstorm Wind	60 kts. EG	0	0	10.00K	0.00K
<a href="#">RIVER BEND</a>	BIBB CO.	AL	04/24/2010	22:45	CST-6	Thunderstorm Wind	70 kts. EG	0	0	20.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	06/25/2010	14:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	1.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	08/27/2010	16:55	CST-6	Thunderstorm Wind	45 kts. EG	0	0	4.00K	0.00K

<a href="#">BRENT</a>	BIBB CO.	AL	04/11/2011	18:22	CST-6	Thunderstorm Wind	50 kts. EG	0	0	4.00K	0.00K
<a href="#">FAIRDALE</a>	BIBB CO.	AL	04/11/2011	18:25	CST-6	Thunderstorm Wind	96 kts. MG	0	0	10.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	04/11/2011	18:30	CST-6	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
<a href="#">ASHBY</a>	BIBB CO.	AL	04/11/2011	18:35	CST-6	Thunderstorm Wind	50 kts. EG	0	1	0.00K	0.00K
<a href="#">BRIERFIELD</a>	BIBB CO.	AL	04/27/2011	04:49	CST-6	Thunderstorm Wind	60 kts. EG	0	0	15.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	06/10/2011	14:05	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
<a href="#">HARMON</a>	BIBB CO.	AL	06/10/2011	15:21	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	07/04/2011	14:24	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
<a href="#">GREENPOND</a>	BIBB CO.	AL	03/02/2012	18:46	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
<a href="#">GILES</a>	BIBB CO.	AL	06/11/2012	19:06	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
<a href="#">RANDOLPH</a>	BIBB CO.	AL	07/01/2012	15:50	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
<a href="#">LAWLEY</a>	BIBB CO.	AL	07/05/2012	18:22	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
<a href="#">LUCILLE</a>	BIBB CO.	AL	08/18/2012	05:43	CST-6	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	08/18/2012	05:47	CST-6	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	03/05/2013	13:25	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
<a href="#">BRIERFIELD</a>	BIBB CO.	AL	03/18/2013	15:05	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	03/23/2013	21:47	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
<a href="#">RANDOLPH</a>	BIBB CO.	AL	03/23/2013	22:01	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
<b>Totals:</b>								0	1	302.00K	0.00K

**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.

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

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">RANDOLPH</a>	BIBB CO.	AL	01/22/2003	04:45	CST	Hail	1.75 in.	0	0	3.00K	0.00K
<a href="#">PONDVILLE</a>	BIBB CO.	AL	04/25/2003	12:50	CST	Hail	4.50 in.	0	0	250.00K	0.00K
<a href="#">RANDOLPH</a>	BIBB CO.	AL	04/25/2003	14:05	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	05/02/2003	16:29	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	04/07/2004	19:10	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	04/10/2004	23:32	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">WOODSTOCK</a>	BIBB CO.	AL	07/25/2004	14:21	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">EOLINE</a>	BIBB CO.	AL	03/30/2005	21:39	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">EOLINE</a>	BIBB CO.	AL	03/31/2005	03:11	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	04/22/2005	12:25	CST	Hail	0.75 in.	0	0	1.00K	0.00K
<a href="#">BRIERFIELD</a>	BIBB CO.	AL	11/28/2005	15:50	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">CENTREVILLE</a>	BIBB CO.	AL	12/04/2005	13:08	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	04/08/2006	01:23	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	07/22/2006	13:17	CST	Hail	0.88 in.	0	0	0.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	02/13/2007	17:30	CST-6	Hail	1.75 in.	0	0	5.00K	0.00K
<a href="#">MERTZ</a>	BIBB CO.	AL	04/11/2007	13:56	CST-6	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	04/11/2007	14:25	CST-6	Hail	1.75 in.	0	0	0.00K	0.00K
<a href="#">CENTREVILLE</a>	BIBB CO.	AL	04/11/2007	14:37	CST-6	Hail	1.75 in.	0	0	0.00K	0.00K
<a href="#">FAIRDALE</a>	BIBB CO.	AL	05/08/2008	15:30	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
<a href="#">GILES</a>	BIBB CO.	AL	05/03/2009	11:57	CST-6	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	03/27/2011	06:37	CST-6	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	14:37	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
<a href="#">BLOCTON JCT</a>	BIBB CO.	AL	03/02/2012	18:42	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
<a href="#">RANDOLPH</a>	BIBB CO.	AL	07/01/2012	15:49	CST-6	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	03/18/2013	14:56	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
<a href="#">FAIRDALE</a>	BIBB CO.	AL	03/23/2013	21:42	CST-6	Hail	1.75 in.	0	0	0.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	03/23/2013	21:45	CST-6	Hail	1.75 in.	0	0	0.00K	0.00K
<b>Totals:</b>								0	0	259.00K	0.00K

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

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">HARMON</a>	BIBB CO.	AL	02/13/2007	17:19	CST-6	Tornado	EF1	0	0	5.00K	0.00K
<a href="#">SIX MILE</a>	BIBB CO.	AL	02/13/2007	17:48	CST-6	Tornado	EF0	0	0	10.00K	0.00K
<a href="#">RANDOLPH</a>	BIBB CO.	AL	04/11/2007	14:47	CST-6	Tornado	EF1	0	0	10.00K	0.00K
<a href="#">HARRISBURG</a>	BIBB CO.	AL	10/22/2007	23:01	CST-6	Tornado	EF1	0	0	12.00K	0.00K
<a href="#">MERTZ</a>	BIBB CO.	AL	04/15/2011	15:00	CST-6	Tornado	EF1	0	0	88.75K	0.00K
<a href="#">MERTZ</a>	BIBB CO.	AL	04/27/2011	17:20	CST-6	Tornado	EF3	1	10	14.000M	0.00K
<a href="#">MERTZ</a>	BIBB CO.	AL	04/27/2011	17:57	CST-6	Tornado	EF1	0	0	275.00K	0.00K
<a href="#">GARNSEY</a>	BIBB CO.	AL	04/27/2011	18:32	CST-6	Tornado	EF1	0	0	9.00K	0.00K
<a href="#">CENTREVILLE FOX ARPT</a>	BIBB CO.	AL	12/22/2011	12:56	CST-6	Tornado	EF0	0	0	3.00K	0.00K
<a href="#">LAWLEY</a>	BIBB CO.	AL	12/22/2011	13:25	CST-6	Tornado	EF0	0	0	15.00K	0.00K
<a href="#">HARRISBURG</a>	BIBB CO.	AL	04/11/2013	15:18	CST-6	Tornado	EF1	0	0	0.00K	0.00K
<b>Totals:</b>								1	10	14.428M	0.00K

**10 Flood/Flash Flood Events – 01/01/2003 thru 12/31/2013 (4018 days)**  
*(Source: NOAA NCDC Storm Events Database)*

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/18/2003	14:30	CST	Flood		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2005	00:00	CST	Flood		0	0	0.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	09/16/2004	09:56	CST	Flash Flood		0	0	2.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	07/10/2005	19:30	CST	Flash Flood		0	0	4.00K	0.00K
<a href="#">FAIRDALE</a>	BIBB CO.	AL	09/19/2009	12:35	CST-6	Flash Flood		0	0	0.00K	0.00K
<a href="#">FAIRDALE</a>	BIBB CO.	AL	09/20/2009	23:00	CST-6	Flash Flood		0	0	75.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	09/21/2009	09:43	CST-6	Flash Flood		0	0	100.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	09/21/2009	09:43	CST-6	Flash Flood		0	0	1.00K	0.00K
<a href="#">CENTREVILLE FOX ARPT</a>	BIBB CO.	AL	03/09/2011	05:35	CST-6	Flash Flood		0	0	0.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	09/04/2012	07:00	CST-6	Flash Flood		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	182.00K	0.00K

**27 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
<b>Totals:</b>								0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/18/2006	07:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/22/2008	06:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/02/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	10/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	12/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/03/2012	00:00	CST-6	Drought		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**7 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)*

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/01/2009	02:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/09/2011	13:05	CST-6	Ice Storm		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/19/2008	06:00	CST-6	Winter Weather		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	02/12/2010	11:00	CST-6	Winter Weather		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**6 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)*

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	50.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/29/2005	17:00	CST	Tropical Storm		0	0	210.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/16/2004	07:00	CST	High Wind	56 kts. EG	0	0	350.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/11/2005	16:00	CST	Strong Wind	40 kts. EG	0	0	14.00K	0.00K
<b>Totals:</b>								0	0	626.00K	0.00K

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

*(Source: Local Input)*

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">CENTREVILLE</a>	BIBB CO.	AL	06/27/2005	Sinkhole		0	0	0.00K	0.00K
<b>Totals:</b>						0	0	0.00K	0.00K

*No sinkhole events were reported during 01/01/2003 thru 12/31/2013 by the NOAA NCDC Storm Events Database/U.S. Geological Survey*

**2 Landslide Events** – 01/01/2003 thru 12/31/2013 (4018 days)  
(Source: Local Input)

Location	County/Zone	St.	Date	Type	Mag	Dth	Inj	PrD	CrD
<a href="#">BIBB</a> (Co. Rd. 20)	COUNTY	AL	2005	Landslide		0	0	50.00K	0.00K
<a href="#">BIBB</a> (Co. Rd. 16)	COUNTY	AL	2005	Landslide		0	0	100.00K	0.00K
<b>Totals:</b>						0	0	150.00K	0.00K

*No landslide events were reported during 01/01/2003 thru 12/31/2013 by the NOAA NCDC Storm Events Database/U.S. Geological Survey*

**2 Earthquake Events** – 01/01/2003 thru 12/31/2013 (4018 days)  
(Source: Alabama Geological Survey/USGS Database/  
[www.homefacts.com/earthquakes/Alabama.html](http://www.homefacts.com/earthquakes/Alabama.html))

Location	St.	Date	Time	Type	Depth km	Mag	Dth	Inj	PrD	CrD
<a href="#">LAWLEY</a> 8.87 miles from Lawley	AL	4/21/2009	10:25 a.m.	Earthquake	12.7	3.3	0	0	0.00K	0.00K
<a href="#">LAWLEY</a> 9.47 miles from Lawley	AL	4/22/2009	5:28 a.m.	Earthquake	8.2	2.9	0	0	0.00K	0.00K

*No earthquake events were reported during 01/01/2003 thru 12/31/2013 by the NOAA NCDC Storm Events Database/U.S. Geological Survey*

**109 Wildfire Events** – 1/1/2010 thru 12/31/2013  
(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
Bibb	109	36	1280.15	427	12

**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.

**Man-made Hazard Events, January 1, 1997-December 31, 2006**  
(Sources: Local Input, US DOT Hazardous Material Information System)

<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Mag</b>	<b>Dth</b>	<b>Inj</b>	<b>PrD</b>	<b>CrD</b>	<b>Total Cost</b>	<b>Comments</b>
Brierfield, 150 Lilys Way	2/3/2006	Arson	Destroyed						Ashby Baptist
Antioch, 185 Church Ln	2/3/2006	Arson	Minor						Antioch
Lawley, 11262 Deer Creek	2/3/2006	Arson	Destroyed						Rehobeth
1094 Oakley Station Rd	2/3/2006	Arson	Minor						Old Union
Antioch, 397 Church Lane	2/3/2006	Arson	Destroyed						Pleasant
Brierfield, Hwy 25	7/28/2000	Material Spill	100 gal						Rail
<b>TOTALS</b>		<b>6</b>		<b>0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,749,715</b>	

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## Hazard Profiles

### I. Thunderstorms

A thunderstorm is a convective cloud that often produces heavy rain, wind gusts, thunder, lightning, and hail. Bibb 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.

Primary Effects from thunderstorms in Bibb County would include:

1. High Winds, Straight-line Winds
2. Lightning
3. Flooding
4. Hail
5. Spawning Tornados

Hazardous results from significant thunderstorms in Bibb 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 tornados that destroy anything in its path, resulting in loss of power, shelter, and potential loss of life.

The National Weather Service reported 38 severe thunderstorms during the ten-year study period of 2003 - 2013. An estimated \$302,000 in property damage and no crop damage resulted from these storms. One injury and no deaths were reported during these thunderstorm events. **Table 3-5** shows the historical occurrences of severe thunderstorms during the study period. Each jurisdiction is at risk for thunderstorm events. Of the storms reported, two affected

the entire county, 21 occurred in an unincorporated county area, and the remaining 15 affected only specific municipalities.

On April 11, 2011, a cold front associated with a strong upper level storm system, a squall line moved across Central Alabama. This line of thunderstorms produced widespread wind damage, knocked down numerous trees and power lines and damaged many homes and buildings. A tree fell on a Brierfield fire truck along Highway 25. One fireman sustained minor injuries. The extent of damage to the fire truck is unknown. No property or crop damages were reported.

On May 3, 2003, numerous trees were blown down in and around Brent. Three mobile homes were severely damaged by falling trees. One of these mobile homes was destroyed. One tree landed on a business. No injuries were reported. Property damages of \$75,000 resulted.

Bibb County experienced 38 thunderstorm events in a 10 year period resulting in a greater than 100% (3.80) probability that a thunderstorm event will occur on an annual basis. The total amount of damages for the 38 thunderstorm events was \$302,000 with 26 thunderstorm events causing damage resulting in an estimated \$11,615 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 Bibb County due to a thunderstorm event; the ranking is minor to major.

## **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. Lightning is a giant spark of electricity in the atmosphere or between the atmosphere and the ground. In the initial stages of development, air acts as an insulator between the positive and negative charges in the cloud and between the cloud and the ground; however, when the differences in charges becomes too great, this insulating capacity of the air breaks down and there is a rapid discharge of electricity that we know as lightning. Lightning can occur between opposite charges within the thunderstorm cloud (Intra Cloud Lightning) or between opposite charges in the cloud and on the ground (Cloud-To-Ground Lightning). Cloud-to-ground lightning is divided two different types of flashes depending on the charge in the cloud where the lightning originates. Thunder is the sound made by a flash of lightning. As lightning passes through the air it heats the air quickly. This causes the air to expand rapidly and creates the sound wave we hear as thunder. Normally, you can hear thunder about 10 miles from a lightning strike. Since lightning can strike outward 10 miles from a thunderstorm, if you hear thunder, you are likely within striking distance from the storm. 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 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.

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. Lightning strikes can cause power outages, fires, electrocution, disruptions to communication systems, personal injuries, and deaths. **Table 3-5** shows the historical occurrences of lightning during the study period.

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). During the years 2004-2013, Alabama experienced 11 deaths due to lightning (NOAA, December 18, 2014). The months of June through September are the deadliest as far as lightning is concerned. In an average year, three people will be struck and killed by lightning in Alabama and at least six will be injured. (*Source: National Weather Service/Lightning Safety Accessed 11/16/14; NOAA, December 18, 2014*).

The NOAA NCDC reported no lightning events during the ten-year study period of 2003-2013. Since no lightning events were reported, no property damages, crop damages, injuries, or deaths were reported as results of lightning events. Although the NOAA NCDC reported no lightning events during the ten-year study period of 2003-2013, the entire planning area of the county is equally at risk for a lightning event. Due to no county experiences, it is not possible to determine a more factual probability of lightning occurrences for the Bibb County planning area. Each jurisdiction is equally at risk for lightning events.

Bibb County experienced 0 lightning events in a 10 year period resulting in a 0% (0.00) or unknown probability that a lightning event will occur on an annual basis; however, it is likely a lightning event will occur. The total amount of damages for the 0 lightning events was \$0.00 with 0 lightning events causing damage resulting in an estimated \$0 (unknown) of expected annual damages from future events. The referenced lightning 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 Bibb County due to a lightning event; the ranking is minimum to minor.

Primary effects from lightning in Bibb County would include:

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

Hazardous results from significant lightning in Bibb 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. Electrocutation 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

Hail is frequently associated with severe thunderstorms. 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, 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).

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 3-6**. Note that penny size (3/4 inches in diameter) or larger hail is considered severe.

**Table 3-6: Estimating Hail Size**

Size	Inches in Diameter
Pea	¼ inch
Marble/mothball	½ inch
Dime/Penny	¾ inch
Nickel	7/8 inch
Quarter	1 inch
Ping-Pong Ball	1 ½ inch
Golf Ball	1 ¾ inch
Tennis Ball	2 ½ inch
Baseball	2 ¾ inch
Tea Cup	3 inches
Grapefruit	4 inches
Softball	4 ½ inches

*Source: NWS, January 10, 2003*

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.

The NOAA NCDC reported 27 hail events during the ten-year study period of 2003-2013. An estimated \$259,000 in property damage resulted from these events. No crop damage, injuries, or deaths were reported during these hail events. **Table 3-5** shows the historical occurrences of hail events during the study period. Each jurisdiction is at risk for hail. Of the events reported, one affected the entire county, 11 occurred in an unincorporated county area, and the remaining 15 affected only specific municipalities.

The most significant event during the study period occurred in the unincorporated area of Pondville on April 25, 2003 when hail up to softball size (4.5 inches) fell, resulting in \$250,000 in property damage. On this day, several steady-state, rotating thunderstorms, referred to as supercells, cut swaths of damage through Alabama. Numerous homes and automobiles were damaged by the large hail. Damaging winds also accompanied the storm. Many trees were snapped off, uprooted, or blown down along the path. Several homes were damaged from the falling trees. The supercell entered Bibb County and continued strengthening. A swath of large hail fell along the entire path. Several locations reported hail covering the ground up to a foot deep. The largest hail was reported from South of Brent to the Randolph and Lawley Areas where the hail ranged from ping pong ball to softball size. Many automobiles and homes were damaged. Funnel clouds were reported with the storm and many individuals reported that a roaring sound accompanied the storm. (*Source: NCDC NOAA*)

Bibb County experienced 27 hail events in a 10 year period resulting in a greater than 100% (2.70) probability that a hail event will occur on an annual basis. The total amount of damages for the 27 hail events was \$259,000 with 4 hail events causing damage resulting in an estimated \$64,750 of expected annual damages from future events. The referenced hail event(s) is/are the one(s) 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 Bibb County due to a thunderstorm event; the ranking is minor to major.

Primary Effects from Hail in Bibb County would include:

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

Hazardous results from significant Hail in Bibb 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**

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 3-1** shows the general paths of tornadoes across the United States.

**Figure 3-2** shows the FEMA designated wind zones in the United States. Bibb County is located in Zone IV which warrants profiling. Zone IV has witnessed a higher frequency of tornadoes than any other zone. Zone IV has also witnessed some of the deadliest tornadoes in history.

A total of 11 tornadoes occurred in Bibb County according to NOAA NCDC during 2003 - 2013. An estimated \$14.428 million in property damage, no crop damage, one death and 10 injuries occurred as a result of the reported tornadoes.

The most significant event during the study period occurred in the unincorporated area of Mertz on April 27, 2011 with an EF3 tornado, 29.93 miles in length and 1,760 yards wide. A powerful storm system crossed the Southeast United States on Wednesday, April 27, 2011, 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 county warning area. Straight line winds of 90 mph (78kts) or greater and 11 tornadoes lead 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. A tornado touched down in southwestern Greene County near Tishabee, and moved northeast through central Hale and Bibb Counties, before it lifted near Marvel in far northeast Bibb County. The tornado moved into the Talladega National Forest near Ingram and crossed into Bibb County North of Mertz. The tornado tracked northeastward where it caused significant tree damage in

the National Forest. The tornado moved through Eoline and caused significant structural damage consistent with an EF3 rating and winds of 145 mph. Numerous mobile homes and single family homes sustained minor to major damage. A dozen mobile homes and single family homes were destroyed. In addition, the Eoline Fire Department and another business were destroyed. One fatality occurred in a vehicle near the fire department. At least 10 other injuries were noted. The tornado continued northeast and crossed AL Hwy 5, South of West Blocton where it weakened slightly to an EF2 with winds of 125 mph. Several mobile homes and single family homes sustained major damage or were destroyed near CR 26. Along the path, thousands of trees were downed. The tornado continued to weaken and lifted just Northeast of Marvel. 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*)

Each jurisdiction has been affected by tornado activity in the past. The location of Bibb County in Wind Zone IV, past occurrences of tornados, and the potential for future occurrences to cause damage, death, and injuries leaves Bibb County vulnerable to and at risk for tornados.

Bibb County experienced 11 tornado events in a 10 year period resulting in a greater than 100% (1.10) probability that a tornado event will occur on an annual basis. The total amount of damages for the 11 thunderstorm events was \$14,428,000 with 10 tornado events causing damage resulting in an estimated \$1,442,800 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 Bibb County due to a tornado event; the ranking is major.

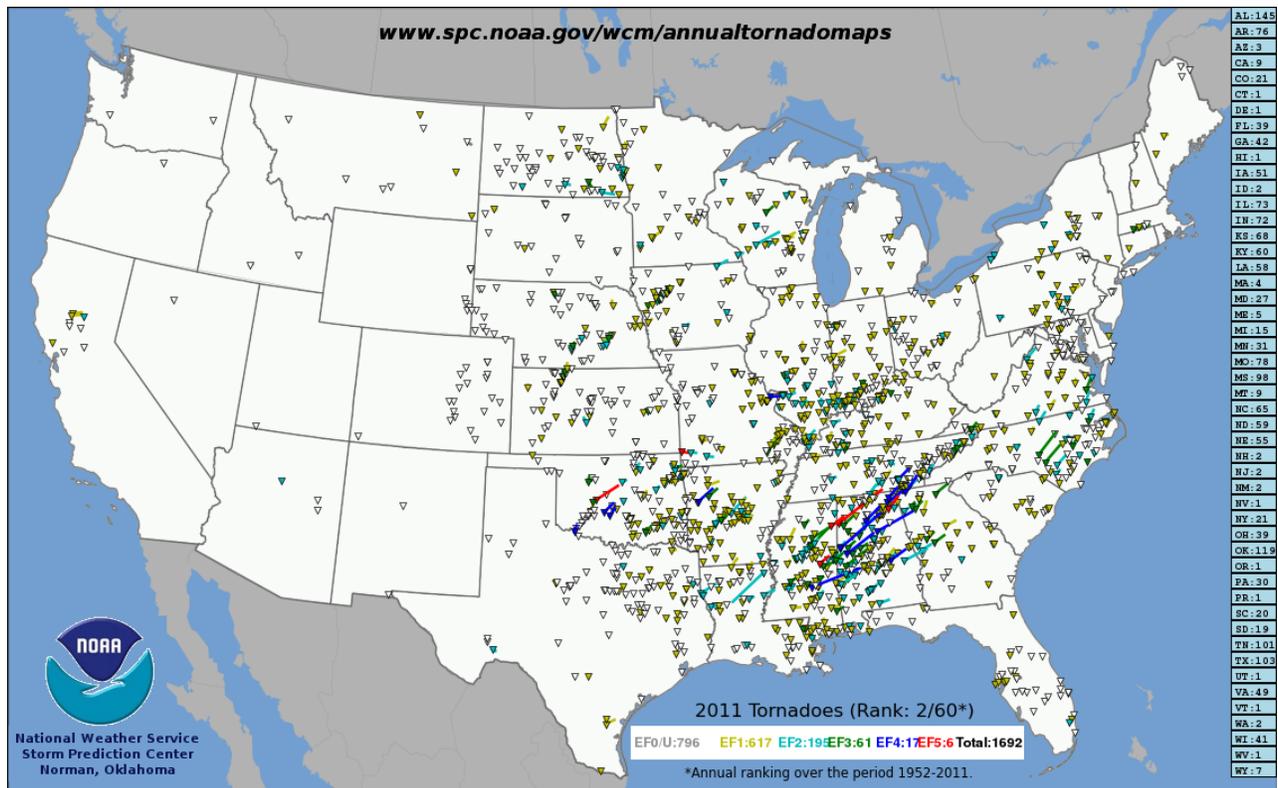
Primary effects from Tornados in Bibb County would include:

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

Hazardous results from significant Tornados in Bibb 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 3-1: Generalized Tornado Paths**



**Figure 3-2: Wind Zones in the United States**

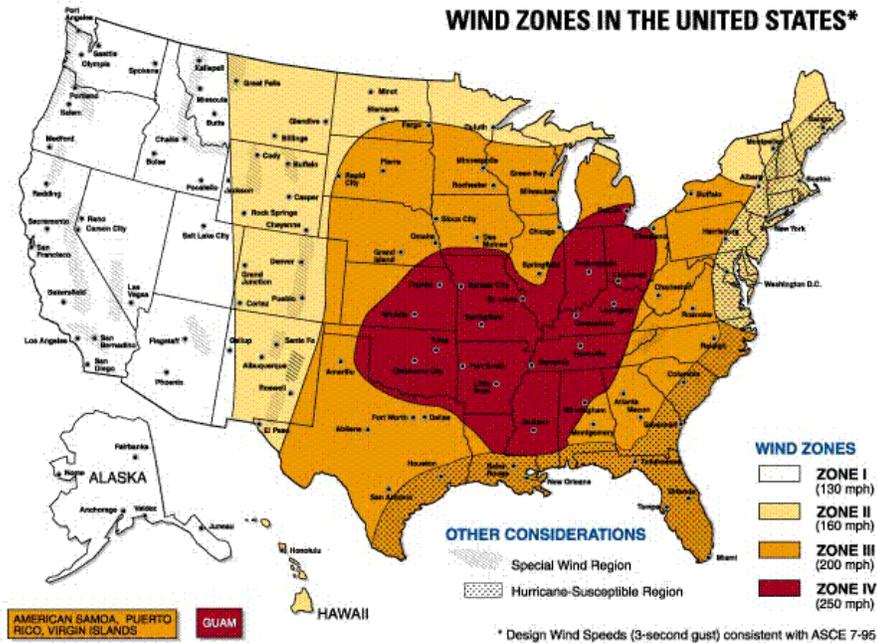


Figure I.2 Wind zones in the United States  
 Source: [www.fema.gov](http://www.fema.gov)

Tornados 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, which goes from 2003-2013, events shown in **Table 3-5** express the magnitude of tornados 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.

**Table 3-7: Fujita Tornado Scales**

**Fujita Tornado Scale**

<b>Category</b>	<b>Wind Speed</b>	<b>Description of Damage</b>
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.

**Enhanced Fujita Tornado Scale**

<b>Category</b>	<b>Wind Speed</b>	<b>Description of Damage</b>
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

There are three types of flooding that affect Bibb County: (1) general flooding, (2) storm water runoff, and (3) flash flooding. General flooding occurs in areas where development has encroached into flood-prone areas. Storm water runoff causes flooding in areas that have inadequate drainage systems. Flash flooding is caused when a large amount of rain falls within a short period of time. **Table 3-5** shows severe flooding events in Bibb County recorded by NOAA NCDC. Between 2003 and 2013 there were 8 occurrences of flash flooding and 2 floods in the county. Damages from these events were only as a result of flash flooding and totaled \$182,000 in property damage, no crop damage, no deaths, and no injuries.

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.

Dam-break floods may occur due to structural failures (e.g., progressive erosion), overtopping or breach from flooding, or earthquakes. Dam failures are potentially the worst flood events. Dam safety has been an ongoing hazard mitigation issue in the State of Alabama for the past decade, 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.

Approximately 1,700 privately owned dams would fit into the category proposed by the law. According to *HAZUS MH 2.1*, Bibb County has 11 High Density Polyethylene (HPDE - Earth) Dams, one High Density Polyethylene Concrete Gravity Dam, and two High Density Polyethylene Miscellaneous Dams. No historical records are available of dam/levee failures in Bibb 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 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 3-8** shows a range of flood recurrence intervals and their probabilities of occurrence.

<b>Table 3-8: Flood Probability Terms</b>	
<b>Flood Recurrence Intervals</b>	<b>Percent Chance of Annual Occurrence</b>
10-Year	10.0%
50-Year	2.0%
100-Year	1.0%
500-Year	0.2%
<i>(Source: FEMA, August 2001)</i>	

On September 21, 2009, a warm and unstable air mass led to the development of slow moving thunderstorms. Many of the storms produced flash flooding, and a few produced large hail. Several businesses and other buildings along Main Street in the City of Brent sustained significant water damage after a storm drain failed to keep up with flooding rains. The buildings included a building supply company, a services building for the elderly, and a church. Property damages of \$100,000 resulted.

Bibb County experienced 10 flood/flash flood events in a 10 year period resulting in a 100% (1.00) probability that a flood/flash flood event will occur on an annual basis. The total amount of damages for the 10 flood/flash flood events was \$182,000 with 5 flash flood events causing damage resulting in an estimated \$36,400 of expected annual damages from future events. The referenced flood/flash 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 Bibb County due to a flood/flash flood event; the ranking is minor to major.

Primary Effects from Floods in Bibb County would include:

1. Loss of life
2. Property damage
3. Crop damage

4. Dam and levee failure

Hazardous results from significant flood in Bibb 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 inadaptable 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***

Bibb 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. The National Flood Insurance Program (NFIP) requires local participation. **Table 3-9** shows the current NFIP status

of each jurisdiction. 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, Bibb 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 1-1**.

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<b>Table 3-9: Bibb County National Flood Insurance Program Status by Jurisdiction</b>						
<b>CID</b>	<b>Community Name</b>	<b>Initial FHBM Identified</b>	<b>Initial FIRM Identified</b>	<b>Current Eff. Map Date</b>	<b>Sanction Date</b>	<b>Tribal</b>
010226#	Bibb County	02/14/75	08/01/87	08/18/09	08/01/87	No
010012#	City of Brent	04/11/75	09/04/85	08/18/09	09/04/85	No
010369#	City of Centreville	10/15/76	08/19/85	08/18/09	08/19/85	No
010014#	Town of West Blocton	11/08/74	09/18/85	08/18/09	09/18/85	No
010428#	Town of Vance	See Bibb County	08/18/09	01/16/14(M)	06/26/06	No
015013#	Town of Woodstock	See Bibb County	08/01/87	01/16/14	01/30/08	No
<i>Source: FEMA Community Status Book Report as of February 6, 2014</i>						

***Repetitive Loss Properties***

Repetitive loss properties are those for which two or more losses of at least \$1,000 each have been paid under the National Flood Insurance Program (NFIP) within any 10-year period since 1978. *FEMA – Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008.*

Bibb County has no reported Repetitive Loss properties or Severe Repetitive Loss properties at this time.

***Flood Prone Areas***

Bibb County is prone to flooding along the Cahaba River and Haysop Creek. According to the National Weather Service Advanced Hydrological Prediction Service, flood stage for the

Cahaba River in Centreville is 23 feet and pasturelands in the area would begin to start flooding. At the Moderate Flood stage of 36 feet, some residential flooding could be expected. Severe Flood stage is 42 feet. The highest historical crest on record occurred in July of 1916 when the river crested at 37.80 feet.

## VI. Droughts/Extreme Heat

Drought occurs when there is a deficiency of precipitation over an extended period of time. Climatic factors, such as high temperature, high winds, and low relative humidity, can contribute to the severity of a drought. No society is immune to the social, economic, and environmental impacts of a drought. There are two primary types of drought: meteorological and hydrological droughts. These events can result in agricultural and socioeconomic droughts.

*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.

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 3-10**. 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.

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.

During the past ten years, Bibb County experienced D2 Severe to D3 Extreme Drought in 2006, D1 Moderate to D4 Exceptional Drought in 2007, D0 Abnormally Dry to D4 Exceptional Drought in 2008, D2 Severe to D3 Extreme Drought in 2011, and D2 Severe Drought in 2012. No deaths, injuries, property or crop damages were reported. Possible impacts resulting from the drought categories experienced by Bibb County include: D0 - Slow growth of plants, crops and pastures; water deficits. D1 – Crop and pasture damages; streams, reservoirs, or wells low; some water shortages; voluntary water-use restrictions requested. D2 – Crop or pasture losses likely; water shortages common; water restrictions imposed. D3 – Major crop/pasture losses; widespread water shortages or restrictions. D4 – Exceptional and widespread crop/pasture losses; shortages of water in reservoirs, streams, and wells, creating water emergencies.

Bibb County experienced 27 drought/extreme heat events in a 10 year period resulting in a greater than 100% (2.70) probability that a drought/extreme heat event will occur on an annual basis. The total amount of damages for the 27 drought/extreme heat events was \$0 with no drought/extreme heat events causing damage resulting in an estimated \$0 of expected annual damages from future events. No deaths or injuries were reported. 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 Bibb County due to a drought/extreme heat event; the ranking is minimum to minor.

Primary effects from Drought and Excessive Heat in Bibb 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 Bibb 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 3-10: Heat Index/Heat Disorders**

<b>Danger Category</b>	<b>Heat Disorder</b>	<b>Apparent Temperature (°F)</b>
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)*

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.

**Table 3-5** reflects that the NOAA NCDC reported 27 instances of drought for Bibb County from 2003-2013. No crop or property damages were reported. There were no reports of extreme heat events during this ten year period.

The National Weather Service reported two instances of drought for Bibb County in 2006. Statewide, 31 counties were declared a disaster area. Alabama farmers received one million dollars in federal disaster aid along with other grant assistance. It was during this time that the State implemented its Drought Monitoring System. An initial five wells were selected to track water levels around the state, with plans to increase the number of monitoring wells to 25. Drought conditions continued to escalate into 2007 and by August the Federal Government declared all 67 Alabama counties Natural Disaster areas. West-central Alabama reported a rainfall deficit that reached nearly 30 inches by 2007. Impacts were felt by farmers of all crops, including timber, livestock producers, and the forestry service. Additionally, electricity providers were affected as river and lake levels dropped and some municipalities were forced to place restrictions on water consumption as supplies became strained. State Agriculture Commissioner Ron Sparks referred to this event as the worst drought in 30-40 years.

## **VII. Winter Storms/Frost Freezes/Heavy Snow/Ice Storms/Winter Weather/Extreme Cold**

Bibb County is vulnerable to extreme winter weather conditions such as extreme cold temperatures, snow, and ice. **Table 3-5** shows the winter storm/extreme cold/frost freeze/heavy snow/ice storm/winter weather events that have affected Bibb County from 2003- 2013. In the category of winter storms/frost freezes/heavy snow/ice storms/winter weather/extreme cold events, seven storms were reported for Bibb County between 2003 and 2013 – 2 frost freeze events; 1 heavy snow event; 1 ice storm event; 2 winter weather events; and 1 extreme cold event. The entire planning area is equally at risk to all hazards in this category.

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.

An extreme cold event on January 24, 2003 resulted in the coldest temperatures in 7 years occurring across much of North and Central Alabama and lasting 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. No deaths, injuries, property or crop damages were reported.

A frost freeze event on April 7-8, 2007 resulted in an unusually cold spring time air mass settling across Central Alabama and bringing record cold temperatures to the entire region. Sub-freezing temperatures were recorded as far south as Wetumpka, Alabama and mid to upper 20s were recorded as far south as Clanton in Chilton County, Alabama. Fruit crops suffered heavy damage, although dollar loss estimates were not known. No deaths, injuries, or property damages were reported.

A heavy snow event occurred on March 1, 2009 from a late winter storm system that had also caused some severe thunderstorms the previous day. The snow began around 2 a.m. and accumulated up to 2 to 3 inches before ending around noon. No deaths, injuries, or property damages were reported.

An ice storm event occurred on January 9, 2011 as a low pressure system moved across the northern Gulf of Mexico and moisture pushed northward into Central Alabama interacting with the cold air that was already in place across the area. The combination of moisture and cold air brought a wintry mix of precipitation to most of Central Alabama, Sunday afternoon through Monday morning. Ice and sleet were the predominant precipitation type with around .50 inch of ice and between 1 to 3 inches of sleet reported across southern portions of the area. Light wintry precipitation began to spread into the area during the early afternoon hours on January 9. Even though amounts were light, accumulations were increasing travel concerns and the risk for vehicle accidents. As the strong storm system neared the area, several bands of wintry precipitation moved northward across the area, sometimes becoming quite heavy, with estimated precipitations rates over 1 inch an hour. As snow and ice began to accumulate, travel conditions quickly became hazardous. Several reports of thundersnow were also noted. Ice accumulation over one quarter inch was reported across Bibb County, with three tenths inch reported in Centreville. Ice accumulation led to numerous road closures. No deaths, injuries, property or crop damages were reported.

Bibb County experienced 7 storms in the category of winter storm/extreme cold/frost freeze/heavy snow/ice storm/winter weather events in a 10 year period resulting in a less than

100% (.70) probability that a winter storm/extreme cold/frost freeze/heavy snow/ice storm/winter weather event will occur on an annual basis. The total amount of damages for the 7 winter storm/extreme cold/frost freeze/heavy snow/ice storm/winter weather events was \$0 with no winter storm/extreme cold/frost freeze/heavy snow/ice storm/winter weather events causing damage resulting in an estimated \$0 (unknown) of expected annual damages from future events. The referenced events are the ones that resulted in the most damages, deaths, and injuries during the past ten year period and serve as the extent/range of magnitude or severity that could be experienced by Bibb County due to such events; the ranking is minimum to minor.

Primary effects from winter storms in Bibb 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 Bibb 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. Hurricanes/Tropical Storms/Tropical Depressions/High Winds/Strong Winds

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.

According to data from the National Oceanic and Atmospheric Administration's National Hurricane Center, there are three classification levels of storms based on wind speed. The first, a tropical depression, is "an organized system of clouds and thunderstorms with a defined surface cyclonic closed circulation and maximum sustained winds of 38 mph or less." A tropical storm is the second level and is described as "an organized system of strong thunderstorms with a defined surface circulation and maximum sustained winds of 39-73 mph." A "hurricane," which is the third classification level, is "an intense tropical weather system of strong thunderstorms with a well-defined surface circulation and maximum sustained winds of 74 mph or higher." Individual hurricanes vary in intensity and are categorized using the Saffir-Simpson Hurricane Scale.

NOAA measures wind speeds for thunderstorm/wind and hurricane events in knots (kts) while the Saffir-Simpson scale, shown later in the Hurricane profile, 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 3-11**, 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 3-11: 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	<b>Very dangerous winds will produce some damage:</b> 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	<b>Extremely dangerous winds will cause extensive damage:</b> 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	<b>Devastating damage will occur:</b> 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	<b>Catastrophic damage will occur:</b> 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	<b>Catastrophic damage will occur:</b> 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)

### Threats Related to Hurricanes

Hurricanes impact regions in a variety of ways. The intensity of the storm, the speed of the winds, whether the storm moves through a region 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. Bibb County is not directly affected by storm surges; therefore, no additional analysis will be completed on the topic.

August 29-30, 2005, the effects of what was once Hurricane Katrina resulted in several trees and power lines being blown down across Bibb County. Power outages were widespread. Several vehicles and homes were damaged by the fallen trees. Property damages of \$210,000 were reported.

November 9-11, 2009, the effects of what was once Hurricane Ida brought very heavy rain and gusty winds to Bibb County. The winds blew down shallow rooted trees where the saturated soil likely played a significant role. Property damages of \$2,000 were reported.

Bibb County experienced 6 hurricane/tropical storm/tropical depression/high wind/strong wind events in a 10 year period resulting in a less than 100% (.60) 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 6 hurricane/tropical storm/tropical depression/high wind/strong wind events was \$626,000 with 5 hurricane/tropical storm/tropical depression/high wind/strong wind events causing damage resulting in an estimated \$125,200 of expected annual damages from future events. No deaths or injuries were reported. The referenced hurricane/tropical storm/tropical depression/high wind/strong wind 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 Bibb 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

Bibb 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 Bibb County does not feel the effects of storm surges, other effects including heavy rain, flooding, winds, and tornados often have significant impacts on Bibb County.

## **X. Sinkholes/ Expansive Soils**

### ***Sinkholes***

Naturally occurring Sinkholes occur where limestone, carbonate rock, salt beds, or rocks can be dissolved by ground water 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.

An area along Six Mile Creek, some ten miles northeast of Centreville in the northeast corner of Bibb County, has long been known as the “Sinks” due to the large number of sinkholes in the region. The existence of barite deposits has been the blame for sinkhole events. Most of the barite deposits are in adjacent parts of Township 24 North, Ranges 10 and 11 East. The nearest rail shipping point is Piper, nearly six miles away. This district has an average difference in elevation of about 100 feet and is gently rolling to rugged. Most of the area is heavily covered with hardwoods and scattered pines and is drained by Six Mile Creek and Little Cahaba River. The Sinks is in a sharply folded and faulted zone of Paleozoic rocks just above the fall-line of the Mississippi Embayment. It is immediately south of the Cahaba Coal field, from which it is separated by a major fault. The area surrounding the barite deposits is also faulted.

According to the Geological Survey of Alabama’s sinkhole data as of 2010, Bibb County has experienced sinkholes; however, the sinkhole density in Bibb County is low. **Figure 3-3** shows sinkholes susceptibility in Bibb County.

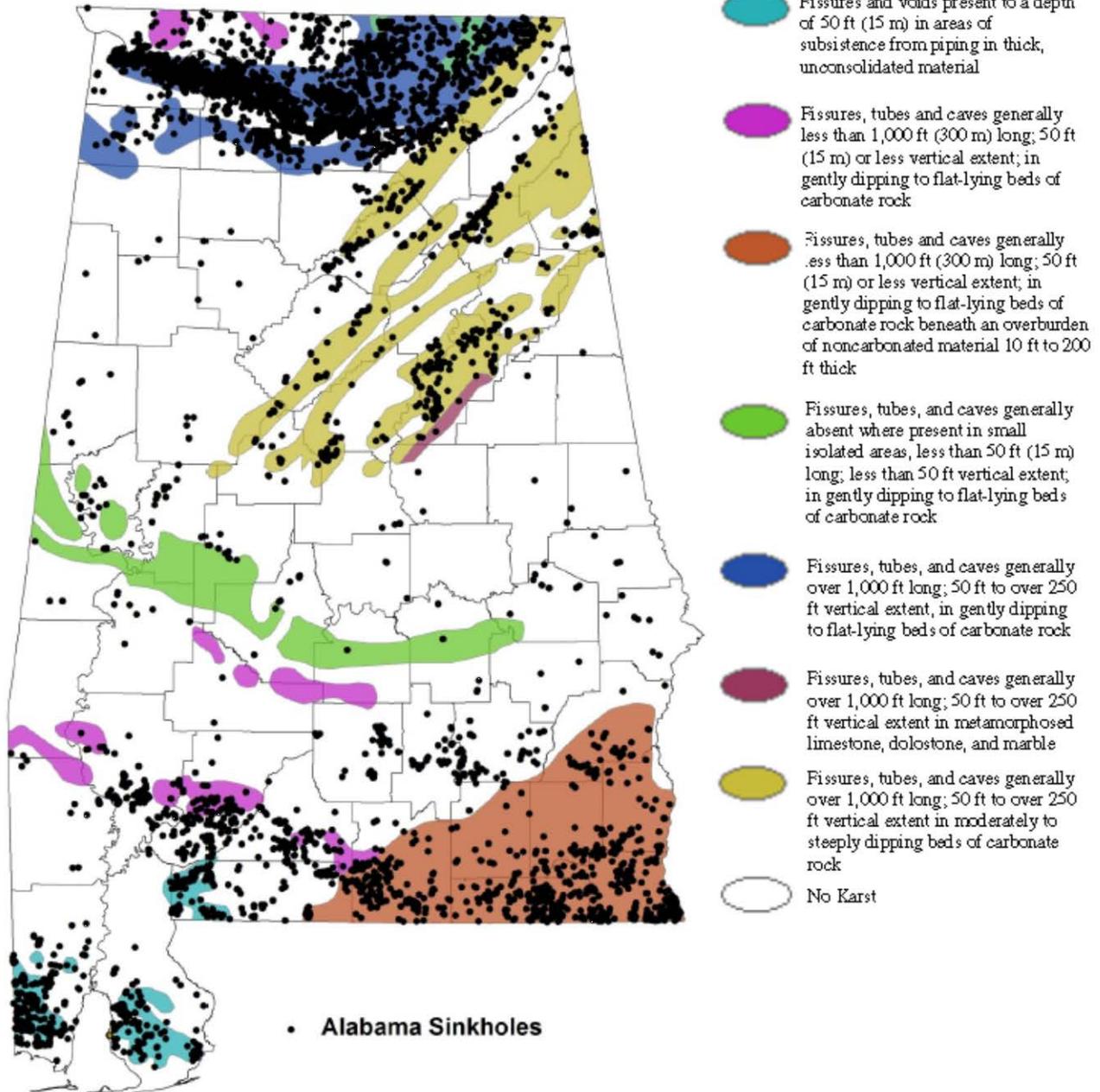
### ***Expansive Soils***

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 3-4** shows the general soil areas for the state. Bibb County has Coastal Plains, Major Flood Plains and Alluvial soils. There were no expansive soils reported from NOAA or local sources during the time frame covered by the plan.

Though these soils have shrink-swell potential, the committee does not feel a profile is necessary.

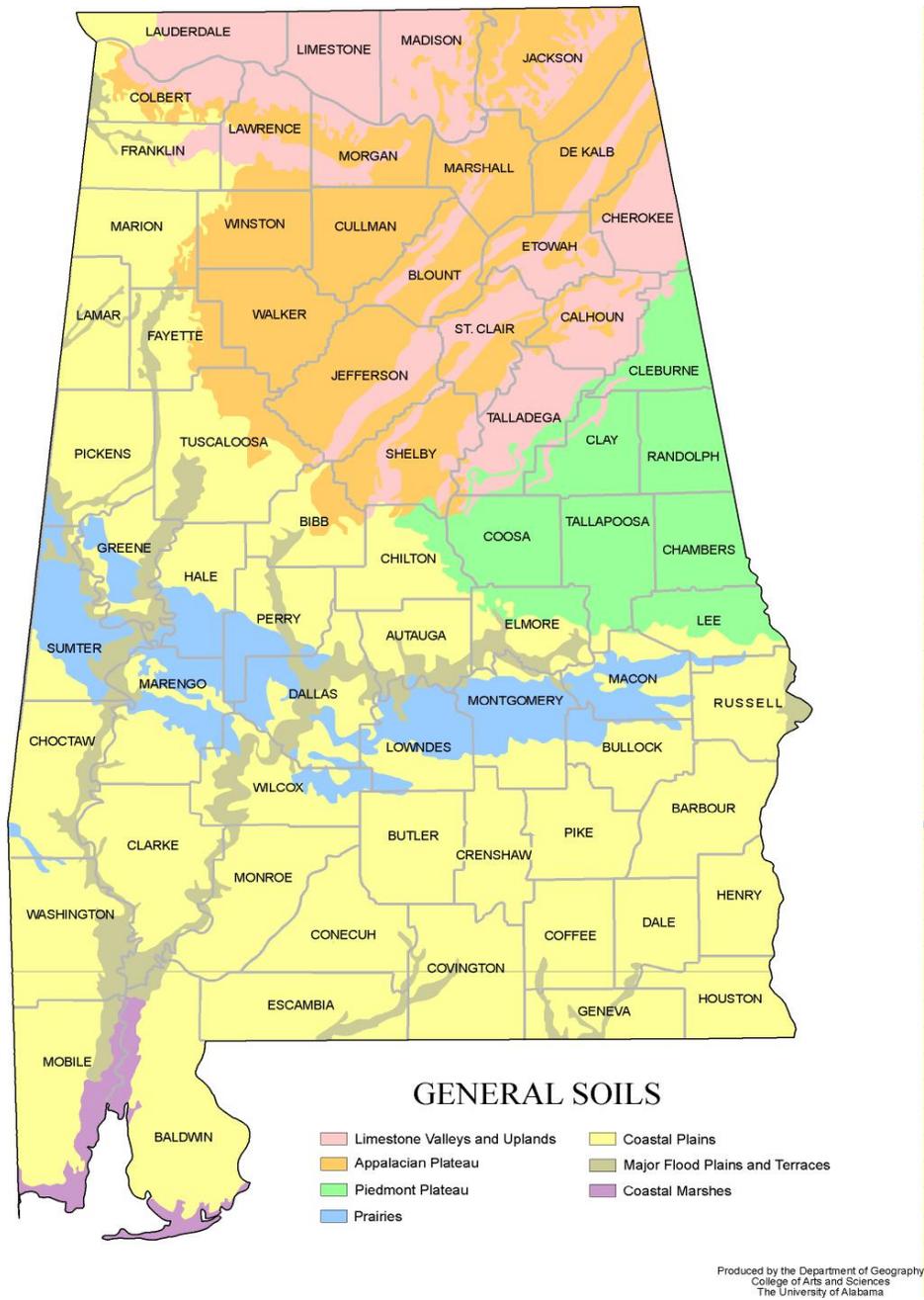
**Figure 3-3: Bibb County Sinkhole Susceptibility**

(Source: Alabama State Hazard Mitigation Plan, April 2013)



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**Figure 3-4: General Soils of Alabama**



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There were no active sinkholes reported from NOAA; however, one sinkhole occurring on June 27, 2005 was reported by the Bibb County engineer. This sinkhole was located along Highway 82 East just inside the City Limits of Centreville. The sinkhole had been active for some time and was the result of a natural spring. According to the Bibb County engineer, the sinkhole has been mitigated.

Bibb County experienced one sinkhole event in a 10 year period resulting in a less than 49% (.10) probability that a sinkhole event will occur on an annual basis. The total amount of damages for the one sinkhole event was \$0 with no sinkhole event causing damage resulting in unknown expected annual damages from future events. No deaths or injuries were reported. The referenced sinkhole 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 Bibb County due to a sinkhole event; the ranking is minimum to minor.

Primary effects from sinkholes in Bibb County would include:

1. Property damage
2. Underground infrastructure damage
3. Impassable roads
4. Building collapse

Hazardous results from significant sinkholes in Bibb County would include:

1. Formation of sinkholes can destroy any structure it underlies. Houses, businesses, and government buildings are extremely susceptible to this damage.
2. Underground power, gas, and water lines can be broken causing leakage and breaks that can disrupt service and have negative environmental effects.
3. The ground underneath a road sinks and either leaves the road unsupported or destroys it completely. This is extremely dangerous for unsuspecting motorists and repair crews.
4. Unsupported foundations of buildings allow for collapse of the foundation and possibly the entire structure resulting in mass amounts of injury and damage as well as possible death.

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## **X. Landslides**

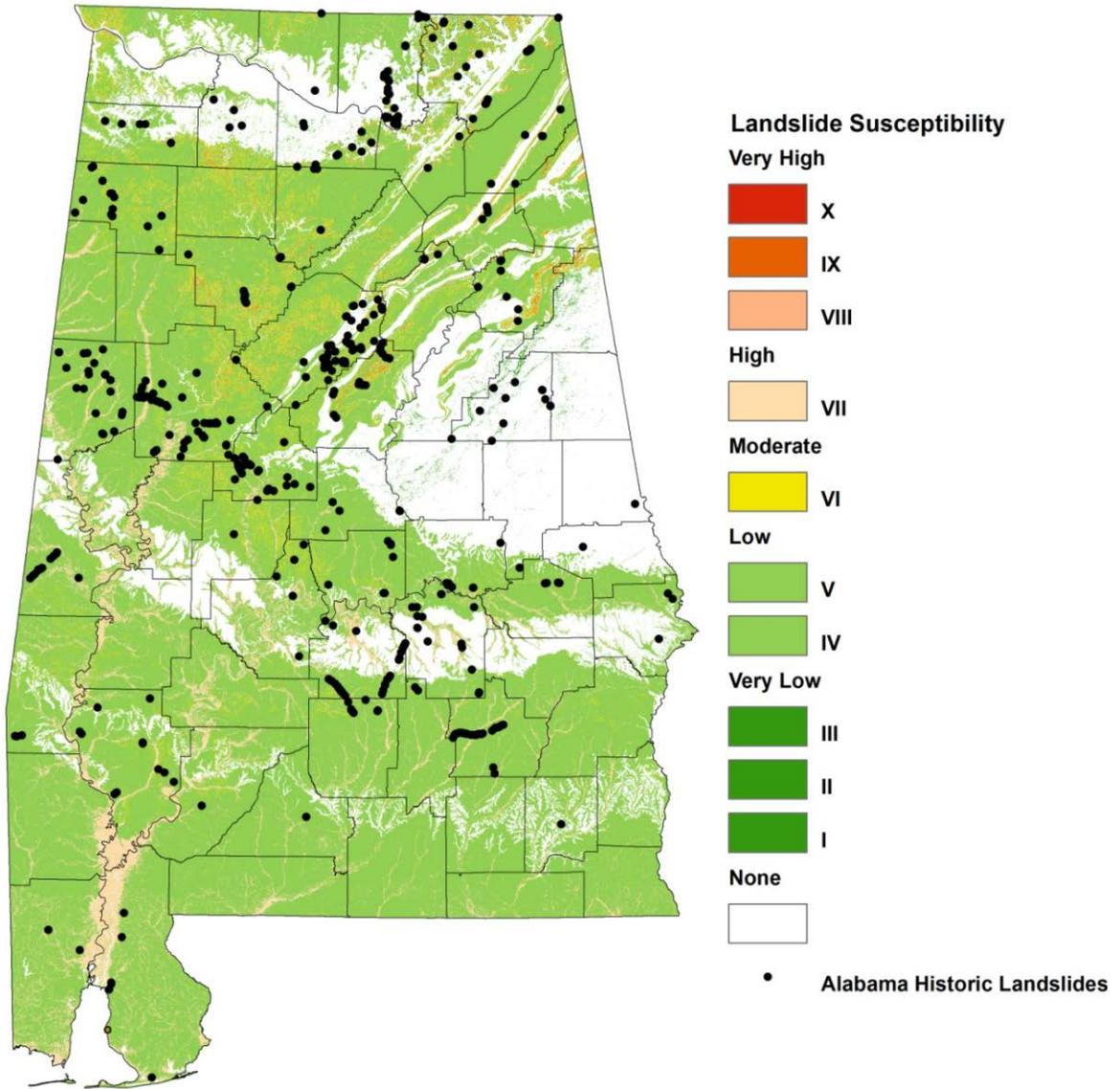
A landslide is defined by the United States Geologic Survey as the movement of rock, debris, or earth down a slope. Various natural and man-induced triggers can cause a landslide. Naturally induced landslides occur as a result of weakened rock composition, heavy rain, changes in groundwater levels, and seismic activity. Geologic formations in a given area are key factors when determining landslide susceptibility. The three underlying geologic formations present within the region are the Coker, Gordo, and Tuscaloosa groups. These groups are classified as having low to moderate susceptibility to slope failure. In a 1982 study performed by Karen F. Rheams of the United States Geologic Survey, Bibb County was indicated to have 26 of the 454 reported landslides in the state of Alabama. The report separated the landslides into natural and man-induced events. The events reported in Bibb County were all man-induced events attributed to roadway construction, primarily along U.S. Highway 82. No naturally occurring landslides were recorded in Bibb County from this report. Since this data is outside the ten-year study period, it is reported for its historical significance only and to indicate those landslides that were recorded.

**Figure 3-5** shows that most of Bibb County is at a low risk of incidence; however, areas in the southern part of Bibb County, including the City of Brent and the City of Centreville, have a moderate incidence of landslides and the two landslides reported by the Bibb County engineer occurred within this area. One on County Road 16, in the western part of the county, which damaged the roadway, and another in east Bibb County on County Road 20. Both occurred in 2005 and were addressed by county forces at a cost of \$100,000 and \$50,000 respectively. There were no landslides reported from NOAA or the U.S. Geological Survey during the time frame covered by this plan.

Bibb County experienced two landslide events in a 10 year period resulting in a less than 49% (.20) probability that a landslide event will occur on an annual basis. The total amount of damages for the two landslide events was \$150,000 with two landslide events causing damage resulting in an estimated \$75,000 of expected annual damages from future events. No deaths or injuries were reported. The referenced landslide 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 Bibb County due to a landslide event; the ranking is minimum to minor.

**Figure 3-5: Bibb County Landslide Susceptibility**  
 (Source: Alabama State Hazard Mitigation Plan, April 2013)



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Primary effects from landslide in Bibb County would include:

1. Property damage
2. Impassable roads
3. Sediment erosion
4. Underground infrastructure damage

Hazardous results from landslide in Bibb County would include:

1. Landslides move with tremendous force capable of destroying most structures in their 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. Earthquakes**

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 3-12**. 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 3-12: 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.

Three zones of frequent earthquake activity affecting Alabama are the New Madrid Seismic Zone (NMSZ), the Southern Appalachian Seismic Zone (SASZ) (also called the Eastern Tennessee Seismic Zone), and the South Carolina Seismic Zone (SCSZ). The NMSZ lies within the central Mississippi Valley, extending from northeast Arkansas through southeast Missouri, western Tennessee, and western Kentucky, to southern Illinois. The SASZ extends from near

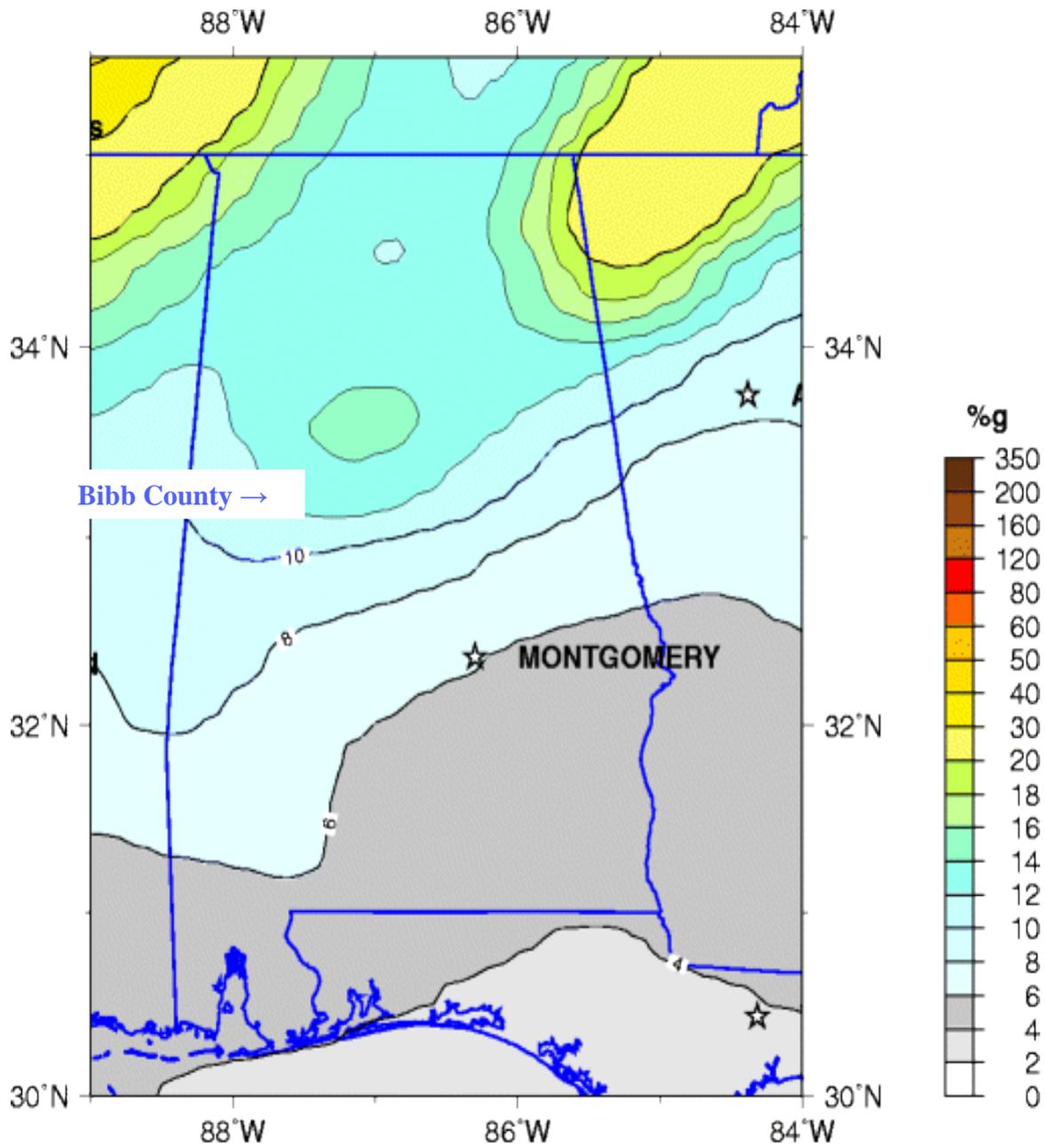
Roanoke in southwestern Virginia southwestward to central Alabama. Considered a zone of moderate risk, the SASZ includes the Appalachian Mountains. Most of the earthquakes felt in Alabama are centered in the SASZ. The hypocenters of earthquakes in this zone are on deeply buried faults. The SCSZ is centered near Charleston South Carolina and encompasses nearly the whole State. Bibb County is at risk for earthquakes.

Earthquakes occurring in Bibb 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 3-6** shows the Percent Ground Acceleration (PGA) with two percent 50 year exceedance probability. The USGS database shows that there is a 1.91% chance of a major earthquake (= or > 5.0 magnitude) within 31 miles of Bibb County, AL within the next 50 years. The largest earthquake within 30 miles of Bibb County, AL was a 4.8 Magnitude in 1999. The risk of a significant, damage-causing earthquake in Bibb County is low to moderate.

Although many areas of the United States are better known for their susceptibility, earthquakes do occur in Alabama. **Figure 3-7** 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. According to the Alabama Geological Survey/USGS Database, Bibb County experienced two earthquake events in the past ten years (January 1, 2003 – December 31, 2013) as noted in **Table 3-5**. On April 21, 2009 at 10:25 a.m., an earthquake 12.7 km in depth and 3.3 magnitude occurred 8.87 miles from Lawley, AL. On April 22, 2009 at 5:28 a.m., an earthquake 8.2 km in depth and 2.9 magnitude occurred 9.47 miles from Lawley, AL. No deaths, injuries, property or crop damages were reported from these two earthquake events.

Two zones of frequent earthquake activity that could potentially impact Bibb County are the New Madrid Seismic Zone and the Southern Appalachian Seismic Zone. Damage could be significant in Bibb County if a powerful earthquake were to occur because buildings in this part of the country have not been constructed to withstand such a powerful force. In 1916 on October

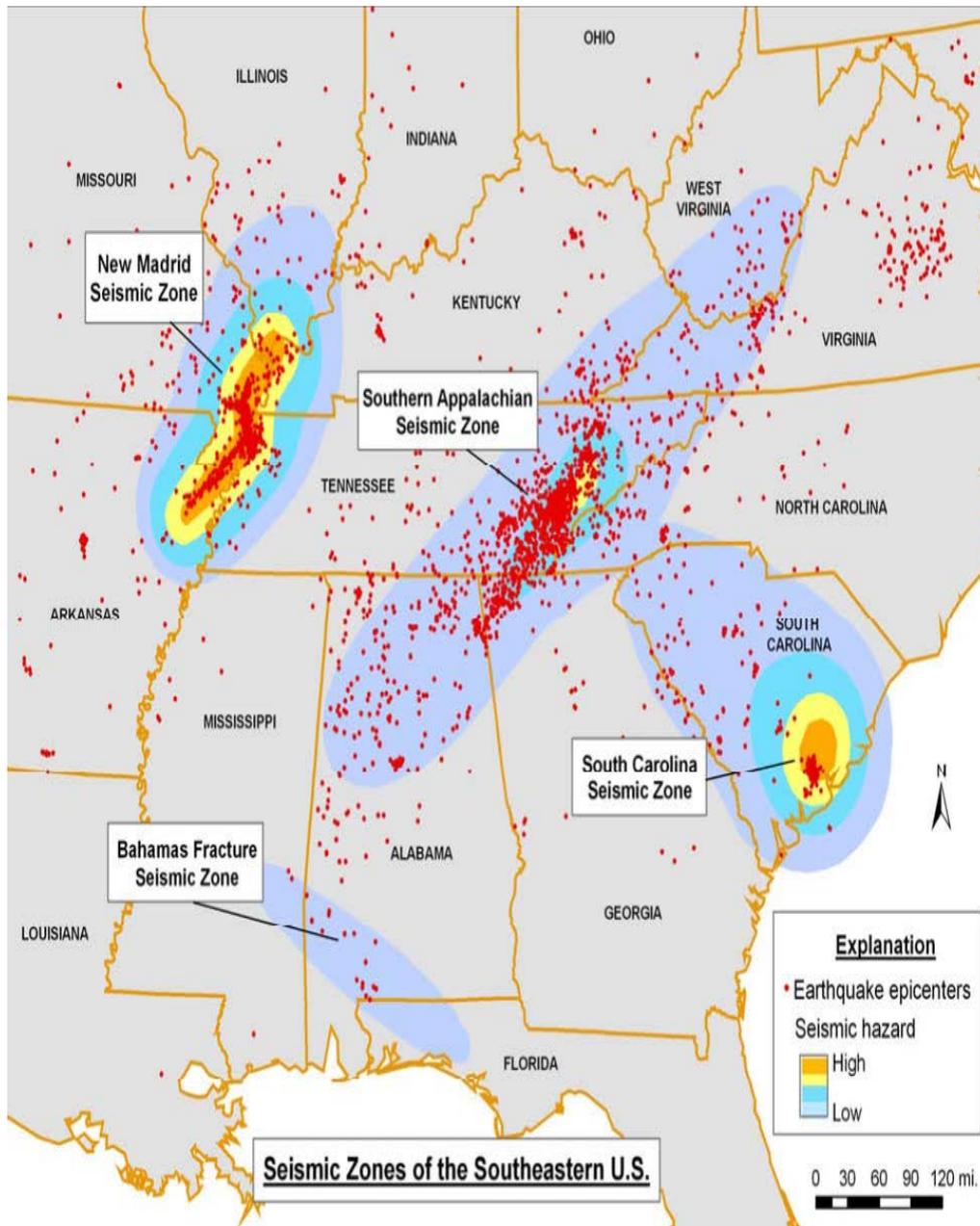
18, a strong earthquake occurred on an unnamed fault east of Birmingham. It was apparently most strong at Easonville. Near the epicenter, chimneys were knocked down, windows broken, and frame buildings were greatly shaken. It was noted by residents in seven states and covered 100,000 square miles. The 1895 New Madrid earthquake registered a 6.8 on the Richter scale and was moderately felt throughout the southeastern United States. The New Madrid Fault line runs along the Mississippi River. Geologists agree that another major earthquake along the New Madrid Fault line could cause chimneys to fall, glass to break, and walls to crack in Bibb County.



**Peak Acceleration (%g) with 2% Probability of Exceedance in 50 Years  
 site: NEHRP B-C boundary  
 National Seismic Hazard Mapping Project (2008)  
 Figure 3-6**

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**Figure 3-7: Seismic Zones of the Southeastern United States**



*Source: Geological Survey of Alabama, 2010*

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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.

Bibb County experienced two earthquake events in a 10 year period resulting in a less than 49% (.20) probability that an earthquake event will occur on an annual basis. The total amount of damages for the two earthquake events was \$0 or unknown with no earthquake events causing damage resulting in an estimated \$0 or unknown expected annual damages from future events. No deaths or injuries were reported. The referenced earthquake 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 Bibb County due to a earthquake event; the ranking is minimum to minor.

Primary effects from earthquake in Bibb County would include:

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

Hazardous results from earthquake in Bibb 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 Bibb 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. Wildfires**

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. Bibb County is susceptible to wild/forest fires especially during times of drought. According to the Alabama Forestry Commission's Forest Resource Report of 2012, Bibb County has a total of 331,102 acres of forestland, which accounts for 83 percent of the total land area in the county – acres are made up of 141,509 acres of softwoods; 75,830 acres of oak-pine; and 113,763 acres of hardwoods. The Talladega National Forest, located in southwestern Bibb County, consists of 59,810 acres of forestland, 15 percent of the total land area.

The frequency and severity of wildfires is dependent on weather and on human activity. 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 3-5** shows the number of fires and acres burned during the period 2010 to 2013, as recorded by the Alabama Forestry Commission. Bibb County had a total of 109 fires during this three year period, affecting a total of 1,280 acres.

The National Forest Service (NFS) maintains data nationwide and produces various maps and forecasts daily under the Wildland Fire Assessment System (WFAS). A review of this data showed Bibb County has a 5-10 percent probability of a fire occurring because of a lightning strike. The probability of ignition by lightning depends mainly on fuel moisture. Fuel Model Maps help to determine susceptibility of vegetative cover to wildfires. Bibb County is covered by Fuel Models A and C. Areas covered by these models consist of light fuel vegetation such as herbaceous plants and round woods that are less than one-quarter of an inch.

**Figure 3-8** and **Figure 3-9** from the Alabama Forestry Commission show Bibb County's risk of a wildland fire on a given acre and the fire occurrences per 1,000 acres as of 2007. This is the most recent data available, as the Alabama Forestry Commission has removed these maps from their website for the present time. The areas at highest risk in Bibb County are the West Blocton area and the unincorporated area of Marvel located in the northeast portion of the

county. These areas are ranked as “Extreme” on both the fire susceptibility and fire occurrence indexes.

Bibb County experienced 109 wildfire events in a three year period resulting in a greater than 100% (36.33) probability that wildfire event will occur on an annual basis. The total amount of acres burned was 1,280 multiplied by \$1,900 (the average market value for an acre of land in Bibb County) equals \$2,432,000 damages for the 109 wildfire events with 109 wildfire events causing damage resulting in an estimated \$22,312 multiplied by 1.09 (projected loss expresses an estimated damage amount per future occurrence by converting the average loss figures from a midpoint of 2008 dollars to 2014 dollars - \$1 in 2008 = \$1.09 in 2014...a cumulative rate of inflation of 9%) equals a total of \$24,320 of expected annual damages from future events. No deaths or injuries were reported. The referenced wildfire 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 Bibb County due to a wildfire event; the ranking is minor to major. The extent/range of magnitude or severity that could be experienced by Bibb County due to a wildfire event is minimum to minor.

Primary effects from wildfire in Bibb County would include:

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

Hazardous results from significant wildfire in Bibb 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.



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### **XIII. Dam/Levee 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 Bibb 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. There have been no significant dam or levee failures reported in Bibb County during 2003 - 2013.

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 Bibb 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. According to *HAZUS-MH 2.1 2012* and *NOAA*, Bibb County has 10 HPDE – Earth Dams and one HPDG – Concrete Gravity Dam. There are no dams classified as having high hazard potential, meaning failure or misoperation would probably result in the loss of human life. Three of the HPDG dams – Caddis Lake Dam, Robinson Lake Dam, and Malcolm Lewis Dam are listed in the significant risk category meaning their failure would probably not result in the loss of life but would result in economic loss, environmental damage, and disruption of lifeline facilities. The remaining eight dams in the county are listed as low risk meaning that their failure or misoperation would not result in the loss of life and only result in low economic or environmental damage. None of the dams is located in a municipality. All are located in sparsely populated areas scattered throughout the unincorporated jurisdiction. **Table 3-13** shows risk categories of dams. **Table 3-14** provides an inventory listing of all the dams in Bibb County and includes additional data on each.

An estimated 2,228 dams are located in Alabama. As of March 2010 the 2009 dams are listed in the National Inventory of Dams (NID) and maintained by the USACE. The Tennessee Valley Authority (TVA), USACE, Alabama Power Company (APCo), and the Alabama Electric Cooperative, Inc. have jurisdiction over approximately 32 federally regulated hydroelectric, navigation, and flood control project dams in Alabama. Some existing dams have inadequate spillways and embankments. Many dams are poorly maintained. *(Source: Alabama State Hazard Mitigation 2013 Plan Update)*

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.

Primary effects from Dam failure in Bibb 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 Bibb 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.

**Table 3-13: Bibb County Dams Risk Categories**

<b>Risk Categories</b>	<b>Number of Dams</b>
<b>High</b> - loss of one human life is likely if the dam fails	0
<b>Significant</b> - possible loss of human life and likely significant property or environmental destruction if the dam fails if the dam fails	3
<b>Low</b> - no loss of life and low economic or environmental damage	8
<b>Total</b>	<b>11</b>
<i>(Source: HAZUS MH 2.1)</i>	

**Table 3-14: Bibb County Dam Inventory List**

Dam Name	NID ID	River	NID Height	NID Storage	Year Completed	Drainage Area	Hazard	County	Longitude	Latitude
CADDIS LAKE DAM	AL00539	TR-BLUE OUTTEE CR.	24.00	252.00	1963		S	BIBB	-87.3250	32.9167
MALCOLM LEWIS DAM	AL01989	LICKLOG CREEK	29.00	508.00	1983	1.70310	S	BIBB	-87.1400	33.0400
ROBINSON LAKE DAM	AL01723	TR-CAFFEE CREEK	12.00	60.00	1974		S	BIBB	-87.1300	33.1833
CHASE LAKE DAM	AL00541	SHULTZ CREEK	24.00	672.00	1959		L	BIBB	-87.2183	33.0667
KIMBERLY CLARK PAPER CO LAKE DAM	AL00537	TR CAHABA RIVER	33.00	84.00	1949		L	BIBB	-87.0417	33.0800
KORNEGAY LAKE DAM	AL00538	TR HAYSOP CREEK	25.00	96.00	1965		L	BIBB	-87.2550	32.9683
LIGHTSEY'S MILL POND DAM	AL00533	LIGHTSEY'S BRANCH	13.00	80.00	1890		L	BIBB	-87.1233	32.9100
MCKNIGHT LAKE DAM	AL00534	CANE CREEK	32.00	120.00	1950		L	BIBB	-87.0867	33.2100
PEARSON LAKE DAM	AL00535	LICKLOG BRANCH	31.00	248.00	1880		L	BIBB	-87.2133	33.0733
SHADY GROVE DAM 1	AL00542	GALLOWAY BRANCH	36.00	300.00	1957		L	BIBB	-87.1683	33.0250
SHADY GROVE DAM 2	AL01722	GALLOWAY BRANCH	36.00	132.00	1950		L	BIBB	-87.1550	33.0233

(Source: <http://crunch.tec.army.mil/nidpublic/webpages/nid.cfm>; 2015)

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#### **XIV. Man-made Hazards** *(No changes were made to this section for 2015)*

Man-made hazards are any threats that originate from or are induced by human activity, unlike the natural hazards previously profiled which have an origin in the natural environment. Technological disasters and acts of terrorism are the main categories of man-made hazards, according to FEMA, and have been subdivided into ten incident types in order to identify and prioritize these threats as well as track specific occurrences for this plan. FEMA's term, "technological hazards," are those "incidents that can arise from human activities such as manufacture, transportation, storage, and use of hazardous materials." The term "terrorism" refers to "intentional, criminal, [or] malicious acts" (FEMA 387-7).

As shown in **Table 3-3**, there were six total incidents on record for Bibb County during the time period between 1997 and 2006 (the years of 2003 – 2006 is during this plan's study period). The United States Department of Transportation's Hazardous Materials Information System was utilized along with local input to provide data for this section. The most recent incident of significance is the church fires that the county experienced in February of 2006. During the course of eight days 10 Baptist churches in rural Alabama were burned. Five churches were located in Bibb County and three were total losses. These were the first churches to be attacked. The others, located in surrounding counties, were burned as a diversion. The Bibb County fires were all set by the same arsonists, three young men who attended a prestigious private college in Jefferson County. They were later arrested and convicted of the crime. The motive appeared to be based on boredom and thrill seeking, not racial or religious factors. Damages to the five churches totaled over \$1,749,715. Individual damage estimates were not available. At the very least, this incident shows that there is no way to predict what will be attacked or why. It is the very nature of nearly all man-made hazards because the common denominator and determinant factor is the human element. It is also what makes attempts to mitigate these types of acts so difficult.

Due to the limited report of incidents, no further extensive profiling is required for the man-made hazards portion in Bibb County's mitigation plan.

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## **Section Four: Vulnerability Assessment**

In Section Three, the primary effects and hazardous results were considered for all identified hazards. In this section 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 3-5** and for each jurisdiction in their individual Hazard Event table in Section Five of this plan.

**Vulnerability** is the extent to which something is damaged by a hazard. Vulnerability is very often measured using “damage functions.” These are based on studies of how buildings perform when they are exposed to hazards. Similar functions are available for infrastructure and other physical assets. Injury and mortality functions (how many people are injured or die during events) are also sometimes used as indicators of vulnerability, but these are generally not as reliable as functions for physical assets because there are many more variables.

### **Hazard Impacts**

#### ***Thunderstorms (Source: NCDC NOAA)***

Damage from thunderstorms can have a wide range of severity. All jurisdictions are vulnerable to thunderstorm events. Bibb County experiences storms every year with varying frequency and intensity. One event having the most property damages occurred in Brent on May 3, 2003 and resulted in property damages of \$75,000. Numerous trees were blown down in and around Brent. Two mobile homes were severely damaged by falling trees. One mobile home was destroyed. One tree landed on a business. No injuries were reported. A thunderstorm event having the highest winds occurred on Monday, April 11, 2011 in the Fairdale Community in Bibb County. The wind magnitude was 111 miles per hour (96 kts.). ahead of a cold front associated with a strong upper level storm system, a squall line moved across Central Alabama. This line of thunderstorms produced widespread wind damage, knocked down numerous trees and power lines and damaged many homes and buildings causing \$10,000 in property damages. Wind gust of 96 knots, measured by equipment 70 ft high, caused damage to the tower. In addition, multiple trees were blown down. Another event on April 11, 2011 that resulted in the most injuries occurred in Ashby, 2011 and resulted in one injury but not property or crop

damages. Ahead of a cold front associated with a strong upper level storm system, a squall line moved across Central Alabama on Monday, April 11. This line of thunderstorms produced widespread wind damage, knocked down numerous trees and power lines and damaged many homes and buildings. A tree fell on a Brierfield fire truck along Highway 25. One fireman sustained minor injuries. Extent of damage to the fire truck is unknown.

***Lightning*** (Source: NCDC NOAA)

Lightning can cause substantial property damage and loss of human lives. All jurisdictions are vulnerable to lightning events.

***Hail*** (Source: NCDC NOAA)

A hail event resulting from a severe thunderstorm that occurred on April 25, 2003 produced hailstones 4.5 inch in diameter (softball size) in Pondville and resulting in \$250,000 in property damages. A supercell entered Bibb County and continued strengthening, resulting in a swath of large hail falling along its entire path. Several locations reported hail covering the ground up to a foot deep. The largest hail was reported from South of Brent to the Randolph and Lawley areas where the hail ranged from ping pong ball to softball size. Many automobiles and homes were damaged. Funnel clouds were reported with the storm and many individuals reported that a roaring sound accompanied the storm. All jurisdictions are vulnerable to hail events.

***Tornados*** (Source: NCDC NOAA)

The impacts of tornados can be far-reaching. Life, property, and personal items are at risk. Tornados 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.

Areas with higher population densities pose the greatest potential for property damage, injury, and death. Census Tract 100.02 is the most densely populated area in the county, having 85.7 persons per square mile. 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. Bibb County has a total of 2,615 mobile homes countywide, 29% of the total housing stock. The greatest concentration of mobile homes in a municipality is in the Town of West Blocton where 30% of the units are mobile homes. (*Sources: U.S. Census Bureau, 2010-2012 American Community Survey and Easidemographics.com*)

A powerful storm system crossed the Southeast United States on Wednesday, April 27, 2011, 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. This one event resulted in one death, 10 injuries and \$14 million in property damages.

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 county warning area. Straight line winds of 90 mph (78kts) or greater and 11 tornadoes lead 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.

Bibb County experienced two EF1s and one EF3 on April 27, 2011, resulting in one death, ten injuries, and \$14,284,000 in property damages. A tornado touched down in Southwestern Greene County near Tishabee and moved northeast through Central Hale and Bibb Counties, before it lifted near Marvel in far Northeast Bibb County. The tornado moved into the Talladega National Forest near Ingram and crossed into Bibb County north of Mertz, tracking northeastward where it caused significant tree damage in the national forest. Next, the tornado moved through Eoline and caused significant structural damage consistent with an EF3 rating and winds of 145 mph. Numerous mobile homes and single family homes sustained minor to major damage. A dozen mobile homes and single family homes were destroyed. The Eoline Fire Department and another business were destroyed. One fatality occurred in a vehicle near the fire

dept. At least 10 other injuries were noted. The tornado continued northeast and crossed AL Highway 5, south of West Blocton where it weakened slightly to an EF2 with winds of 125 mph. Several mobile homes and single family homes sustained major damage or were destroyed near County Road 26. Along the path, thousands of trees were downed. The tornado continued to weaken and lifted just northeast of Marvel.

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.

### **Floods/Flash Floods** (*Source: NCDC NOAA*)

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 such as the Cities of Centreville and Brent 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. The location of the Cities of Brent and Centreville along the Cahaba River positions them to receive the greatest impact of a riverine flood event. To date, there are no Repetitive Loss properties in Bibb County to indicate any significant impact areas. Impacts for both flood types includes property and crop damage, contamination or failure of water and sewer systems, increase in waterborne disease, and possible dam or levee failure. All jurisdictions are vulnerable to flood events.

During 2003-2013, Bibb County experienced two flood events and eight flash flood events. The two flood events resulted in no deaths, injuries, property or crop damages. The eight flash flood events resulted in \$182,000 in property damages. One of the most expensive flash flood events occurred in Brent on September 21, 2009 and resulted in \$100,000 in property damages. On this day, a warm and unstable air mass led to the development of slow moving thunderstorms. Many of the storms produced flash flooding and a few produced large hail.

Several businesses and other buildings along Main Street in the City of Brent sustained significant water damage after a storm drain failed to keep up with heavy rains. The buildings affected included a building supply company, a services building for the elderly, and a church.

Another flash flood event occurred on September 21, 2009 and resulted in \$75,000 in property damages. More than two dozen people in and around the City of Brent had to be rescued from homes and mobile homes in the middle of the night, after storm drains became overwhelmed by heavy rain. A section of Deer Creek Road near Centreville became washed out due to the rushing waters and at least two vehicles subsequently drove into the newly formed ditch.

***Drought/Extreme Heat*** (Source: NCDC NOAA)

All jurisdictions are vulnerable to occurrences of drought and extreme heat. 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. The effects are far reaching and impact people, livestock, crops, and hydrologic systems. Droughts create conditions of increased vulnerability to wild fires that can destroy lives and property, and also lead to water supply shortages as reservoirs and ground water levels drop. Heat exhaustion and stroke are common and can disproportionately impact the elderly and low-income residents who cannot afford air conditioning.

The categories of drought are defined as follows (Source <http://droughtmonitor.unl.edu>) Accessed 11/16/14: **Abnormally Dry (D0)** - Going into drought: short-term dryness slowing planting, growth of crops or pastures; fire risk above average. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered. **Moderate Drought (D1)** - Some damage to crops, pastures; fire risk high; streams, reservoirs, or wells low, some water shortages developing or imminent, voluntary water use restrictions requested. **Severe Drought (D2)** - Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed.

**Extreme Drought (D3)** - Major crop/pasture losses; extreme fire danger; widespread water shortages or restrictions. **Exceptional Drought (D4)** - Exceptional and widespread crop/pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells, creating water emergencies.

In 2006, Bibb County experienced one month of D2 Severe Drought events and two months of D3 Extreme Drought events. Impacts of such events include crop and/or pasture losses; water shortages; and imposing water restrictions. In 2007, Bibb County experienced one month of D2 Severe Drought events, three months of D3 Extreme Drought events, and six months of D4 Exceptional Drought events. Impacts of such events include exceptional and widespread crop and/or pasture losses; water shortages, especially in reservoirs, streams, and wells; water restrictions; and water emergencies. In 2008, Bibb County experienced three months of D2 Severe Drought events, two months of D3 Extreme Drought events, and three months of D4 Exceptional Drought events. Impacts of such events include exceptional and widespread crop and/or pasture losses; water shortages, especially in reservoirs, streams, and wells; water restrictions; and water emergencies. In 2011, Bibb County experienced one month of D2 Severe Drought events and four months of D3 Extreme Drought events. Impacts of such events include crop and/or pasture losses; water shortages; and imposing water restrictions. In 2012, Bibb County experienced one month of D2 Severe Drought events. Impacts of such events include crop and/or pasture losses; water shortages; and imposing water restrictions.

All Bibb County drought events resulted in agricultural, hydrologic, and sociological impacts to be widely felt. No injuries, deaths, property or crop damages were reported to the NCDC NOAA as results of these drought events.

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). Heat stress can be indexed by combining the effects of temperature and humidity. 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. During 2003-2013, no Bibb County extreme heat events were reported to the NCDC NOAA.

***Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold***  
(Source: NCDC NOAA)

During 2003-2013, Bibb County has been affected by two frost/freeze events; one heavy snow event; one ice storm event; two winter weather events, and one extreme cold event that impacted the county in a variety of ways. Ice and small amounts of snow can cripple the county, leaving roads impassable, effectively crippling residents from traveling to school, work, or the grocery store, creating a panic of activity and traffic congestion in advance of a predicted storm.. 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 failures and property damages. 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 even death. The most significant impacts from an actual event are power outages and consequential loss of heat, numerous transportation related accidents, and stranded motorists. Much like drought, extreme cold has more impact on disadvantaged populations, especially the homeless. Since these storms have no defined track, all residents of Bibb County are vulnerable to severe winter storm events.

***Hurricane/Tropical Storm/Tropical Depression/Strong Wind/High Wind***  
(Source: NCDC NOAA)

Hurricanes and tropical storms such as Ivan, Arlene, Katrina, Dennis, Fay, and Ida have affected Bibb 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. Mobile homes in the county represent 30% of the housing stock. 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.

The following information was mentioned in the previous plan revision; however, this information is the most current data available.

#### *Hurricane Ivan (High Winds)*

On September 16, 2004, Hurricane Ivan impacted Southern Alabama making landfall near Gulf Shores at approximately 10 a.m. on September 16 as a Category 3 Hurricane. Storm surge values of 10-14 feet along the Alabama and Florida coastlines were the highest observed in over 100 years. As the storm moved inland, high winds and heavy rains wreaked havoc across the state. Heavy rainfall ranges between five and eight inches caused minor flooding across various areas of the state. Hurricane force winds were experienced for two to four hours across all inland Alabama counties, causing major damage to trees. These fallen trees were determined to be the primary cause of all inland structural damage attributed to the storm and electricity to residents to be interrupted for a week or more. Alabama totaled an estimated \$500,000,000 in damage to timber. Most of the soybean and pecan crops were destroyed, while the cotton crop suffered significantly though was not completely ruined. At least 100 trees and power lines were blown down across Bibb County and 150 households were impacted with varying degrees of wind damage. Three homes suffered extensive damage. Maximum wind gusts were estimated around 65 miles per hour. Doppler radar estimated 5 to 7 inches of rain during Ivan which caused a few roads in Southern Bibb County to become temporarily impassable. Bibb County experienced strong winds of 64 miles per hour and according to local sources, suffered \$148,746 in damages as a result of Hurricane Ivan.

#### *Hurricane Arlene (Strong Winds)*

Tropical Storm Arlene formed late on Wednesday, June 8, 2005. The system developed off the coast of Honduras in the Western Caribbean and moved generally north northwest. The storm grazed the tip of Western Cuba on Friday, June 10, 2005 and then entered the Gulf of Mexico, with winds sustained around 70 miles an hour. Arlene weakened just before it reached

the United States mainland and did not reach hurricane force. Arlene made landfall as a Tropical Storm on Saturday afternoon, June 11, 2005 just west of Pensacola, Florida. Arlene was downgraded to a Tropical Depression Saturday evening as it entered Central Alabama. Arlene continued northward across Central Alabama through early Sunday morning. Arlene eventually lost its tropical characteristics over eastern Michigan Monday afternoon, June 13, 2005. Arlene's local effects were rather minor. Storm total rain amounts were generally 1 to 3 inches east of Interstate 65 and 2 to 5 inches west of Interstate 65. Locally higher amounts up to 6 to 8 inches were possible. Many counties received sustained winds of 20 to 30 miles an hour briefly, mainly associated with stronger outer bands. Estimated maximum wind gusts ranged between 35 and 45 miles an hour with a few higher amounts possible. The heaviest rain and strongest winds were generally experienced west of Interstate 65. Several trees and power lines were blown down across Central Alabama as the storm moved through the area. Many thousands of residents were without power for several hours. A few homes suffered minor roof damage. A few cities reported minor urban flooding that lasted only a few hours. The heaviest rain and highest wind gusts were sporadic in nature and occurred from late Saturday afternoon into early Sunday morning area wide. The variability was due to stronger feeder bands and location of the remnant tropical system. Bibb County experienced strong winds of 46 miles per hour and \$14,000 in property damages.

*Hurricane Dennis (Tropical Storm)*

On July 10, 2005, the remnants of Hurricane Dennis moved across Bibb County. Numerous trees and power lines were blown down. Many of the trees landed on homes and vehicles. Bibb County experienced significant damage due to trees. Downed trees were reported on SR 5 near West Blocton, on Reed Street in the town of Centreville, and near the Pondville Community. Downed trees and power lines were reported on SW Davidson Road by the Probate Office as well as on County Road 51. A fallen tree damaged a mobile home in Green Pond and trees blocked Plantation Drive to the sewer lagoon in the Town of Brent. State Road 219 was flooded and a total of 3,900 Alabama Power customers were reportedly without power. Bibb County suffered approximately \$50,000 in property damages; local sources indicate Bibb County totaled \$41,961 in damages related to Hurricane Dennis.

### *Hurricane Katrina (Tropical Storm)*

On August 29, 2005, Hurricane Katrina made landfall on August 29, 2005 near Buras, Louisiana as a Category 3 storm and became known not only as the costliest but also as one of the most devastating hurricanes in the history of the United States. It is the deadliest hurricane to strike U.S. coastlines since 1928 and produced damages in excess of \$75 billion. Katrina had maximum sustained winds estimated to be 120 MPH at landfall. As Katrina moved across land, the storm weakened, though it maintained hurricane status past Laurel, Mississippi.

Southwestern Alabama experienced hurricane conditions as Katrina moved through neighboring Mississippi. The effects of Katrina were widespread across Alabama, particularly areas in the western portions of the state. These effects included significant rainfall values totaling between 5 and 6 inches and high winds. The rain and winds resulted in thousands of fallen trees and downed power lines. Power outages lasted from a few days to a week or more, and Alabama Power reported Katrina to be the worst storm in their history for statewide damage and power outages. Additionally, minor damages occurred to some structures throughout the area. In Alabama, six tornados also stemmed from Katrina, four of which were F-0 and two that were F-1s. Several trees and power lines were blown down across Bibb County. Power outages were widespread. Several vehicles and homes were damaged by the fallen trees. Bibb County reported approximately \$210,000 in property damages as a result of Hurricane/Tropical Storm Katrina; local sources in Bibb County reported a total of \$133,626 in damages as a result of Hurricane Katrina.

### *Hurricane Fay (Tropical Depression)*

On August 23, 2008, Tropical Storm Fay weakened to a Tropical Depression after it made its final landfall on the Florida Panhandle and entered Southern Alabama. No fatalities or injuries were reported in Bibb County. Trees and power lines were blown down by the winds, resulting in power outages, but no property or crop damages were reported.

### *Hurricane Ida (Tropical Depression)*

On November 9, 2009, the remnants of what was at one time Hurricane Ida but now had weakened into a Tropical Depression, brought very heavy rain and gusty winds to a large portion of Central Alabama. Nearly everyone across Central Alabama experienced at least 3 inches of

rain. Sustained winds around Central Alabama maxed out between 20 and 30 mph, with peak wind gusts generally between 30 and 40 mph. These winds blew down a few trees around the area, especially shallow rooted trees where the saturated soil likely played a significant role. Bibb County suffered \$2,000 in property damages.

***Sinkholes and Expansive Soils*** (Sources: NCDC NOAA; Geological Survey; Local Input)

The most current data is locals reported one sinkhole on June 27, 2005, outside of Centreville along Highway 82 as the result of an underground spring. The sinkhole was successfully mitigated. Impacts of sinkhole events are damages to property, infrastructure, and/or roadways. Areas of denser development such as the Cities of Brent and Centreville could experience more significant impact and loss due to increased number and concentration of structures and associated utility services. All jurisdictions except Woodstock identified this hazard. There are limited adverse effects and shrink-swell potential of soils in Bibb County. No sinkholes or expansive soils were reported by the NOAA NCDC Storm Events Database or the U. S. Geological Survey.

***Landslides*** (Source: Local Input)

Like sinkholes, landslides are possible in Bibb County, but seldom occur. One landslide on County Road 20 was reported by locals in 2005 and resulted in \$50,000 in property damages. Another landslide on County Road 16 was reported by locals in 2005 and resulted in \$100,000 in property damages. Both cases caused roadway damage. Road construction itself is often the source of potential landslide events as existing slopes and hillsides are cut to accommodate the road construction; the associated roadway receives the most impact of these types of landslides. The potential impacts to Bibb County as a result of landslides include property damages, impassable roads, sediment erosion, and possible infrastructure damages. All jurisdictions except Woodstock identified landslides as a local hazard. The southern half of Bibb County, including Brent and Centreville, is most likely to be impacted by potential landslide events. Naturally occurring landslides have not been reported in the county. No landslides were reported

by the NOAA NCDC Storm Events Database or the U. S. Geological Survey during this plan's study period of 2003-2013.

***Earthquakes*** (Sources: Alabama Geological Survey; USGS Database; [www.homefacts.com/earthquakes/Alabama.html](http://www.homefacts.com/earthquakes/Alabama.html); Accessed Dec. 15, 2014)

While earthquakes can and do occur in Bibb County, their impact has historically been minimal and insignificant. Previous events have occurred in the northeastern part of the county, but did not result in any damages, injuries, or deaths. One event was reported on April 21, 2009, 8.87 miles from Lawley, having a depth of 12.7 and magnitude of 3.3. Another event was reported on April 22, 2009, 9.47 miles from Lawley, having a depth of 8.2 and magnitude of 2.9. All jurisdictions except Centreville identified earthquakes as a local hazard. Construction of many buildings on steep slopes susceptible to landslides and in karst terrains susceptible to sinkholes will be a major contributing factor to damage from future earthquakes in the county. Earthquakes can trigger other natural disasters such as landslides and sinkholes. No earthquakes were reported by the NOAA NCDC Storm Events Database during this plan's study period of 2003-2013.

***Wildfires*** (Source: Alabama Forestry Commission)

Bibb County contains a significant amount of forestland, over 87% of its land area. Identified at-risk areas in the county are located around West Blocton and in the northeastern part of the county. Both rural and urban areas in all jurisdictions are impacted by wildfires. The timber industry is very prominent and timber crops could be significantly impacted in this county. During 2010-2013, Bibb County experienced 109 wildfire events resulting in 1280.15 total acres being burned. Based on this data, the average number of wildfires per year is 36; average acres burned per year is 427; and the average fire size in acres per year is 12. Alabama's forest products industries are vital to the state's economy. Alabama forests generate over \$21 billion in timber production and processing revenue and provide over 122,000 jobs. The forest industry produces an estimated \$12.78 billion worth of products in 2010, making the forestry industry the state's second largest manufacturing industry. Bibb County has four sawmills, one

vener mill, and one miscellaneous mill; therefore, its economy would greatly suffer from wildfires destroying forest lands. Both rural and urban areas in all jurisdictions are impacted by wildfires and result in loss of wilderness, crops, livestock and other property. Loss of human life, both residents and firefighters, is also possible.

***Dam and Levee Failures*** (Sources: HAZUS MH 2.1; Local Input)

There are eleven dams located in Bibb County: ten earth dams and one concrete gravity dam. No dams are located in a municipality, nor classified as having high hazard potential. Only the unincorporated county identified this hazard. The impact of a dam failure in the county is low given their location in remote areas with little residential occupancy. Potential impacts would be limited or unregulated water flow, associated damages to property and crops, and a potential increase in water borne disease. The risks associated with dam/levee failures are also the same as those risks associated with flooding. There have been no significant dam or levee failures reported in Bibb County during 2003 - 2013.

***Man-made hazards***

The very nature of man-made hazards makes it difficult to foresee, or effectively mitigate, their occurrence. All of the man-made hazards profiled in the plan are possible, no matter how unlikely they are to actually occur. Events that did occur in Bibb County were limited to hazardous material releases and arson. All municipalities and rural areas include roads or rail lines that could be impacted by an event. Potential impacts include lose of life and property, and the disruption of transportation networks and public services.

**Socially Vulnerable Populations**

Certain populations are generally more affected by hazard events. These populations can be defined in terms of social, racial, and economic characteristics. Data provided in the section was obtained from the 2010 Census using breakouts for entire municipalities and census tracts. Bibb County has 622.58 square miles of land and 36.8 persons per square mile.

**Table 4-1** shows the county's population characteristics by jurisdiction and by census tract. The City of Brent is the most populated jurisdiction, followed by the City of Centreville and the Towns of Woodstock and West Blocton. The Town of Vance, which is primarily located in neighboring Tuscaloosa County, has only limited areas in Bibb County. According to 2010 Census data, the total population for the entire Town of Vance is 500; however, approximately 36 of these are located in Bibb County. The City of Brent is the most populated jurisdiction in the county, due in part to the Medium Security State Prison that houses roughly 1,800 inmates. The prison also represents the highest concentration of people in a single location in the county.

**Map 2-1** shows the county's four new 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 100.04 is the most populated tract and contains the City of Brent and approximately half of the City of Centreville. Tract 100.02 is the second most populated tract and contains portions of the Towns of Vance and Woodstock and the entire Town of West Blocton. Tract 100.03 is the third most populated tract and contains portions of the City of Centreville. Tract 100.01 is the least populated tract and contains the remaining portion of the City of Centreville.

**Table 4-1: Bibb County Population Characteristics**

<b>Geographic Area</b>	<i>Population</i>	<i>Race-White</i>	<i>Race-Black</i>	<i>Race-Other*</i>	<i>Under 18 years</i>	<i>Age 18-64 years</i>	<i>Age 65 and Over</i>
<b>Bibb County</b>	22,919	17,381	5,047	487	5,201	14,808	2,906
<b>Brent</b>	4,947	2,348	2,494	105	408	1,108	288
<b>Centreville</b>	2,778	1,999	706	73	255	797	292
<b>Vance</b> <i>(only a small portion of Vance is located in Bibb County)</i>	1,529	1,368	112	49	449	953	127
<b>West Blocton</b>	1,240	1,124	100	12	319	768	153
<b>Woodstock</b>	1,428	1,317	80	31	382	891	155
<b>Census Tracts</b>							
<b>100.01</b> 29.80 persons per sq mi	2,732	2,410	276	46	706	1,664	362
<b>100.02</b> 85.70 persons per sq mi	6,025	5,591	319	115	1,600	3,784	641
<b>100.03</b> 20.07 persons per sq mi	5,391	4,404	814	173	1,225	3,362	804
<b>100.04</b> 44.83 persons per sq mi	8,767	4,971	3,630	166	1,670	5,998	1,099
<i>(Source: 2010 Census)</i>							

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. More

information and maps can be found at [www.warc.info/planning-a-development/documents](http://www.warc.info/planning-a-development/documents) - data book for Bibb County provided by the West Alabama Regional Commission.

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.

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 4-2** shows the median household income, per capita income, and poverty level data for the jurisdictions and census tracts in Bibb County.

The median household income for the State of Alabama is \$43,160. The median household income for the United States is \$53,046. Tract 100.01 is the only tract that exceeds the state average; all remaining tracts are less than the state and national averages. The population of Vance has a median household income that exceeds the state and national averages; however, the majority of this municipality is located in Tuscaloosa County, Alabama. Woodstock has a median household income that exceeds the state average, but is less than the national average. All other municipalities do not have a median household income that equals or exceeds either the state or national average. (*Source: 2010 Census; 2008-2012 Census Data at USA.com*)

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. All tracts are lower than the state and national averages. Vance has a per capita income that exceeds the state average; however, the majority of this municipality is located in Tuscaloosa County, Alabama. All other municipalities do not have a per capita income that equals or exceeds either the state or national average. (*Source: 2010 Census; 2008-2012 Census Data at USA.com*)

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 100.04 is the only tract that exceeds the state and national poverty level rates. Tract 100.01 exceeds the national poverty level rate, but is

lower than the state poverty level rate. All remaining tracts are lower than both the state and national poverty level rates. Brent, Centreville, and West Blocton have poverty level rates higher than both the state and national poverty level rates. Woodstock has a poverty level rate lower than the state and higher than the national poverty level rates. Vance is the only area having a poverty level rate lower than both the state and national poverty level rates; however, the majority of this municipality is located in Tuscaloosa County, Alabama. The Town of Brent has the highest poverty rate in the county at 29.01%, due in part to the inclusion of the inmate population at the State Prison. *(Source: 2010 Census; 2008-2012 Census Data at USA.com)*

According to the 2010 Census, the total population of Bibb County is 22,915, which is 10.03% more than it was in 2000. The population growth rate is higher than the state average rate of 7.48% and is about the same as the national average rate of 9.71%. The Bibb County population density is 36.60 people per square mile, which is much lower than the state 91.18 and national 81.32 average densities of people per square mile. The most prevalent race in Bibb County is white, which represents 75.85% of the total population. The average Bibb County education level is lower than the state and national averages.

As of 2008-2012 Census Data, the per capita income of Bibb County is \$17,611, which is lower than the state average of \$23,587 and national average of \$28,051. Bibb County median household income is \$36,824, which has increased by 17.20% since 2000. The median household income growth rate is lower than the state average rate of 26.44% and national average rate of 26.32%.

As of 2008-2012 Census Data, the median price of a house in Bibb County is \$91,600, which is lower than the state average of \$122,300 and national average of \$181,400. The Bibb County median house value has increased by 22.79% since 2000. The growth rate for the price of a house in Bibb County is lower than the state average rate of 43.71% and national average rate of 51.67%. The median year that a house in Bibb County was built is 1982, which is newer than the median year for a house built in the state which is 1980 and for a house built in the USA which is 1975.

**Table 4-2: Bibb County Income Data**

<b>Geographic Area</b>	<b>Median Household Income</b>	<b>Per Capita Income</b>	<b>Population Below Poverty Level</b>	<b>Population Percent Below Poverty Level</b>
<b>Bibb County</b>	\$36,824	\$23,273	3,594	16.5%
<b>Brent</b>	\$28,640	\$14,404	1,176	29.01%
<b>Centreville</b>	\$21,864	\$14,691	695	19%
<b>Vance</b>	\$73,182	\$27,819	69	5.43%
<b>West Blocton</b>	\$34,205	\$20,928	320	21.15%
<b>Woodstock</b>	\$44,531	\$21,939	238	15.19%
<b>Census Tracts</b>				
<b>100.01</b>	\$41,765	\$15,992	452	15.22%
<b>100.02</b>	\$43,876	\$21,235	861	14.18%
<b>100.03</b>	\$32,385	\$19,243	661	13.21%
<b>100.04</b>	\$30,379	\$14,678	1,620	20.92%
<i>(Source: 2010 Census; 2008-2012 Census Data at USA.com)</i>				

## Vulnerable Structures

Housing is an important consideration of mitigation planning. The concentration and the type of housing are two primary factors. In Bibb County there are a total of 8,981 housing units. **Table 4-3** shows the housing characteristics of the county by jurisdiction.

Brent has the greatest number of housing units, followed by Centreville, Vance, Woodstock, and West Blocton. Brent has the highest number of mobile home units within a municipality; while, West Blocton 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.

<b>Table 4-3: Bibb County Housing Characteristics</b>			
<b>Geographic Area</b>	<b>Total Housing Units</b>	<b>Mobile Home Units</b>	<b>Mobile Home %</b>
<b>Bibb County</b>	8,981	2,615	29.0%
<b>Brent</b>	1,449	373	25.0%
<b>Centreville</b>	1,170	265	22.0%
<b>Vance</b>	601	163	27.0%
<b>West Blocton</b>	526	162	30.0%
<b>Woodstock</b>	565	131	23.0%
<i>(Source: 2010 Census; Easidemographics.com; Percent calculations by LHA)</i>			

The Census Tracts for Bibb County were changed and renumbered for the 2010 Census. Tract 100 was split into Tracts 100.01 and 100.02. Tract 101 is now Tract 100.04 Tract 102 is now Tract 100.03. **Table 4-4** and **Table 4-5** reflect information taken from HAZUS-MH 2.1 2012 which does not correspond with the new Census Tracts; therefore, references have been made to reflect both 2000 Census Tracts and 2010 Census Tracts accordingly. **Table 4-4** shows the building stock in Bibb County by general occupancy. The data provides the number of buildings by use and is shown by Census Tract. Complementing this information is **Table 4-5** that provides the value totals for these building types and **Table 4-6** that provides the content value for these building types, each table is shown by Census Tract.

**Table 4-4: Bibb County Building Stock by General Occupancy**

2000 Tract	2010 Tract	Residential	Commercial	Industrial	Agriculture	Religious	Government	Education	Building Count
100	100.01	3,656	119	40	5	18	5	7	3,850
	100.02								
102	100.03	2,475	103	33	10	19	10	3	2,653
101	100.04	2,901	121	28	9	17	8	4	3,088
	<b>Total</b>	<b>9,032</b>	<b>343</b>	<b>101</b>	<b>24</b>	<b>54</b>	<b>23</b>	<b>14</b>	<b>9,591</b>

(Source: HAZUS-MH 2.1 2012)

**Table 4-5: Bibb County Building Exposure**

(Numbers shown in thousands of dollars)

2000 Tract	2010 Tract	Residential	Commercial	Industrial	Agriculture	Religious	Government	Education	Total Exposure
100	100.01	\$274,507	\$32,727	\$9,182	\$562	\$10,237	\$1,537	\$7,122	\$335,874
	100.02								
102	100.03	\$229,224	\$32,434	\$7,877	\$1,739	\$10,456	\$5,710	\$3,755	\$291,195
101	100.04	\$250,169	\$57,660	\$9,194	\$1,006	\$8,023	\$3,170	\$2,746	\$331,968
	<b>Total</b>	<b>\$753,900</b>	<b>\$122,821</b>	<b>\$26,253</b>	<b>\$3,307</b>	<b>\$28,716</b>	<b>\$10,417</b>	<b>\$13,623</b>	<b>\$959,037</b>

(Source: HAZUS-MH 2.1 2012)

**Table 4-6: Bibb County Building Contents Exposure**  
(Numbers shown in thousands of dollars)

2000 Tract	2010 Tract	Residential	Commercial	Industrial	Agriculture	Religious	Government	Education	Total Exposure
100	100.01	\$137,501	\$33,486	\$10,730	\$562	\$10,237	\$2,049	\$7,122	\$201,687
	100.02								
102	100.03	\$114,747	\$32,777	\$10,729	\$1,739	\$10,456	\$7,220	\$3,755	\$181,423
101	100.04	\$125,274	\$64,809	\$12,526	\$1,006	\$8,023	\$3,170	\$2,746	\$217,554
	<b>Total</b>	<b>\$377,522</b>	<b>\$131,072</b>	<b>\$33,985</b>	<b>\$3,307</b>	<b>\$28,716</b>	<b>\$12,439</b>	<b>\$13,623</b>	<b>\$600,664</b>

(Source: HAZUS-MH 2.1 2012)

### Critical Facility Inventory

Critical facilities are crucial to the daily operation of Bibb County. Critical facilities help maintain a certain quality of life. Loss of operation could result in severe impacts on the community. Each of the critical facilities listed in **Table 4-7** is vulnerable to each of the hazards identified in the risk assessment. Critical facilities include but are not limited to the following:

- Governmental services
- Police and Fire Departments
- Public Works
- Education
- Industrial
- Medical

Each jurisdiction listed facilities based on the location of the facility without regard to ownership or function. The Bibb County Courthouse, for example, is shown on the City of Centreville’s list based on its location in the county seat. The county’s list will show only what is located in the unincorporated areas. Each jurisdiction also provided addresses and approximate values for the facilities listed, using replacement values from their insurance policies when available. *HAZUS-MH 2.1* was also utilized for building and content values.

Critical facilities were reviewed to consider vulnerability to special flood hazard areas. The determination utilized the review of existing FIRMs or FHBMs. Only one critical facility in

Bibb County was identified as being in a special flood hazard area and particularly vulnerable to floods include:

- Brent – City Shop located at McKinley Street valued at \$1,500,000 (structure and contents). In the previous plan revision, the Eoline Fire Department #1 located on Highway 82 and valued at \$450,000 for structure and contents was listed as being in a special flood hazard area; however, since has been identified as being outside flood hazard area. This determination was made when the grant application was filed for a community safe room to be installed and FEMA approved and awarded the grant.

In 2008, three community shelters were constructed in the County using the Hazard Mitigation Grant Program (HMGP). The shelters were built at West Blocton Elementary School, Woodstock Elementary School, and Randolph Elementary School. Each shelter has an occupancy capacity of 604 persons. When school is in session these shelters will reduce vulnerability to a special at-risk population by serving children under the age of 18. Most recently, the City of Brent constructed a storm shelter in combination with a fire station and senior center facility with an occupancy capacity of 115 people. The shelter reduces vulnerability to a special at-risk population by serving the elderly. The project utilized Pre-Disaster Mitigation funds from FEMA. The location of the facility is on State Highway 5, close to the U. S. Highway 82 Junction. This area has a high concentration of commercial development and includes the newly built Wal-Mart. In addition to the Brent community safe room, a new safe room is located at the Eoline Fire Department.

*Future Critical Facilities:*

Construction of other critical facilities and infrastructure will follow future development.

**TABLE 4-7: Bibb County Critical Facilities**

Facility	Location	Area	Use	Value
Brierfield VFD	18567 Hwy 139	Brierfield	Fire & Rescue	\$350,000
Cedar Grove VFD	13503 N Scottsville		Fire Fighting	\$250,000
Eoline VFD #1	US 82	Eoline	Fire Fighting	\$450,000
Eoline VFD #2	Slick Road	Eoline	Fire Fighting	\$250,000
Lawley VFD #1	2971 Hwy 36	Lawley	Fire Fighting	\$250,000
Lawley VFD #2	2115 Hurricane Ridge	Lawley	Fire Fighting	\$250,000
Randolph VFD	6953 Hwy 36	Randolph	Fire Fighting	\$250,000
<b>Harrisburg Water Pumping Station</b>				
Harrisburg Water Pumping Station	Payne Lake Rd	Harrisburg	Water Supply	\$125,000
Pleasant Hill Water Pumping Station	Hwy 82/ Pleasant Hill	Harrisburg	Water Supply	\$125,000
Eoline Water Pumping Station	Ward School House Rd	Harrisburg	Water Supply	\$125,000
Pondville Water Storage Tank	Elam School House Rd	Pondville	Water Storage	\$400,000
Randolph Water Tank	Hwy 36	Randolph	Water System	\$450,000
Randolph Water Pump	Hwy 139	Brierfield	Water System	\$200,000
Green Pond Water Dept.	19639 Eastern Valley Rd	Green Pond	Water System	\$250,000
Green Pond Tank (100,000 Gal)	State Route 5	Green Pond	Water System	\$200,000
Green Pond Tank (300,000 Gal)	Mountain Top Rd	Green Pond	Water System	\$500,000
Green Pond Tank (1 million Gal)	Moore Dr.	Green Pond	Water System	\$1,000,000
Green Pond Spring	Big Springs Road	Green Pond	Water System	
Green Pond Weeks Well	Eastern Valley Rd	Green Pond	Water System	
Green Pond Well #4	Grey Hill Rd	Green Pond	Water System	
Eoline Water Pumping	Hwy 82	Brent	Water System	\$1,000,000
<b>Randolph Elementary/ Storm Shelter</b>				
Randolph Elementary/ Storm Shelter	7259 Hwy 36	Randolph	Education	\$3,797,635
<b>Bibb Co Career Tech</b>				
Bibb Co Career Tech	17191 Hwy 5		Education	\$3,150,000
<b>Cahaba Timber</b>				
Cahaba Timber	Hwy 25	Brierfield	Major Employer	
<b>Lawley Senior Center</b>				
Lawley Senior Center	6624 Hwy 36	Randolph	Shelter/Food Svc	\$150,000
Outdoor Warning Siren (#2)	1497 Grey Hill Rd	Green Pond	Weather warning	\$15,000
Outdoor Warning Siren (#4)	108 Garden Trail Apts		Weather warning	\$15,000
Outdoor Warning Siren (#7)	13200 Montevallo Rd	Brierfield	Weather warning	\$15,000
Outdoor Warning Siren (#13)	2602 Bear Creek Rd		Weather warning	\$15,000
Outdoor Warning Siren (#14)	7259 Hwy 36	Randolph	Weather warning	\$15,000
Outdoor Warning Siren (#15)	11353 Deer Creek Rd/Rehobeth	Lawley	Weather warning	\$15,000
Outdoor Warning Siren (#16)	Elam School House Rd		Weather warning	\$15,000
Outdoor Warning Siren (#18)	18567 Hwy 139	Brierfield	Weather warning	\$15,000
<i>Source: Local Jurisdiction</i>			<b>TOTAL</b>	<b>\$13,842,635</b>

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**Development Trends**

Bibb County is mostly rural with a high percentage of National Forest land. Bibb County’s population has grown slightly over the past forty years and should see continued growth as development from Tuscaloosa, Shelby and Jefferson Counties continues to expand. Many potential residents from these counties may choose to live in more rural areas where crime rates and housing prices are lower. **Table 4-8** provides the population projections for Bibb County. **Map 4-1** shows current land use cover in Bibb County.

**Table 4-8: Population Projections**

County	2000	2010	2015	2020	2025	2030	2035	2040	Number Difference	Percent Difference
<b>Bibb</b>	20,826	22,915	23,367	23,737	23,971	24,095	24,134	24,091	1,176	5.1
Note: These projections are driven by population change between Census 2000 and Census 2010. Recent data on births and deaths from the Alabama Department of Public Health are used to derive birth and death rates for the state and each county.										
Source: U.S. Census Bureau and Center for Business and Economic Research, The University of Alabama, Fall 2012 – As noted in the Alabama State Hazard Mitigation Plan, April 2013										

Recent new businesses in the county include a Jacks fast food restaurant in Centreville (2013), Family Dollar in Centreville (2014) and a Fit Life in Brent (2014). Future development includes a new ball park that is under construction.

Currently there are no known or anticipated annexations by municipalities except for the Town of Woodstock. The Town’s expansion is primarily along Interstate 20/59 and includes areas in neighboring Tuscaloosa County. Development in the newly annexed areas of Woodstock is expected to consist of light industrial and commercial businesses, as this has been the general trend at the northern end of the county due to its location along a major transportation corridor between the larger cities of Tuscaloosa and Birmingham.

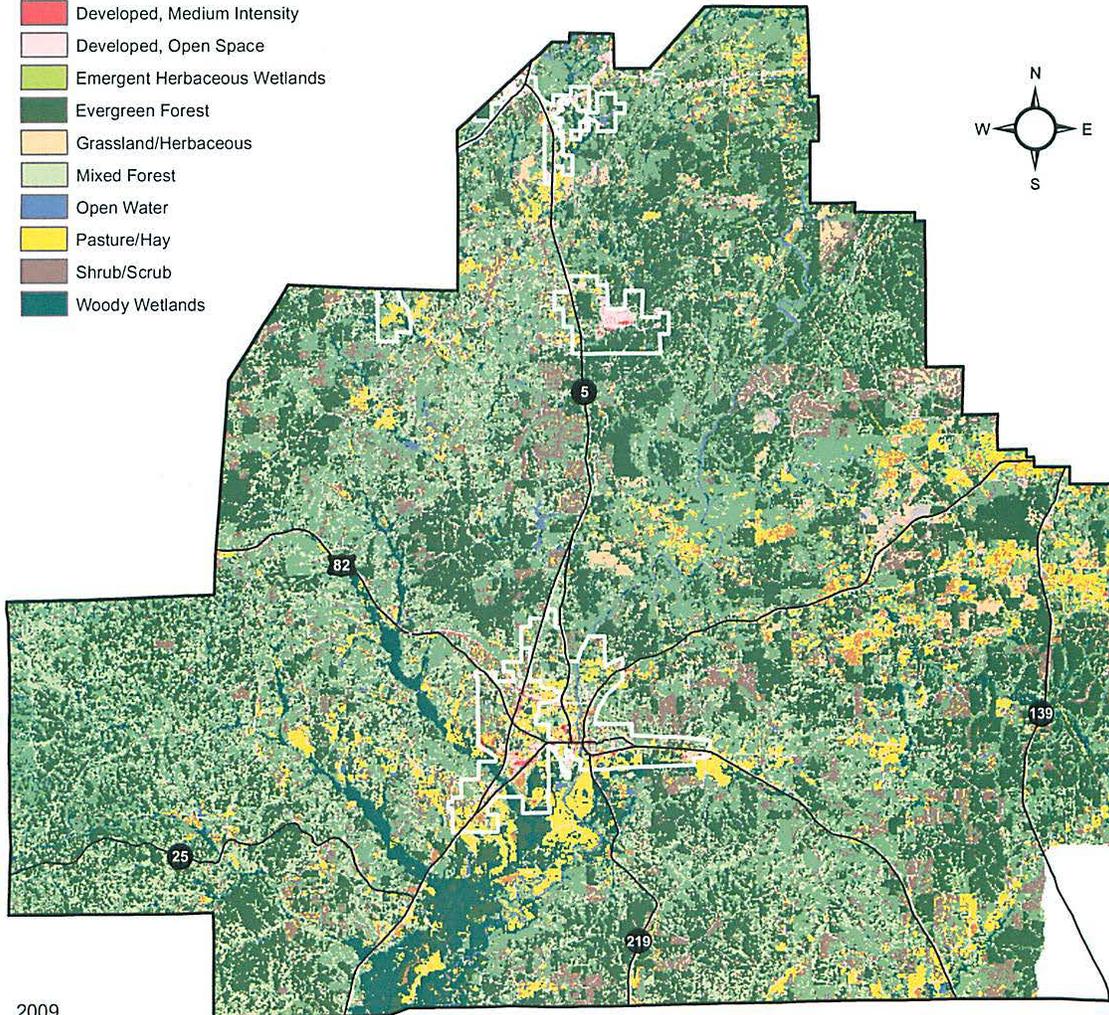
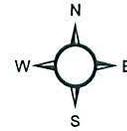
In the City of Brent development has consisted of the emergence of a new commercial corridor along State Hwy 5 near the junction of U. S. Hwy 82. Existing businesses such as Wal-Mart have relocated here from previous locations in the town in order to expand.

The development trends in the county do not indicate any marked increase in vulnerability to identified hazards. At present, land use patterns are not expected to change, and development is expected to remain consistent within existing patterns.

# Map 4-3: Bibb County Land Use Land Cover



- Barren Land (Rock/Sand/Clay)
- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, Open Space
- Emergent Herbaceous Wetlands
- Evergreen Forest
- Grassland/Herbaceous
- Mixed Forest
- Open Water
- Pasture/Hay
- Shrub/Scrub
- Woody Wetlands



2009

This map is not a survey product, and should not be used for conveyance. Sources: US Census Bureau TIGER Line Files, WARC, Alabama Land and Water Resources. For more information, call (205)333-2990.



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## **Methods of Warning**

Bibb County Emergency Management Agency and the county's jurisdictions have constructed a warning system that provides multiple ways to receive weather watches, warnings, and other emergency messages.

### ***NOAA Weather Radio***

NOAA Weather Radio is a nationwide network of radio stations broadcasting weather and other emergency information 24 hours a day. All National Weather Service issued watches, warnings, forecasts and other emergency messages are broadcast on one of seven frequencies.

National Weather Service personnel at offices in Birmingham record weather information that plays in a cyclical pattern repeating every three to six minutes. Broadcasts generally include local area five-day forecasts, current weather conditions, radar reports, weather summaries, climatic data, river and lake stage readings, and other weather information. The broadcasts are continuously updated to provide the listener with the latest information.

NOAA Weather Radio is useful any time for the latest weather information but becomes even more important during severe or hazardous weather. During episodes of severe weather, the normal broadcast cycle is interrupted and focus shifted to the local severe weather threat. Watches, warnings, and statements are given the highest priority and are updated frequently as conditions change.

In an emergency, each transmitter is capable of transmitting a warning alarm tone signal and the new Specific Area Message Encoding (SAME) signal followed by information on the emergency situation. These signals will activate specially designed receivers, either bringing up the volume or producing a visual and/or audible alarm. Not all weather band receivers have this capability, but all radios that receive NOAA Weather Radio transmissions can receive the emergency broadcasts. The warning alarm device is tested each Wednesday between 11 am and noon, weather permitting.

### ***Outdoor Warning Sirens***

Bibb County EMA has 21 outdoor warning sirens in place. Although these sirens cover most of the populated areas, there are many places without an outdoor siren. Since the 2009 plan update, the county has begun using CodeRED and ALERT FM warning systems countywide; therefore, the county does not plan to install outdoor warning sirens within the next five years. The costs of purchasing, installing, and maintaining outdoor warning sirens became very expensive and unaffordable for the county. **Table 4-9** lists the outdoor warning sirens in Bibb County, as well as the only proposed outdoor warning siren for future installation at the Eoline Fire Department.

The existing sirens have an effective radiated coverage area of one mile around the siren. The sirens are activated only for Tornado Warnings, but will be used to notify the public of Hazardous Materials Incidents in the near future. There is no ALL CLEAR siren sounding due to the possibility of public confusion. Weather Warnings sound like a long wail. The siren blasts run three to five minutes. The sirens are activated from the Bibb County E-911 Office. Activations are simultaneously completed for the entire coverage areas.

The entire countywide Outdoor Siren Warning System is periodically tested. Notification of testing is usually posted in the newspapers to avoid confusion. The general public is advised not to depend on hearing the sirens inside a building. The sirens are designed to be heard outdoors only and are installed near recreational areas and shopping malls where there are large outdoor populations. As a backup to the Outdoor Siren Warning System, police and fire units throughout the county can be instructed to sound their sirens. Additionally, the county now utilizes the CodeRED Warning System.

### ***CodeRED Emergency Communication Warning System***

The CodeRED Warning System is easy to use under any conditions. Authorized users launch messages via telephone or Internet from anywhere at any time. The system can support thousands of users. CodeRED utilizes technology that ensures messages are delivered in their entirety whether the call is picked up live by a person or an answering device. Real time

reporting allows users to view the status of every communication. Multiple redundancies are built in to ensure delivery of critical communications. CodeRED is a massive dialing system that is capable of transmitting millions of messages an hour. The system's resources are allocated to match local telephone infrastructure, resulting in less disconnected calls, network congestion, and busy signals during an emergency situation.

### ***ALERT FM Emergency Communication Warning System***

The ALERT FM Warning System allows emergency officials the ability to communicate directly with their community in the event of a public emergency. Messages can be targeted to specific geographical areas, organizational groups, citizens, first responders, and/or government personnel. Emergency communication warning messages can be sent via multiple ways in seconds.

### ***Broadcast Media***

One of the key elements of the Countywide Warning System is broadcast media. Most of the radio, television, and cable companies that serve Bibb County residents are dedicated to informing their audiences of impending emergencies. These broadcasters have partnered with the Bibb County Emergency Management Agency to bring their listeners and viewers fast, accurate, and important severe weather and civil emergency information via EAS and traditional newsgathering methods. Most of the television stations serving the Bibb County market (ABC 33/40, CBS 42, NBC 13, and Fox 6) feature live Doppler radar and certificated meteorologists. Many of the radio stations maintain continuous severe weather coverage.

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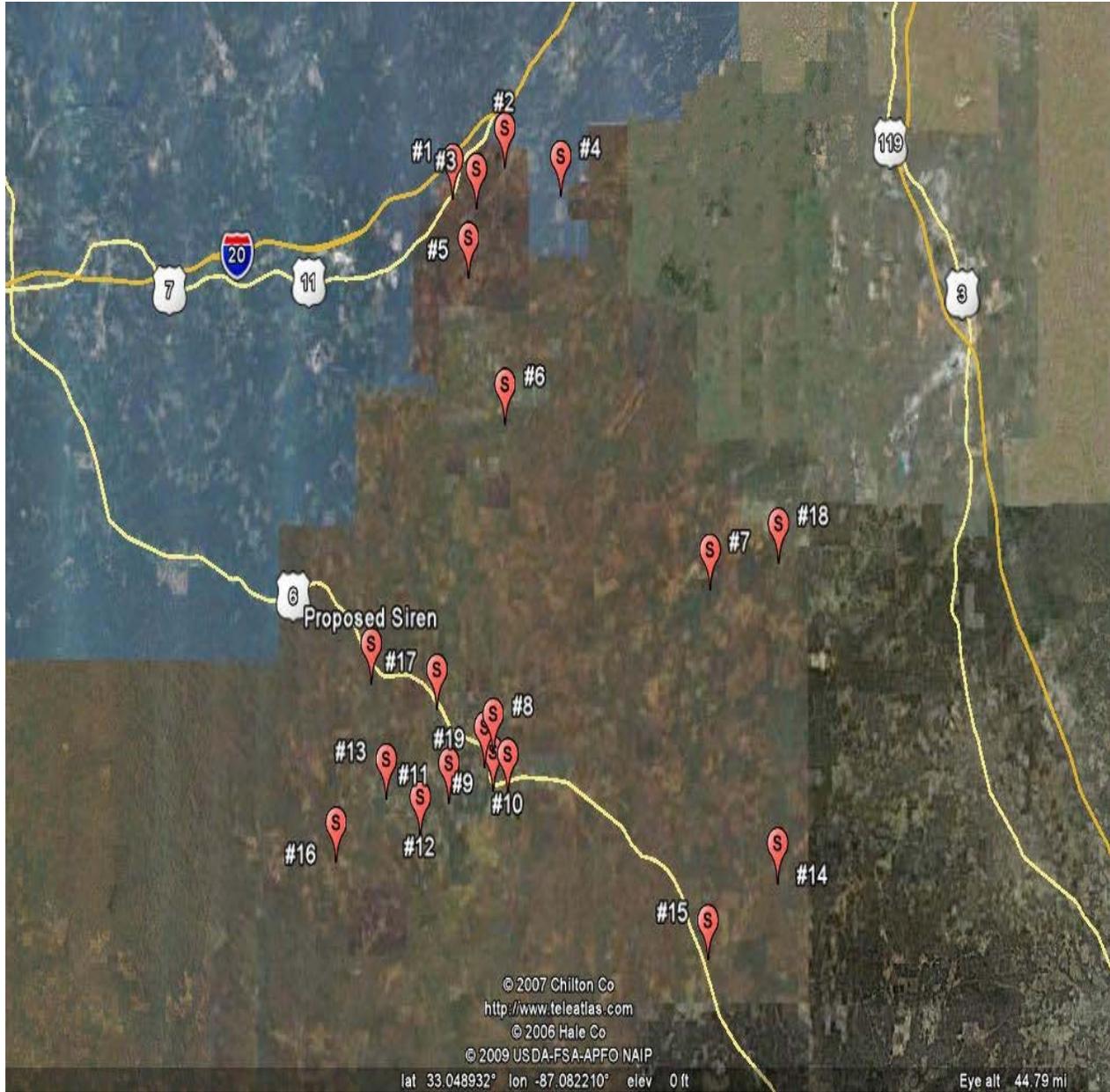
**TABLE 4-9: Bibb County Outdoor Warning Sirens**

<b>Existing Sirens</b>				
<b>Number</b>	<b>Jurisdiction</b>	<b>ADDRESS</b>	<b>Longitude</b>	<b>Latitude</b>
1	Woodstock	19986 Hwy 11	33.2110	-87.1675
2	Green Pond	1497 Grey Hill Rd	33.2251	-87.1258
3	Woodstock	71 Strickland Dr	33.2076	-87.1482
4	County	108 Garden trail Apts	33.2156	-87.0817
5	Woodstock	189 Oakland Dr	33.1768	-87.1559
6	West Blocton	835 Cahaba River Dr	33.1157	-87.1259
7	County/Brierfield	13200 Montevallo Rd	33.0358	-86.9601
8	Centreville	530 2nd ST N - Country Club	32.9582	-87.1365
9	Centreville	153 S. W. Davison Dr	32.9397	-87.1365
10	Centreville	68 Forestry Dr -City Shop	32.9397	-87.1241
11	Brent	647 S. Scottsville Rd	32.9400	-87.1707
12	Brent	351 Hickory ST	32.9210	-87.1950
13	County	2602 Bear Creek Rd -AL Power	32.9374	-87.2218
14	County/Randolph	7259 HWY 36	32.9013	-86.9063
15	County/Lawley	11353 Deer Creek Rd/Rohebeth	32.8673	-86.9632
16	County	Elam School House Rd	32.9076	-87.2657
17	Brent	Behind Wal-Mart	32.9761	-87.1841
18	County/Brierfield	18567 Hwy 139	33.0457	-86.9043
19	Centreville	Pierson St. - Hospital	32.9471	-87.1421
20	West Blocton	50 Fire Station Dr		
<i>*All sirens have a one mile audible radius</i>				
<b>Proposed Siren</b>				
<b>Number</b>	<b>Jurisdiction</b>	<b>Address</b>	<b>Latitude</b>	<b>Longitude</b>
1	County	Eoline	32.9952	-87.2344
<i>Source: Bibb County EMA</i>				

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## MAP 4-2: BIBB COUNTY OUTDOOR WARNING SIRENS

(Source: Google Earth and Bibb County EMA)



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### ***Vulnerability Summary***

**Table 4-12** provides a summary of Bibb County’s vulnerability to specified hazards by jurisdiction. Each jurisdiction was tasked with considering how vulnerable they are to each hazard by considering the percentage of potential damage and the frequency of occurrences. Using information from the Risk Assessment in Section Three as well as the data in the earlier parts of this section as a basis for evaluation, the committee members assigned either N/A: Not Applicable, L: Low Risk, M: Medium Risk, and H: High Risk as defined in the Table Key.

### ***Estimated Loss Projections***

**Table 4-10** shows the figures used for valuation of deaths and injuries are approximations based on FEMA guidance used in benefit-cost analysis of hazard mitigation measures. Major and minor injuries are combined in the NOAA data, so it was necessary to use a blended number in the valuation.

**Table 4-12** shows the estimated loss projections for each hazard. The average number of occurrences per year is shown along with total number of deaths and injuries. The average amount of loss per event was determined by combining crop and property loss damages for each event type and then dividing by the corresponding total number of events reported during the ten-year study period. This amount is shown under the column heading Average Crop and Property Loss. There are instances where the Average Crop and Property Loss (per event) and Projected Loss (per Event) for an identified hazard could not be determined due to the absence of historical event data. This is a data limitation beyond the control of an affected jurisdiction.

<b>Table 4-10: 2014 Values used for Monetary Conversion of Tornado Injuries and Deaths</b>	
<b>Damage Category</b>	<b>Value</b>
Injury (blended major and minor)	\$23,175
Death	\$3,660,003
<i>(Source: FEMA)</i>	

The Projected Loss is shown per event by hazard type. Due to the fluctuations in the value of a dollar over the ten-year study period, the year 2008 was chosen as a midpoint year. The Projected Loss was then calculated by adjusting the 2008 value of \$1 up to \$1.09, a 9 % increase to reflect the value of the dollar in 2014. Average loss amounts were increased by 9% to achieve a 2014 value for an estimated projected loss per event occurrence. *(Source: U. S. Inflation Calculator based on the U. S. Government Consumer Price Index Data)*

**Table 4-11: Bibb County Vulnerability Summary**

<b>Natural Hazards</b>	<b>Brent</b>	<b>Centreville</b>	<b>Vance</b>	<b>West Blocton</b>	<b>Woodstock</b>	<b>Unincorporated County</b>
<b>Thunderstorm</b>	H	M	H	H	L	H
<b>Lightning</b>	H	H	H	H	L	H
<b>Hail</b>	H	L	H	L	L	H
<b>Tornado</b>	H	M	H	H	M	H
<b>Flood/Flash Flood</b>	M	M	H	M	L	M
<b>Drought/Extreme Heat</b>	H	L	M	M	H	M
<b>Winter Storm/Frost Freeze/ Heavy Snow/ Ice Storm/ Winter Weather/Extreme Cold</b>	M	L	M	H	H	M
<b>Hurricane/Tropical Storm/ Tropical Depression/High Wind/Strong Wind</b>	H	M	M	M	L	M
<b>Sinkhole/Expansive Soil</b>	L	M	L	L	N/A	M
<b>Landslide</b>	L	L	L	L	N/A	L
<b>Earthquake</b>	L	N/A	L	L	L	M
<b>Wildfire</b>	H	M	L	L	L	H
<b>Dam/Levee Failure</b>	N/A	N/A	N/A	N/A	N/A	L
<b>Man-made Hazards</b>						
<b>Hazardous Material Release</b>	H	M	L	H	L	M
<b>Arson/Incendiary Attack</b>	M	L	L	H	L	M
<b>Armed Attack</b>	M	L	L	M	L	L
<b>Conventional Bomb</b>	M	L	L	M	M	M
<b>Chemical Agent</b>	M	M	L	H	M	M
<b>Cyber Terrorism</b>	H	L	M	M	H	L
<b>Agriterrorism</b>	M	M	L	H	H	M
<b>Biological Agent</b>	M	M	L	H	H	L
<b>Radiological Agent</b>	M	M	L	H	H	L
<b>Nuclear Bomb</b>	M	L	L	M	H	L

**KEY:**

- 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)

*(Source: Participating Jurisdictions)*

**Table 4-12: Bibb County  
Estimated Loss Projections from Specified Hazards**

<b>Natural Hazards</b>	<b>Average Occurrences (per year)</b>	<b>Total Deaths</b>	<b>Total Injuries</b>	<b>Average Death and Injury Loss (per event)</b>	<b>Average Crop and Property Loss (per event)</b>	<b>Projected Loss (per event)</b>
<b>Thunderstorm</b>	3.8	0	1	\$610	\$7,947	\$8,720
<b>Lightning</b>	0	0	0	\$0	\$0	Unknown
<b>Hail</b>	2.7	0	0	\$0	\$9,953	\$10,142
<b>Tornado</b>	1.1	1	10	\$354,341	\$1,311,636	\$1,697,631
<b>Flood/Flash Flood</b>	1	0	0	\$0	\$18,200	\$18,546
<b>Drought/Extreme Heat</b>	2.7	0	0	\$0	\$0	Unknown
<b>Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold</b>	0.7	0	0	\$0	\$0	Unknown
<b>Hurricane/Tropical Storm/ Tropical Depression/High Wind/ Strong Wind</b>	0.6	0	0	\$0	\$104,333	\$106,315
<b>Sinkhole/Expansive Soil</b>	0.1	0	0	\$0	\$0	Unknown
<b>Landslide</b>	0.2	0	0	\$0	\$75,000	\$76,425
<b>Earthquake</b>	0.2	0	0	\$0	\$0	Unknown
<b>Wildfire (3 year study period)</b>	36	0	0	\$0	\$25,176	\$27,442
<b>Dam/Levee Failure</b>	0	0	0	\$0	\$0	Unknown

*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 is a 3-year period. Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figures 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.

## **Mitigating Potential Losses**

The Hazard Mitigation Planning Committee set forth mitigation goals and objectives for the county and its jurisdictions. Each jurisdiction sets forth its own mitigation action plan located in Section Five.

### ***Mitigation Strategy***

In the preparation of the mitigation strategy, the Hazard Mitigation Planning Committee reviewed the goals and objectives of the 2009 plan revision. The committee agreed the goals and objectives would remain the same for this plan revision.

### ***Mitigation Actions***

Mitigation ideas can be found on the FEMA.gov website. FEMA summarizes mitigation actions into four types: Local Planning and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, Education and Awareness.

Jurisdictions sought and selected their own mitigation actions to support the goals and objectives of the mitigation strategy. The identification of mitigation actions has been shaped by the events that occurred over the past five years, vulnerabilities, and available mitigation actions. Each significant event revealed strengths and weaknesses within the hazard mitigation program; therefore, jurisdictions adjusted their mitigation actions to address these weaknesses accordingly. Because of these events, the prioritization of actions has been re-evaluated and ranked as follows:

Actions identify the activity, what hazard(s) are addressed, whether the activity applies to a new or existing asset, and an estimated cost. The action also identifies the planning mechanism, possible funding sources, and a time frame for completion of the activity.

### ***Action Priority and Cost Benefit Review***

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.

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.

### ***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.

In the 2009 plan revision, priorities were expressed by numbering 1 as the highest priority – the higher the number, the lower the priority. For this plan revision, the committee decided to assign a new prioritization labeling as one project may be equally as important as another project. As a result, projects will be labeled high, medium, and low in priority. All actions will be addressed as soon as possible depending on available funding and resources; however, actions labeled high in priority will be addressed first, medium in priority will be addressed secondly, and low in priority will be addressed last. The most important determination is funding, which greatly affects which projects can be completed.

In order to track the progress of identified actions, the Bibb County’s 2009 Mitigation Action Plan is shown below. The current statuses of the proposed actions are shown in italics. **Table 4-13** shows Bibb County’s mitigation actions for the 2015 plan update. During the plan update process new actions were identified and added to the plan. In the 2009 plan revision, priorities were expressed by numbering 1 as the highest priority – the higher the number, the lower the priority. For this plan revision, the committee decided to assign a new prioritization labeling as one project may be equally as important as another project. As a result, projects will be labeled high, medium, and low in priority.

## **BENCHMARKING:**

### **Bibb County Mitigation Action Plan (2009)**

1. Install reverse E-911 System – *Action was deleted.*
  - The county is now utilizing CodeRED and ALERT FM which sends messages and provides weather warnings.
2. Provide NOAA Weather Radios at critical facilities and public schools - *Action was deleted.*
  - The county is now utilizing CodeRED and ALERT FM which sends messages and provides weather warnings.

3. Add additional weather sirens throughout the county - *Action was revised and remains in this plan revision.*
  - The county does not want to add additional outdoor warning sirens, with the exception of one they wish to add at the Eoline Fire Department, due to the costs of maintenance on the sirens and the fact they now utilize CodeRED and ALERT FM.
4. Upgrade communications systems – *Action remains in this plan revision.*
  - The county has installed a new E911 tower and is applying for grants to update their E911 System.
5. Construct short-term community storm shelters to include generators – *Action was revised, combined with another action (#9), and remains in this plan revision.*
  - The county used the Pre Disaster Mitigation Program (PDM) to construct two community safe rooms: Brent Senior Citizen Facility and Eoline Fire Department, both having an occupancy capacity of 115 people. The county now has five community safe rooms, one having no generator. Action has been revised, and combined with the other community storm shelter action of 2009, to say construct/install community safe rooms to include generators. The county wishes to add additional community safe rooms within the next five years.
6. Construct long-term community storm shelters to include generators - *Action was revised, combined with another action (#4), and remains in this plan revision.*
  - Action has been revised, and combined with the other community storm shelter action of 2009, to say construct/install community safe rooms to include generators. A new action of construct/install individual safe rooms has been added. The county wishes to add individual safe rooms within the next five years.
7. Construct storm retrofits to school buildings – *No action was taken due to lack of funding; action remains in this plan revision.*
8. Construct new EMA/EOC office – *Action was deleted due to lack of match funding availability.*
  - The E911 Office has been moved across the hall from the EMA EOC, making it a more efficient and effective working EOC.

9. Install security measures at Bibb County critical facilities - *Action remains in this plan revision.*
  - Within the past five years, the county has installed security cameras at the courthouse and commission building.
10. Enforce floodplain management requirements, regulate construction or improvements in Special Flood Hazard Areas (SFHA) - *Action remains in this plan revision.*
  - Brent has received a flood grant to correct some drainage issues.
11. Add generators to Bibb County's critical facilities - *Action remains in this plan revision.*
  - Within the past five years, the county has added a generator at the Brent City Hall and the Brent sewage lift station at the prison site.

## **MITIGATION STRATEGY – BIBB COUNTY**

### **Goal 1: Protect life**

#### Objective 1.1 Improve Warning and Emergency Communication Systems

*Action 1.1.1 Install an outdoor weather siren at the Eoline Fire Department*

*Action 1.1.2 Upgrade communication systems*

#### Objective 1.2 Reduce impacts of hazards on vulnerable populations

*Action 1.2.1 Construct/install community safe rooms to include generators*

*NOTE: Priority will be placed according to the most populated areas down to the least populated areas.*

*Action 1.2.2 Construct/install individual storm shelters*

*NOTE: Bibb County was approved for 75 individual storm shelters following the 2011 tornado outbreak; however, only 45 were completed due to individuals not having matching funds. The county still has the funds available for 30 individual storm shelters and wishes to sponsor 100 if funding is available within the next five years. Priority will be placed according to first priority given to the most recent community affected, followed by a lottery.*

*Action 1.2.3 Construct storm retrofits to school buildings*

Objective 1.3 Improve disaster response and recovery

**Goal 2: Protect property**

Objective 2.1 Reduce losses to critical facilities/assets

*Action 2.1.1 Install security measures at Bibb County critical facilities*

Objective 2.2 Continue Participation in NFIP program

*Action 2.2.1 Enforce floodplain management requirements, regulate construction or improvements in Special Flood Hazard Areas (SFHA)*

Objective 2.3 Provide and maintain essential public services

*Action 2.3.1 Add generators to Bibb County critical facilities*

Objective 2.4 Reduce losses due to drainage problems

**Goal 3: Reduce economic impacts of disasters**

Objective 3.1 Maintain operations of critical businesses and major employers

**Goal 4: Protect environment and natural resources**

Objective 4.1 Identify, protect, and properly manage flood plains

Objective 4.2 Enforce local codes and regulations related to NFIP

**Goal 5: Increase public preparedness for disasters**

Objective 5.1 Continue to train severe weather spotters

**Table 4-13: Bibb County Mitigation Actions**

<b>Mitigation Action 1.1.1</b>	Install an outdoor weather siren at the Eoline Fire Department
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado, Hurricane
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; Bibb County
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$30,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	Medium
<b>Mitigation Action 1.1.2</b>	Upgrade communication systems
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; Bibb County
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$300,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	Low
<b>Mitigation Actions 1.2.1</b>	Construct/install community safe rooms to include generators
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; Bibb County
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$100,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	High
<b>Mitigation Action 1.2.2</b>	Construct/install individual storm shelters
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; Bibb County
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$5,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	High
<b>Mitigation Action 1.2.3</b>	Construct storm retrofits to school buildings
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; Bibb County Board of Education
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$400,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	Medium
<b>Mitigation Action 2.1.1</b>	Install security measures at Bibb County critical facilities
<b>Hazard(s) Addressed</b>	Manmade Hazards
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA
<b>Time frame for Completion</b>	One year from funding availability

<b>Estimated Cost</b>	\$500,000
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	Medium
<b>Mitigation Action 2.2.1</b>	Enforce floodplain management requirements, regulate construction or improvements in Special Flood Hazard Areas (SFHA)
<b>Hazard(s) Addressed</b>	Flood
<b>Applies to new/existing asset</b>	New
<b>Local Planning Mechanism</b>	Bibb County
<b>Time frame for Completion</b>	2017
<b>Estimated Cost</b>	
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	Low
<b>Mitigation Action 2.3.1</b>	Add generators to Bibb County critical facilities
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; Bibb County
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$25,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	High

# **Section Five:**

# **Jurisdiction Assessments**

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# City of Brent

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**Table 5-1: City of Brent  
Risk and Vulnerability Overview**

<b>Natural Hazards</b>	<b>Hazard Identification</b>	<b>Mitigation Actions Prioritization</b>	<b>Prioritized Occurrence Threat</b>	<b>Vulnerability</b>
<b>Thunderstorm</b>	X	1	4	H
<b>Lightning</b>	X	4	5	H
<b>Hail</b>	X	6	4	H
<b>Tornado</b>	X	2	5	H
<b>Flood/Flash Flood</b>	X	7	4	M
<b>Drought/Extreme Heat</b>	X	10	2	H
<b>Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/ Winter Weather/ Extreme Cold</b>	X	8	3	M
<b>Hurricane/Tropical Storm/ Tropical Depression/High Wind/Strong Wind</b>	X	3	4	H
<b>Sinkhole/Expansive Soil</b>	X	9	5	L
<b>Landslide</b>	X	12	5	L
<b>Earthquake</b>	X	11	5	L
<b>Wildfire</b>	X	5	1	H
<b>Dam/Levee Failure</b>	N/A	N/A	5	N/A
<b>Man-made Hazards</b>				
<b>Hazardous Material Release</b>	X	1	1	H
<b>Arson/Incendiary Attack</b>	X	6	6	M
<b>Armed Attack</b>	X	7	7	M
<b>Conventional Bomb</b>	X	2	2	M
<b>Chemical Agent</b>	X	3	3	M
<b>Cyber Terrorism</b>	X	5	5	H
<b>Agriterrorism</b>	X	8	8	M
<b>Biological Agent</b>	X	4	4	M
<b>Radiological Agent</b>	X	9	9	M
<b>Nuclear Bomb</b>	X	10	10	M

**KEY:**

Hazard Identification – Identified by local jurisdictions

Mitigation Actions Prioritization - Hazards are prioritized by jurisdictions based on past hazard experiences, vulnerabilities, and available mitigation actions with the hazard having highest priority of mitigation assigned number one.

Prioritized Occurrence Threat - 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. These prioritized threats may or may not be the same as the mitigation actions prioritization.

Vulnerability – Identified by local jurisdictions. 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); and H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)

*(Source: NOAA NCEM Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions)*

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**TABLE 5-2: CITY OF BRENT HAZARD EVENTS**

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

(Source: NOAA NCDC Storm Events Database)

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BRENT</a>	BIBB CO.	AL	05/03/2003	06:50	CST	Thunderstorm Wind	55 kts. EG	0	0	75.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	06/22/2004	16:20	CST	Thunderstorm Wind	60 kts. EG	0	0	12.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	01/13/2005	10:15	CST	Thunderstorm Wind	50 kts. EG	0	0	4.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	04/11/2011	18:22	CST-6	Thunderstorm Wind	50 kts. EG	0	0	4.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	14:05	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	15:21	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
<b>Totals:</b>								0	0	99.00K	0.00K

**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.

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

(Source: NOAA NCDC Storm Events Database)

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BRENT</a>	BIBB CO.	AL	04/07/2004	19:10	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	04/22/2005	12:25	CST	Hail	0.75 in.	0	0	1.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	04/08/2006	01:23	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	02/13/2007	17:30	CST-6	Hail	1.75 in.	0	0	5.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	04/11/2007	14:25	CST-6	Hail	1.75 in.	0	0	0.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	14:37	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
<b>Totals:</b>								0	0	6.00K	0.00K

**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.

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

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/18/2003	14:30	CST	Flood		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2005	00:00	CST	Flood		0	0	0.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	09/16/2004	09:56	CST	Flash Flood		0	0	2.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	07/10/2005	19:30	CST	Flash Flood		0	0	4.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	09/21/2009	09:43	CST-6	Flash Flood		0	0	100.00K	0.00K
<a href="#">BRENT</a>	BIBB CO.	AL	09/04/2012	07:00	CST-6	Flash Flood		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	106.00K	0.00K

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

(Source: NOAA NCDC Storm Events Database)

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/18/2006	07:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/22/2008	06:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/02/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	10/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	12/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/03/2012	00:00	CST-6	Drought		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**7 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
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/01/2009	02:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/09/2011	13:05	CST-6	Ice Storm		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/19/2008	06:00	CST-6	Winter Weather		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	02/12/2010	11:00	CST-6	Winter Weather		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**6 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
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	50.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/29/2005	17:00	CST	Tropical Storm		0	0	210.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/16/2004	07:00	CST	High Wind	56 kts. EG	0	0	350.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/11/2005	16:00	CST	Strong Wind	40 kts. EG	0	0	14.00K	0.00K
<b>Totals:</b>								0	0	626.00K	0.00K

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

**0 Landslide Events - 01/01/2003 thru 12/31/2013 (4018 days)**  
(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)  
No events occurred or were reported during 01/01/2003 thru 12/31/2013.

**0 Earthquake Events - 01/01/2003 thru 12/31/2013 (4018 days)**  
(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)  
No events occurred or were reported during 01/01/2003 thru 12/31/2013.

**109 Wildfire Events – 1/1/2010 thru 12/31/2013**

*(Source: Alabama Forestry Commission)*

<b>County</b>	<b>Total # of Fires 2010-2013</b>	<b>Average # of Fires Per Year</b>	<b>Total Acres Burned 2010-2013</b>	<b>Average Acres Burned Per Year</b>	<b>Average Fire Size</b>
Bibb	109	36	1280.15	427	12

**0 Dam/Levee Failure Events - 01/01/2003 thru 12/31/2013 (4018 days)**

*(Source: NOAA NCDC Storm Events Database)*

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

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**Table 5-3: City of Brent  
Hazard Probability Assessment**

<b>Natural Hazards</b>	<b>Number of Historical Occurrences</b>	<b>Probability of Future Annual Occurrence</b>	<b>Extent</b>	<b>Area Affected</b>
<b>Thunderstorm</b>	6	60%	>10%	Citywide
<b>Lightning</b>	0	Unknown	>10%	Citywide
<b>Hail</b>	6	60%	>10%	Citywide
<b>Tornado</b>	0	Unknown	>10%	Citywide
<b>Flood/Flash Flood</b>	6	60%	5-10%	East side, along railroad
<b>Drought/Extreme Heat</b>	27	>100%	>10%	Citywide
<b>Winter Storm/Frost Freeze/ Heavy Snow/ Ice Storm/ Winter Weather/ Extreme Cold</b>	7	70%	5-10%	Citywide
<b>Hurricane/Tropical Storm/ Tropical Depression/High Wind/ Strong Wind</b>	6	60%	>10%	Citywide
<b>Sinkhole/Expansive Soil</b>	0	Unknown	<5%	Citywide
<b>Landslide</b>	0	Unknown	<5%	Citywide
<b>Earthquake</b>	0	Unknown	<5%	Citywide
<b>Wildfire</b>	109	>100%	5-10%	Citywide
<b>Dam/Levee Failure</b>	0	Unknown	0%	N/A
<b>Man-made Hazards</b>				
<b>Hazardous Material Release</b>	0	Unknown	>10%	Citywide
<b>Arson/Incendiary Attack</b>	0	Unknown	5-10%	Citywide
<b>Armed Attack</b>	0	Unknown	5-10%	Citywide
<b>Conventional Bomb</b>	0	Unknown	5-10%	Citywide
<b>Chemical Agent</b>	0	Unknown	5-10%	Citywide
<b>Cyber Terrorism</b>	0	Unknown	>10%	Citywide
<b>Agriterrorism</b>	0	Unknown	5-10%	Citywide
<b>Biological Agent</b>	0	Unknown	5-10%	Citywide
<b>Radiological Agent</b>	0	Unknown	5-10%	Citywide
<b>Nuclear Bomb</b>	0	Unknown	5-10%	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 summary (Table 4-12). Zero denotes no data available to determine the probability, extent, or affected area.

**TABLE 5-4: City of Brent Critical Facilities**

Facility	Location	Use	Value	Generator Existing	Generator Needed
Brent City Hall	22 1st St	Government	\$ 3,000,000		
Bibb County Engineers Building	Hwy 5	Government	\$ 2,000,000		
Bibb County Jail	97 Bibb Lane	County Jail	\$10,000,000		
Bibb County Correctional Facility	565 Bibb Lane	State Prison	\$25,000,000		
Brent Community Safe Room	Senior Center, 10445 Hwy 5	Community Safe Room	\$1,500,000		
#4 Well	Hwy 5	Water Supply	\$250,000		
#5 Well	Dry Hollow Rd	Water Supply	\$250,000		
#6 Well	University Way	Water Supply	\$250,000		
Water Pumping Station	Serendipity	Water Supply	\$125,000		
Water Pumping Station	N. Scottsville Rd	Water Supply	\$125,000		
Water Storage Tank	Dry Hollow Rd	Water Storage	\$150,000		
Water Storage Tank	Industrial Dr	Water Storage	\$750,000		
Water Storage Tank	Circlewood Dr	Water Storage	\$275,000		
Water Storage Tank	Bibb Lane (Prison)	Water Storage	\$1,000,000		
Waste Water Treatment Plant	Plantation Rd	Sewer Treatment	\$1,500,000		
Sewer Pumping Station	Don Miles Hwy25	Pump Raw Sewage	\$150,000		
Sewer Pumping Station	Haysop Creek/ Hwy 25	Pump Raw Sewage	\$150,000		
Sewer Pumping Station	Westwood Estates	Pump Raw Sewage	\$150,000		
Sewer Pumping Station	Bibb Lane (Prison)	Pump Raw Sewage	\$150,000		
Sewer Pumping Station	Camp Rd	Sanitary Sewer	\$150,000		
City Shop	McKinley Street	Equipment Storage	\$1,500,000		
County Engineer's Shop	10651 Hwy 5	Co Eng/Alt EOC Site	\$500,000		
Water Treatment Plant	Patridge Road	Sewer Treatment	\$2,125,000		
Water Storage Tank	Elam School House Rd	Water Storage	\$150,000		
Water Pumping Station	Payne Lake Road	Water Supply	\$125,000		
Water Pumping Station	Hwy 82/Pleasant Hill	Water Supply	\$125,000		
Water Pumping Station	Ward School House Rd	Water Supply	\$125,000		
Electronics	For all pumping stations, tanks, and wells	System Telemetry	\$100,000		
Brent Elementary School	160 4th St	Education	\$3,271,301		
Burkes Mechanical	#1 Industrial Dr	Major Employer	\$15,000,000		
Scott Davis Chip and Timber	#2 Industrial Dr	Major Employer	\$6,500,000		
Centreville/Brent Senior Center	Hwy 82	Shelter/Food Services	\$150,000		
Valley Services	Hwy 25	Food Service	\$1,000,000		
Outdoor Weather Siren	647 S. Scottsville Rd	Outdoor Warning	\$15,000		
Outdoor Weather Siren	Don Miles 351 Hickory Dr	Outdoor Warning	15,000		
Outdoor Weather Siren	Dry Hollow Rd West - Wal Mart	Outdoor Warning	\$15,000		
Cell Phone Tower	Hwy 5 Midstate Dr	Communications System	\$500,000		
Centreville/Brent Sr. Center	Hwy. 82, Brent	Safe Room/Food Service	\$150,000		
Valley Services	Hwy 25	Food Service	\$1,000,000		
Mayfield Oil	Walnut Street	Fuel	\$1,000,000		
<b>TOTAL</b>			<b>\$80,291,301</b>		

**Table 5-5: City of Brent  
Estimated Loss Projections from Specified Hazards**

<b>Natural Hazards</b>	<b>Average Occurrences (per year)</b>	<b>Total Deaths</b>	<b>Total Injuries</b>	<b>Average Death and Injury Loss (per event)</b>	<b>Average Crop and Property Loss (per event)</b>	<b>Projected Loss (per event)</b>
<b>Thunderstorm</b>	0.6	0	0	\$0	\$16,500	\$17,985
<b>Lightning</b>	0.0	0	0	\$0	\$0	Unknown
<b>Hail</b>	0.6	0	0	\$0	\$1,000	\$1,090
<b>Tornado</b>	0.0	0	0	\$0	\$0	Unknown
<b>Flood/Flash Flood</b>	0.6	0	0	\$0	\$17,667	\$19,257
<b>Drought/Extreme Heat</b>	2.7	0	0	\$0	\$0	Unknown
<b>Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold</b>	0.7	0	0	\$0	\$0	Unknown
<b>Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind</b>	0.6	0	0	\$0	\$104,333	\$113,723
<b>Sinkhole/Expansive Soil</b>	0.0	0	0	\$0	\$0	Unknown
<b>Landslide</b>	0.0	0	0	\$0	\$0	Unknown
<b>Earthquake</b>	0.0	0	0	\$0	\$0	Unknown
<b>Wildfire</b>	10.9	0	0	\$0	\$0	Unknown
<b>Dam/Levee Failure</b>	0.0	0	0	\$0	\$0	Unknown

*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. 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 there is no data available to determine the average occurrences, average loss or projected loss per event.

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## City of Brent Mitigation Action Plan

The City of Brent 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, if any. **Table 5-6** shows the City of Brent's updated mitigation actions.

### BENCHMARKING:

#### City of Brent Mitigation Action Plan (2009)

1. Add outdoor warning sirens throughout the city - *Action remains in this plan revision.*
  - The county is now utilizing CodeRED and ALERT FM which sends messages and provides weather warnings.
2. Install NOAA indoor warning system at critical facilities and Brent Library - *Action remains in this plan revision.*
  - The county is now utilizing CodeRED and ALERT FM which sends messages and provides weather warnings.
3. Plan, fund, and build a long-term community storm shelter - *Action was revised, combined with another action (#4), and remains in this plan revision.*
  - Action has been revised, and combined with the other community storm shelter action of 2009, to say construct/install community safe rooms to include generators. A new action of construct/install individual safe rooms has been added.
4. Construct short-term community storm shelters in the city – *Action was revised, combined with another action (#9), and remains in this plan revision.*
  - The Pre Disaster Mitigation Program (PDM) was used to construct two community safe rooms: Brent Senior Citizen Facility and Eoline Fire Department, both having an occupancy capacity of 115 people. Action has been revised, and combined with the other community storm shelter action of 2009, to say construct/install community safe rooms to include generators.

5. Construct storm retrofits to school buildings – *No action has been taken due to lack of funding; action remains in this plan revision.*
6. Install security measures at critical facilities - *No action has been taken due to lack of funding; action remains in this plan revision.*
7. Install permanent emergency generators at critical facilities - *Action remains in this plan revision.*
  - Within the past five years, generators have been installed at the Brent City Hall and the Brent sewage lift station at the prison site.
  - Note: The city was not approved for the HMGP grant for which they applied to put the generator at the Brent City Hall; therefore, they used only local funds to complete this project.
  - Prioritization: Sewage pumping stations will receive generators as a first priority, followed by the water wells receiving generators.
8. Enforce floodplain management requirements, regulate construction or improvements in Special Flood Hazard Areas (SFHA) - *Action remains in this plan revision.*
9. Upgrade drainage system to enlarge ditches and add storm drains - *Action is ongoing*
  - Brent has received a CDBG 2012 flood grant to correct some drainage issues. Within the next five years, the city plans to add new storm drains and larger ditches on Partridge Drive/Camp Road.
  - Note: In 2008, the city was not declared; however, the event resulted in washed out roadways and flooded buildings.

## MITIGATION STRATEGY – CITY OF BRENT

### Goal 1: Protect life

Objective 1.1 Improve Warning and Emergency Communication Systems

*Action 1.1.1 Add outdoor warning sirens throughout City*

*Action 1.1.2 Install NOAA indoor warning system at critical facilities and Brent Library*

Objective 1.2 Reduce impacts of hazards on vulnerable populations

*Action 1.2.1 Construct/install community safe rooms to include generators*

*Action 1.2.2 Construct/install individual storm shelters*

*Action 1.2.3 Construct storm retrofits to school buildings*

Objective 1.3 Improve disaster response and recovery

### Goal 2: Protect property

Objective 2.1 Reduce losses to critical facilities/assets

*Action 2.1.1 Install security measures at critical facilities*

*Action 2.1.2 Install permanent emergency generators at critical facilities*

Objective 2.2 Continue Participation in NFIP program

*Action 2.2.1 Enforce floodplain management requirements and regulate construction or improvements in Special Flood Hazard Areas (SFHAs).*

Objective 2.3 Provide and maintain essential public services

Objective 2.4 Reduce losses due to drainage problems

*Action 2.4.1 Upgrade drainage system to enlarge ditches and add storm drain, to include the Partridge Drive/Camp Road area*

### Goal 3: Reduce economic impacts of disasters

Objective 3.1 Maintain operations of critical businesses and major employers

### Goal 4: Protect environment and natural resources

Objective 4.1 Identify, protect, and properly manage flood plains

Objective 4.2 Enforce local codes and regulations related to NFIP

**Goal 5: Increase public preparedness for disasters**

Objective 5.1 Continue to train severe weather spotters

Table 5-6: City of Brent Mitigation Actions

<b>Mitigation Action</b>	Provide permanent emergency generators at critical facilities
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, City of Brent
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$75,000 ea
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Enforce floodplain management requirements and regulate construction or improvements in Special Flood Hazard Areas (SFHAs)
<b>Hazard(s) Addressed</b>	Flood
<b>Applies to new/existing asset</b>	New and existing
<b>Local Planning Mechanism</b>	City of Brent
<b>Time frame for Completion</b>	Ongoing
<b>Estimated Cost</b>	
<b>Funding Sources</b>	Grants, Local
<b>Priority</b>	Low
<b>Mitigation Action</b>	Upgrade drainage system to enlarge ditches and add storm drains
<b>Hazard(s) Addressed</b>	Flood
<b>Applies to new/existing asset</b>	New and existing
<b>Local Planning Mechanism</b>	Bibb County EMA, City of Brent, Public Works
<b>Time frame for Completion</b>	Two years from funding availability
<b>Estimated Cost</b>	\$1,000,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Add outdoor warning sirens throughout city
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, City of Brent
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$25, 000 ea
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	Medium
<b>Mitigation Action</b>	Install security measures at critical facilities
<b>Hazard(s) Addressed</b>	Man-made hazards
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	City of Brent
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$150, 000
<b>Funding Sources</b>	Local, grants
<b>Priority</b>	Medium

<b>Mitigation Action</b>	Construct/install community safe rooms to include generators
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	New
<b>Local Planning Mechanism</b>	Bibb County EMA, City of Brent
<b>Time frame for Completion</b>	Two years from funding availability
<b>Estimated Cost</b>	\$1,500,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	High
<b>Mitigation Action Project</b>	Construct/install individual storm shelters
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	New
<b>Local Planning Mechanism</b>	Bibb County EMA, City of Brent
<b>Time frame for Completion</b>	Two years from funding availability
<b>Estimated Cost</b>	\$5,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Construct storm retrofits to school buildings
<b>Hazard(s) Addressed</b>	Thunderstorms, Tornados
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, Bibb Co. Board of Education
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$500,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	Medium
<b>Mitigation Action</b>	Indoor warning systems (NOAA Weather Radios) for Brent Library and critical facilities
<b>Hazard(s) Addressed</b>	Thunderstorms, Tornado, Flood, Hurricane
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, City of Brent
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$500
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	Low

# City of Centreville

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**Table 5-7: City of Centreville  
Risk and Vulnerability Overview**

<b>Natural Hazards</b>	<b>Hazard Identification</b>	<b>Mitigation Actions Prioritization</b>	<b>Prioritized Occurrence Threat</b>	<b>Vulnerability</b>
<b>Thunderstorm</b>	X	2	3	M
<b>Lightning</b>	X	3	7	H
<b>Hail</b>	X	4	5	L
<b>Tornado</b>	X	1	6	M
<b>Flood</b>	X	5	5	M
<b>Drought/Extreme Heat</b>	X	8	2	L
<b>Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/ Winter Weather/Extreme Cold</b>	X	7	4	L
<b>Hurricane/Tropical Storm/ Tropical Depression/High Wind/ Strong Wind</b>	X	6	5	M
<b>Sinkhole/Expansive Soil</b>	X	9	7	M
<b>Landslide</b>	X	10	7	L
<b>Earthquake</b>	X	12	7	N/A
<b>Wildfire</b>	X	11	1	M
<b>Dam/Levee Failure</b>	N/A	N/A	7	N/A
<b>Man-made Hazards</b>				
<b>Hazardous Material Release</b>	X	9	9	M
<b>Arson/Incendiary Attack</b>	X	1	1	L
<b>Armed Attack</b>	X	2	2	L
<b>Conventional Bomb</b>	X	5	5	L
<b>Chemical Agent</b>	X	3	3	M
<b>Cyberterrorism</b>	X	10	10	L
<b>Agriterrorism</b>	X	8	8	M
<b>Biological Agent</b>	X	4	4	M
<b>Radiological Agent</b>	X	6	6	M
<b>Nuclear Bomb</b>	X	7	7	L

**KEY:**

Hazard Identification – Identified by local jurisdictions

Mitigation Actions Prioritization - Hazards are prioritized by jurisdictions based on past hazard experiences, vulnerabilities, and available mitigation actions with the hazard having highest priority of mitigation assigned number one.

Prioritized Occurrence Threat - 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. These prioritized threats may or may not be the same as the mitigation actions prioritization.

Vulnerability – Identified by local jurisdictions. 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); and H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)

*(Source: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions)*

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**TABLE 5-8: CITY OF CENTREVILLE HAZARD EVENTS**

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

*(Source: NOAA NCDC Storm Events Database)*

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	06/22/2004	16:20	CST	Thunderstorm Wind	60 kts. EG	0	0	12.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	01/13/2005	10:15	CST	Thunderstorm Wind	50 kts. EG	0	0	4.00K	0.00K
<a href="#">CENTREVILLE FOX ARPT</a>	BIBB CO.	AL	02/17/2008	12:00	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	04/04/2008	14:45	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	06/25/2010	14:10	CST-6	Thunderstorm Wind	45 kts. EG	0	0	1.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	08/27/2010	16:55	CST-6	Thunderstorm Wind	45 kts. EG	0	0	4.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	04/11/2011	18:30	CST-6	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	14:05	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	15:21	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	03/05/2013	13:25	CST-6	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	03/23/2013	21:47	CST-6	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
<b>Totals:</b>								0	0	45.00K	0.00K

**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.

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

*(Source: NOAA NCDC Storm Events Database)*

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">CENTREVILLE</a>	BIBB CO.	AL	12/04/2005	13:08	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">CENTREVILLE</a>	BIBB CO.	AL	04/11/2007	14:37	CST-6	Hail	1.75 in.	0	0	0.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	03/27/2011	06:37	CST-6	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	14:37	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	03/18/2013	14:56	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	03/23/2013	21:45	CST-6	Hail	1.75 in.	0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

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

(Source: NOAA NCDC Storm Events Database)

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">CENTREVILLE FOX ARPT</a>	BIBB CO.	AL	12/22/2011	12:56	CST-6	Tornado	EF0	0	0	3.00K	0.00K
<b>Totals:</b>								0	0	3.00K	0.00K

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

(Source: NOAA NCDC Storm Events Database)

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/18/2003	14:30	CST	Flood		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2005	00:00	CST	Flood		0	0	0.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	09/16/2004	09:56	CST	Flash Flood		0	0	2.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	07/10/2005	19:30	CST	Flash Flood		0	0	4.00K	0.00K
<a href="#">CENTERVILLE</a>	BIBB CO.	AL	09/21/2009	09:43	CST-6	Flash Flood		0	0	1.00K	0.00K
<a href="#">CENTREVILLE FOX ARPT</a>	BIBB CO.	AL	03/09/2011	05:35	CST-6	Flash Flood		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	7.00K	0.00K

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

*(Source: NOAA NCDC Storm Events Database)*

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/18/2006	07:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/22/2008	06:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/02/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	10/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	12/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/03/2012	00:00	CST-6	Drought		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**7 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)

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/01/2009	02:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/09/2011	13:05	CST-6	Ice Storm		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/19/2008	06:00	CST-6	Winter Weather		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	02/12/2010	11:00	CST-6	Winter Weather		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**6 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)

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	50.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/29/2005	17:00	CST	Tropical Storm		0	0	210.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/16/2004	07:00	CST	High Wind	56 kts. EG	0	0	350.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/11/2005	16:00	CST	Strong Wind	40 kts. EG	0	0	14.00K	0.00K
<b>Totals:</b>								0	0	626.00K	0.00K

**0 Sinkhole/Expansive Soil Events - 01/01/2003 thru 12/31/2013 (4018 days)**

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

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

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

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

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

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

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

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

**109 Wildfire Events – 1/1/2010 thru 12/31/2013**

*(Source: Alabama Forestry Commission)*

<b>County</b>	<b>Total # of Fires 2010-2013</b>	<b>Average # of Fires Per Year</b>	<b>Total Acres Burned 2010-2013</b>	<b>Average Acres Burned Per Year</b>	<b>Average Fire Size</b>
Bibb	109	36	1280.15	427	12

**0 Dam/Levee Failure Events - 01/01/2003 thru 12/31/2013 (4018 days)**

*(Source: NOAA NCDC Storm Events Database)*

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

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**Table 5-9: City of Centreville  
Hazard Probability Assessment**

<b>Natural Hazards</b>	<b>Number of Historical Occurrences</b>	<b>Probability of Future Occurrence</b>	<b>Extent</b>	<b>Area Affected</b>
<b>Thunderstorm</b>	11	>100%	5-10%	Citywide
<b>Lightning</b>	0	Unknown	>10%	Citywide
<b>Hail</b>	6	60%	<5%	Citywide
<b>Tornado</b>	1	10%	5-10%	Citywide
<b>Flood/Flash Flood</b>	6	60%	5-10%	Citywide
<b>Drought/Extreme Heat</b>	27	>100%	<5%	Citywide
<b>Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold</b>	7	70%	<5%	Citywide
<b>Hurricane/High Wind/Strong Wind/Tropical Storm/Tropical Depression</b>	6	60%	5-10%	Citywide
<b>Sinkhole/Expansive Soil</b>	0	Unknown	5-10%	Citywide
<b>Landslide</b>	0	Unknown	<5%	Citywide
<b>Earthquake</b>	0	Unknown	<5%	Citywide
<b>Wildfire</b> (2010-2013 – 3 year study period)	109	>100%	5-10%	Citywide
<b>Dam/Levee Failure</b>	0	N/A	N/A	N/A
<b>Man-made Hazards</b>				
<b>Hazardous Material Release</b>	0	Unknown	5-10%	Citywide
<b>Arson/Incendiary Attack</b>	0	Unknown	<5%	Citywide
<b>Armed Attack</b>	0	Unknown	<5%	Citywide
<b>Conventional Bomb</b>	0	Unknown	<5%	Citywide
<b>Chemical Agent</b>	0	Unknown	5-10%	Citywide
<b>Cyberterrorism</b>	0	Unknown	<5%	Citywide
<b>Agriterrorism</b>	0	Unknown	5-10%	Citywide
<b>Biological Agent</b>	0	Unknown	5-10%	Citywide
<b>Radiological Agent</b>	0	Unknown	5-10%	Citywide
<b>Nuclear Bomb</b>	0	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 summary (Table 4-12). Zero denotes no data available to determine the probability, extent, or affected area.

<b>TABLE 5-10: City of Centreville Critical Facilities</b>			
<b>Facility</b>	<b>Location</b>	<b>Use</b>	<b>Value</b>
Bibb County Courthouse	8 Court Square W.	County Government	\$15,000,000
Bibb County Health Dept	281 Alexander Avenue	Health	\$4,000,000
Bibb County Registrar's Office	111 Church Lane	Government	\$1,500,000
Human Resources Building	84 Library St	Government	\$893,000
Centreville City Hall	1270 Walnut St	Municipal	\$324,400
Centreville Police Dept	1254 Walnut St	Law Enforcement	\$158,000
Centreville VFD (new)	507 Montevallo Rd	Fire Protection	\$445,578
Centreville VFD (old)/ S. Bibb Rescue	151 Montgomery Hwy	Fire Protection	\$207,000
County Sheriff's Office	183 S.W. Davidson Dr	County Protection	\$1,500,000
Brent/Centreville Library	153 Walnut St	Library & Shelter	\$4,000,000
National Guard Armory	185 Walnut St	Military	\$15,000,000
Chamber of Commerce	835 Walnut Street	Government	\$300,000
<b>Street / Water &amp; Sewer Shop</b>			
Street / Water & Sewer Shop	68 Forestry St	Equipment, Supply, Storage	\$213,482
Well #3/ Pumping Station	Lightsey Rd	Potable Water	\$49,901
Well #4/ Pumping Station	Montgomery Hwy	Potable Water	\$49,901
Well #5/ Pumping Station	Highway 5	Potable Water	\$650,000
Water Booster Pump Station	County Rd 20/Soap Hill	Water	\$50,000
Water Booster Pump Station	Hurricane Ridge	Water	\$50,000
Water Booster Pump Station	Marvel Rd /County Rd 10	Water	\$50,000
Water Booster Pump Station	Birmingham Road	Water	\$50,000
Water Tank	County Road 2/ Burt's Spur	Water Storage	\$123,967
Water Tank #1	McKinley St	Water Storage	\$192,478
Water Tank #2	McKinley St	Water Storage	\$262,340
Water Tank #3	Hwy 5/219	Water Storage	\$123,967
Water Tank #4	County Road 54	Water Storage	\$27,186
Water Tank	Hurricane Ridge	Water Storage	\$150,000
Wastewater Treatment Facility	Plantation Rd	Sewer Treatment	\$1,500,000
Sewer Pump Station	Mill St	Sanitary Sewer	\$50,000
Sewer Pump Station	Mooreland Rd	Sanitary Sewer	\$50,000
Sewer Pump Station	River Dr	Sanitary Sewer	\$50,000
Sewer Pump Station	Hwy 25 to Cahaba Christian	Sanitary Sewer	\$50,000
Sewer Pump Station	Hwy 209 /Hwy 25	Sanitary Sewer	\$50,000
Sewer Pump Station	Hwy 82 /Reeves St	Sanitary Sewer	\$50,000
<b>Cahaba Veneer Inc</b>			
Cahaba Veneer Inc	252 Mill Street	Major Employer	\$2,000,000
<b>Centreville Elementary</b>			
Centreville Elementary	1621 Montgomery Hwy	Education	\$11,800,000
<b>Bibb County High (old)</b>			
Bibb County High (old)	220 Birmingham Rd	Education	\$5,500,000
<b>Bibb County High (new)</b>			
Bibb County High (new)	220 Birmingham Rd	Education	\$9,100,000

**TABLE 5-10: City of Centreville Critical Facilities**

Centreville/Brent Senior Center	Hwy 82	Shelter/Food Services	\$150,000
Bibb Medical Center/ Nursing Home	208 Pierson Ave	Health Care	\$30,000,000
Outdoor Warning Siren (#8)	530 2nd St N/ Country Club	Weather Warning System	\$15,000
Outdoor Warning Siren (#9)	208 Pierson Ave/Hospital	Weather Warning System	\$15,000
Outdoor Warning Siren (#10)	68 Forestry St/ City Shop	Weather Warning System	\$15,000
Outdoor Warning Siren (#19)	153 S W Davison	Weather Warning System	\$15,000
Bibb County Airport	249 Airport Rd	Transportation	\$10,000,000
Cell Phone Tower	2415 Montevallo Rd	Communications	\$120,000
Bibb County Bus Shop (New)	Hwy 82 E	School fuel station	\$600,000
<i>Source: Local Jurisdiction</i>		<b>TOTAL</b>	<b>\$116,501,200</b>

**Table 5-11: City of Centreville  
Estimated Loss Projections from Specified Hazards**

<b>Natural Hazards</b>	<b>Average Occurrences (per year)</b>	<b>Total Deaths</b>	<b>Total Injuries</b>	<b>Average Death and Injury Loss (per event)</b>	<b>Average Crop and Property Loss (per event)</b>	<b>Projected Loss (per event)</b>
<b>Thunderstorm</b>	1.1	0	0	\$0	\$4,091	\$4,459
<b>Lightning</b>	0	0	0	\$0	\$0	Unknown
<b>Hail</b>	0.6	0	0	\$0	\$0	Unknown
<b>Tornado</b>	0.1	0	0	\$0	\$3,000	\$3,270
<b>Flood/Flash Flood</b>	0.6	0	0	\$0	\$1,167	\$1,272
<b>Drought/Extreme Heat</b>	2.7	0	0	\$0	\$0	Unknown
<b>Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold</b>	0.7	0	0	\$0	\$0	Unknown
<b>Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind</b>	0.6	0	0	\$0	\$104,333	\$113,723
<b>Sinkhole/Expansive Soil</b>	0	0	0	\$0	\$0	Unknown
<b>Landslide</b>	0	0	0	\$0	\$0	Unknown
<b>Earthquake</b>	0	0	0	\$0	\$0	Unknown
<b>Wildfire (3 year study period)</b>	36	0	0	\$0	\$25,176	\$27,442
<b>Dam/Levee Failure</b>	0	0	0	\$0	\$0	Unknown

*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. Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figures 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 there is no data available to determine the average occurrences, average loss or projected loss per event.

## **City of Centreville Mitigation Action Plan**

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

### **Mitigation Status**

In order to track the progress of identified actions, the City of Centreville's 2009 Mitigation Action Plan is shown below. The current statuses of the proposed actions are shown in italics.

### **BENCHMARKING:**

#### **City of Centreville Mitigation Action Plan (2009)**

1. Install additional outdoor warning sirens throughout city - *Action was deleted*
  - The city now utilizes the county's CodeRED and ALERT FM, due to the cost of maintaining outdoor warning sirens.
2. Install security measures at critical facilities – *No action has been taken due to lack of funding; action remains in this plan revision.*
3. Enforce floodplain management requirements, regulate construction or improvements in Special Flood Hazard Areas (SFHA) - *Action remains in this plan revision.*
4. Install generators at critical facilities - *Action remains in this plan revision.*
5. Upgrade drainage system to enlarge ditches and install storm drains - *No action has been taken due to lack of funding; action remains in this plan revision.*

**Table 5-12** shows the City of Centreville's mitigation actions for the 2015 plan update. During the plan update process, actions were deleted and added as necessary.

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## MITIGATION STRATEGY – CITY OF CENTREVILLE

### Goal 1: Protect life

Objective 1.1 Improve Warning and Emergency Communication Systems

Objective 1.2 Reduce impacts of hazards on vulnerable populations

*Action 1.1.1 Construct/install community safe rooms to include generators*

*Action 1.2.2 Construct/install individual storm shelters*

Objective 1.3 Improve disaster response and recovery

### Goal 2: Protect property

Objective 2.1 Reduce losses to critical facilities/assets

*Action 2.1.1 Install security measures at critical facilities*

Objective 2.2 Continue Participation in NFIP program

*Action 2.2.1 Enforce floodplain management requirements; regulate construction or improvements in Special Flood Hazard Areas (SFHAs).*

Objective 2.3 Provide and maintain essential public services

*Action 2.3.1 Install generators at critical facilities*

Objective 2.4 Reduce losses due to drainage problems

*Action 2.4.1 Upgrade drainage system to enlarge ditches and install storm drains*

### Goal 3: Reduce economic impacts of disasters

Objective 3.1 Maintain operations of critical businesses and major employers

### Goal 4: Protect environment and natural resources

Objective 4.1 Identify, protect, and properly manage flood plains

Objective 4.2 Enforce local codes and regulations related to NFIP

### Goal 5: Increase public preparedness for disasters

Objective 5.1 Continue to train severe weather spotters

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Table 5-12: City of Centreville Mitigation Actions

<b>Mitigation Action</b>	Provide generators at critical facilities
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, City of Centreville
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$25,000 each
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Construct/install community safe rooms to include generators
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; City of Centreville
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$100,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Upgrade drainage system to enlarge ditches and install storm drains
<b>Hazard(s) Addressed</b>	Flood
<b>Applies to new/existing asset</b>	New and existing
<b>Local Planning Mechanism</b>	Bibb County EMA, City of Centreville, Public Works
<b>Time frame for Completion</b>	Two years from funding availability
<b>Estimated Cost</b>	\$150,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Install security measures at critical facilities
<b>Hazard(s) Addressed</b>	Man-made hazards
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, City of Centreville, Bibb County
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$150,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	Medium
<b>Mitigation Action</b>	Enforce floodplain managements requirements, regulate construction or improvements in Special Flood Hazard Areas (SFHAs)
<b>Hazard(s) Addressed</b>	Flood
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	City of Centreville
<b>Time frame for Completion</b>	Ongoing
<b>Estimated Cost</b>	
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	Low
<b>Mitigation Action</b>	Construct/install individual storm shelters
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, City of Centreville, Public Works
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$500,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	High

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# **Town of Vance**

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**Table 5-13: Town of Vance  
Risk and Vulnerability Overview**

<b>Natural Hazards</b>	<b>Hazard Identification</b>	<b>Mitigation Actions Prioritization</b>	<b>Prioritized Occurrence Threat</b>	<b>Vulnerability</b>
<b>Thunderstorm</b>	X	1	5	H
<b>Lightning</b>	X	4	7	H
<b>Hail</b>	X	5	6	H
<b>Tornado</b>	X	3	7	H
<b>Flood</b>	X	2	4	H
<b>Drought/Extreme Heat</b>	X	7	2	M
<b>Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold</b>	X	9	3	M
<b>Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind</b>	X	8	4	M
<b>Sinkhole/Expansive Soil</b>	X	12	7	L
<b>Landslide</b>	X	10	7	L
<b>Earthquake</b>	X	11	7	L
<b>Wildfire</b>	X	6	1	L
<b>Dam/Levee Failure</b>	N/A	N/A	7	N/A
<b>Man-made Hazards</b>				
<b>Hazardous Material Release</b>	X	2	2	L
<b>Arson/Incendiary Attack</b>	X	4	4	L
<b>Armed Attack</b>	X	9	9	L
<b>Conventional Bomb</b>	X	5	5	L
<b>Chemical Agent</b>	X	3	3	L
<b>Cyberterrorism</b>	X	1	1	M
<b>Agriterrorism</b>	X	8	8	L
<b>Biological Agent</b>	X	6	6	L
<b>Radiological Agent</b>	X	7	7	L
<b>Nuclear Bomb</b>	X	10	10	L

**KEY:**

Hazard Identification – Identified by local jurisdictions

Mitigation Actions Prioritization - Hazards are prioritized by jurisdictions based on past hazard experiences, vulnerabilities, and available mitigation actions with the hazard having highest priority of mitigation assigned number one.

Prioritized Occurrence Threat - 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. These prioritized threats may or may not be the same as the mitigation actions prioritization.

Vulnerability – Identified by local jurisdictions. 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); and H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)

*(Source: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions)*

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**TABLE: 5-14: TOWN OF VANCE HAZARD EVENTS**

**4 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
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	06/22/2004	16:20	CST	Thunderstorm Wind	60 kts. EG	0	0	12.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	01/13/2005	10:15	CST	Thunderstorm Wind	50 kts. EG	0	0	4.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	14:05	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	15:21	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
<b>Totals:</b>								0	1	20.00K	0.00K

**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.

**1 Hail 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
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	14:37	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**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.

**6 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
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/18/2003	14:30	CST	Flood		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2005	00:00	CST	Flood		0	0	0.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	09/16/2004	09:56	CST	Flash Flood		0	0	2.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	07/10/2005	19:30	CST	Flash Flood		0	0	4.00K	0.00K
<b>Totals:</b>								0	0	6.00K	0.00K

**27 Drought/Extreme Heat Events – 01/01/2003 thru 12/31/2013 (4018 days)**  
*(Source: NOAA NCDC Storm Events Database)*

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/18/2006	07:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/22/2008	06:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/02/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	10/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	12/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/03/2012	00:00	CST-6	Drought		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**7 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)

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/01/2009	02:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/09/2011	13:05	CST-6	Ice Storm		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/19/2008	06:00	CST-6	Winter Weather		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	02/12/2010	11:00	CST-6	Winter Weather		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**6 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)

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	50.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/29/2005	17:00	CST	Tropical Storm		0	0	210.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/16/2004	07:00	CST	High Wind	56 kts. EG	0	0	350.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/11/2005	16:00	CST	Strong Wind	40 kts. EG	0	0	14.00K	0.00K
<b>Totals:</b>								0	0	626.00K	0.00K

**0 Sinkhole/Expansive Soil Events - 01/01/2003 thru 12/31/2013 (4018 days)**

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

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

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

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

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

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

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

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

**109 Wildfire Events** – 1/1/2010 thru 12/31/2013

*(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
Bibb	109	36	1280.15	427	12

**0 Dam/Levee Failure Events** - 01/01/2003 thru 12/31/2013 (4018 days)

*(Source: NOAA NCDC Storm Events Database)*

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

**Table 5-15: Town of Vance  
Hazard Probability Assessment**

<b>Natural Hazards</b>	<b>Number of Historical Occurrences</b>	<b>Probability of Future Annual Occurrence</b>	<b>Extent</b>	<b>Area Affected</b>
<b>Thunderstorm</b>	4	40%	>10%	Town wide
<b>Lightning</b>	0	Unknown	>10%	Town wide
<b>Hail</b>	1	10%	>10%	Town wide
<b>Tornado</b>	0	Unknown	>10%	Town wide
<b>Flood/Flash Flood</b>	6	60%	>10%	Town wide
<b>Drought/Extreme Heat</b>	2	20%	5-10%	Town wide
<b>Winter Storm/Frost Freeze/Heavy Snow/ Ice Storm/Winter Weather/Extreme Cold</b>	7	70%	5-10%	Town wide
<b>Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind</b>	6	60%	5-10%	Town wide
<b>Sinkhole/Expansive Soil</b>	0	Unknown	<5%	Town wide
<b>Landslide</b>	0	Unknown	<5%	Town wide
<b>Earthquake</b>	0	Unknown	<5%	Town wide
<b>Wildfire</b> (2010-2013 – 3 year study)	109	>100%	<5%	Town wide
<b>Dam/Levee Failure</b>	N/A	N/A	N/A	N/A
<b>Man-made Hazards</b>				
<b>Hazardous Material Release</b>	0	Unknown	<5%	Town wide
<b>Arson/Incendiary Attack</b>	0	Unknown	<5%	Town wide
<b>Armed Attack</b>	0	Unknown	<5%	Town wide
<b>Conventional Bomb</b>	0	Unknown	<5%	Town wide
<b>Chemical Agent</b>	0	Unknown	<5%	Town wide
<b>Cyberterrorism</b>	0	Unknown	5-10%	Town wide
<b>Agriterrorism</b>	0	Unknown	<5%	Town wide
<b>Biological Agent</b>	0	Unknown	<5%	Town wide
<b>Radiological Agent</b>	0	Unknown	<5%	Town wide
<b>Nuclear Bomb</b>	0	Unknown	<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 summary (Table 4-12). Zero or Unknown denotes there is no data available to determine the probability, extent, or affected area.



**Table 5-17: Town of Vance  
Estimated Loss Projections from Specified Hazards**

<b>Natural Hazards</b>	<b>Average Occurrences (per year)</b>	<b>Total Deaths</b>	<b>Total Injuries</b>	<b>Average Death and Injury Loss (per event)</b>	<b>Average Crop and Property Loss (per event)</b>	<b>Projected Loss (per event)</b>
<b>Thunderstorm</b>	0.4	0	1	\$5,794	\$5,000	\$11,766
<b>Lightning</b>	0.0	0	0	\$0	\$0	Unknown
<b>Hail</b>	0.1	0	0	\$0	\$0	Unknown
<b>Tornado</b>	0.0	0	0	\$0	\$0	Unknown
<b>Flood/Flood</b>	0.6	0	0	\$0	\$1,000	\$1,090
<b>Drought/Extreme Heat</b>	2.7	0	0	\$0	\$0	Unknown
<b>Winter Weather/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold</b>	0.7	0	0	\$0	\$0	Unknown
<b>Hurricane/Tropical Storm/Tropical Depression/ High Wind/ Strong Wind</b>	0.6	0	0	\$0	\$104,333	\$113,723
<b>Sinkhole/Expansive Soil</b>	0.0	0	0	\$0	\$0	Unknown
<b>Landslide</b>	0.0	0	0	\$0	\$0	Unknown
<b>Earthquake</b>	0.0	0	0	\$0	\$0	Unknown
<b>Wildfire (3 year study period)</b>	36	0	0	\$0	\$25,176	\$27,442
<b>Dam/Levee Failure</b>	0.0	0	0	\$0	\$0	Unknown

*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. Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figures 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 denotes there is no data available to determine the average occurrences, average loss or projected loss per event.

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## **Town of Vance Mitigation Action Plan**

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

### **Mitigation Status**

In order to track the progress of identified actions, the 2009 Mitigation Plan's mitigation action list for the Town of Vance is shown below. The current statuses of the proposed actions are shown in italics.

### **BENCHMARKING:**

#### **Town of Vance Mitigation Action Plan (2009)**

1. Provide NOAA Weather Radios at critical facilities and public schools - *Action was deleted.*
  - The town is utilizing the county's CodeRED and ALERT FM warning systems which sends messages and provides weather warnings.
2. Upgrade communications systems, add a second line of communications (2-way radios) – *No action has been taken due to lack of funding; action remains in this plan revision.*
3. Install security measures at critical facilities - *No action has been taken due to lack of funding; action remains in this plan revision.*
4. Enforce floodplain management requirements, regulate construction or improvements in Special Flood Hazard Areas (SFHA) - *Action remains in this plan revision.*
5. Provide generators for critical facilities - *No action has been taken due to lack of funding; action remains in this plan revision.*

**Table 5-18** shows the Town of Vance's mitigation actions for the 2015 plan revision. During the plan update process it was decided that one of Vance's mitigation actions from 2009 would be deleted due to the use of CodeRED and ALERT FM warning systems, two new actions concerning community safe rooms and individual storm shelters were identified and added, and all other actions are ongoing.

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## MITIGATION STRATEGY – TOWN OF VANCE

### Goal 1: Protect life

Objective 1.1 Improve Warning and Emergency Communication Systems

*Action 1.1.1 Upgrade communications system, add a second line of communications (2- way radios)*

Objective 1.2 Reduce impacts of hazards on vulnerable populations

*Action 1.2.1 Construct/install community safe rooms with backup generators*

*Action 1.2.2 Construct/install individual storm shelters*

Objective 1.3 Improve disaster response and recovery

### Goal 2: Protect property

Objective 2.1 Reduce losses to critical facilities/assets

*Action 2.1.1 Install security measures at critical facilities*

Objective 2.2 Continue Participation in NFIP program

*Action 2.2.1 Enforce floodplain management requirements; regulate construction or improvements in Special Flood Hazard Areas (SFHAs).*

Objective 2.3 Provide and maintain essential public services

*Action 2.3.1 Provide generators for critical facilities*

Objective 2.4 Reduce losses due to drainage problems

### Goal 3: Reduce economic impacts of disasters

Objective 3.1 Maintain operations of critical businesses and major employers

### Goal 4: Protect environment and natural resources

Objective 4.1 Identify, protect, and properly manage flood plains

Objective 4.2 Enforce local codes and regulations related to NFIP

### Goal 5: Increase public preparedness for disasters

Objective 5.1 Continue to train severe weather spotters

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**Table 5-18: Town of Vance Mitigation Actions**

<b>Mitigation Action</b>	Upgrade communications equipment, add second line of communications (2 way radios)
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb/Tuscaloosa County EMA, Town of Vance
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$50,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	Medium
<b>Mitigation Action</b>	Construct/install community safe rooms to include generators
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; Town of Vance
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$100,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Construct/install individual storm shelters
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; Town of Vance
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$5,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Install security measures at critical facilities
<b>Hazard(s) Addressed</b>	Chemical Agent, Conventional bomb
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, Citizen's Water Authority
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$10,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Enforce floodplain managements requirements, regulate construction or improvements in Special Flood Hazard Areas (SFHAs).
<b>Hazard(s) Addressed</b>	Flood
<b>Applies to new/existing asset</b>	New and existing
<b>Local Planning Mechanism</b>	Town of Vance
<b>Time frame for Completion</b>	Ongoing
<b>Estimated Cost</b>	
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	Low

<b>Mitigation Action</b>	Provide generators for critical facilities
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb/Tuscaloosa County EMA, Town of Vance
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$25,000 ea
<b>Funding Sources</b>	ADECA,
<b>Priority</b>	High

# **Town of West Blocton**

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**Table 5-19: Town of West Blocton  
Risk and Vulnerability Overview**

<b>Natural Hazards</b>	<b>Hazard Identification</b>	<b>Mitigation Actions Prioritization</b>	<b>Prioritized Occurrence Threat</b>	<b>Vulnerability</b>
<b>Thunderstorm</b>	X	2	3	H
<b>Lightning</b>	X	1	8	H
<b>Hail</b>	X	8	6	L
<b>Tornado</b>	X	4	8	H
<b>Flood</b>	X	6	7	M
<b>Drought/Extreme Heat</b>	X	7	2	M
<b>Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/Winter Weather/Extreme Cold</b>	X	5	4	H
<b>Hurricane/Tropical Storm/ Tropical Depression/High Wind/ Strong Wind</b>	X	12	5	M
<b>Sinkhole/Expansive Soil</b>	X	9	8	L
<b>Landslide</b>	X	10	8	L
<b>Earthquake</b>	X	11	8	L
<b>Wildfire</b>	X	3	1	L
<b>Dam/Levee Failure</b>	N/A	N/A	8	N/A
<b>Man-made Hazards</b>				
<b>Hazardous Material Release</b>	X	6	6	H
<b>Arson/Incendiary Attack</b>	X	1	1	H
<b>Armed Attack</b>	X	4	4	M
<b>Conventional Bomb</b>	X	5	5	M
<b>Chemical Agent</b>	X	2	2	H
<b>Cyberterrorism</b>	X	7	7	M
<b>Agriterrorism</b>	X	8	8	H
<b>Biological Agent</b>	X	3	3	H
<b>Radiological Agent</b>	X	9	9	H
<b>Nuclear Bomb</b>	X	10	10	M

**KEY:**

Hazard Identification – Identified by local jurisdictions

Mitigation Actions Prioritization - Hazards are prioritized by jurisdictions based on past hazard experiences, vulnerabilities, and available mitigation actions with the hazard having highest priority of mitigation assigned number one.

Prioritized Occurrence Threat - 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. These prioritized threats may or may not be the same as the mitigation actions prioritization.

Vulnerability – Identified by local jurisdictions. 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); and H – High Risk; significant risk/major damage potential (damage to over 10% of jurisdiction, regular occurrence)

*(Source: NOAA NCDC Storm Events Database; Alabama Forestry Commission; National Forestry Service; Alabama Geological Survey; Participating Jurisdictions)*

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**TABLE 5-20: TOWN OF WEST BLOCTON HAZARD EVENTS**

**9 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
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	06/22/2004	16:20	CST	Thunderstorm Wind	60 kts. EG	0	0	12.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	01/13/2005	10:15	CST	Thunderstorm Wind	50 kts. EG	0	0	4.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	04/30/2005	03:51	CST	Thunderstorm Wind	52 kts. EG	0	0	4.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	07/04/2005	13:47	CST	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	11/30/2006	22:28	CST-6	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	14:05	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	15:21	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	07/04/2011	14:24	CST-6	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	08/18/2012	05:47	CST-6	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
<b>Totals:</b>								0	0	33.00K	0.00K

**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.

**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
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	05/02/2003	16:29	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	04/10/2004	23:32	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">WEST BLOCTON</a>	BIBB CO.	AL	07/22/2006	13:17	CST	Hail	0.88 in.	0	0	0.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	14:37	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
<a href="#">BLOCTON JCT</a>	BIBB CO.	AL	03/02/2012	18:42	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**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.

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

*(Source: NOAA NCDC Storm Events Database)*

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/18/2003	14:30	CST	Flood		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2005	00:00	CST	Flood		0	0	0.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	09/16/2004	09:56	CST	Flash Flood		0	0	2.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	07/10/2005	19:30	CST	Flash Flood		0	0	4.00K	0.00K
<b>Totals:</b>								0	0	6.00K	0.00K

27 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
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/18/2006	07:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/22/2008	06:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/02/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	10/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	12/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/03/2012	00:00	CST-6	Drought		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**7 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)

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/01/2009	02:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/09/2011	13:05	CST-6	Ice Storm		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/19/2008	06:00	CST-6	Winter Weather		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	02/12/2010	11:00	CST-6	Winter Weather		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**6 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)

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	50.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/29/2005	17:00	CST	Tropical Storm		0	0	210.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/16/2004	07:00	CST	High Wind	56 kts. EG	0	0	350.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/11/2005	16:00	CST	Strong Wind	40 kts. EG	0	0	14.00K	0.00K
<b>Totals:</b>								0	0	626.0K	0.00K

**0 Sinkhole/Expansive Soil Events - 01/01/2003 thru 12/31/2013 (4018 days)**  
(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)

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

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

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

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

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

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

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

**109 Wildfire Events – 1/1/2010 thru 12/31/2013**

*(Source: Alabama Forestry Commission)*

<b>County</b>	<b>Total # of Fires 2010-2013</b>	<b>Average # of Fires Per Year</b>	<b>Total Acres Burned 2010-2013</b>	<b>Average Acres Burned Per Year</b>	<b>Average Fire Size</b>
Bibb	109	36	1280.15	427	12

**0 Dam/Levee Failure Events - 01/01/2003 thru 12/31/2013 (4018 days)**

*(Source: NOAA NCDC Storm Events Database)*

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

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**Table 5-21: Town of West Blocton  
Hazard Probability Assessment**

<b>Natural Hazards</b>	<b>Number of Historical Occurrences</b>	<b>Probability of Future Annual Occurrence</b>	<b>Extent</b>	<b>Area Affected</b>
<b>Thunderstorm</b>	9	90%	>10%	Town wide
<b>Lightning</b>	0	Unknown	>10%	Town wide
<b>Hail</b>	5	50%	<5%	Town wide
<b>Tornado</b>	0	Unknown	>10%	Town wide
<b>Flood/Flash Flood</b>	4	40%	5-10%	East part of town along Caffee Creek
<b>Drought/Extreme Heat</b>	27	>100%	5-10%	Town wide
<b>Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold</b>	7	70%	>10%	Town wide
<b>Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind</b>	6	60%	5-10%	Town wide
<b>Sinkhole/Expansive Soil</b>	0	Unknown	<5%	Town wide
<b>Landslide</b>	0	Unknown	<5%	Town wide
<b>Earthquake</b>	0	Unknown	<5%	Town wide
<b>Wildfire</b> (2010-2013 – 3 year study period)	109	36	<5%	Town wide
<b>Dam/Levee Failure</b>	0	Unknown	0%	N/A
<b>Man-made Hazards</b>				
<b>Hazardous Material Release</b>	0	Unknown	>10%	Town wide
<b>Arson/Incendiary Attack</b>	0	Unknown	>10%	Town wide
<b>Armed Attack</b>	0	Unknown	5-10%	Town wide
<b>Conventional Bomb</b>	0	Unknown	5-10%	Town wide
<b>Chemical Agent</b>	0	Unknown	>10%	Town wide
<b>Cyberterrorism</b>	0	Unknown	5-10%	Town wide
<b>Agriterrorism</b>	0	Unknown	>10%	Town wide
<b>Biological Agent</b>	0	Unknown	>10%	Town wide
<b>Radiological Agent</b>	0	Unknown	>10%	Town wide
<b>Nuclear Bomb</b>	0	Unknown	5-10%	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 summary (Table 4-12). Zero and Unknown denotes there is no data available to determine the probability, extent, or affected area.

**TABLE 5-22: Town of West Blocton Critical Facilities**

Facility	Location	Use	Value
West Blocton Town Hall	1139 Main St	Government	\$200,000
West Blocton Police Dept	1139 Main St	Law Enforcement	\$75,000
West Blocton Fire Dept	50 Fire Station Dr	Fire Protection	\$300,000
Water Booster Pump	McGraw-Truman Aldrich Pkwy	Water Supply	\$500,000
Water Booster Pump	Smith Hill-Bishop Ridge	Water Supply	\$500,000
Water Booster Pump	Hwy 5	Water Supply	\$500,000
Water Pumping Station/Spring	Cedar Crest Rd	Water Supply	\$1,000,000
Water Tank (100,000 gal)	Florida St	Water Supply	\$250,000
Water Tank (200,000 gal)	Eardens Farm Rd	Water Supply	\$250,000
Water Tank (150,000 gal)	Richtown Rd	Water Supply	\$250,000
Water Tank (500,000 gal)	Bishop Ridge	Water Supply	\$500,000
Sewer Treatment Plant	Primitive Ridge	Sewer Treatment Plant	\$2,000,000
Sewer Pump Station (1)	Cahaba River Dr	Sanitary Sewer	\$300,000
Sewer Pump Station (2)	Cahaba River Dr	Sanitary Sewer	\$300,000
Sewer Pump Station (3)	Cahaba River Dr	Sanitary Sewer	\$300,000
Sewer Pump Station (4)	Hwy 5, Cahaba River Dr	Sanitary Sewer	\$300,000
Alabama Power Co	Florida St	Electrical Power	\$200,000
Bell South Communications	Main St	Telephone Service	\$2,000,000
West Blocton Elem/shelter	828 Cahaba River Dr	Education	\$5,450,000
West Blocton Middle School	4721 Truman Aldrich Pkwy	Education	\$4,695,985
West Blocton High School	4734 Truman Aldrich Pkwy	Education	\$14,300,000
Bibb Co. Alternative School	Cahaba River Dr	Education	\$100,000
Head Start	Cahaba River Dr	Education	\$100,000
Bibb County Resource Center	837 Cahaba River Dr.	Education	\$450,000
West Blocton Medical Center	Magnolia St	Health Care	\$200,000
Outdoor Warning Siren (#6)	Cahaba River Dr	Weather warning	\$15,000
Outdoor Warning Siren (#20)	50 Firestation Dr		\$50,000
Jacks Pharmacy	Truman Aldrich Rd	Supplies	\$500,000
West Blocton Food Center	Cahaba River Dr	Supplies	\$500,000
Cell Phone Tower	Golden Rod Ln	Communications	\$2,000,000
Bibb County Maintenance Shop	837 Cahaba River Dr.	Transportation	\$500,000
<i>Source: Local Jurisdiction</i>		<b>Total</b>	<b>\$38,585,985</b>

**Table 5-23: Town of West Blocton  
Estimated Loss Projections from Specified Hazards**

<b>Natural Hazards</b>	<b>Average Occurrences (per year)</b>	<b>Total Deaths</b>	<b>Total Injuries</b>	<b>Average Death and Injury Loss (per event)</b>	<b>Average Crop and Property Loss (per event)</b>	<b>Projected Loss (per event)</b>
<b>Thunderstorm</b>	.9	0	0	\$0	\$3,667	\$3,997
<b>Lightning</b>	0	0	0	\$0	\$0	Unknown
<b>Hail</b>	.5	0	0	\$0	\$0	Unknown
<b>Tornado</b>	0	0	0	\$0	\$0	Unknown
<b>Flood/Flash Flood</b>	.4	0	0	\$0	\$1,500	\$1,635
<b>Drought/Extreme Heat</b>	2.7	0	0	\$0	\$0	Unknown
<b>Winter Storm/ Frost Freeze/ Heavy Snow/ Ice Storm/Winter Weather/Extreme Cold</b>	.7	0	0	\$0	\$0	Unknown
<b>Hurricane/Tropical Storm/Tropical Depression/High Wind/ Strong Wind</b>	.6	0	0	\$0	\$104,333	\$113,723
<b>Sinkhole/Expansive Soil</b>	0	0	0	\$0	\$0	Unknown
<b>Landslide</b>	0	0	0	\$0	\$0	Unknown
<b>Earthquake</b>	0	0	0	\$0	\$0	Unknown
<b>Wildfire (3 year study period)</b>	36	0	0	\$0	\$25,176	\$27,442
<b>Dam/Levee Failure</b>	0	0	0	\$0	\$0	Unknown

*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. Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figures 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 denotes there is no data available to determine the average occurrences, average loss or projected loss per event.

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## Town of West Blocton Mitigation Action Plan

The Town of West Blocton recognizes the importance of Mitigation Planning and will incorporate Mitigation planning in planning documents as they are revised or initiated.

### **Mitigation Status**

In order to track the progress of identified actions, the Town of West Blocton's 2009 Mitigation Plan list is shown below. The current status of the proposed actions is shown in italics.

### **BENCHMARKING:**

#### **Town of West Blocton Mitigation Action Plan (2009)**

1. Install NOAA Weather Radios at critical facilities - *Action was deleted*
  - The town is now utilizing the county's CodeRED and ALERT FM warning systems which sends messages and provides weather warnings.
2. Install additional weather sirens - *Action was deleted*
  - The town does not want to add additional outdoor warning sirens, due to the costs of maintenance on the sirens and the fact they now utilize CodeRED and ALERT FM.
3. Construct storm retrofits to school buildings – *No action has been taken due to lack of funding; action remains in this plan revision.*
4. Install security measures at critical facilities - *No action has been taken due to lack of funding; action remains in this plan revision.*
5. Install lightning arrestors at all water and sewer pumps - *No action has been taken due to lack of funding; action remains in this plan revision.*
6. Upgrade fire hydrants to add security access device - *No action has been taken due to lack of funding; action remains in this plan revision.*
7. Enforce floodplain management requirements, regulate construction or improvements in Special Flood Hazard Areas (SFHA) - *Action remains in this plan revision.*
8. Install emergency generators at critical facilities - *No action has been taken due to lack of funding; action remains in this plan revision.*

9. Upgrade drainage system to enlarge pipes and ditches, add storm drains - *No action has been taken due to lack of funding; action remains in this plan revision.*

**Table 5-24** shows the Town of West Blocton's updated mitigation actions for the 2015 plan revision. During the plan update process, actions were deleted and added as needed.

## MITIGATION STRATEGY – TOWN OF WEST BLOCTON

### Goal 1: Protect life

Objective 1.1 Improve Warning and Emergency Communication Systems

Objective 1.2 Reduce impacts of hazards on vulnerable populations

*Action 1.2.1 Construct storm retrofits to school buildings*

*Action 1.2.2 Construct/install community safe rooms to include generators*

*Action 1.2.3 Construct/install individual storm shelters*

Objective 1.3 Improve disaster response and recovery

### Goal 2: Protect property

Objective 2.1 Reduce losses to critical facilities/assets

*Action 2.1.1 Install security measures at critical facilities*

*Action 2.1.2 Install lightning arrestors at all water & sewer pumps*

*Action 2.1.3 Upgrade fire hydrants to add security access device*

Objective 2.2 Continue Participation in NFIP program

*Action 2.2.1 Enforce floodplain management requirements, regulate construction or improvements in Special Flood Hazard Areas (SFHAs).*

Objective 2.3 Provide and maintain essential public services

*Action 2.3.1 Install emergency generators at critical facilities*

Objective 2.4 Reduce losses due to drainage problems

*Action 2.4.1 Upgrade drainage system to enlarge pipes and ditches, add storm drains*

### Goal 3: Reduce economic impacts of disasters

Objective 3.1 Maintain operations of critical businesses and major employers

### Goal 4: Protect environment and natural resources

Objective 4.1 Identify, protect, and properly manage flood plains

Objective 4.2 Enforce local codes and regulations related to NFIP

### Goal 5: Increase public preparedness for disasters

Objective 5.1 Continue to train severe weather spotters

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**Table 5-24: Town of West Blocton Mitigation Actions**

<b>Mitigation Action</b>	Construct storm retrofits to school buildings
<b>Hazard(s) Addressed</b>	Thunderstorms, Tornados, Hurricanes
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, Bibb County Board of Education
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$300,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	Low
<b>Mitigation Actions</b>	Construct/install community safe rooms to include generators
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; Town of West Blocton
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$100,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	Medium
<b>Mitigation Action</b>	Construct/install individual storm shelters
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; Town of West Blocton
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$5,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Install emergency generators at critical facilities
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, Town of West Blocton
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$25,000 - \$50,000 ea
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Install security measures at critical facilities
<b>Hazard(s) Addressed</b>	Chemical Agent, Conventional bomb
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, Town of West Blocton
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$100,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Install lightning arrestors at all water and sewer pumps
<b>Hazard(s) Addressed</b>	Lightning
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, Town of West Blocton
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$150,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	High

<b>Mitigation Action</b>	Upgrade fire hydrants to add security access device
<b>Hazard(s) Addressed</b>	Chemical agent
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, Town of West Blocton
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$100,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	Medium
<b>Mitigation Action</b>	Upgrade drainage systems to enlarge pipes and ditches, add storm drains
<b>Hazard(s) Addressed</b>	Flood
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, Town of West Blocton
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$1,000,000
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	Medium
<b>Mitigation Action</b>	Enforce flood plain managements requirements, regulate construction or
<b>Hazard(s) Addressed</b>	Flood
<b>Applies to new/existing asset</b>	New and existing
<b>Local Planning Mechanism</b>	Town of West Blocton
<b>Time frame for Completion</b>	Ongoing
<b>Estimated Cost</b>	
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	Low

# **Town of Woodstock**

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**Table 5-25: Town of Woodstock  
Risk and Vulnerability Overview**

<b>Natural Hazards</b>	<b>Hazard Identification</b>	<b>Mitigation Actions Prioritization</b>	<b>Prioritized Occurrence Threat</b>	<b>Vulnerability</b>
<b>Thunderstorm</b>	X	1	5	L
<b>Lightning</b>	X	2	7	L
<b>Hail</b>	X	7	6	L
<b>Tornado</b>	X	3	7	M
<b>Flood/Flash Flood</b>	X	8	5	L
<b>Drought/Extreme Heat</b>	X	4	2	H
<b>Winter Storm/Frost Freeze/ Heavy Snow/Ice Storm/Winter Weather/ Extreme Cold</b>	X	9	3	H
<b>Hurricane/Tropical Storm/Tropical Depression/Strong Wind/High Wind</b>	X	6	4	L
<b>Sinkhole/Expansive Soil</b>	N/A	N/A	7	N/A
<b>Landslide</b>	N/A	N/A	7	N/A
<b>Earthquake</b>	X	10	7	L
<b>Wildfire</b>	X	5	1	L
<b>Dam/Levee Failure</b>	N/A	N/A	7	N/A
<b>Man-made Hazards</b>				
<b>Hazardous Material Release</b>	X	3	3	L
<b>Arson/Incendiary Attack</b>	X	4	4	L
<b>Armed Attack</b>	X	1	1	L
<b>Conventional Bomb</b>	X	2	2	M
<b>Chemical Agent</b>	X	7	7	M
<b>Cyberterrorism</b>	X	6	6	H
<b>Aggriterrorism</b>	X	9	9	H
<b>Biological Agent</b>	X	8	8	H
<b>Radiological Agent</b>	X	5	5	H
<b>Nuclear Bomb</b>	X	10	10	H

**KEY:**

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)

*(Source: Participating Jurisdictions)*

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## TABLE 5-26: TOWN OF WOODSTOCK HAZARD EVENTS

### 4 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
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	06/22/2004	16:20	CST	Thunderstorm Wind	60 kts. EG	0	0	12.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	01/13/2005	10:15	CST	Thunderstorm Wind	50 kts. EG	0	0	4.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	14:05	CST-6	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	15:21	CST-6	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
<b>Totals:</b>								0	0	20.00K	0.00K

### 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.

### 2 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
<a href="#">WOODSTOCK</a>	BIBB CO.	AL	07/25/2004	14:21	CST	Hail	0.75 in.	0	0	0.00K	0.00K
<a href="#">BIBB CO.</a>	BIBB CO.	AL	06/10/2011	14:37	CST-6	Hail	1.00 in.	0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

### 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.

### 4 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
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/18/2003	14:30	CST	Flood		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2005	00:00	CST	Flood		0	0	0.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	09/16/2004	09:56	CST	Flash Flood		0	0	2.00K	0.00K
<a href="#">COUNTYWIDE</a>	BIBB CO.	AL	07/10/2005	19:30	CST	Flash Flood		0	0	4.00K	0.00K
<b>Totals:</b>								0	0	6.00K	0.00K

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

*(Source: NOAA NCDC Storm Events Database)*

<u>Location</u>	<u>County/Zone</u>	<u>St.</u>	<u>Date</u>	<u>Time</u>	<u>T.Z.</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/18/2006	07:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2006	00:00	CST	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/27/2007	06:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	10/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	12/01/2007	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	02/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	05/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/22/2008	06:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/01/2008	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/02/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	10/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	12/01/2011	00:00	CST-6	Drought		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/03/2012	00:00	CST-6	Drought		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**7 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
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/07/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	04/08/2007	00:00	CST-6	Frost/freeze		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	03/01/2009	02:00	CST-6	Heavy Snow		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/09/2011	13:05	CST-6	Ice Storm		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/19/2008	06:00	CST-6	Winter Weather		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	02/12/2010	11:00	CST-6	Winter Weather		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	01/24/2003	00:00	CST	Extreme Cold/wind Chill		0	0	0.00K	0.00K
<b>Totals:</b>								0	0	0.00K	0.00K

**6 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
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	07/10/2005	17:00	CST	Tropical Storm		0	0	50.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/29/2005	17:00	CST	Tropical Storm		0	0	210.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	08/23/2008	12:00	CST-6	Tropical Depression		0	0	0.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	11/09/2009	14:00	CST-6	Tropical Depression		0	0	2.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	09/16/2004	07:00	CST	High Wind	56 kts. EG	0	0	350.00K	0.00K
<a href="#">BIBB (ZONE)</a>	BIBB (ZONE)	AL	06/11/2005	16:00	CST	Strong Wind	40 kts. EG	0	0	14.00K	0.00K
<b>Totals:</b>								0	0	626.00K	0.00K

**0 Sinkhole/Expansive Soil Events - 01/01/2003 thru 12/31/2013 (4018 days)**  
(Source: NOAA NCDC Storm Events Database/U.S. Geological Survey)

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

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

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

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

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

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

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

**109 Wildfire Events – 1/1/2010 thru 12/31/2013**

*(Source: Alabama Forestry Commission)*

<b>County</b>	<b>Total # of Fires 2010-2013</b>	<b>Average # of Fires Per Year</b>	<b>Total Acres Burned 2010-2013</b>	<b>Average Acres Burned Per Year</b>	<b>Average Fire Size</b>
Bibb	109	36	1280.15	427	12

**0 Dam/Levee Failure Events - 01/01/2003 thru 12/31/2013 (4018 days)**

*(Source: NOAA NCDC Storm Events Database)*

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

**Table 5-27: Town of Woodstock  
Hazard Probability Assessment**

<b>Natural Hazards</b>	<b>Number of Historical Occurrences</b>	<b>Probability of Future Annual Occurrence</b>	<b>Extent</b>	<b>Area Affected</b>
<b>Thunderstorm</b>	4	40%	<5%	Town wide
<b>Lightning</b>	0	Unknown	<5%	Town wide
<b>Hail</b>	2	20%	<5%	Town wide
<b>Tornado</b>	0	Unknown	5-10%	Town wide
<b>Flood/Flash Flood</b>	4	40%	<5%	Along Caffee Creek, Railroad
<b>Drought/Extreme Heat</b>	27	>100%	>10%	Town wide
<b>Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold</b>	7	70%	>10%	Town wide
<b>Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind</b>	6	60%	<5%	Town wide
<b>Sinkhole/Expansive Soil</b>	0	Unknown	N/A	N/A
<b>Landslide</b>	0	Unknown	N/A	N/A
<b>Earthquake</b>	0	Unknown	<5%	Town wide
<b>Wildfire</b> (2010-2013 – 3 year study period)	109	>100%	<5%	Town wide
<b>Dam/Levee Failure</b>	0	Unknown	N/A	N/A
<b>Man-made Hazards</b>				
<b>Hazardous Material Release</b>	0	Unknown	<5%	Town wide
<b>Arson/Incendiary Attack</b>	0	Unknown	<5%	Town wide
<b>Armed Attack</b>	0	Unknown	<5%	Town wide
<b>Conventional Bomb</b>	0	Unknown	5-10%	Town wide
<b>Chemical Agent</b>	0	Unknown	5-10%	Town wide
<b>Cyberterrorism</b>	0	Unknown	>100%	Town wide
<b>Agriterrorism</b>	0	Unknown	>100%	Town wide
<b>Biological Agent</b>	0	Unknown	>100%	Town wide
<b>Radiological Agent</b>	0	Unknown	>100%	Town wide
<b>Nuclear Bomb</b>	0	Unknown	>100%	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 summary (Table 4-12). Zero and Unknown denotes there is no data available to determine the probability, extent, or affected area.

**TABLE 5-28: Town of Woodstock Critical Facilities**

<b>Facility</b>	<b>Location</b>	<b>Use</b>	<b>Value</b>
Woodstock Town Hall	28513 Hwy 5	Government; Police	\$5,000,000
Green Pond #1 VFD	19639 Eastern Valley Rd	Fire Fighting & Rescue	\$2,500,000
Green Pond #2 VFD	1135 Woodland Lake Rd	Fire Fighting & Rescue	\$2,500,000
Green Pond #3 VFD	Gray Hill Rd	Fire Fighting & Rescue	\$2,500,000
Woodstock Annex	Giles Road		\$200,000
Pump Station #1 w/generator	2735 Coldwater Rd	Sanitary Sewer	\$65,000
Pump Station #2 w/generator	20020 Hwy 11	Sanitary Sewer	\$55,000
Pump Station #4 w/generator	2583 Hwy 5	Sanitary Sewer	\$116,000
Electrical Distribution Center	Gray Hill Rd	Electrical Power	\$3,000,000
Pump Station #3 w/generator	12015 Ridgeway Road, McCalla	Sanitary Sewer	\$65,000
Woodstock Elem/storm shelter	19456 Eastern Valley Rd	Education	\$5,506,833
Woodstock Ball Park	60 Wegee Way Road	Education	\$25,000
Greenpond/Woodstock Library & Park	321 Presbyterian Rd.	Education	\$250,000
Woodstock Clinic	Hwy 5 & 11	Medical Service	\$1,000,000
Outdoor Warning Siren (#1)	Mission Baptist	Weather Warning	\$15,000
Outdoor Warning Siren (#3)	Old Woodstock Baptist	Weather Warning	\$15,000
Outdoor Warning Siren (#5)	Pine Lake Subdivision	Weather Warning	\$15,000
Woodstock Senior Center	28513 Hwy 5 ( @town hall)	Shelter/Food Service	\$250,000
Woodstock Drug		Drug Service	\$15,000
Cell Phone Tower		Communications	\$2,000,000
Woodstock Baptist Church	Hwy 5	Red Cross Shelter	\$1,000,000
<i>Source: Local Jurisdiction</i>			<b>TOTAL \$26,092,833</b>

**Table 5-29: Town of Woodstock  
Estimated Loss Projections from Specified Hazards**

<b>Natural Hazards</b>	<b>Average Occurrences (per year)</b>	<b>Total Deaths</b>	<b>Total Injuries</b>	<b>Average Death and Injury Loss (per event)</b>	<b>Average Crop and Property Loss (per event)</b>	<b>Projected Loss (per event)</b>
<b>Thunderstorm</b>	.4	0	0	\$0	\$5,000	\$5,450
<b>Lightning</b>	0	0	0	\$0	\$0	Unknown
<b>Hail</b>	.2	0	0	\$0	\$0	Unknown
<b>Tornado</b>	0	0	0	\$0	\$0	Unknown
<b>Flood/Flash Flood</b>	.4	0	0	\$0	\$1,500	\$1,635
<b>Drought/Extreme Heat</b>	2.7	0	0	\$0	\$0	Unknown
<b>Winter Storm/Frost Freeze/Heavy Snow/Ice Storm/Winter Weather/Extreme Cold</b>	.7	0	0	\$0	\$0	Unknown
<b>Hurricane/Tropical Storm/Tropical Depression/High Wind/Strong Wind</b>	.6	0	0	\$0	\$104,333	\$113,723
<b>Sinkhole/Expansive Soil</b>	0	0	0	\$0	\$0	Unknown
<b>Landslide</b>	0	0	0	\$0	\$0	Unknown
<b>Earthquake</b>	0	0	0	\$0	\$0	Unknown
<b>Wildfire (3 year study period)</b>	36	0	0	\$0	\$25,176	\$27,442
<b>Dam/Levee Failure</b>	0	0	0	\$0	\$0	Unknown

*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. Projected loss expresses an estimated damage amount per future occurrence by converting the average loss figures 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 denotes there is no data available to determine the average occurrences, average loss or projected loss per event.

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## **Town of Woodstock Mitigation Action Plan**

The Town of Woodstock recognizes the importance of Mitigation Planning and will incorporate mitigation planning in planning documents as they are revised or initiated.

### **Mitigation Status**

In order to track the progress of identified actions, the Town of Woodstock's 2005 Mitigation Plan list is shown below. The current status of the proposed action is shown in italics.

### **BENCHMARKING:**

#### **Town of Woodstock Mitigation Action Plan (2009)**

1. Construct storm retrofits to school buildings - *No action has been taken due to lack of funding; action remains in this plan revision.*
2. Install security measures at critical facilities - *No action has been taken due to lack of funding; action remains in this plan revision.*
3. Enforce floodplain management requirements, regulate construction or improvements in Special Flood Hazard Areas (SFHA) - *Action remains in this plan revision.*
4. Provide generators for critical facilities - *No action has been taken due to lack of funding; action remains in this plan revision.*

**Table 5-30** shows the Town of Woodstock's updated mitigation actions. During the plan update process two new actions were identified and added to the plan. All actions listed in the 2009 Plan Update are ongoing.

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## MITIGATION STRATEGY – TOWN OF WOODSTOCK

### **Goal 1: Protect life**

Objective 1.1 Improve Warning and Emergency Communication Systems

Objective 1.2 Reduce impacts of hazards on vulnerable populations

*Action 1.2.1 Construct storm retrofits to school buildings*

*Action 1.2.2 Construct/install community safe rooms to include generators*

*Action 1.2.3 Construct/install individual storm shelters*

Objective 1.3 Improve disaster response and recovery

### **Goal 2: Protect property**

Objective 2.1 Reduce losses to critical facilities/assets

*Action 2.1.1 Install security measures at critical facilities*

Objective 2.2 Continue Participation in NFIP program

*Action 2.2.1 Enforce floodplain management requirements and regulate construction or improvements in Special Flood Hazard Areas (SFHAs).*

Objective 2.3 Provide and maintain essential public services

*Action 2.3.1 Provide generators for critical facilities*

Objective 2.4 Reduce losses due to drainage problems

### **Goal 3: Reduce economic impacts of disasters**

Objective 3.1 Maintain operations of critical businesses and major employers

### **Goal 4: Protect environment and natural resources**

Objective 4.1 Identify, protect, and properly manage flood plains

Objective 4.2 Enforce local codes and regulations related to NFIP

### **Goal 5: Increase public preparedness for disasters**

Objective 5.1 Continue to train severe weather spotters

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**Table 5-30: Town of Woodstock Mitigation Actions**

<b>Mitigation Action</b>	Construct storm retrofits to school buildings
<b>Hazard(s) Addressed</b>	Thunderstorms, Tornados, Hurricanes
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, Bibb County Board of Education
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$400,000
<b>Funding Sources</b>	Grants, local
<b>Priority</b>	Medium
<b>Mitigation Action</b>	Construct/install community safe rooms to include generators
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; Bibb County
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$100,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Construct/install individual storm shelters
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County EMA; Bibb County
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$5,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Install security measures at critical facilities
<b>Hazard(s) Addressed</b>	Man-made hazards
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, Town of Woodstock
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$15,000
<b>Funding Sources</b>	Grants, local
<b>Priority</b>	High
<b>Mitigation Action</b>	Enforce floodplain managements requirements, regulate construction or
<b>Hazard(s) Addressed</b>	Flood
<b>Applies to new/existing asset</b>	New
<b>Local Planning Mechanism</b>	Town of Woodstock
<b>Time frame for Completion</b>	Ongoing
<b>Estimated Cost</b>	
<b>Funding Sources</b>	Local, Grants
<b>Priority</b>	Low

<b>Mitigation Action</b>	Provide generators for critical facilities
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County EMA, Town of Woodstock
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$25,000 ea
<b>Funding Sources</b>	Grants, local
<b>Priority</b>	High

# **Bibb County Fire Association**

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## **Bibb County Fire Association Action Plan**

The Bibb County Fire Association recognizes the importance of Mitigation Planning and will incorporate mitigation planning in planning documents as they are revised or initiated.

### **Mitigation Status**

In order to track the progress of identified actions, the Bibb County Fire Association's Mitigation Plan has been added to this plan update.

**Table 5-31** shows the Bibb County Fire Association's mitigation actions.

### **BENCHMARKING:**

Prior to this plan revision, no actions were listed for this organization; therefore, no benchmarking can be made.

## **MITIGATION STRATEGY – BIBB COUNTY FIRE ASSOCIATION**

### **Goal 1: Protect life**

Objective 1.2 Reduce impacts of hazards on vulnerable populations

*Action 1.2.1 Construct storm retrofits to fire buildings*

*Action 1.2.2 Construct/install community safe rooms at fire buildings to include generators*

*Action 1.2.3 Construct/install individual storm shelters at fire buildings*

### **Goal 2: Protect property**

Objective 2.3 Provide and maintain essential public services

*Action 2.3.1 Provide generators for fire buildings*

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**Table 5-31: Bibb County Fire Association Mitigation Actions**

<b>Mitigation Action</b>	Construct storm retrofits to fire buildings
<b>Hazard(s) Addressed</b>	Thunderstorms, Tornados, Hurricanes
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County Fire Association
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$250,000 each
<b>Funding Sources</b>	Grants, local
<b>Priority</b>	Low
<b>Mitigation Action</b>	Construct/install community safe rooms to fire buildings to include generators
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County Fire Association
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$100,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Construct/install individual storm shelters to fire buildings
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County Fire Association
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$5,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	Low
<b>Mitigation Action</b>	Provide generators for fire buildings
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County Fire Association
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$25,000 ea
<b>Funding Sources</b>	Grants, local
<b>Priority</b>	High

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**Bibb County  
Board of Education**

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## **Bibb County Board of Education Action Plan**

The Bibb County Board of Education recognizes the importance of Mitigation Planning and will incorporate mitigation planning in planning documents as they are revised or initiated.

### **Mitigation Status**

In order to track the progress of identified actions, the Bibb County Board of Education's Mitigation Plan has been added to this plan update.

**Table 5-31** shows the Bibb County Board of Education's mitigation actions.

### **BENCHMARKING:**

Prior to this plan revision, no actions were listed for this organization; therefore, no benchmarking can be made.

## **MITIGATION STRATEGY – BIBB COUNTY BOARD OF EDUCATION**

### **Goal 1: Protect life**

Objective 1.2 Reduce impacts of hazards on vulnerable populations

*Action 1.2.1 Construct storm retrofits to educational buildings*

*Action 1.2.2 Construct/install community safe rooms at educational buildings to include generators*

*Action 1.2.3 Construct/install individual storm shelters at educational buildings*

### **Goal 2: Protect property**

Objective 2.1 Reduce losses to critical facilities/assets

*Action 2.1.1 Install security measures at Bibb County's critical educational facilities*

Objective 2.3 Provide and maintain essential public services

*Action 2.3.1 Provide generators for educational buildings*

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**Table 5-32: Bibb County BOE Mitigation Actions**

<b>Mitigation Action</b>	Construct storm retrofits to educational buildings
<b>Hazard(s) Addressed</b>	Thunderstorms, Tornados, Hurricanes
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County BOE
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$400,000 each
<b>Funding Sources</b>	Grants, local
<b>Priority</b>	Low
<b>Mitigation Action</b>	Construct/install community safe rooms to educational buildings to include generators
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County BOE
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$100,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	High
<b>Mitigation Action</b>	Construct/install individual storm shelters to educational buildings
<b>Hazard(s) Addressed</b>	Thunderstorm, Tornado
<b>Applies to new/existing asset</b>	New and Existing
<b>Local Planning Mechanism</b>	Bibb County BOE
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$5,000 each
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	Low
<b>Mitigation Action</b>	Provide generators for educational buildings
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County BOE
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$25,000 ea
<b>Funding Sources</b>	Grants, local
<b>Priority</b>	High

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# **Bibb County Medical Center**

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## **Bibb County Medical Center Action Plan**

The Bibb County Medical Center recognizes the importance of Mitigation Planning and will incorporate mitigation planning in planning documents as they are revised or initiated.

### **Mitigation Status**

In order to track the progress of identified actions, the Bibb County Medical Center's Mitigation Plan has been added to this plan update.

**Table 5-31** shows the Bibb County Medical Center's mitigation actions.

### **BENCHMARKING:**

Prior to this plan revision, no actions were listed for this organization; therefore, no benchmarking can be made.

## **MITIGATION STRATEGY – BIBB COUNTY MEDICAL CENTER**

### **Goal 1: Protect life**

Objective 1.2 Reduce impacts of hazards on vulnerable populations

*Action 1.2.1 Construct storm retrofits to medical buildings*

### **Goal 2: Protect property**

Objective 2.1 Reduce losses to critical facilities/assets

*Action 2.1.1 Install security measures at Bibb County's Medical Center facilities*

Objective 2.3 Provide and maintain essential public services

*Action 2.3.1 Provide generators for medical buildings*

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**Table 5-32: Bibb County Medical Center Mitigation Actions**

<b>Mitigation Action</b>	Construct storm retrofits to medical buildings
<b>Hazard(s) Addressed</b>	Thunderstorms, Tornados, Hurricanes
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County Medical Center
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$400,000 each
<b>Funding Sources</b>	Grants, local
<b>Priority</b>	Low
<b>Mitigation Action 2.1.1</b>	Install security measures at Bibb County Medical Center
<b>Hazard(s) Addressed</b>	Manmade Hazards
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County Medical Center
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$500,000
<b>Funding Sources</b>	Local; Grants
<b>Priority</b>	Medium
<b>Mitigation Action</b>	Provide generators for medical buildings
<b>Hazard(s) Addressed</b>	All
<b>Applies to new/existing asset</b>	Existing
<b>Local Planning Mechanism</b>	Bibb County Medical Center
<b>Time frame for Completion</b>	One year from funding availability
<b>Estimated Cost</b>	\$25,000 each
<b>Funding Sources</b>	Grants, local
<b>Priority</b>	High

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## **Section Six: Mitigation Plan Maintenance**

The plan may be reviewed at any time at the request of any local government, by the Chairman of the Hazard Mitigation Planning Committee, or at the discretion of the Bibb County EMA Director. Local governments may submit a formal letter to the Bibb County EMA Director or the Chairman of the Bibb County Hazard Mitigation Planning Committee requesting a review of the plan. The public may also request review of the plan by submitting a formal letter to the Bibb County EMA Director or the Chairman of the Bibb County Hazard Mitigation Planning Committee requesting a review of the plan. In the future, the County EMA will strive to get jurisdictions with websites to post the Hazard Mitigation Plan and provide a way for the public to comment online. Citizen Input on Hazard Mitigation Planning forms will be placed in public places, to include on the courthouse bulletin board, in the local government buildings, and in the library to provide the public a chance to provide feedback during the plan's implementation, monitoring, and evaluation process.

The Hazard Mitigation Planning Committee may re-evaluate the plan after a disaster has occurred to make sure that mitigation of the hazard was addressed properly. At a minimum, the Hazard Mitigation Planning Committee will monitor, evaluate, and amend this plan annually. During publicized meetings of various kinds (mutual aid, LEPC, etc.), public participation, as well as participation from neighboring counties, is encouraged to allow the public an opportunity to participate in the process. In addition, the Hazard Mitigation Planning Committee will continually review a variety of resources and examine conditions, which may affect mitigation activities for natural and technological hazards. The committee will review existing plans, policies, maps, and other documentation such as, but not limited to:

- NFIP flood panels
- Post-disaster redevelopment models
- Critical facilities lists and maps
- Existing land-use maps
- Future land-use maps
- Current zoning maps
- Land development codes
- Governing body codes and resolutions

- Comprehensive plans, including drainage studies
- Emergency Operations Plan
- Standard Operating Guidelines
- Various other plans and/or studies related to hazard mitigation

The EMA Director will serve as the point of contact for all amendments to the plan and will coordinate all additions or deletions 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 EMA Director will begin the update process 18-24 months prior to the plan's expiration date in order to allow adequate time for the planning update process to be completed.

Regular plan monitoring will be achieved through the County EMA's efforts to track mitigation activities and the Hazard Mitigation Planning Committee's continual review of resources and conditions. The EMA Director 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 will take place in June of each year. Although the entire plan's progress will be monitored, evaluated, and updated on a continuous basis throughout the five-year timeframe, the annual review will begin by the EMA Director emailing a survey form to the HMPC members asking them for their input and giving them a two-week deadline on returning the information to the EMA Director. Following the two-week deadline, the EMA Director will consolidate the survey forms and act upon the findings as needed and in the methods described below. Documentation will be kept from each review, to include sign-in sheets, agendas, public notices, emails, survey forms, etc. if applicable.

The County EMA will conduct an annual evaluation of the plan, reconvening the committee only if additional information is available or the EMA Director requires assistance. The EMA Director will document the annual evaluation and note the findings. The evaluation will consider several basic factors including:

1. Changes in the level of risk to the county and its citizens

2. Changes in laws, policies, or regulations at the local or state level
3. Changes in state or local agencies or their procedures that will affect how mitigation programs or funds are administered
4. Significant changes in funding sources or capabilities
5. Changes in the composition of the Hazard Mitigation Committee
6. Progress on mitigation actions (including project closeouts) and new mitigation actions that the county is considering
7. Major changes to the multi-jurisdictional hazard mitigation plan

Additionally, the County EMA will contact local agencies (and other individuals and organizations as appropriate) to determine if updates have been made to certain elements of the local plans as part of the annual review process. The purpose of this effort is to ensure that local information about risk, goals, projects, and mitigation strategies included in the plan remains current.

In the event modifications to the plan are warranted as a result of the annual review or other conditions, the HMPC 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. The public and neighboring counties will be encouraged and provided the chance to participate in the review of the updated plan, as well as in the plan update itself. Before any revisions are submitted to the jurisdictions for adoption, a notice may be placed in the local newspaper or posted in public facilities, allowing an opportunity for the public to review the proposed amendments at the EMA, submit written comments, and/or present comments at a public meeting. The HMPC 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.

### ***Incorporation into Existing Planning Mechanisms***

The Bibb County Hazard Mitigation Plan is incorporated into the current Bibb County Emergency Operations Plan that is administered by the Bibb County Emergency Management Agency. The Bibb County Hazard Mitigation Plan update has also been incorporated into the

District II Comprehensive Economic Development Strategy (CEDS). District II covers the West Alabama counties of Bibb, Fayette, Greene, Hale, Lamar, Pickens, and Tuscaloosa.

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***

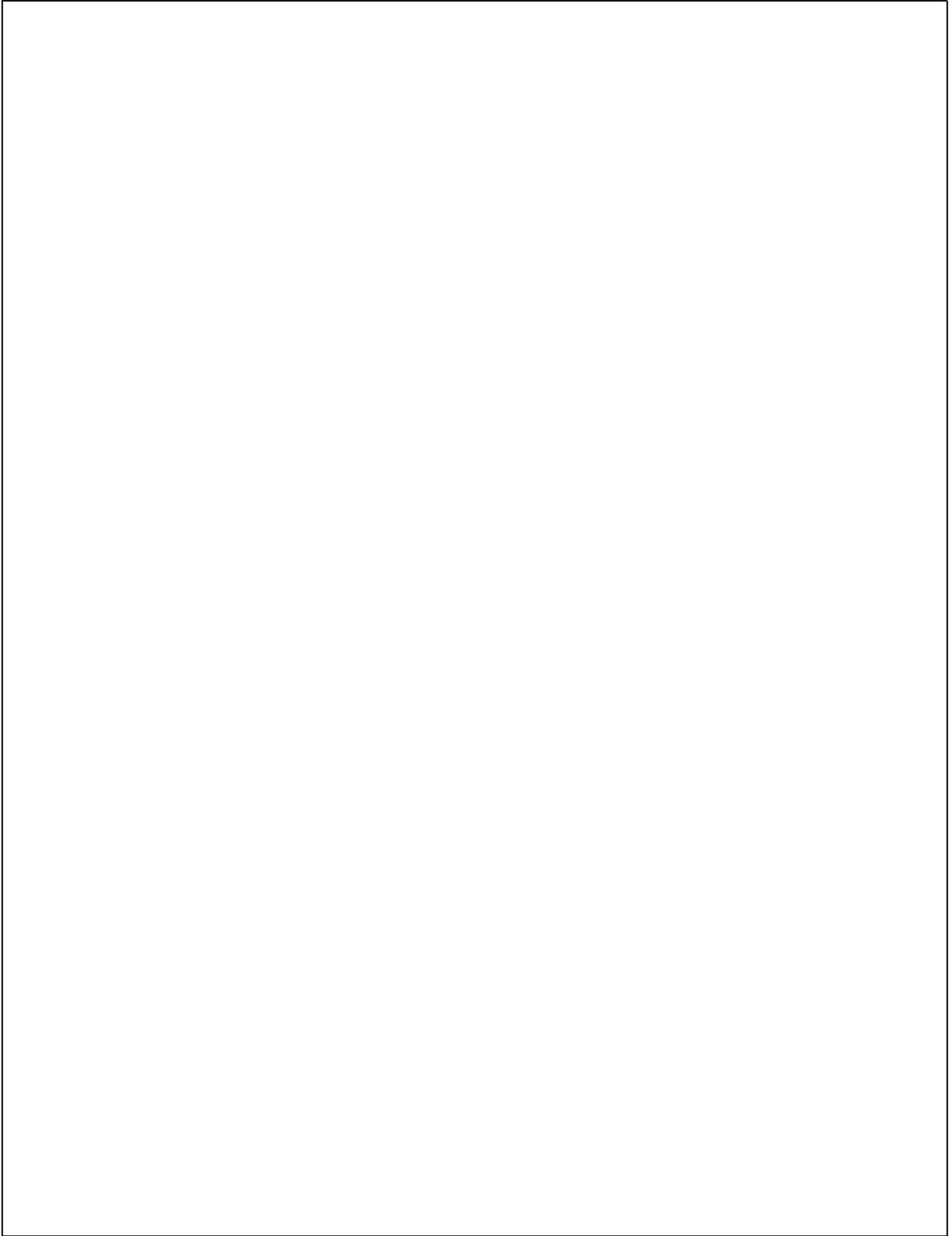
The plan will be available for the public to view at the Bibb County Emergency Operations Center, all City and Town Halls, the Bibb County Commission office, the West Alabama Regional Commission, and the Brent-Centreville Public Library. Written comments regarding the plan can be made to the Bibb County EMA Director.

During the past five years, the Bibb County EMA began having public meetings as stated in the 2009 Hazard Mitigation Plan. Only two people attended the first meeting and one person attended the second meeting; therefore, the Bibb County EMA Director began making annual personal contacts with the Committee Members to gather updated information. No records were kept of these contacts. Plan monitoring, evaluation, and amending will be conducted and documented differently in the next five years (see pages 333-335).

# **APPENDIX I**

## **Adopting Resolutions**

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**City of Centreville**

**2015 Bibb County Hazard Mitigation Plan Update**

**Resolution of Adoption**

**WHEREAS**, the Bibb County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

**WHEREAS**, the City of Centreville participated in the updating of a multi-jurisdictional plan, Bibb County Hazard Mitigation Plan; and

**WHEREAS**, the City of Centreville 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 Centreville has reviewed the plan and affirms that the plan will be updated no less than every five years.

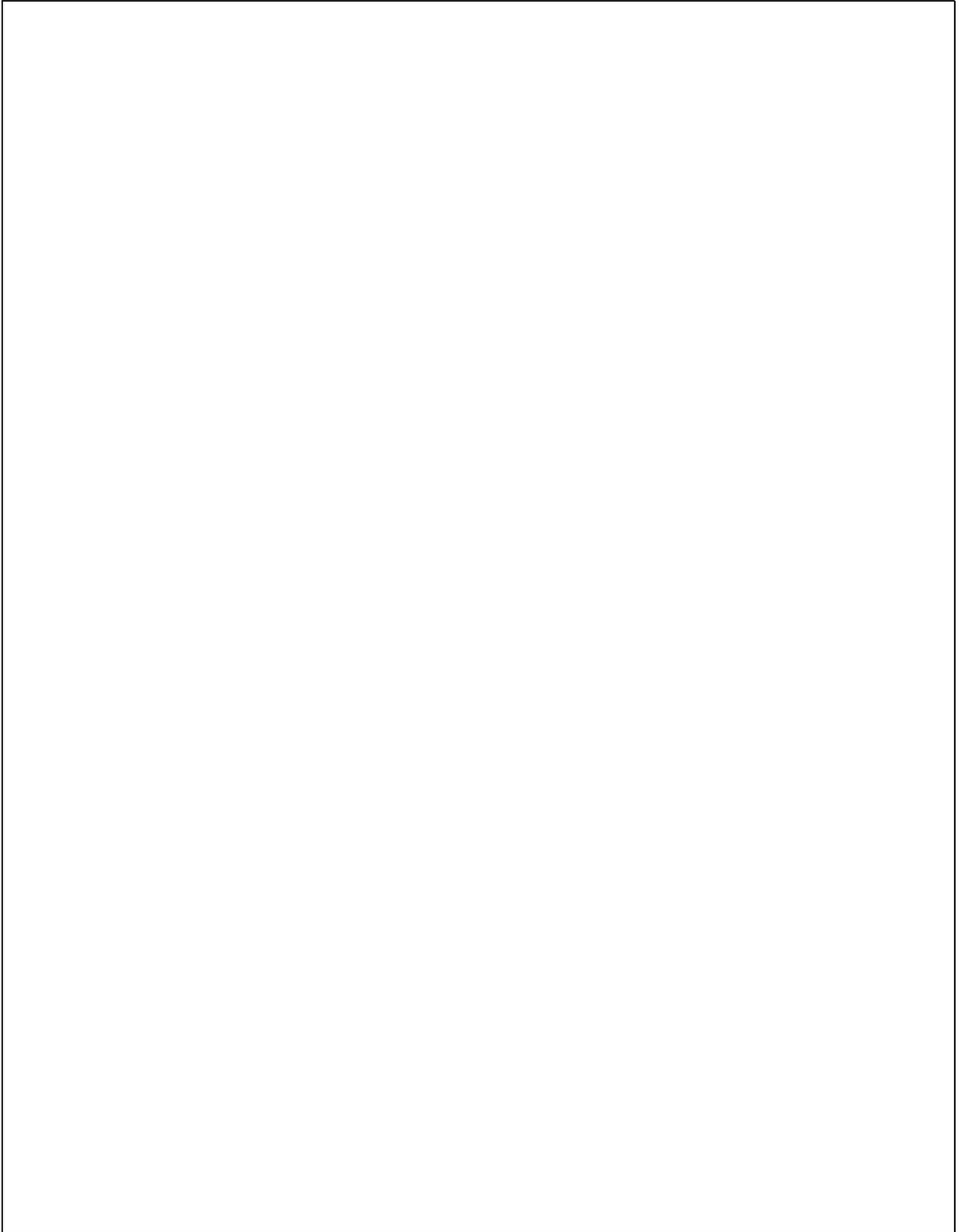
**NOW THEREFORE, BE IT RESOLVED** by the City Council that the City of Centreville adopts the 2015 Bibb County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this \_\_\_\_\_ day of \_\_\_\_\_, 2015 at the meeting of the City Council.

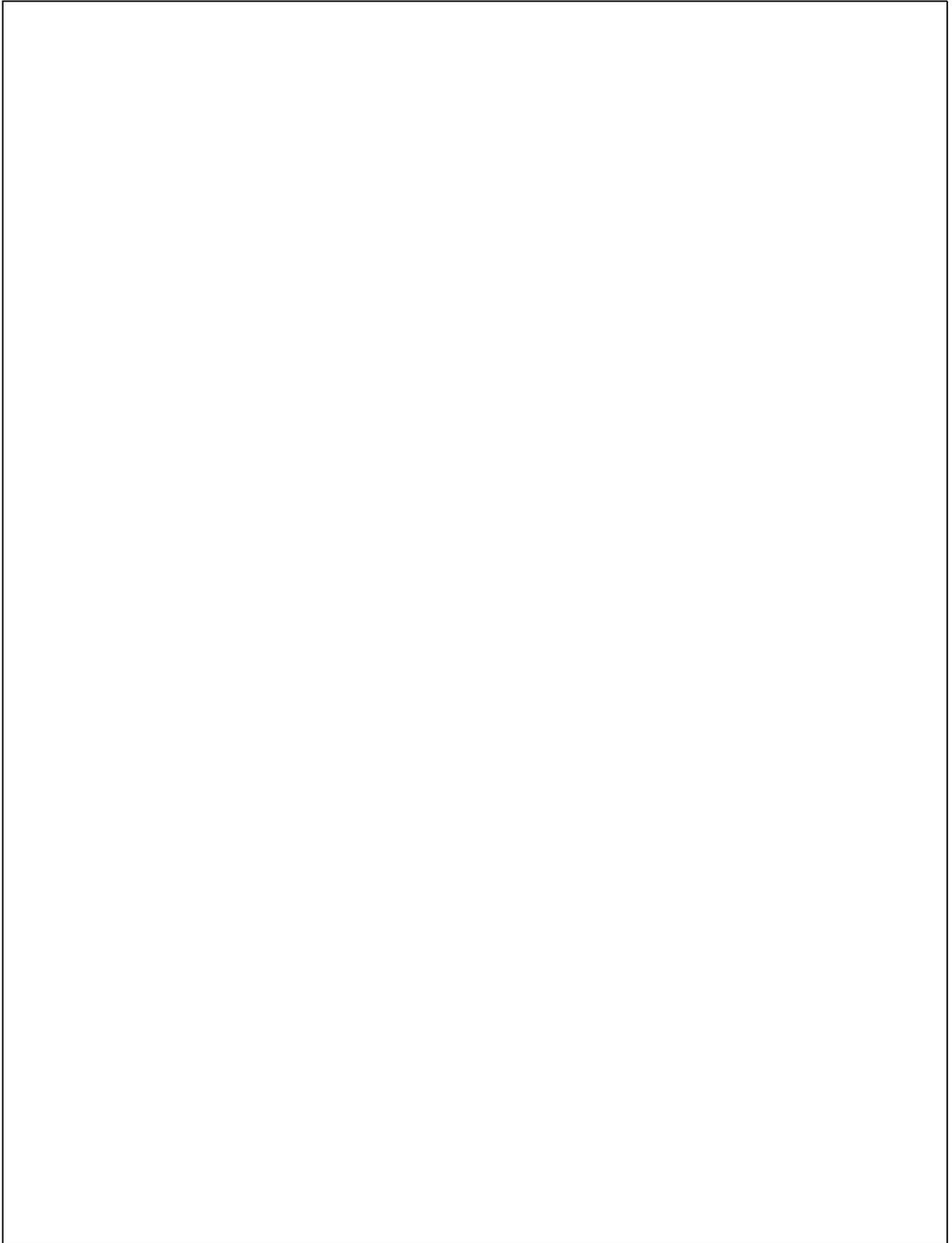
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\_\_\_\_\_  
President, Centreville City Council

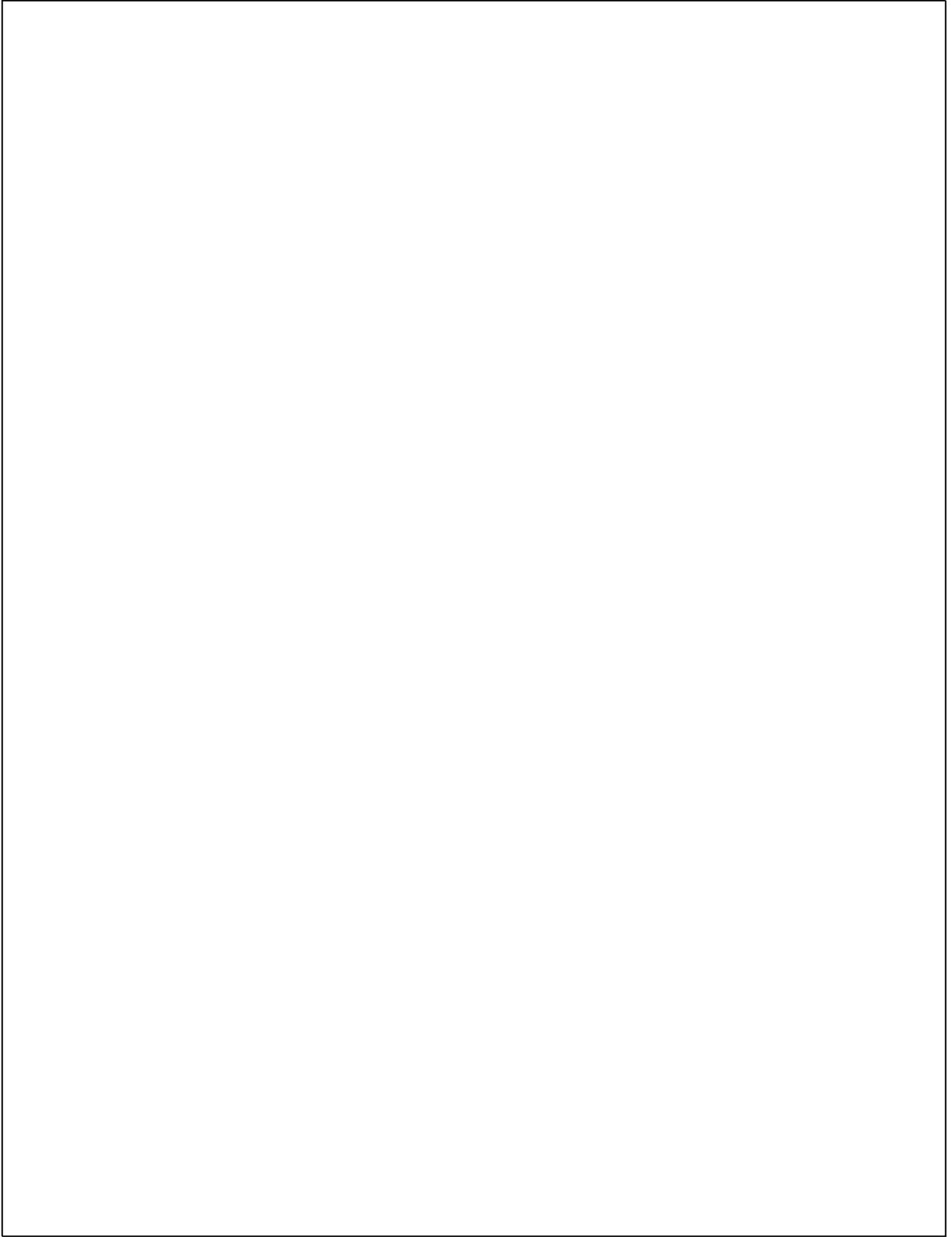
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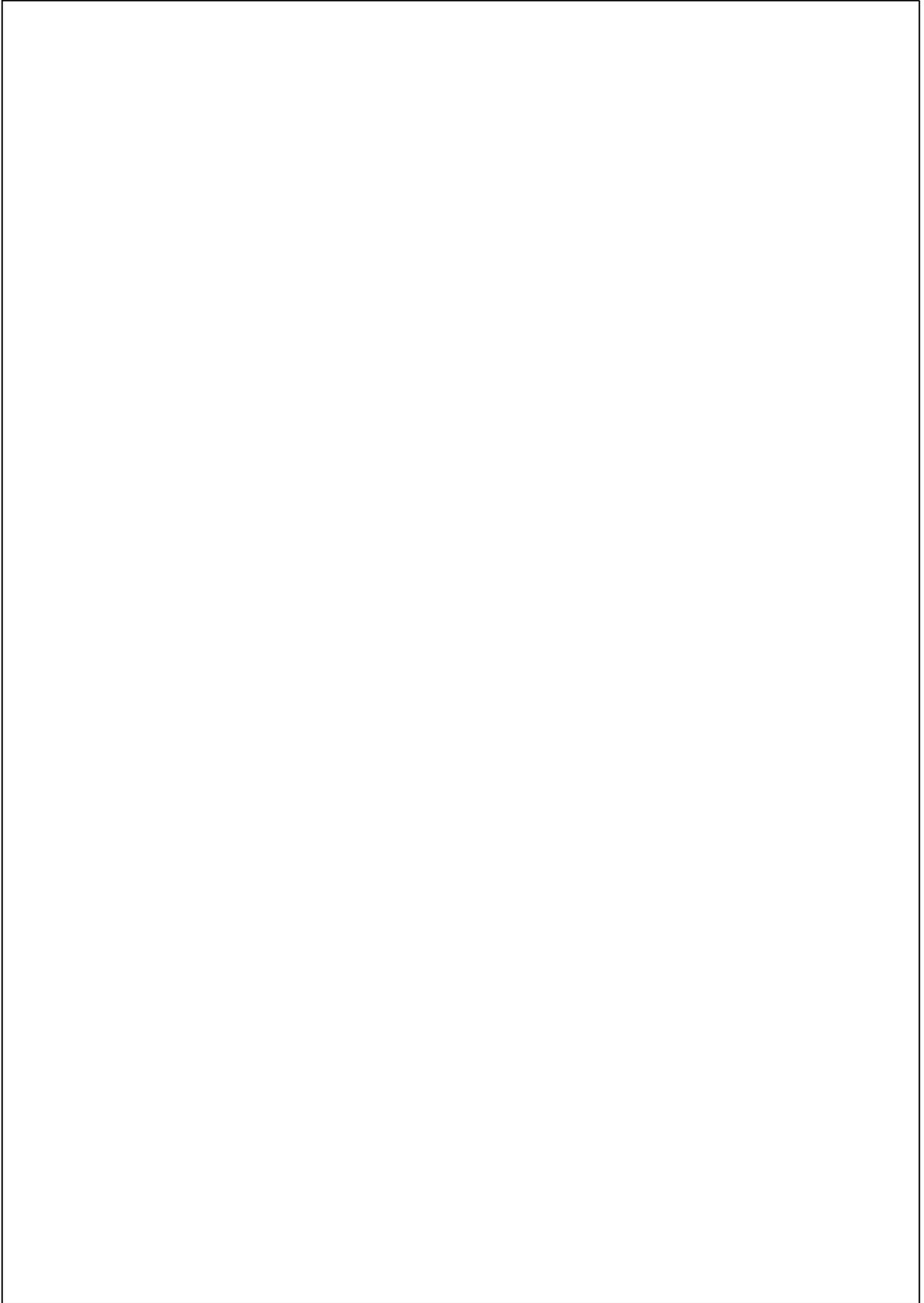


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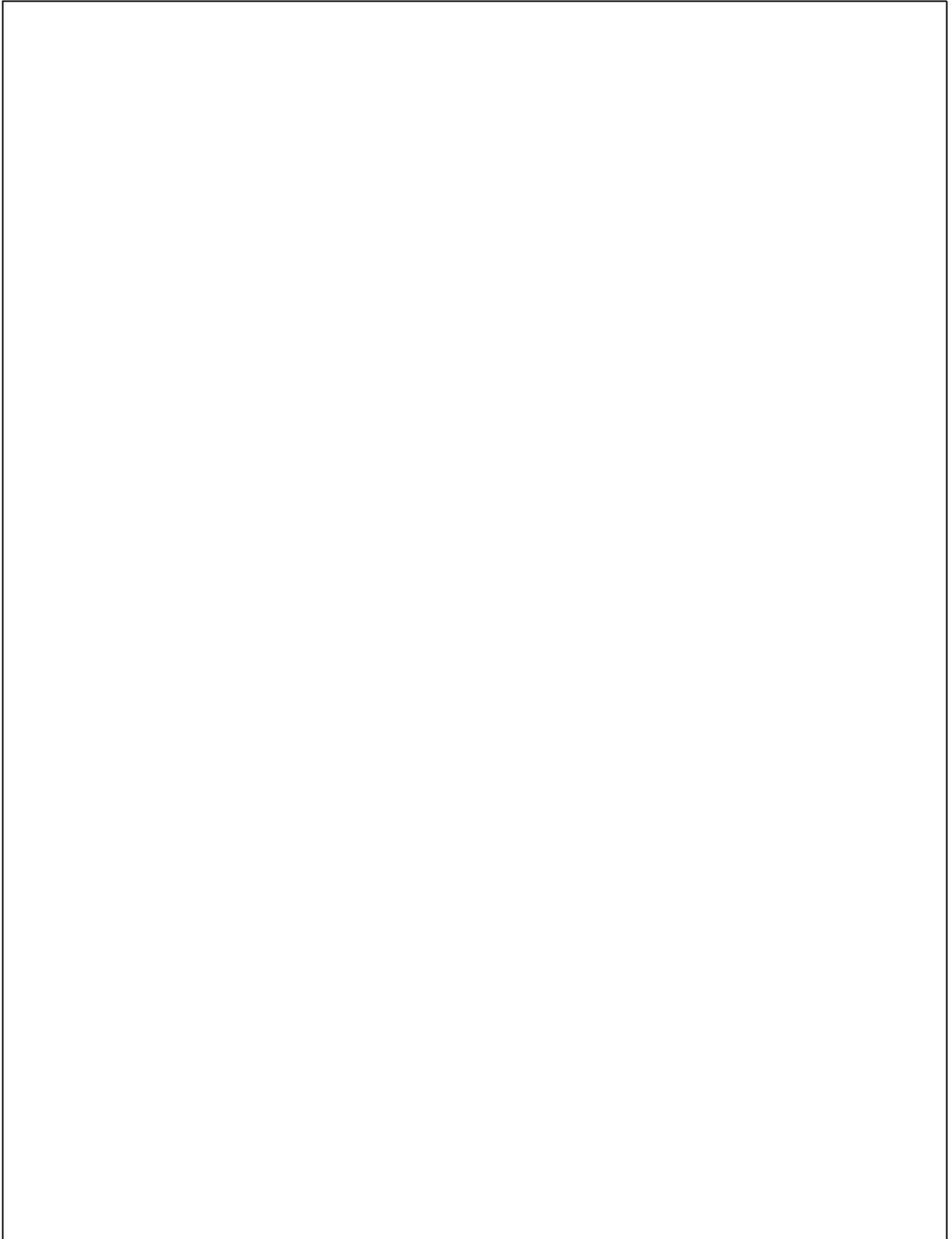


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**Bibb County Medical Center/Bibb County Healthcare Authority**

**2015 Bibb County Hazard Mitigation Plan Update**

**Resolution of Adoption**

**WHEREAS**, the Bibb County Hazard Mitigation Plan has been updated in accordance with FEMA requirements at 44 C.F.R. 201.6; and

**WHEREAS**, the Bibb County Medical Center/Bibb County Healthcare Authority participated in the updating of a multi-jurisdictional plan, Bibb County Hazard Mitigation Plan; and

**WHEREAS**, the Bibb County Medical Center/Bibb County Healthcare Authority 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 Bibb County Medical Center/Bibb County Healthcare 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 \_\_\_\_\_ that the Bibb County Medical Center/Bibb County Healthcare Authority adopts the 2015 Bibb County Hazard Mitigation Plan Update, and resolves to execute the actions in the plan.

ADOPTED, this \_\_\_\_\_ day of \_\_\_\_\_, 2015 at the meeting of the Bibb County Medical Center/Bibb County Healthcare Authority.

\_\_\_\_\_,  
Bibb County Medical Center/Bibb County Healthcare Authority