



# **Dallas County, Alabama**

## **Natural Hazard Mitigation Plan**

**September 2015**

The Alabama Tombigbee Regional Commission prepared this plan with guidance from the Dallas County Emergency Management Agency and the Dallas County Hazard Mitigation Planning Committee.

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**Appendix 1: Planning Process Documentation**

## **Summary of Changes Made in Plan Update Section I. The Hazard Mitigation Plan**

The first section of the plan gives a basic overview of the need and purpose of a Hazard Mitigation Plan. The Dallas County EMA contracted with the Alabama Tombigbee Regional Commission for the plan update. Due to the change in contractors, the plan underwent extensive changes. Section I was added to give information pertaining to the plan's purpose. All revisions/updates were approved by the Hazard Mitigation Planning Committee.

## I. THE HAZARD MITIGATION PLAN

### 1.1 Dallas County Natural Hazards Mitigation Plan

The Dallas County, Alabama Natural Hazards 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. This plan geographically covers the entire county including all unincorporated areas and the municipalities of Orrville, Selma, and Valley Grande.

### 1.2 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 Part 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.

### 1.3 Funding

Funding for this update to the Dallas County Mitigation Plan was made available through the Hazard Mitigation Grant Program (HMGP). The Alabama Tombigbee Regional Commission facilitated the development of Dallas County's plan.

### 1.4 Scope

The Dallas County, Alabama Natural Hazards Mitigation Plan includes all incorporated and unincorporated areas in Dallas County. The plan addresses all natural hazards identified by the Federal Emergency Management Agency. All natural hazards that may affect Dallas County and its residents are identified. Hazard mitigation strategies are discussed in terms of short term and long-term goals. Responsibility for implementation of strategies is discussed and possible funding sources are identified.

### 1.5 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 Dallas County, Alabama Natural Hazards Mitigation Plan is an effort to evaluate and identify all natural hazards, which may affect Dallas County. It presents mitigation strategies that address each hazard identified. This plan is only one of many steps Dallas County will take to achieve a safer, more hazard resistant environment for its residents.

### 1.6 Multi-Jurisdictional Planning Participation

All four jurisdictions in Dallas County along with both school systems participated in the planning process. The participating jurisdictions are Dallas County, Orrville, Selma, and Valley Grande. The Dallas County Board of Education and the Selma City School System also participated. Participation included completing hazard questionnaires, supplying information on critical facilities, and providing project lists. Each participant will also formally adopt the plan. Table 1.1 outlines plan participants that will formally adopt the plan.

**Dallas County, Alabama Hazard Mitigation Plan  
Section I. The Hazard Mitigation Plan**

**Table 1.1 Dallas County Hazard Mitigation Plan Participants**

<b>Continuing Participants</b>	<b>New Participants</b>
Town of Orrville	Selma City Schools
City of Selma	Dallas County Schools
City of Valley Grande	
Dallas County Commission	

**Developed by the Alabama Tombigbee Regional Commission on June 25, 2015**

**Source: Dallas County Hazard Mitigation Planning Committee**

## **Summary of Changes Made in Plan Update Section II. County Profile**

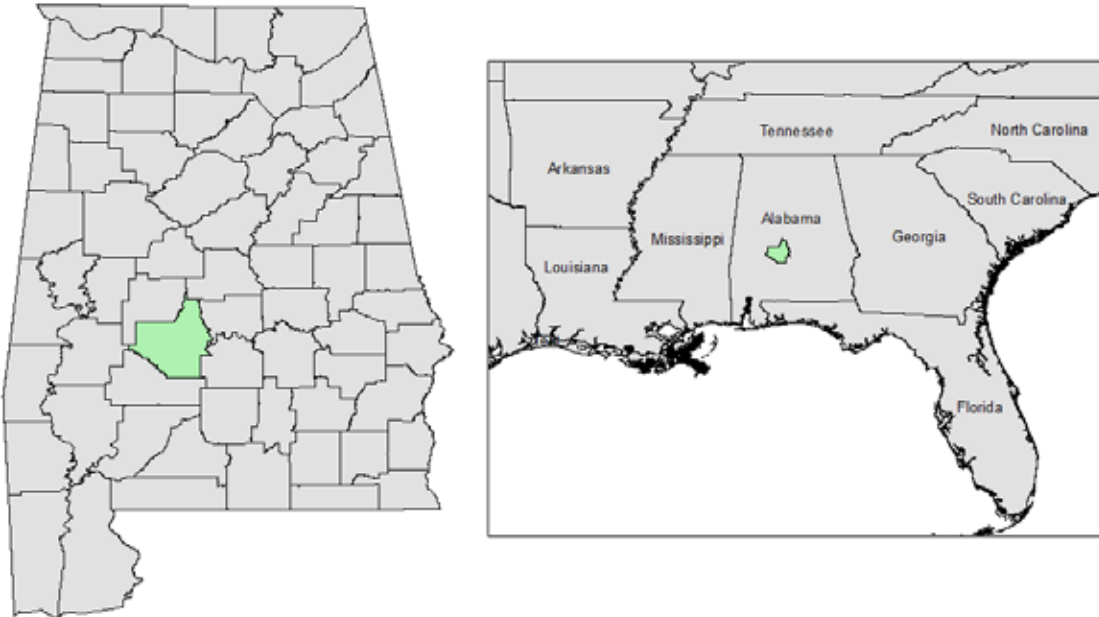
**This section gives a brief overview of Dallas County as a whole. It is intended to help the reader become more familiar with the county. This is not a required section of the mitigation plan.**



## II. COUNTY PROFILE

Dallas County was created on February 9, 1818 by the Alabama Territorial Legislature. It was named in honor of Alexander J. Dallas of Pennsylvania, the U.S. Treasury Secretary. The county is bordered by Perry, Chilton, Autauga, Lowndes, Wilcox, and Marengo counties (Figure 2.1). The county spans an area of 975 square miles. It is the tenth largest county, with regards to area, in Alabama.

**Figure 2.1 Map of Dallas County in Relation to the State of Alabama and Southeast U.S**

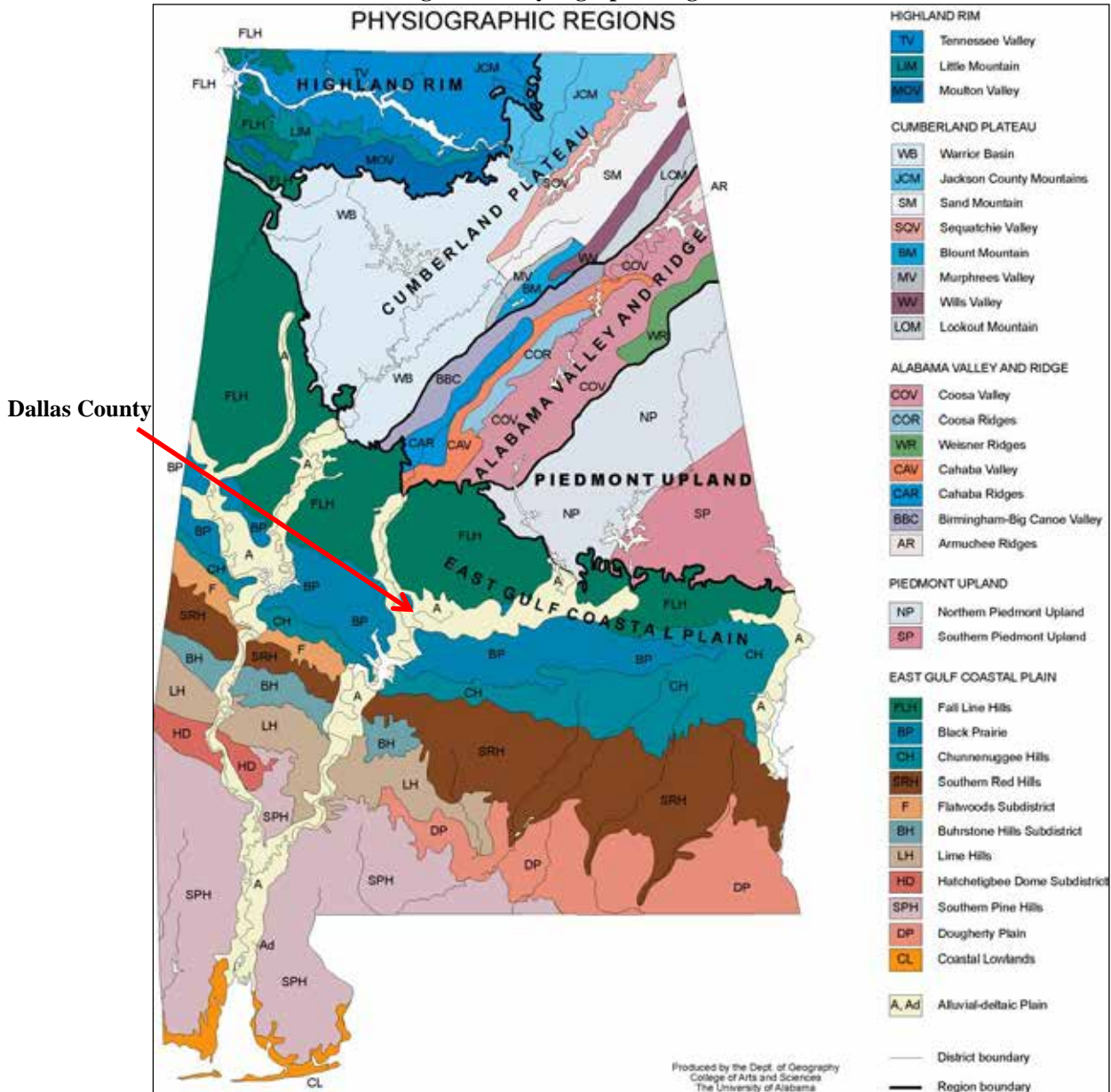


Map produced by the Alabama Tombigbee Regional Commission  
Source data US Census Bureau TIGER Line files  
March 2015

## 2.1 Geology

Dallas County lies in the East Gulf Coastal Plain. Geologic units range from the Cretaceous to Holocene. These units are sedimentary in origin and consist of sand, clay, gravel, silt, limestone, marl, chalk, and quartz. Figure 2.2 provides a map of the physiographic regions of Alabama with Dallas County's location identified.

Figure 2.2 Physiographic Regions of Alabama



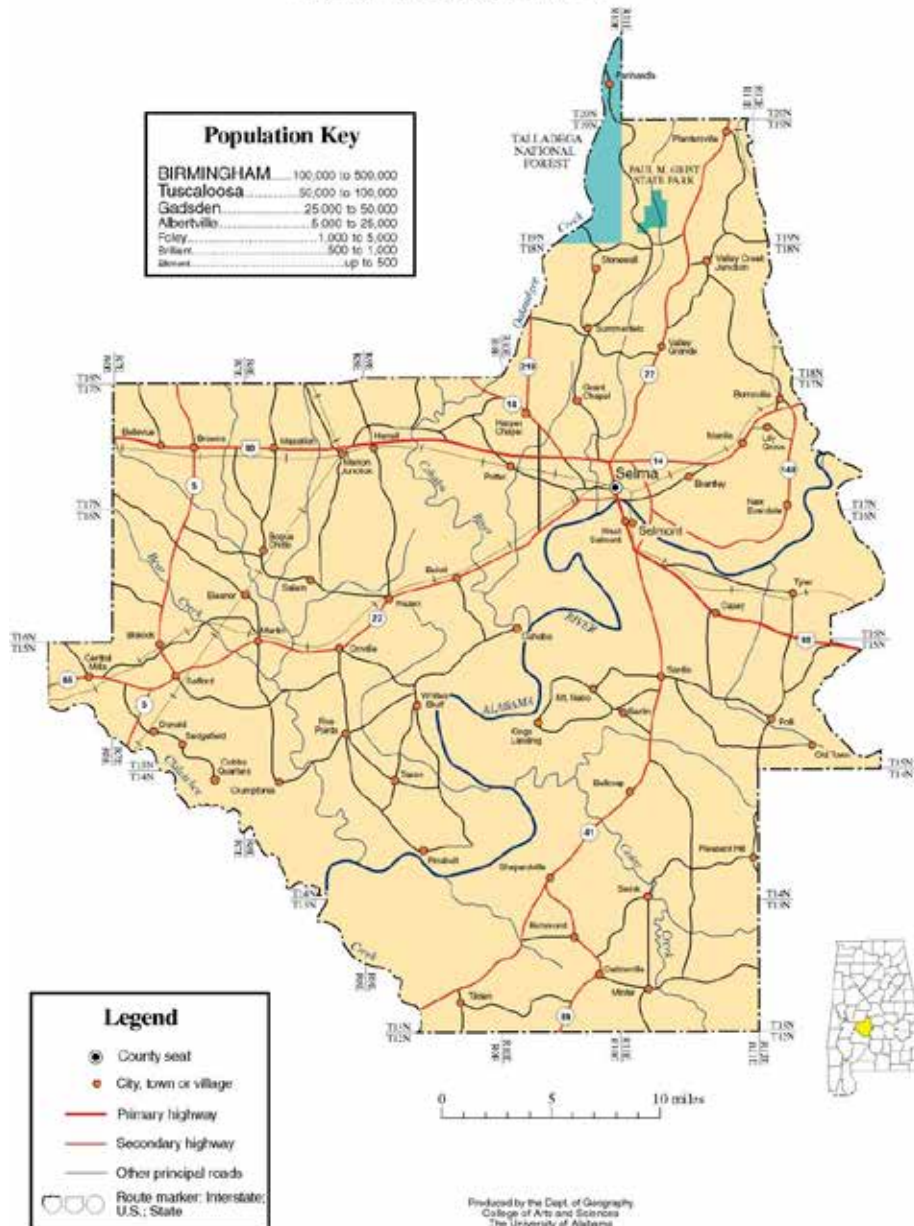
Source: Cartographic Research Laboratory, The University of Alabama  
[http://alabamamaps.ua.edu/contemporarymaps/alabama/physical/al\\_physio.jpg](http://alabamamaps.ua.edu/contemporarymaps/alabama/physical/al_physio.jpg)  
 Accessed on April 4, 2014

## 2.2 Transportation

### Roads

Dallas County has an extensive network of county roads. The county also has heavily travelled State Highways such as highways 5, 22, 41, 14, and 219. United States Highway 80 runs from east to west through the county. The City of Selma is located along this route. U.S. 80 is a major truck route extending from Tybee Island, Georgia to Dallas, Texas. Figure 2.3 provides a map of the county with major roads denoted.

**Figure 2.3 Dallas County**  
**DALLAS COUNTY**



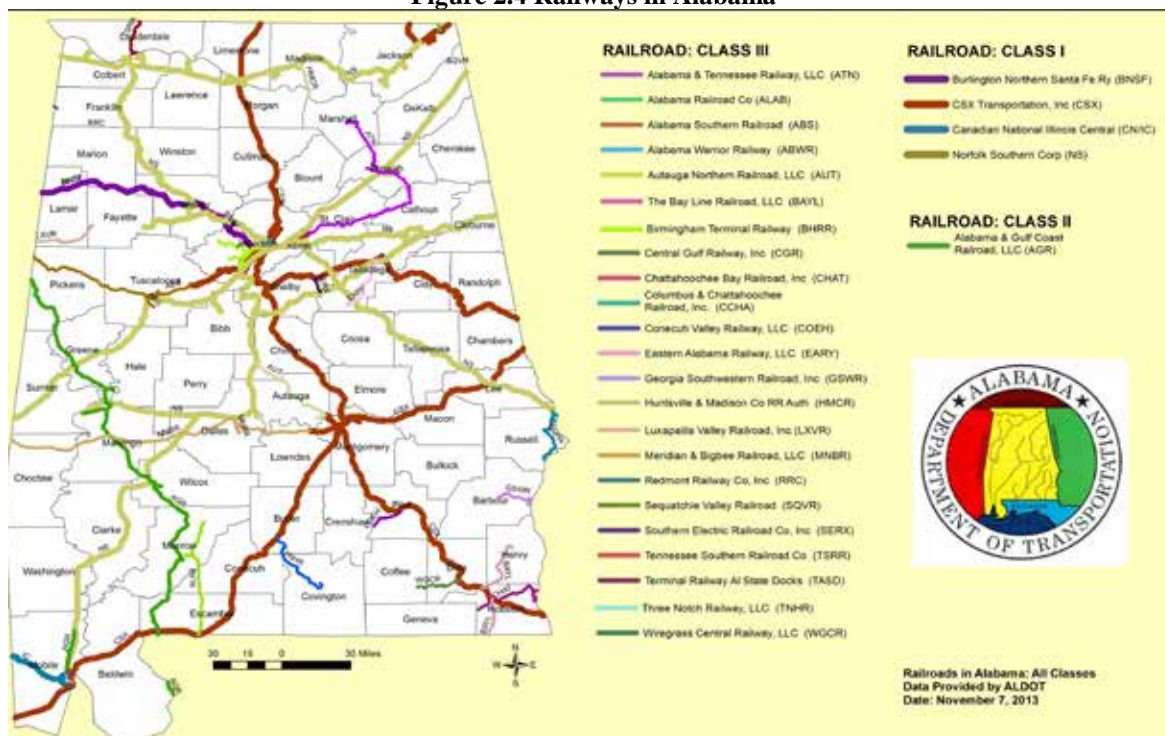
Source: Cartographic Research Laboratory, The University of Alabama  
<http://alabamamaps.ua.edu/contemporarymaps/alabama/counties/dallas.jpg>  
 Accessed on March 9, 2015

### Railroads

There are two railways which operate in Dallas County (Figure 2.4). Norfolk Southern operates a Class I railroad in the county. Class I railroads have annual carrier operating revenues over \$250 million dollars. Major commodities transported through Dallas County include coal and industrial products.

Meridian and Bigbee operates the county's other rail line, a Class III or short line railroad. The Meridian and Bigbee System extends from Meridian, Mississippi to Burkeville, Alabama. It interchanges with four Class I railroads, including Norfolk Southern in Selma. Major commodities transported on this route include aggregates, brick and cement, chemicals, food and feed products, forest products, and metallic ores and minerals.

### Figure 2.4 Railways in Alabama



**Source: Alabama Rail Directory, June 2014**

## Airports

Craig Field, located in Selma, is a general aviation airport. The airport has 8,002 feet of lighted runway with 1,000 foot overruns on each end. The Montgomery Regional Airport, the closest commercial airport, is located 40 minutes east of Selma on US Highway 80.

## 2.3 Economy

The economy of Dallas County is dependent largely upon manufacturing. Table 2.1 is a listing of the county's ten largest industrial employers.



**Table 2.1 Major Industrial Employers in Dallas County**

<b>Employer</b>	<b>Employees</b>
International Paper Co., Riverdale Mill	733
Plantation Patterns, LLC	375
Honda Lock-America Inc. (HL-A)	350
Hanil E-Hwa Interior Systems Alabama	345
Bush Hog, Division of Alamo Group	295
R. L. Zeigler Co., Inc.	250
American Apparel, Inc.	236
Rayco Industrial	200
Crown Health Care Laundry Services	160
Renosol Seating	135

**Source: Selma & Dallas County EDA**  
<http://www.selmaeda.com/top-employers/>  
 Accessed on September 8, 2015

## **2.4 Utilities**

*Electricity:* Alabama Power, Pioneer Electric

*Water:* Dallas County Water Authority, North Dallas Water Authority, Town of Orrville, Selma Water Works and Sewer Board, South Dallas Water Authority, West Dallas Water Authority

*Natural Gas:* Alagasco, Amerigas

*Telecommunications:* AT&T, Pinebelt, Frontier

## **2.5 Media**

*Newspapers:*

- *Selma Times Journal*

## **2.6 Social and Economic Characteristics**

Table 2.2 provides general demographic information on Dallas County. This information was taken from the American Community Survey 2009-2013 5-Year Estimates.

**Table 2.2 Dallas County Demographic Profile**

<b>Population</b>	43,091
<b>Male</b>	19,901
<b>Female</b>	23,190
<b>White</b>	12,600
<b>Black</b>	29,630
<b>Other</b>	861
<b>Median Age</b>	38
<b>Total households</b>	16,173
<b>Total Housing Units</b>	20,174
<b>Occupied Housing Units</b>	16,173
<b>Population 3 and Over Enrolled in School</b>	11,430
<b>Percent high school graduate or better</b>	77.5%
<b>Percent bachelor's degree or higher</b>	14.2%
<b>Median Household Income</b>	\$26,519

**Dallas County, Alabama Hazard Mitigation Plan**  
**Section II. County Profile**

<b>Per Capita Income</b>	\$17,245
<b>Individuals below the poverty level</b>	35.5%

Developed by the Alabama Tombigbee Regional Commission  
Source: United States Census Bureau, American Community Survey 2013  
Accessed on September 8, 2015

There are three municipalities in the county. These municipalities are Orrville, Selma, and Valley Grande. Selma is the largest city and county seat. Table 2.3 gives basic social characteristics of these populations. Selma has a significantly larger population than all other municipalities. Both Selma and Orrville have over sixty-percent of their populations belonging to a minority.

**Table 2.3 Social Characteristics by Municipality**

<b>Place</b>	<b>Orrville</b>	<b>Selma</b>	<b>Valley Grande</b>
<b>Population</b>	129	20,391	3,970
<b>Minority Percent</b>	62.3%	82%	24.8%
<b>Percent 65 Years and Older</b>	29.5%	14.2%	14.8%
<b>Percent Under Age 18</b>	20.2%	28%	23.6%
<b>Median Age</b>	50.8	35	42.4
<b>Per Capita Income</b>	\$15,197	\$16,542	\$26,224
<b>Median Household Income</b>	\$18,125	\$22,478	\$53,563
<b>Individuals Below Poverty Level</b>	34.1%	41.9%	16.5%
<b>Housing Units</b>	95	9,583	1,792

Developed by the Alabama Tombigbee Regional Commission  
Source: US Census Bureau, American Community Survey 2013  
Accessed on September 8, 2015

Valley Grande covers the largest area of all the municipalities in the county (Table 2.4). It covers over twice as many square miles as Selma. Selma has both the highest population and housing densities.

**Table 2.4 Housing and Population Densities by Municipality**

<b>Municipality</b>	<b>Total Area*</b>	<b>Housing Units</b>	<b>Housing Density**</b>	<b>Population</b>	<b>Population Density**</b>
<b>Orrville</b>	1	95	95	129	1.36
<b>Selma</b>	14.44	9,583	663.64	20,391	1,412.12
<b>Valley Grande</b>	33.8	1,792	53.01	3,970	117.46

\*square miles

\*\*density per square mile of land

Developed by the Alabama Tombigbee Regional Commission  
Source: US Census Bureau, American Community Survey 2013  
Accessed on September 8, 2015

## **Summary of Changes Made in Plan Update**

### **Section III. Planning Process**

This section contains a variety of organizational and basic information that deals with the update process. Committee and stakeholder lists are provided to reflect current information. A participating jurisdiction section was included to give details on how each jurisdiction participated. Appendix 1 is provided to document the planning process through meeting notices, sign in sheets, mailing lists, and general correspondence. This appendix is referred to throughout this section. A section containing synopses of the changes made to each section is also included. A discussion on existing plans is also provided in this section. This section was approved by the Hazard Mitigation Planning Committee.

### III. PLANNING PROCESS

The Dallas County, Alabama Natural Hazards Mitigation Plan was updated in the spring and summer of 2015. The Alabama Tombigbee Regional Commission worked with the Dallas County Emergency Management Agency to develop the plan. The plan was developed with the guidance of the Hazard Mitigation Planning Committee. The purpose of this committee was to ensure the interests and concerns of everyone in Dallas County were addressed. The committee was re-evaluated for the update and new appointees were identified for the entire five-year planning cycle.

#### 3.1 Hazard Mitigation Planning Committee

The Dallas County, Alabama Natural Hazards Mitigation Plan was developed with the guidance of the Hazard Mitigation Planning Committee. The committee was appointed for the entire five-year planning cycle. The committee was charged with the following task:

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

- Ü Engages public participation and support,
- Ü Facilitates federal, state, regional, and local agencies' coordination,
- Ü Constantly monitors and evaluates the potential risks of hazards to life and property
- Ü Actively mobilizes all available community resources and measures to mitigate the threats of hazards,
- Ü Results in programmed actions with specific results.

The Dallas County EMA Director chose not to change the participation requirements for this plan update. Each member of the committee was notified of these requirements in writing and at the committee meeting. All members stated they understood the requirements. The requirements were as follows:

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

The Hazard Mitigation Planning Committee met on April 2, 2015 at the Dallas County Courthouse Annex. The Committee met in conjunction with the Local Emergency Planning Committee. The sign in sheet from the meeting is included in Appendix 1, pages A1. EMA Director Toya Stiles personally contacted committee members that were unable to attend the update meeting. She met with these members and updated jurisdiction specific information.

Each member of the Committee contributed his/her opinion on the following:

- ✓ review of hazards (risk assessment),
- ✓ identification of existing plans,
- ✓ review and update of critical facilities,
- ✓ review and update of goals, objectives, and possible projects;
- ✓ review and update of plan maintenance guidelines.



Table 3.1 provides a summary of committee activity:

**Table 3.1 Hazard Mitigation Planning Committee Participation**

<b>Jurisdiction</b>	<b>Participant</b>	<b>Attended Committee Meetings/Met with EMA</b>	<b>Provided Information via Email</b>	<b>Provided Information via Fax</b>	<b>Provided Information via Phone</b>	<b>Reviewed Draft Plan</b>
<b>Dallas County EMA</b>	Rhonda Abbott/Toya Stiles, Director	X	X		X	X
<b>City of Selma</b>	George Evans, Mayor	X		X		X
<b>City of Valley Grande</b>	Wayne Labbe, Mayor	X				X
<b>Town of Orrville</b>	Louvenia Lumpkin, Mayor	X		X		X
<b>Dallas County BOE</b>	Don Willingham, Superintendent	X	X			X
<b>Selma City Schools</b>	Angela Mangum, Superintendent	X		X		X

Compiled by the Alabama Tombigbee Regional Commission on August 5, 2015

Source: Dallas County Hazard Mitigation Planning Process

### **3.2 Interagency and Intergovernmental Coordination**

A wide range of state, regional, county, and local entities were contacted regarding the update process. Information was requested from many. Many were contacted as stakeholders. All entities were invited to the committee meeting by mail. An email reminder was also sent. Table 3.2 provides a listing of everyone invited to participate and the extent to which they did.

**Table 3.2 Participation Summary for Planning Committee and Stakeholders**

Entity	Natural Hazards Committee	Contacted As Stakeholder	Attended Meetings/Met with EMA	Provided Information	Reviewed Draft	Did Not Participate
Dallas County EMA, Director	X		X	X (critical facility information, projects, goals/objectives)	X	
Dallas County School System, Superintendent	X		X	X (critical facility information, projects, goals/objectives)	X	
Selma City Schools, Superintendent	X		X	X (critical facility information, projects, goals/objectives)	X	
Alabama Forestry Commission- Dallas County, Dallas County Forester		X		X (wildfire information)	X	
Dallas County Volunteer Firefighters Association, President		X	X	X (critical facility information)	X	

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**Section III. Planning Process**

<b>Entity</b>	<b>Natural Hazards Committee</b>	<b>Contacted As Stakeholder</b>	<b>Attended Meetings/Met with EMA</b>	<b>Provided Information</b>	<b>Reviewed Draft</b>	<b>Did Not Participate</b>
<b>Town of Orrville, Mayor</b>	X		X	X (critical facility information, projects, goals/objectives, hazard information)	X	
<b>City of Valley Grande, Mayor</b>	X		X	X (critical facility information, projects, goals/objectives, hazard information)	X	
<b>Dallas County Commission, Chairman</b>	X		X	X (critical facility information, projects, goals/objectives, hazard information)	X	
<b>National Weather Service, Meteorologist In Charge</b>		X		X (storm event data)		
<b>Dallas County Department of Public Health, Director</b>		X				X
<b>Community Action Agency, Director</b>		X				X

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<b>Entity</b>	<b>Natural Hazards Committee</b>	<b>Contacted As Stakeholder</b>	<b>Attended Meetings/Met with EMA</b>	<b>Provided Information</b>	<b>Reviewed Draft</b>	<b>Did Not Participate</b>
<b>Alabama Cooperative Extension Service, Dallas County Agent</b>		X				X
<b>Beloit VFD, Chief</b>		X			X	
<b>Plantersville VFD, Chief</b>		X		X	X	
<b>Valley Grande VFD, Chief</b>		X		X	X	
<b>Burnsville VFD, Chief</b>		X			X	
<b>Summerfield VFD, Chief</b>		X		X	X	
<b>Sardis VFD, Chief</b>		X			X	
<b>Tyler VFD, Chief</b>		X		X	X	
<b>Carlowville VFD, Chief</b>		X		X	X	
<b>Craig VFD, Chief</b>		X		X	X	
<b>Marion Junction VFD, Chief</b>		X		X	X	
<b>Safford VFD, Chief</b>		X			X	
<b>Orrville VFD, Chief</b>		X			X	
<b>Potters Station VFD, Chief</b>		X			X	
<b>River Oaks VFD, Chief</b>		X		X	X	
<b>Selma-Dallas County Rescue Squad, Chief</b>		X	X		X	
<b>Selma Fire Department, Chief</b>		X		X		

**Dallas County, Alabama Hazard Mitigation Plan  
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<b>Entity</b>	<b>Natural Hazards Committee</b>	<b>Contacted As Stakeholder</b>	<b>Attended Meetings/Met with EMA</b>	<b>Provided Information</b>	<b>Reviewed Draft</b>	<b>Did Not Participate</b>
<b>Selma Police Department, Chief</b>		X	X	X		
<b>Dallas County Coroner, Coroner</b>		X				X
<b>International Paper, Plant Manager</b>		X				X
<b>Dixie Pipeline, Manager</b>		X				X
<b>Williams Transcontinental Pipeline, Manager</b>		X				X
<b>M&amp;B Railroad, Manager</b>		X				X
<b>Norfolk Southern, Manager</b>		X				X
<b>Alabama Power, District Manager</b>		X				X
<b>CARE Ambulance, Director</b>		X	X		X	
<b>VOAD-United Way, Director</b>		X	X		X	
<b>Cahaba Mental Health, Director</b>		X	X		X	
<b>Vaughn Regional Medical Center, Administrator</b>		X				X
<b>Pioneer Electric, District Manager</b>		X				X
<b>ADPH Area 7, Director</b>		X	X		X	
<b>Dallas County Sheriff's Office, Sheriff</b>		X		X		

**Dallas County, Alabama Hazard Mitigation Plan  
Section III. Planning Process**

<b>Entity</b>	<b>Natural Hazards Committee</b>	<b>Contacted As Stakeholder</b>	<b>Attended Meetings/Met with EMA</b>	<b>Provided Information</b>	<b>Reviewed Draft</b>	<b>Did Not Participate</b>
<b>Chilton County Commission, Chairman</b>		X				X
<b>Perry County Commission, Chairman</b>		X				X
<b>Marengo County Commission, Chairman</b>		X				X
<b>Wilcox County Commission, Chairman</b>		X				X
<b>Lowndes County Commission, Chairman</b>		X				X
<b>Autauga County Commission, Chairman</b>		X				X

Developed by the Alabama Tombigbee Regional Commission on August 15, 2015

Source: Dallas County Hazard Mitigation Planning Process

### **3.3 Public Involvement**

An important aspect of the planning process is involving the public at every step. Dallas County EMA and ATRC took steps to involve the public at every juncture. The committee meeting held on April 2, 2015 was also a public meeting. A public meeting notice was posted throughout the county advertising the meeting. Notices were posted at Orrville Town Hall, Valley Grande City Hall, Selma City Hall, Dallas County Courthouse, and the Dallas County Courthouse Annex. A copy of this notice is included in Appendix 1, page A2. The meeting was also publicized by a front page article in the *Selma Times Journal*; a copy of this article is included in Appendix 1, page A3.

No members of the general public attended this meeting. If members of the public had attended, their opinions and ideas regarding the hazard mitigation information presented would have been recorded and incorporated into the plan. During the next plan update, the county will expand its public outreach. The EMA will reach out to the local radio station to help promote the meetings. The county will also use social media, such as Facebook, to promote meetings. Survey Monkey or an equivalent online survey website will be used to gather public opinion on hazard issues. Special attention will be given to encouraging neighboring counties (Chilton, Perry, Marengo, Wilcox, Lowndes, and Autauga) to participate. EMA will contact them directly to solicit their participation.

The draft plan was also posted for the public's review on the Alabama Tombigbee Regional Commission's website ([atrcregion6.org](http://atrcregion6.org)). Copies of the draft plan were also available for the public's review at the Dallas County EMA offices. Notice of the draft plan's availability for review was posted throughout the county, a copy of this notice is included in Appendix 1, page A4. This notice was posted at Orrville Town Hall, Valley Grande City Hall, Selma City Hall, Dallas County Courthouse, and the Dallas County Courthouse Annex. For the next update, the county will also post notices at local senior centers, volunteer fire departments, and libraries to encourage participation. No comments from the public were received on the draft plan. For the next update, the county will advertise the draft plan's availability in the local newspaper.

A public hearing to receive public comments was also held by each jurisdiction prior to adopting the resolution approving this plan. These meetings were held on the following dates:

- ✓ Town of Orrville – (date of meeting prior to adoption to be inserted)
- ✓ City of Selma – (date of meeting prior to adoption to be inserted)
- ✓ City of Valley Grande – (date of meeting prior to adoption to be inserted)
- ✓ Dallas County Commission – (date of meeting prior to adoption to be inserted)
- ✓ Dallas County School System – (date of meeting prior to adoption to be inserted)
- ✓ Selma City Schools – (date of meeting prior to adoption to be inserted)

### **3.4 Participating Jurisdictions**

All jurisdictions within Dallas County have participated in the planning process and will adopt the final plan by formal resolution. Both school systems have also participated and will adopt the plan. Participating entities and the extent of their participation are as follows:

- ✓ Town of Orrville: Reviewed jurisdiction specific information and submitted updates, reviewed draft plan
- ✓ City of Selma: Reviewed jurisdiction specific information and submitted updates, reviewed draft plan
- ✓ City of Valley Grande: Reviewed jurisdiction specific information and submitted updates, reviewed draft plan
- ✓ Dallas County Commission: Reviewed jurisdiction specific information and submitted updates, reviewed draft plan
- ✓ Selma City School System: Provided system specific information, reviewed draft
- ✓ Dallas County Board of Education: Provided system specific information, reviewed draft

### **3.5 Update Process**

The update process began with a full review of the existing Dallas County, Alabama Natural Hazards Mitigation Plan by the staff at the Alabama Tombigbee Regional Commission (ATRC) and the Dallas County EMA. ATRC did not facilitate the 2010 planning process, so the entire plan was revisited. There are extensive changes in the plan's layout and structure. The following is a brief discussion of the changes:

- ✓ The Executive Summary Section of the plan was removed. The information contained in this section is provided below and at the beginning of each section.
- ✓ The Hazard Mitigation Plan: The Hazard Mitigation Plan section of the plan was added and contains basic information concerning the requirements of the plan.
- ✓ County Profile: The County Profile section is a new component of the county's plan. The Alabama Tombigbee Regional Commission worked with the Dallas County EMA to provide basic information to help the reader become more familiar with the county.
- ✓ Planning Process: The Planning Process was updated and restructured after the committee meeting was held and the remainder of the plan had been compiled. The planning process section was extensively revised by the Alabama Tombigbee Regional Commission (ATRC). Committee and stakeholders lists were updated to reflect current information. The participating jurisdiction section was to add more detail on how each jurisdiction participated. Appendix 1 was added to the plan to document the planning process through meeting notices, sign in sheets, meeting notes, mailing lists, and general correspondence. This appendix is referred to during the discussion of the process in this section. A section containing synopses of the changes made to each section was also added. The section on existing plans was added to this section. This section was approved by the Hazard Mitigation Planning Committee.
- ✓ Risk Assessment: The Risk Assessment section was initially reviewed and updated prior to the committee meeting. ATRC reviewed each hazard and researched to find information that could help determine risk. Past occurrences were updated using the Storm Events Database. The Risk Assessment was reviewed at the first committee meeting and attendees were asked to provide feedback. The committee was asked to assign a risk level and probability category to each hazard. No attendee requested any changes be made to the risk level assigned to any hazard in the previous plan.



A section on Assessing Vulnerability was also added to the Risk Assessment. American Community Survey information was used to identify affected populations and socially vulnerable populations by hazard. HAZUS-MH was used to get updated building stock numbers for the county. The Identification of Critical Facilities section was compiled in this section along with the Planned Critical Facilities Section. A current land use map and population projection figures are provided in this section to address development trends. This section was approved by the Hazard Mitigation Planning Committee.

- ✓ Ongoing Mitigation Assessment: This section provides the Existing Authorities, Policies, Programs, and Resources by Jurisdiction. A table was added to detail capabilities by jurisdiction. Capabilities were determined by talking with each jurisdiction via phone and/or in person. Information on the Dallas County EMA is provided in Section B. This section was approved by the Hazard Mitigation Planning Committee.
- ✓ Mitigation Goals, Objectives, and Actions by Jurisdiction: This section provides goals, objectives and actions for each participating jurisdiction. Each participating jurisdiction reviewed their information from the previous plan. Each jurisdiction reviewed their information and either confirmed there were no revisions or submitted changes.
- ✓ Plan Maintenance: The plan maintenance process was revised by ATRC at the request of the Dallas County EMA and Hazard Mitigation Planning Committee. The Incorporation into Existing Planning Mechanisms section is provided to outline information by jurisdiction. These changes were reviewed and approved by the Hazard Mitigation Planning Committee.

As noted above, the update process consisted of one Natural Hazards Steering Committee meeting held in conjunction with the Local Emergency Planning Committee held on April 2, 2015 at the Dallas County Courthouse Annex this meeting was also a public involvement meeting. All other correspondence took place via phone, fax, and email; all correspondence is on file at the Dallas County EMA Office.

The draft plan was available for review and comment on ATRC's website, [atrcregion6.org](http://atrcregion6.org). No comments were received on the draft plan.

### **3.6 Integration with Existing Plans**

Many reports, plans, and information sources were consulted during the update process. These plans were consulted for various types of information. The Alabama Tombigbee Regional Commission reviewed these documents and incorporated them as deemed necessary. All sources of information are cited throughout the plan. These sources include:

- ✓ United States Census Bureau, Census 2010 & American Community Survey (socio-economic information)
- ✓ Alabama State Data Center Population Projections
- ✓ Dallas County, Alabama THIRA(hazard information)
- ✓ Alabama State Data Center Estimates ( population, housing units, income)
- ✓ NOAA and NWS records (updated past occurrences)

**Dallas County, Alabama Hazard Mitigation Plan**  
**Section III. Planning Process**

- ✓ Flood Insurance Rate Maps, Flood Insurance Study (reviewed flood boundaries)
- ✓ A Strategic Plan for the Alabama Tombigbee Region. (reviewed strategies with regional goals)
- ✓ Southern Wildfire Risk Assessment Summary Report for Dallas County (reviewed county's wildfire risk and areas at highest risk)
- ✓ State of Alabama :State Hazard Mitigation Plan Update (hazard information, review for consistency)
- ✓ Dallas County, Alabama Soils Survey (soils information)
- ✓ Tropical Cyclone Track Probability: Historical probability of a tropical cyclone crossing various locations around the world – Florida State University (hurricane risk)
- ✓ US Corps of Engineers National Inventory of Dams (dam inventory)
- ✓ Floods of February-March 1961 in the Southeastern States, Geological Survey Circular 452 (1961)

## **Summary of Changes Made in Plan Update**

### **Section IV. Risk Assessment**

ATRC reviewed each hazard and researched to find information that could help determine risk. Past occurrences were updated using the Storm Events Database. The Risk Assessment was reviewed at the first committee meeting and attendees were asked to provide feedback. The committee was asked to assign a risk level and probability category to each hazard. No attendee requested any changes be made to the risk level assigned to any hazard in the previous plan.

A section on Assessing Vulnerability was also added to the Risk Assessment. American Community Survey information was used to identify affected populations and socially vulnerable populations by hazard. HAZUS-MH was used to get updated building stock numbers for the county. The Identification of Critical Facilities section was compiled in this section along with the Planned Critical Facilities Section. A current land use map and population projection figures are provided in this section to address development trends. This section was approved by the Hazard Mitigation Planning Committee.

## VI. RISK ASSESSMENT

### 4.1 Hazard Profiles

The Dallas County Hazard Mitigation Planning Committee examined and classified the risk associated with each hazard using the following guidelines:

- High: Hazards which occur more frequently and/or have a high potential for damage associated with them.
- Medium: Hazards that occur occasionally and/or have a significant potential for damage.
- Low: Hazards with a low probability of occurrence and/or little to no damage potential.
- No Risk: Hazards to which the county is not susceptible.

The committee also used information in the risk assessment and personal knowledge to classify each hazard with regards to probability. The following guidelines were followed:

- High: Probability of major damage in the next 1-10 years
- Medium: Probability of major damage in the next 10-50 years
- Low: Probability of major damage in the next 100 years
- Very Low: major damage not expected

#### A. Avalanche

*Hazard Classification:* No Risk

Avalanches are masses of snow, which slide down mountain slopes. They occur when snow becomes dislodged or unstable on a mountain slope. Dallas County is not susceptible to this hazard according to the US Forest Service National Avalanche Center.

#### B. Coastal Erosion

*Hazard Classification:* No Risk

Coastal erosion is the breakdown and movement of rock and soil from coastal locations by processes such as weathering. Wind and water are two common moving forces in this process. Dallas County is not a coastal location; therefore, Dallas County is not at risk of this hazard.

#### C. Dam Failure

*Hazard Classification:* Medium

Dams provide flood control, water supply, hydroelectric power, river navigation, wildlife habitat, and recreational opportunities. Dams can fail for one or a combination of the following reasons:

- Overtopping caused by floods that exceed the capacity of the dam
- Deliberate acts of sabotage
- Structural failure of materials used in dam construction
- Movement and/or failure of the foundation supporting the dam
- Settlement and cracking of concrete or embankment dams

- Piping and internal erosion of soil in embankment dams
- Inadequate maintenance and upkeep

The State of Alabama is the only state without a dam safety program. The condition of most dams in the state is unknown. According to the Association of State Dam Safety Officials, “The dams that are rated in Alabama are either federally owned or fall under the safety regulatory jurisdiction of the federal government. The lack of inspection and identification of safety deficiencies in the overwhelming majority of dams puts people, infrastructure and the environment at risk.” The number of “Not Rated” dams is likely much lower than the actual number due to the lack of accurate dam safety inventory information.

The only dam inventory available for Dallas County is the National Inventory of Dams (NID). NID information is considered outdated and in most instances counties have a significantly higher number of dams. The NID lists 138 dams as being located in Dallas County. The NID consists of dams meeting at least one of the following criteria: 1) High hazard classification - loss of one human life is likely if the dam fails, 2) Significant hazard classification - possible loss of human life and likely significant property or environmental destruction, 3) Equal or exceed 25 feet in height and exceed 15 acre-feet in storage, 4) Equal or exceed 50 acre-feet storage and exceed 6 feet in height.

The areas that would be affected by dam failure in the county varies by dam. During a dam failure, a large quantity of water is released which inundates everything in its path. Five Dallas County dams are classified as having high hazard potential in the NID; meaning their failure or misoperation would probably result in the loss of human life. These dams are all earthen and used for fish and wildlife. There is no information available regarding their condition. Thirty-two dams are listed in the significant risk category meaning their failure or misoperation would probably not result in the loss of life, but would result in economic loss, environmental damage, and disruption of lifeline facilities. The remaining 101 dams in the county are listed as at low risk meaning that their failure or misoperation would not result in the loss of life and only minimal economic or environmental damage.

#### *Historical Occurrences*

There are no recorded instances of dam failure in Dallas County.

#### *Probability of Occurrence*

Due to the lack of information available for dams in Dallas County, the probability of dam failure occurring is difficult to quantify. The Alabama Office of Water Resources is in the process of inventorying dams throughout the state. Once this inventory is complete, more accurate estimates on risk and probability of occurrence can be made. Based on the information available at this time, dam failure is considered to have a low probability of causing major damage.

## **D. Drought**

*Hazard Classification:* High

The National Weather Service defines drought as a persistent and abnormal moisture deficiency having adverse impacts on vegetation, animals, and people. The four commonly identified types of drought are discussed below:

- Meteorological droughts occur when precipitation departs from normal amounts, high temperatures may also play a role in this type of drought.
- Hydrological droughts are deficiencies in surface or subsurface water levels.
- Agricultural droughts occur when there is not enough soil moisture to support crop growth.
- Socioeconomic Drought occurs when the demand for water exceeds the supply as a result of a weather-related supply shortfall.

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.

Drought can be measured numerous ways. Dallas County used local information along with information provided by the Drought Mitigation Center's Drought Monitor to assess risk. Table 4.1 provides a description of the monitor's classification scheme.

Table 4.1 US Drought Monitor Classification Scheme

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

Source: United States Drought Monitor  
<http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx>  
 Last Accessed on 12/09/2014

The entire county is at the same risk for drought conditions. Some degree of drought is common in Central Alabama during the summer months. Under normal conditions frequent afternoon thunderstorms produce enough precipitation to alleviate drought concerns; however, over that past four years according to the US Drought Monitor, Dallas County has experienced some degree of drought conditions. It is probable that the county could experience D4 or exceptional drought for a period of weeks or even months.

Drought conditions are expected to occur in Dallas County in the future. Droughts can affect the water supply available for residents in the county. Residents that rely on private wells may face significant issues during drought periods. Farmers that rely on water sources dependent on precipitation may also face challenges watering their livestock. Drought conditions can also damage crops causing economic losses for farmers. Drought conditions also provide an environment more susceptible to wildfire. With drought conditions in place, water supply to fight wildfires may be affected. Droughts may lead to recreation and navigation issues along the main rivers and streams.

### *Historical Occurrences*

Drought conditions have occurred numerous times in Dallas County. Historically drought conditions were reported between 1938-1945, 1950-1963, 1980-1982, and 1984-1988. More recently, conditions were reported in 2006, 2007, 2008, and 2011. Table 4.2 provides details of the most recent occurrences.

**Table 4.2 Drought Occurrences in Dallas County\***

<b>Location</b>	<b>Date</b>	<b>Magnitude</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Dallas (ZONE)	7/11/2006	D2	0	0	\$0.00	\$0.00
Dallas (ZONE)	8/1/2006	D2-D3	0	0	\$0.00	\$0.00
Dallas (ZONE)	9/1/2006	D2-D3	0	0	\$0.00	\$0.00
Dallas (ZONE)	5/22/2007	D2	0	0	\$0.00	\$0.00
Dallas (ZONE)	6/1/2007	D4	0	0	\$0.00	\$0.00
Dallas (ZONE)	7/1/2007	D2-D4	0	0	\$0.00	\$0.00
Dallas (ZONE)	8/1/2007	D2-D4	0	0	\$0.00	\$0.00
Dallas (ZONE)	9/1/2007	D2-D4	0	0	\$0.00	\$0.00
Dallas (ZONE)	10/1/2007	D2-D4	0	0	\$0.00	\$0.00
Dallas (ZONE)	11/1/2007	D1-D4	0	0	\$0.00	\$0.00
Dallas (ZONE)	12/1/2007	D1-D3	0	0	\$0.00	\$0.00
Dallas (ZONE)	1/1/2008	D1-D3	0	0	\$0.00	\$0.00
Dallas (ZONE)	2/1/2008	D1-D3	0	0	\$0.00	\$0.00
Dallas (ZONE)	3/1/2008	D1-D3	0	0	\$0.00	\$0.00
Dallas (ZONE)	4/1/2008	D2-D3	0	0	\$0.00	\$0.00
Dallas (ZONE)	5/1/2008	D2-D3	0	0	\$0.00	\$0.00
Dallas (ZONE)	6/1/2008	D2	0	0	\$0.00	\$0.00
Dallas (ZONE)	8/5/2008	D0	0	0	\$0.00	\$0.00
Dallas (ZONE)	6/7/2011	D2	0	0	\$0.00	\$0.00
Dallas (ZONE)	7/1/2011	D2	0	0	\$0.00	\$0.00
Dallas (ZONE)	8/2/2011	D2-D3	0	0	\$0.00	\$0.00
Dallas (ZONE)	9/1/2011	D2-D3	0	0	\$0.00	\$0.00
Dallas (ZONE)	10/1/2011	D2-D3	0	0	\$0.00	\$0.00
Dallas (ZONE)	11/1/2011	D2-D3	0	0	\$0.00	\$0.00
Dallas (ZONE)	12/1/2011	D2	0	0	\$0.00	\$0.00
Totals:			0	0	\$0.00	\$0.00

**Source: NOAA Storm Events Database**  
**<https://www.ncdc.noaa.gov/stormevents/>**  
**Last Accessed on 3/23/2015**



*Probability of Occurrence*

Although the probability of a drought occurring is impossible to quantitatively define, it is realistic to rate Dallas County as being at a high risk for drought. There has been some degree of drought in four of the past ten years, but these conditions are usually manageable. No damage estimates are available for these occurrences, but some degree of agricultural loss would have occurred. With regards to major damage occurring, the probability of drought of this magnitude occurring is medium (10-50 years).

**E. Earthquake**

*Hazard Classification:* Low

An earthquake occurs when two blocks of the earth suddenly slip past one another. The surface where they slip is called the fault or fault plane. The location below the earth's surface where the earthquake starts is called the hypocenter, and the location directly above it on the surface of the earth is called the epicenter. Earthquakes may occur along the edges of tectonic plates or along faults.

The USGS defines a fault as, "A fault is a fracture or zone of fractures between two blocks of rock. Faults allow the blocks to move relative to each other. This movement may occur rapidly, in the form of an earthquake - or may occur slowly, in the form of creep. Faults may range in length from a few millimeters to thousands of kilometers. Most faults produce repeated displacements over geologic time. During an earthquake, the rock on one side of the fault suddenly slips with respect to the other. The fault surface can be horizontal or vertical or some arbitrary angle in between."

Intensity is a number assigned to an earthquake to describe its severity in terms of its effects on the earth and humans and their structures. The most commonly used scale for measuring the intensity of earthquakes is the Modified Mercalli Scale (Table 4.3).

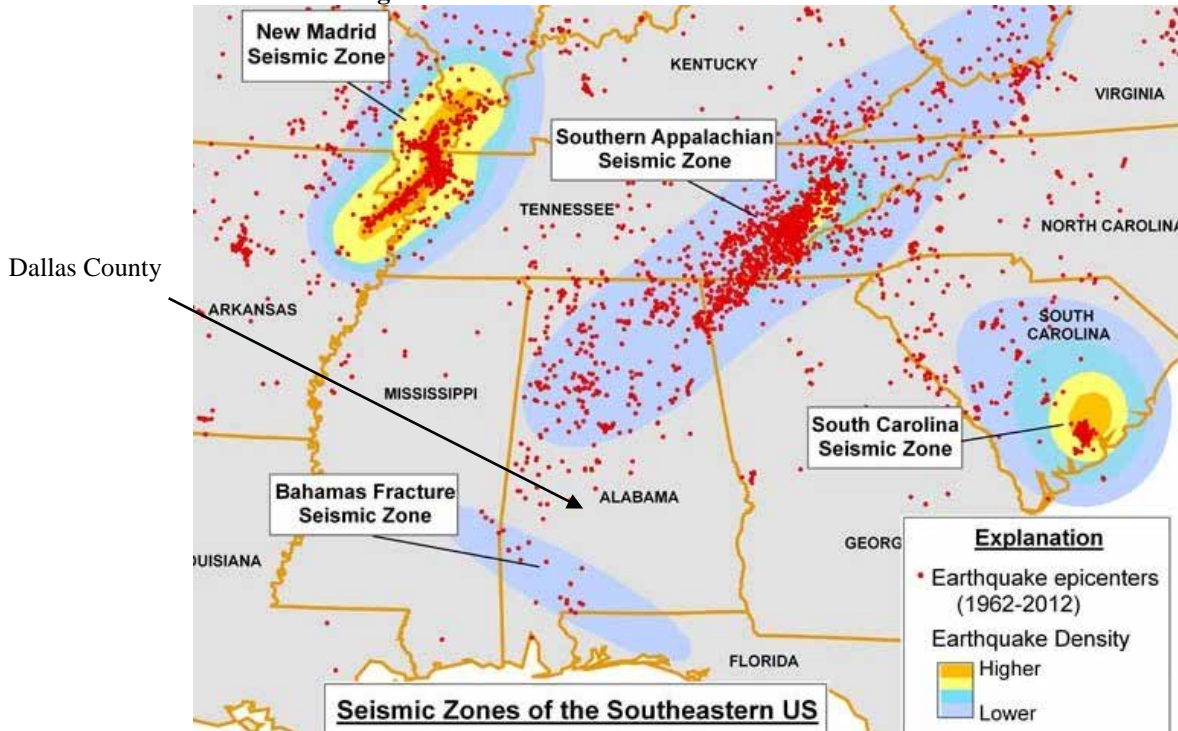
**Table 4. 3 Modified Mercalli Earthquake Measurement Scale**

<b>Intensity</b>	<b>Shaking</b>	<b>Description/Damage</b>
I	Not felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Very strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially 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	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.

**Source: United States Geologic Survey  
<http://earthquake.usgs.gov/learn/topics/mercalli.php>  
Last Accessed on 3/25/2015**

Although many areas of the United States are better known for their susceptibility, earthquakes do occur in Alabama. There are four seismic zones that affect the state; these zones are the New Madrid Seismic Zone, Southern Appalachian Seismic Zone, Bahamas Fracture Seismic Zone, and the South Carolina Seismic Zone (SCSZ). Dallas County does not lie within any of these zones (Figure 4.1).

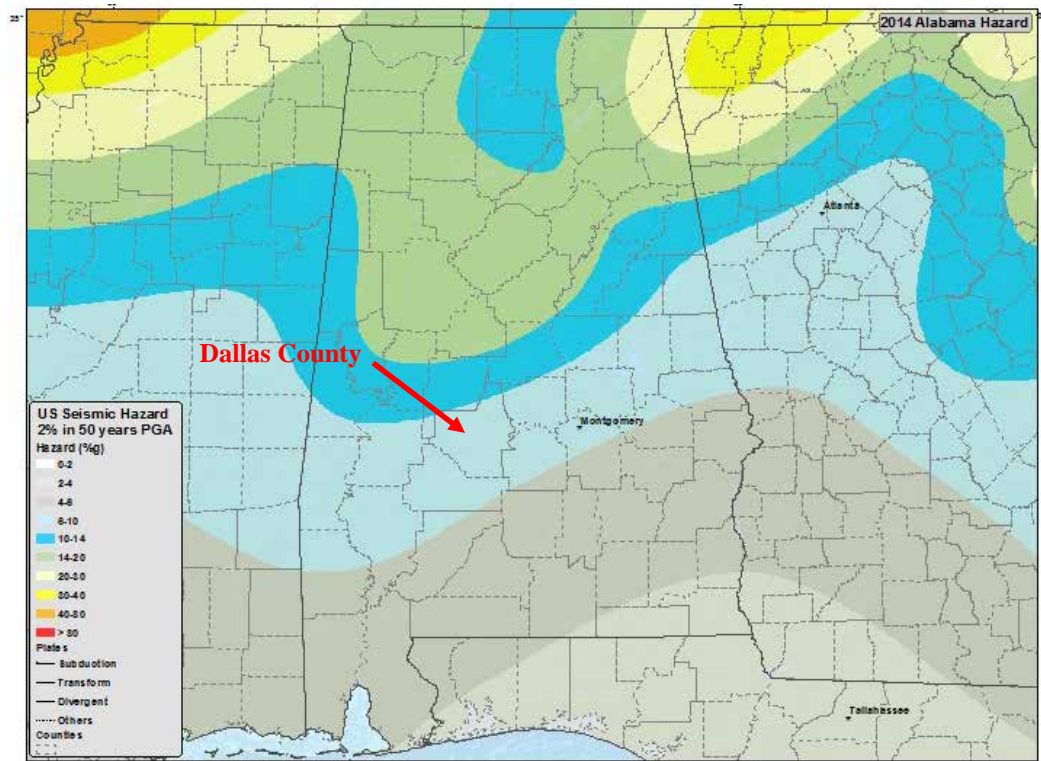
Figure 4.1 Seismic Zones of the Southeastern United States



Source: Geological Survey of Alabama  
[http://gsa.state.al.us/gsa/geologichazards/Quakes\\_AL.htm](http://gsa.state.al.us/gsa/geologichazards/Quakes_AL.htm)  
Accessed on 2/24/2015

Although Dallas County is not located in a seismic zone, it is moderately susceptible to earthquakes caused by movement along faults. Figure 4.2 is the seismic hazard map for Alabama. The National Seismic Hazard Maps are derived from seismic hazard curves calculated on a grid of sites across the United States that describe the annual frequency of exceeding a set of ground motions. It can be seen that the majority of the county lies within the 6-10%, but the extreme northern tip lies in the 10-14% designation.

Figure 4.2 Seismic Hazard Map of Alabama 2014

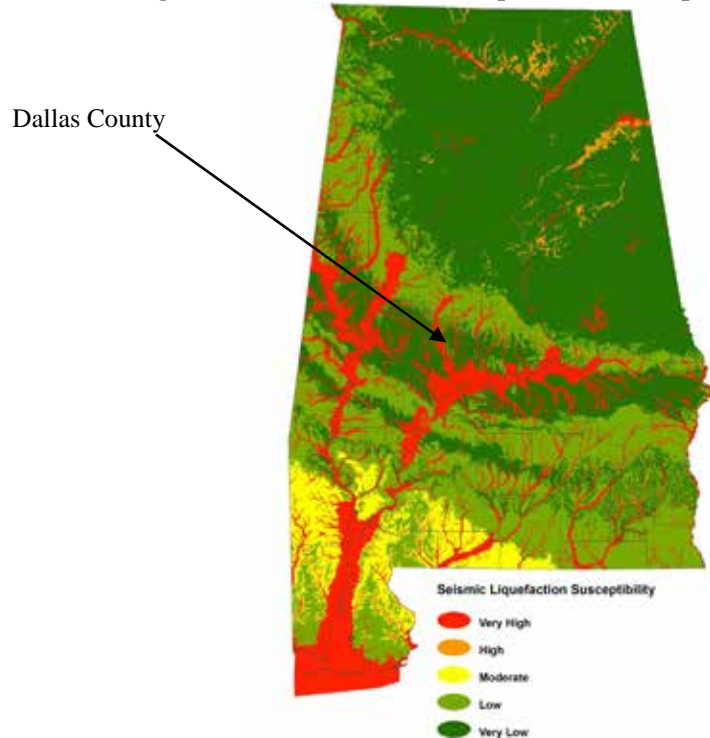


Source: United States Geological Survey  
<http://earthquake.usgs.gov/earthquakes/states/alabama/hazards.php>  
Accessed on 2/24/2015

In the central and eastern United States, a potential risk from strong earthquakes is liquefaction. “Liquefaction occurs when vibrations or water pressure within a mass of soil cause the soil particles to lose contact with one another. As a result, the soil behaves like a liquid, has an inability to support weight and can flow down very gentle slopes. This condition is usually temporary and is most often caused by an earthquake vibrating water-saturated fill or unconsolidated soil (geology.com).”

The State of Alabama Emergency Management Agency along with the Geological Survey of Alabama produced a statewide map highlighting areas at risk of liquefaction during a moderate to strong magnitude earthquake. Figure 4.3 is the statewide liquefaction risk map. One can see that Dallas County has large areas susceptible to liquefaction. These areas lie in the floodplains of the Alabama and Cahaba Rivers, which primarily consist of unconsolidated soils.

Figure 4.3 Statewide Seismic Liquefaction Susceptibility Map



Source: State Hazard Mitigation Plan Update, April 2013

#### *Historical Occurrences*

There are no historical records of earthquakes occurring in Dallas County. A small quake was reported in Perry County near the Dallas county line. This quake occurred on March 30, 2004. This quake measured an II on the Modified Mercalli Scale.

#### *Probability of Occurrence*

The county is located in the least probable earthquake hazard zone, leading to a classification of very low probability.

### **F. Extreme Temperatures**

*Hazard Classification:* High

#### **EXTREME HEAT**

Extreme heat is defined as temperatures that are ten or more degrees or higher than average daily temperatures and last for several weeks.

Heat can be deadly regardless of the length of time it persists. The National Weather Service issues three types of heat related advisories:

- Excessive Heat Outlooks: are issued when the potential exists for an excessive heat event in the next 3-7 days. An Outlook provides information to those who need considerable

lead time to prepare for the event, such as public utility staff, emergency managers and public health officials. See the mean heat index and probability forecasts maps.

- Excessive Heat Watches: are issued when conditions are favorable for an excessive heat event in the next 24 to 72 hours. A Watch is used when the risk of a heat wave has increased but its occurrence and timing is still uncertain. A Watch provides enough lead time so that those who need to prepare can do so, such as cities officials who have excessive heat event mitigation plans.
- Excessive Heat Warning/Advisories: are issued when an excessive heat event is expected in the next 36 hours. These products are issued when an excessive heat event is occurring, is imminent, or has a very high probability of occurring. The warning is used for conditions posing a threat to life. An advisory is for less serious conditions that cause significant discomfort or inconvenience and, if caution is not taken, could lead to a threat to life.

The National Weather Service's heat index chart is given below (Table 4.4). The heat index is a measure of how hot it feels outside. Humidity is factored into this calculation. In Dallas County, high temperatures and high humidity occur on a regular basis during the summer months.

Table 4.4 NOAA's National Weather Service Heat Index

		Temperature (°F)															
		80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
Relative Humidity (%)	40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
	45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
	50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
	55	81	84	86	89	93	97	101	106	112	117	124	130	137			
	60	82	84	88	91	95	100	105	110	116	123	129	137				
	65	82	85	89	93	98	103	108	114	121	128	136					
	70	83	86	90	95	100	105	112	119	126	134						
	75	84	88	92	97	103	109	116	124	132							
	80	84	89	94	100	106	113	121	129								
	85	85	90	96	102	110	117	126	135								
	90	86	91	98	105	113	122	131									
	95	86	93	100	108	117	127										
	100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution Extreme Caution Danger Extreme Danger

Source: National Oceanic and Atmospheric Administration

<http://www.nws.noaa.gov/os/heat/index.shtml#heatindex>

Last Accessed on 12/09/2014

Health conditions that result from extreme heat range from mild to severe. These conditions include sunburn, heat cramps, heat exhaustion, and heat stroke. 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%.

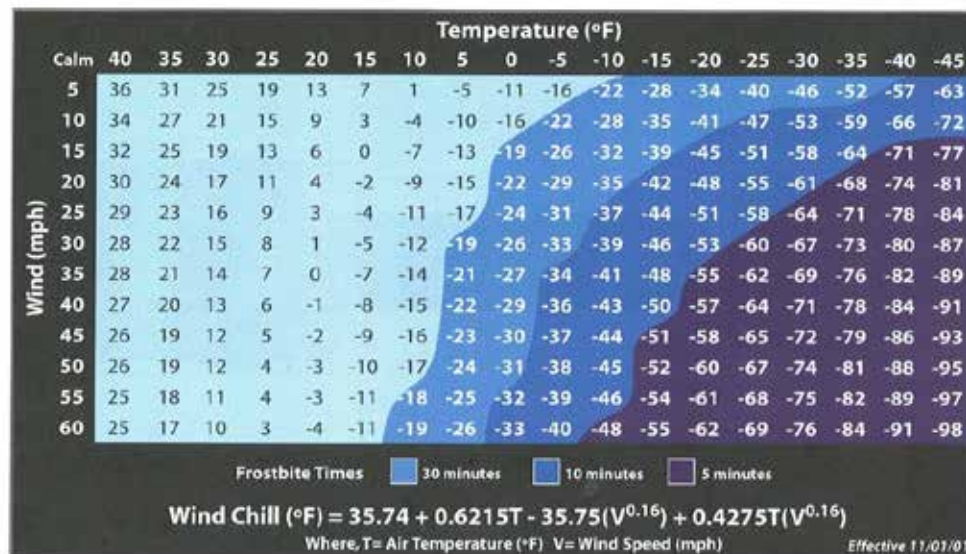


- Heat Exhaustion is much less severe than heatstroke. The body temperature may be normal or slightly elevated. A person suffering from heat exhaustion may complain of dizziness, weakness or fatigue. The primary cause of heat exhaustion is fluid and electrolyte imbalance. The normalization of fluids 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.

### EXTREME COLD

Extreme cold temperatures can occur in Dallas County during the winter months. NOAA defines extreme cold in the South as temperatures near freezing as extreme cold. Wind chill is also important when discussing extreme cold temperatures. Wind Chill is a measure of how wind and cold actually feel on exposed skin, not the actual temperature. Table 4.5 provides information on wind chill factors.

Table 4.5 NOAA's National Weather Service Wind Chill Chart



Source: National Oceanic and Atmospheric Administration  
<http://www.nws.noaa.gov/om/winter/windchill.shtml>  
Last Accessed on 3/14/2015

The risks associated with extreme cold temperatures are similar to those of extreme heat. Exposure to freezing temperatures can cause potentially life-threatening conditions such as hypothermia and frostbite:

- Frostbite is damage to body tissue caused by extreme cold. A wind chill of -20° Fahrenheit (F) with light winds will cause frostbite in just 30 minutes. Frostbite causes a

loss of feeling and a white or pale appearance in extremities, such as fingers, toes, ear lobes or the tip of the nose.

- Hypothermia is a condition brought on when the body temperature drops to less than 95°F, and it can kill. For those who survive, there is likely to be lasting damage to the kidneys, liver and pancreas. Warning signs include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness and apparent exhaustion.

In general, the elderly and young children are more vulnerable to extreme temperatures. People without air conditioning and/or heating systems installed in their homes are also at a higher risk. Persons who work outdoors are also more susceptible to the effects of extreme temperatures.

Extreme temperatures can also damage vegetation and crops leading to economic losses. Livestock and chickens are also affected by heat, leading to additional costs for farmers trying to protect their herds.

Extremely cold temperatures can also lead to waterlines freezing and rupturing, leading to temporary loss of service. Repairing these ruptures leads to additional costs for the water system. Pipes in homes are also at risk of freezing and rupturing leading to property damage.

The entire county is at the same risk for both extreme hot and cold temperatures. During the summer months, temperatures and heat indices above 100 degrees are possible for weeks at a time. During the winter months, temperatures and wind chills at or below freezing are possible for 48-72 hours at a time.

#### *Historical Occurrences*

There are six occurrences of extreme heat on record for Dallas County in the past ten years (Table 4.6). There are no records of losses associated with these events. There are records of nine injuries resulting from these occurrences.

**Table 4.6 Extreme Heat Occurrences in Dallas County**

<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Dallas (Zone)	2/23/1996	Heat	0	0	\$0.00	\$0.00
Dallas (Zone)	8/8/2007	Heat	0	9	\$0.00	\$0.00
Dallas (Zone)	7/1/2012	Heat	0	0	\$0.00	\$0.00
Dallas (Zone)	7/3/2012	Heat	0	0	\$0.00	\$0.00
Dallas (Zone)	7/3/2012	Heat	0	0	\$0.00	\$0.00
Dallas (Zone)	8/1/2012	Heat	0	0	\$0.00	\$0.00
<b>Totals</b>			0	9	\$0.00	\$0.00

Source: NOAA Storm Events Database  
<https://www.ncdc.noaa.gov/stormevents/>  
Last Accessed on 3/23/2015



There are four occurrences of extreme cold temperatures on record for Dallas County in the past ten years (Table 4.7). There is one record of crop losses totaling \$1,000,000 associated with these events.

**Table 4.7 Extreme Cold Occurrences in Dallas County**

Location	Date	Type	Deaths	Injuries	Property Damage	Crop Damage
Dallas (Zone)	2/3/1996	Cold/Wind Chill	0	0	\$0.00	\$0.00
Dallas (Zone)	3/7/1996	Cold/Wind Chill	0	0	\$0.00	\$1,000,000.00
Dallas (Zone)	1/24/2003	Extreme Cold/Wind Chill	0	0	\$0.00	\$0.00
Dallas (Zone)	1/6/2014	Cold/Wind Chill	0	0	\$0.00	\$0.00
Totals			0	0	\$0.00	\$1,000,000.00

Source: NOAA Storm Events Database  
<https://www.ncdc.noaa.gov/stormevents/>  
Last Accessed on 3/23/2015

#### *Probability of Occurrence*

It is believed that the occurrences of these events are more frequent than reported. It can be expected that the county will continue to experience both extreme heat and cold temperatures on an occasional basis. The county classifies the probability of major damage occurring as a result of these events to be medium (10-50 year period).

### **G. Flooding**

*Hazard Classification:* High

A flood is a general and temporary condition where two or more acres of normally dry land or two or more properties are inundated by water or mudflow (floodsmart.gov). Many conditions can lead to flooding including hurricanes, overtopped levees, outdated or clogged drainage systems and rapid accumulation of rainfall. According to the National Weather Service, the most common types of flooding in the United States are:

- Flash flooding: Flash floods generally develop within 6 hours of the immediate cause. Causes of flash flooding include heavy rain, ice or debris jams, and levee or dam failure. These floods exhibit a rapid rise of water over low-lying areas. In some cases, flooding may even occur well away from where heavy rain initially fell. There are many reasons that flash floods occur, but one of the most common is the result of copious amounts of rainfall from thunderstorms that cause flash flooding. This can also occur when slow-moving or multiple thunderstorms move over the same area. These sudden downpours can rapidly change the water levels in a stream or creek and turn small waterways into violent, raging rivers. Urban areas are especially prone to flash floods due to the large amounts of concrete and asphalt surfaces that do not allow water to penetrate into the soil easily.
- River flooding: River flooding occurs when river levels rise and overflow their banks or the edges of their main channel and inundate areas that are normally dry. River flooding

can be caused by heavy rainfall, dam failures, rapid snowmelt and ice jams. The National Weather Service issues Flood Warnings for designated River Forecast Points where a flood stage has been established.

River flooding is classified as Minor, Moderate, or Major based on water height and impacts along the river that have been coordinated with the NWS and local officials. Minor river flooding means that low-lying areas adjacent to the stream or river, mainly rural areas and farmland and secondary roadways near the river flood. Moderate flooding means water levels rise high enough to impact homes and businesses near the river and some evacuations may be needed. Larger roads and highways may also be impacted. Major flooding means that extensive rural and/or urban flooding is expected. Towns may become isolated and major traffic routes may be flooded. Evacuation of numerous homes and business may be required.

There is an additional level of flooding known as record flooding. In many cases this falls into the major flood category, but it doesn't have to. A record flood is simply one where the water reaches a level higher than it ever has been recorded before. Therefore, record flooding can cause extensive damage or even no damage or other negative impacts at all.

- Flooding from Tropical Systems/Hurricanes: When people think of tropical storms and hurricanes they typically think of strong winds, yet the highest percentage of all tropical cyclone deaths are due to flooding. Coastal flooding generally occurs with a land-falling or near-land system such as a Tropical Storm or Hurricane. Storm surge and large waves produced by hurricanes pose the greatest threat to life and property along the coast. The destructive power of storm surge and large battering waves can result in loss of life; destruction of buildings; erosion of beaches and dunes; and damage to roads and bridges along the coast. Storm surges undermine building foundations by constant agitation of the water piled high by the tropical cyclone. The end result can be a complete demolition of homes and businesses.

Tropical cyclones can cause flooding in the U.S. each spring through fall. While the official hurricane Season runs from June to November in the Atlantic and May to November in the Pacific, tropical storms have been known to occur outside of this timeframe. Tropical cyclones can bring copious amounts of precipitation onshore. The majority of the heaviest rain occurs to the right of the center of the storm; however, it should be noted that rain bands on both sides of the system can produce heavy rain.

- Burn scars/debris flows: In areas where wildfires have occurred, vegetation may have been burned away and soil properties may have been altered, leaving behind bare ground that tends to repel water. This is called a burn scar. When rain falls over a burn scar, the ground is unable to absorb the moisture, leaving the water to collect or run across the surface of the ground towards the lowest point. Wildfires are common in the western U.S.; however, wildfires occur in all 50 states, so this type of flooding is possible anywhere.

Without vegetation to hold the soil in place, flooding can produce mud and debris flows.

When normally dry soil becomes overly saturated, it can reach a point where it turns to a liquid state and flows downhill, essentially becoming a river of mud. Mud and debris flows can destroy homes, wash out bridges and roadways, and knock down trees. They can also deposit large amounts of mud and other debris on previously clear surfaces, damaging or burying everything in their path. Areas where ground cover has recently changed dramatically, such as an area impacted by a wildfire, can be at a higher risk for mudflows.

- **Dry Wash:** In dry areas of the U.S. significant rainfall can quickly cause flooding. For example, much of the year the desert southwest is very dry. However, each summer, the weather pattern changes, bringing moisture and thunderstorms into the area. Because of the heat and arid climate, the ground is quite hard and unable to absorb much of the precipitation that does fall. The water from these storms rushes to low-lying areas, often into a canyon or dried up river bed.
- **Dam Breaks/Levee Failure:** Dam failure or levee breaches can occur with little warning. Intense storms may produce a flash flood in a few minutes or hours while other failures and breaches can take much longer to occur, from days to weeks. Causes of dam failure vary from natural causes such as prolonged rainfall, landslides, earthquakes, or erosion to human causes such as improper maintenance and design, negligent operation, or sabotage and terrorism. Dam failures are categorized into three groups: overtopping, in which the water level exceeds the top of the dam; excessive seepage, in which water seeps through the ground; and structural failure, where part of the dam doesn't complete its job sufficiently.

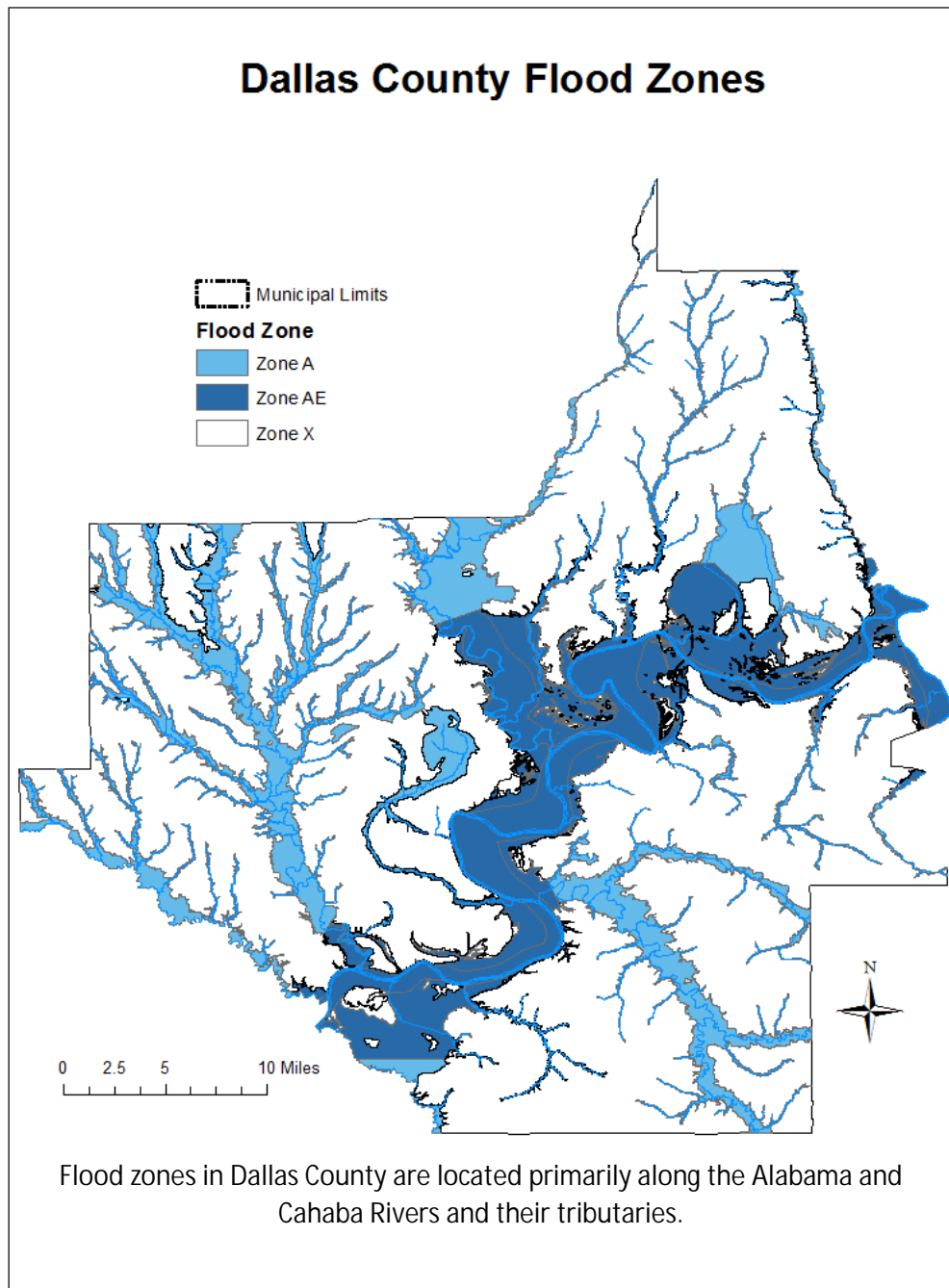
Flooding to some extent occurs every year in Dallas County. The county experiences both flash and riverine flooding.

#### **RIVERINE FLOODING**

Riverine flooding occurs along rivers and their tributaries and usually occurs after periods of heavy rainfall. Dallas County has experienced some flood damages, but generally damage from flooding is not a major problem. According to the State Mitigation Plan Update for Alabama, approximately 22,433 residents live in the 1-Percent-Annual-Chance Flood Hazard Area. Roughly, this is half of the population in the county.

The National Flood Hazard Layer (NFHL) is a digital database that contains flood hazard mapping data from FEMA's National Flood Insurance Program (NFIP). This map data is derived from Flood Insurance Rate Map (FIRM) databases and Letters of Map Revision (LOMRs). Figures 4.4 uses the NFHL to identify Dallas County's Flood Zones, these zones are mainly along the Alabama and Cahaba Rivers and their tributaries.

Figure 4.4 Dallas County Flood Zones

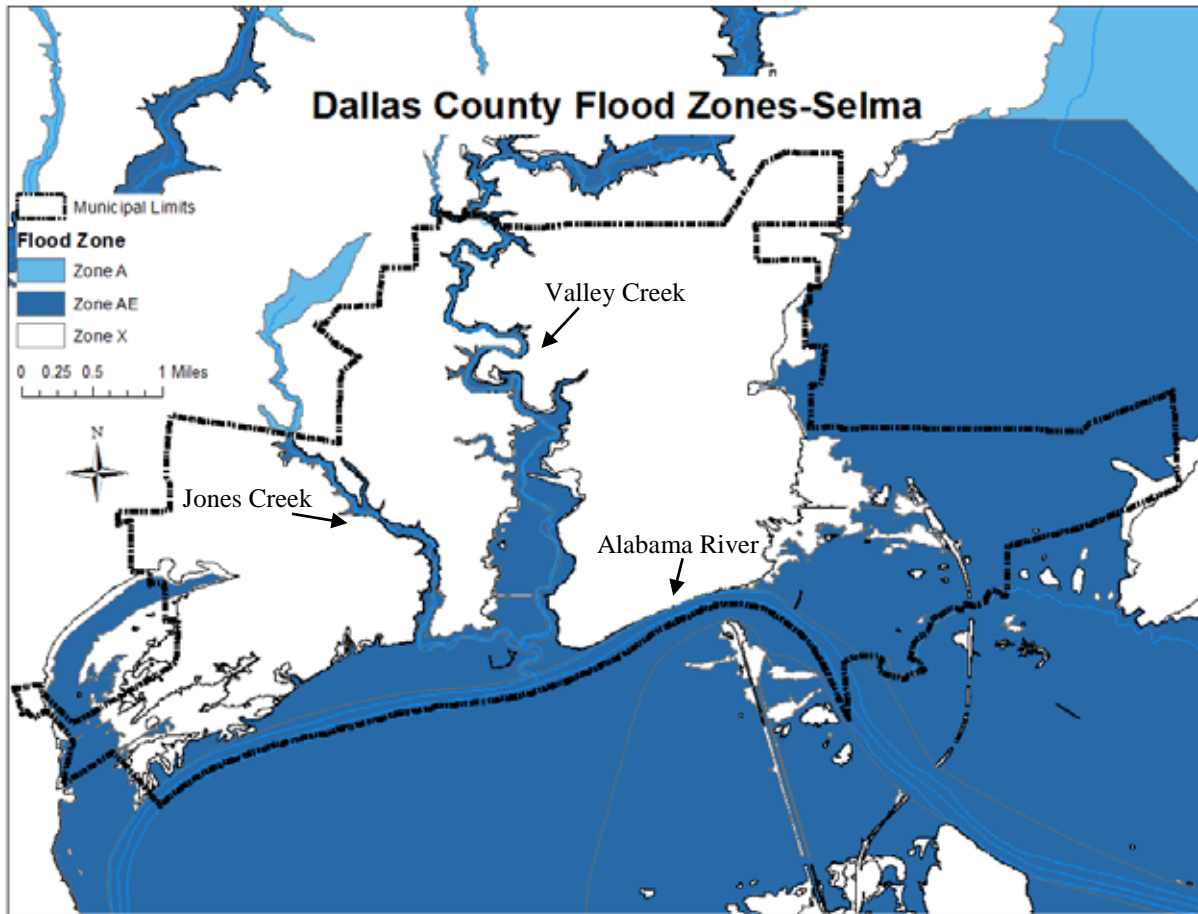


Map Created by the Alabama Tombigbee Regional Commission  
September 11, 2015

Source: National Flood Hazard layer, Version 1.1.1.0

Figure 4.5 provides a flood zone maps for the City of Selma. Along the Alabama River a significant portion of the western and southern section of the city is designated Zone AE. Zone AE is also designated along both Valley and Jones Creek.

Figure 4.5 Selma Flood Zones

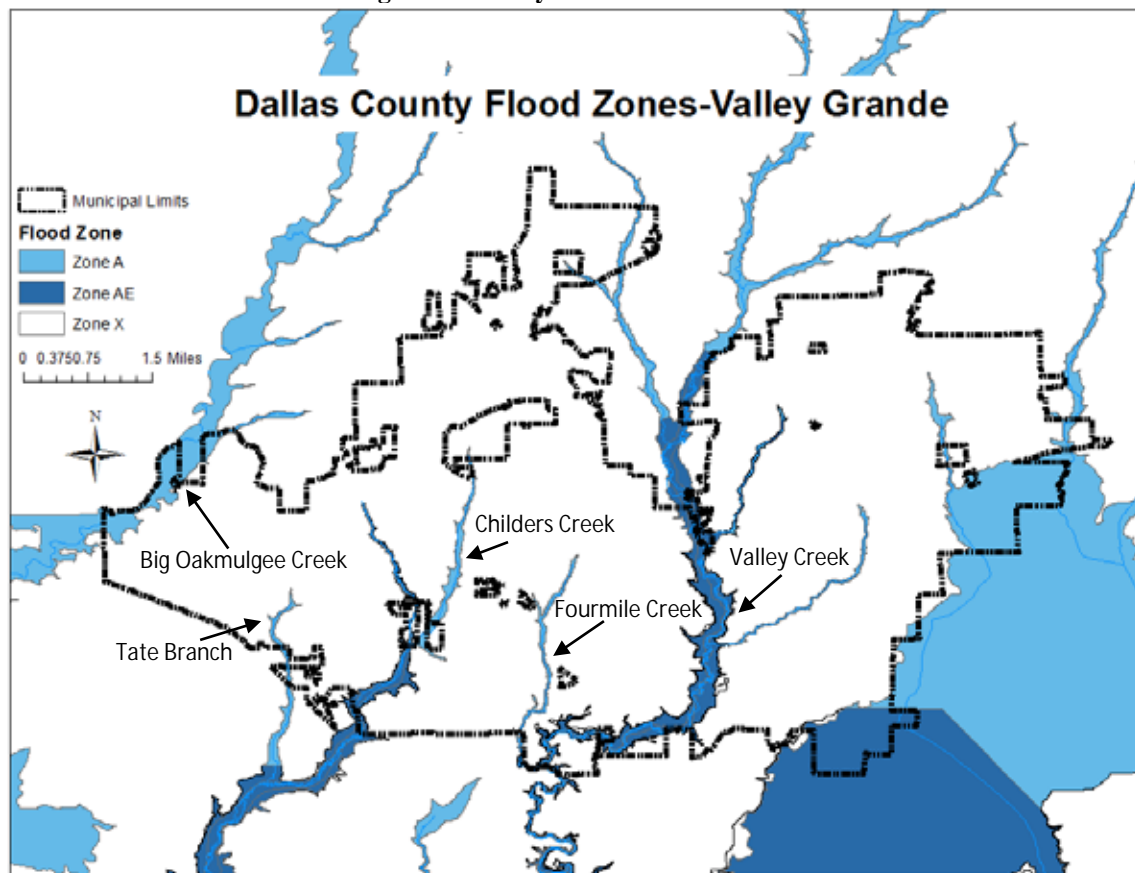


Map Created by the Alabama Tombigbee Regional Commission  
September 11, 2015

Source: National Flood Hazard layer, Version 1.1.1.0

Figure 4.6 provides a flood zone maps for the City of Valley Grande. Zone AE is designated along both Valley Creek and a portion of Childers Creek. Zone A is designated along Big Oakmulgee Creek, Tate Branch, Fourmile Creek, and a portion of Childers Creek.

Figure 4.6 Valley Grande Flood Zones



Map Created by the Alabama Tombigbee Regional Commission  
September 11, 2015

Source: National Flood Hazard layer, Version 1.1.1.0

All jurisdictions in Dallas County are active participants in the National Flood Insurance Program (NFIP). Table 4.8 gives a breakdown of each jurisdiction's participation information. Table 4.9 provides a summary of flood insurance information for the county.

Table 4.8 NFIP Participation- Dallas County

Jurisdiction	Date of Entrance into Program	Current Effective Map Date
Dallas County	9/29/1986	9/3/2014
Orrville	3/18/1985	No Special Flood Hazard
Selma	3/4/1986	9/3/2014
Valley Grande	6/18/2004	9/3/2014

Table Compiled by the Alabama Tombigbee Regional Commission  
September 11, 2015

Source: Community Status Book

**Table 4.9 NFIP Insurance Overview- Dallas County**

<b>Total Number of Policies</b>	<b>250</b>
<b>Total Premiums</b>	<b>\$170,279</b>
<b>Insurance in Force</b>	<b>\$36,328,000</b>
<b>Total Number of Closed Paid Losses</b>	<b>57</b>
<b>Amount of Closed Paid Losses</b>	<b>\$592,349</b>

Table Compiled by the Alabama Tombigbee Regional Commission  
September 15, 2015

Source: Office of Water Resources, ADECA

There are nine repetitive loss properties in Dallas County. Seven are single family residences, one is a nonresidential structure, and one is assumed to be a multi-unit structure. Three of the properties are located in the unincorporated area of the county, while six are located in Selma.

#### **FLASH FLOODING**

Flash flooding has a rapid onset and often leads to utility and infrastructure damage. Flash flooding can occur at any location due to the nature of the hazard. The lack of drainage infrastructure, undersized drainage infrastructure, and damaged drainage infrastructure can exacerbate flash flooding. Roads often suffer the greatest impacts as their base layer becomes compromised from standing water. Standing water also lead to cracks and damage to asphalt. Due to their nature, these floods are very dangerous. Often times these events are localized and have a rapid onset, making them hard to predict. Deaths occur each year from vehicles being swept away in flood waters. A mere six inches of fast-moving flood water can knock over an adult. It takes only two feet of rushing water to carry away most vehicles, including pickups and SUVs.

Often flash flooding events in the county are associated with the remnants of tropical systems moving inland from the Gulf of Mexico. The county has experienced a significant amount of rainfall as a result of these systems. In October 1995, Hurricane Opal brought 6.09 inches of rain to Selma causing flash flooding. In 1998 the remnants of Hurricane Georges dumped over 5 inches of rain on Dallas County. In September 2004, Hurricane Ivan brought between 6-9 inches of rain to Dallas County resulting in flooding and slides. In 2005 the remnants of Hurricane Dennis brought 3-6 inches of rain to the county resulting in flash flooding and slides. In 2012, the remnants of Hurricane Isaac brought upwards of 9 inches of rain to Selma resulting in flash flooding.

#### *Historical Occurrences*

The Alabama and Cahaba Rivers have been the principal source of flooding in Dallas County. These rivers have repeatedly caused severe flooding. Due to the flat topography of the area there are additional problems with ponding and drainage and with streams frequently leaving their banks.

Since 1960, flood stage on the Alabama River has been reached or exceeded 24 times, or on average once every two years. The river has exceeded: 50 feet 8 times, or once every 5 ½ years and 55 feet 4 times, or once every 12 ½ years. Peak time for flooding is normally late winter or spring, but can occur any time of the year.

In the City of Selma, the worst flood on record (approximately the 1-percentannual-chance flood) occurred during March 1961 when floodwaters from the Alabama River covered a large area of Selma causing extensive damage to commercial and private properties. This instance is the highest flood level recorded at Selma. The river crested 13 feet 4 inches above flood stage at 58.35 feet. This followed several days of heavy rain in which portions of the Alabama River basin received as much as 16 to 18 inches of rain. The river was in flood at Selma for 17 days.

Other major flood crests included 57.0 feet in April 1886, 56.0 feet in March, 1929, 56.20 feet in December 1948, and 57.45 feet in March of 1990.

There are twelve recorded occurrences of flash flooding in Dallas County since 1990 (Table 4.10).

**Table 4.10 Flash Flooding Occurrences in Dallas County**

<b>Location</b>	<b>Date</b>	<b>Event Type</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Countywide	1/7/1998	Flash Flood	0	0	\$25,000.00	\$5,000.00
Countywide	9/29/1998	Flash Flood	0	0	\$65,000.00	\$10,000.00
Selma	3/12/2001	Flash Flood	0	0	\$25,000.00	\$0.00
Countywide	4/7/2003	Flash Flood	0	0	\$25,000.00	\$0.00
Countywide	9/16/2004	Flash Flood	0	0	\$7,000.00	\$0.00
Countywide	4/1/2005	Flash Flood	0	0	\$0.00	\$0.00
Selma	7/10/2005	Flash Flood	0	0	\$8,000.00	\$0.00
Selma	11/15/2006	Flash Flood	0	0	\$0.00	\$0.00
Safford	9/5/2009	Flash Flood	0	0	\$10,000.00	\$0.00
Martin	3/9/2011	Flash Flood	0	0	\$75,000.00	\$0.00
Selma	9/4/2012	Flash Flood	0	0	\$1,093,514.00	\$0.00
Selma	8/14/2013	Flash Flood	0	0	\$0.00	\$0.00
<b>Totals</b>			0	0	\$1,333,514.00	\$15,000.00

**Source: NOAA Storm Events Database**  
**<https://www.ncdc.noaa.gov/stormevents/>**  
**Last Accessed on 3/23/2015**

### *Probability of Occurrence*

The probability of flooding occurring in the county is considered medium. The county is both subject to flash and riverine flooding. Significant incidences and damages have been reported as a result of both.

## **H. Hurricanes/Tropical Storms**

*Hazard Classification:* Medium

Tropical systems are best described by the National Hurricane Center:

“A tropical cyclone is a rotating, organized system of clouds and thunderstorms that originates over tropical or subtropical waters and has a closed low-level circulation. Tropical cyclones rotate counterclockwise in the Northern Hemisphere. They are classified as follows:



- Tropical Depression: A tropical cyclone with maximum sustained winds of 38 mph (33 knots) or less.
- Tropical Storm: A tropical cyclone with maximum sustained winds of 39 to 73 mph (34 to 63 knots).
- Hurricane: A tropical cyclone with maximum sustained winds of 74 mph (64 knots) or higher. In the western North Pacific, hurricanes are called typhoons; similar storms in the Indian Ocean and South Pacific Ocean are called cyclones.
- Major Hurricane: A tropical cyclone with maximum sustained winds of 111 mph (96 knots) or higher, corresponding to a Category 3, 4 or 5 on the Saffir-Simpson Hurricane Wind Scale.

Tropical cyclones forming between 5 and 30 degrees North latitude typically move toward the west. Sometimes the winds in the middle and upper levels of the atmosphere change and steer the cyclone toward the north and northwest. When tropical cyclones reach latitudes near 30 degrees north, they often move northeast.”

Dallas County is at risk of experiencing the effects of the Atlantic Hurricane Season which occurs between June 1<sup>st</sup> and November 30<sup>th</sup> annually.

Once a tropical system reaches hurricane strength, the Saffir-Simpson scale estimates potential property damage based on a hurricane’s sustained wind speed. The scale gives a 1-5 ranking. Hurricanes rated Category 3 and higher are considered major hurricanes. They are associated with significant damage and loss of life. Table 4.11 gives a basic description of the scale.

**Table 4.11 Saffir Simpson Hurricane Wind Scale**

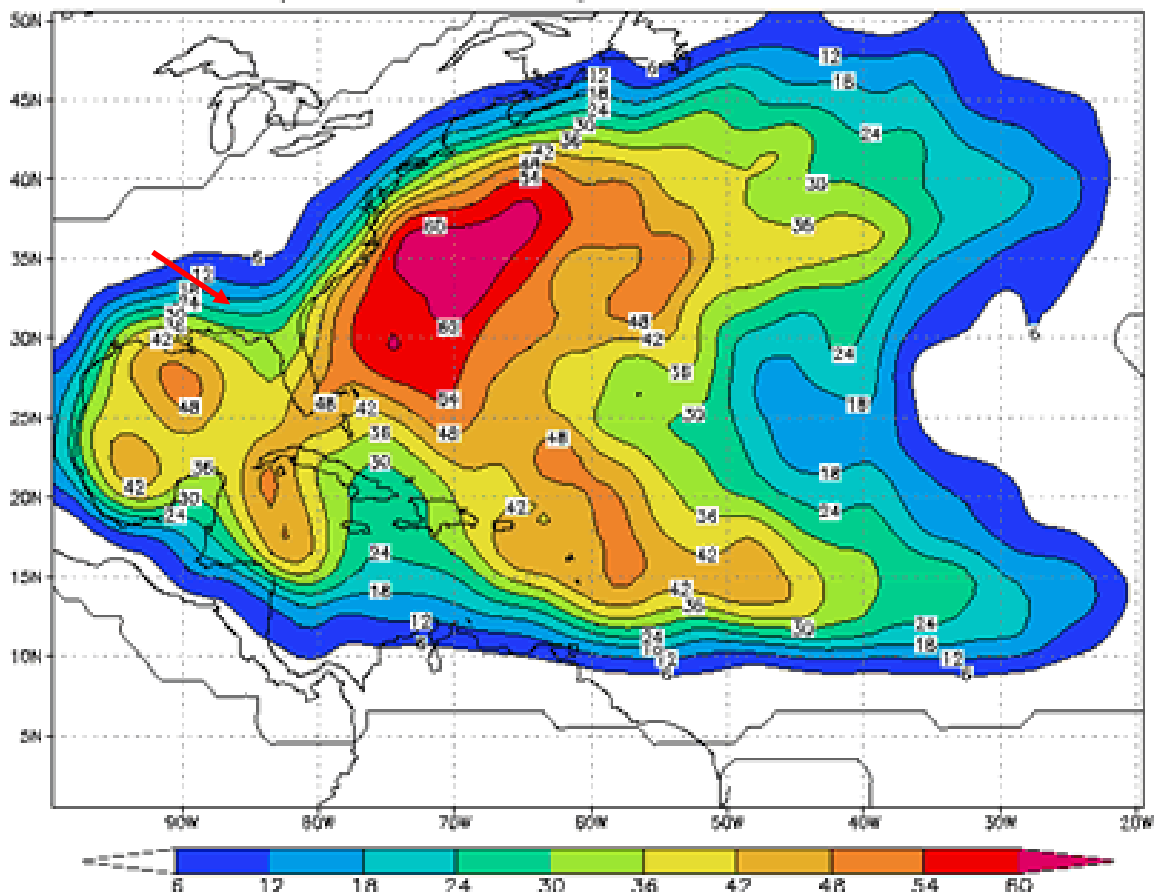
Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph 64-82 kt 119-153 km/h	<b>Very dangerous winds will produce some damage:</b> Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees 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

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
		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  
<http://www.nhc.noaa.gov/aboutshws.php>  
Last Accessed: March 16, 2015

The Atlantic Oceanographic and Meteorological Laboratory analyzed hurricane activity from 1944-1999. A map showing probabilities of a strike that will affect the area sometime during the season was created. Figure 4.7 is the result of this analysis. It shows the results drawn from total hits from hurricanes or storms within one hundred miles of the location. Dallas County lies within the 18% probability range.

Figure 4.7 Empirical Probability of a Named Storm



Source: Atlantic Oceanographic and Research Laboratory  
<http://www.aoml.noaa.gov/hrd/tcfaq/G11.html>  
Last accessed on 4/19/14

Although the probability is low, Dallas County could be directly affected by a major hurricane (Category 3 or higher), leading to significant property damage and possible injuries and/or death. Normally though, Dallas County experiences high winds, heavy rainfall, and spin off tornadoes associated with tropical systems. The impact of these events can range from localized to extensive. Flooding may lead to property damage, disruption in utility services, roadway damage, injury to residents, and death. High winds can also cause significant damage to homes, buildings, and utility infrastructure. The threat of injury and death is also present. Spin off tornadoes present the risks associated with tornadoes in general. Spinoff tornadoes are usually weak EF-0 to EF-1 tornadoes, but nevertheless are dangerous.

#### *Historical Occurrences*

In the past Dallas County has experienced the effects of tropical systems. Table 4.12 provides recorded occurrences from NOAA's Storm Database. It can be seen that the county has experienced a significant amount of property damage as a result of these storms. It also has experienced injuries.

**Table 4.12 Tropical System Occurrences in Dallas County**

<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Dallas	10/4/1995	Hurricane	2	0	N/A	N/A
Dallas	9/16/2004	Tropical Storm (Ivan)	0	0	N/A	N/A
Dallas (Zone)	7/10/2005	Tropical Storm (Dennis)	0	1	\$600,000.00	\$0.00
Dallas (Zone)	8/29/2005	Tropical Storm (Katrina)	0	0	\$240,000.00	\$0.00
Dallas (Zone)	8/23/2008	Tropical Depression (Fay)	0	0	\$5,000.00	\$0.00
Dallas (Zone)	11/9/2009	Tropical Depression (Ida)	0	0	\$2,000.00	\$0.00
Totals			0	1	\$847,000.00	\$0.00

**Source: NOAA Storm Events Database  
<https://www.ncdc.noaa.gov/stormevents/>  
Last Accessed on 3/23/2015**

Based on the information provided in this assessment, this hazard is ranked as medium with regards to risk level.

#### *Probability of Occurrence*

All areas within Dallas County are at the same risk of experiencing the effects of hurricanes. The county primarily is subject to intense rains and high winds. Areas that are prone to flash flooding and low lying areas are more susceptible to flooding from significant rainfall. Dallas County ranks hurricanes/tropical storms as medium with regards to probability of occurrence.

## I. Landslide

*Classification of Hazard: Low*

Landslides are the downward and outward movement of slope-forming soil, rock, and vegetation under the influence of gravity. Landslides can occur naturally and they can be triggered by human-induced changes. A number of the common causes of landslides are given below:

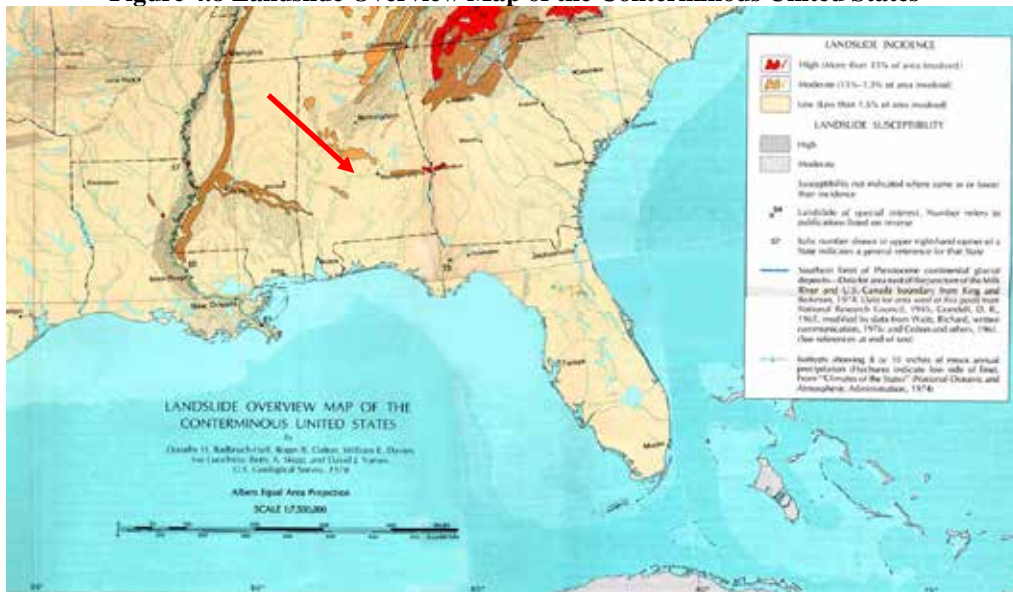
- Weaknesses in composition or structure of the rock or soil
- High precipitation
- Changes in ground-water level
- Seismic activity
- Construction or mining activity
- Over-steepening of slopes
- Changes in surface water runoff
- Heavy loads on slopes

Certain areas are more prone to landslides due to their slope, moisture, and geology. Areas prone to landslides include:

- areas near existing older landslides,
- areas on or at the base of slopes,
- areas in or at the base of drainage hollows,
- areas at the base or top of an old fill slope,
- areas at the base or top of a steep cut slope, and
- developed hillsides where leach field septic systems are used.

Figure 4.8 illustrates landslide incidence and susceptibility. Dallas County has both low incidence and susceptibility. Low incidence and susceptibility translates into less than 1.5% of the area being at risk. Landslides could occur in these areas, ranging in size from less than an acre affected to 5 acres affected.

**Figure 4.8 Landslide Overview Map of the Conterminous United States**

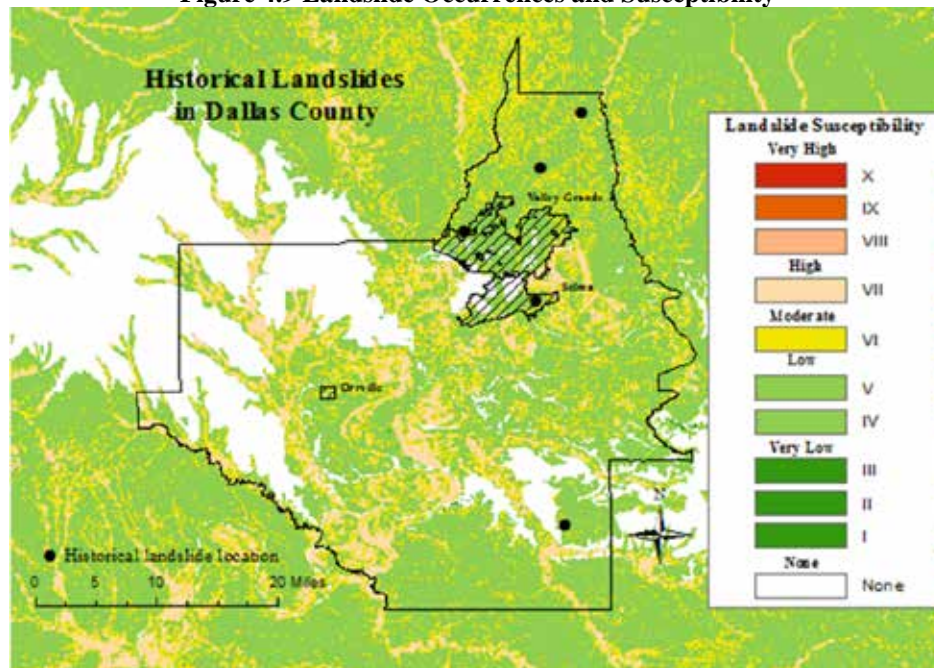


Source: United States Geologic Survey  
<http://pubs.usgs.gov/pp/p1183/plate1.html>  
Last Accessed on 05/02/2014

### *Historical Occurrences*

Figure 4.9 shows historical occurrences of landslides for Dallas County. Five landslides have been recorded in Dallas County.

**Figure 4.9 Landslide Occurrences and Susceptibility**



Map produced by the Alabama Tombigbee Regional Commission  
Source data Alabama Geologic Survey  
Created 3/26/2015

It is impossible to predict the occurrence of landslides in Dallas County. Areas that are at a higher risk can be identified, but it is impossible to predict if and when a landslide will occur.

*Probability of Occurrence*

The county has rated landslides as having a low probability occurrence.

**J. Land Subsidence**

*Hazard Classification: Low*

Land subsidence occurs when large amounts of groundwater have been withdrawn from certain types of rocks, such as fine-grained sediments. The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rocks collapse. Subsidence can occur over large areas and in more localized locations. Smaller localized areas of subsidence are referred to as sinkholes.

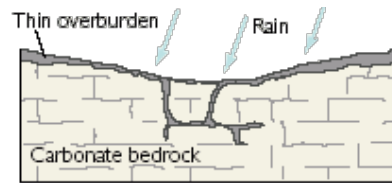
Sinkholes can form from a variety of causes including natural and man-made activities and include ground collapse related to:

- Naturally dissolved voids in rock
- A drop in the water table from drought or pumping of nearby wells
- Heavy construction or weight at the ground surface
- Drainage problems
- Collapse of underground mines
- Excessive rainfall.

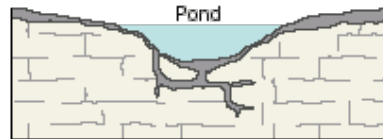
There are three types of sinkholes. A description and illustration (Figure 4.10) of each follows.

Figure 4.10 Types of Sinkholes

• Dissolution:



Rainfall and surface water percolate through joints in the limestone. Dissolved carbonate rock is carried away from the surface and a small depression gradually forms.



On exposed carbonate surfaces, a depression may focus surface drainage, accelerating the dissolution process. Debris carried into the developing sinkhole may plug the outflow, ponding water and creating wetlands.

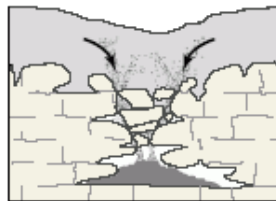
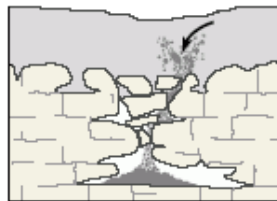
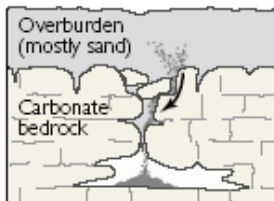
• Cover subsidence:

Granular sediments spill into secondary openings in the underlying carbonate rocks.

A column of overlying sediments settles into the vacated spaces (a process termed "piping").

Dissolution and infilling continue, forming a noticeable depression in the land surface.

The slow downward erosion eventually forms small surface depressions 1 inch to several feet in depth and diameter.



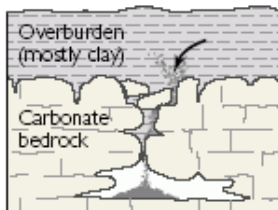
• Cover collapse

Sediments spill into a cavity.

As spalling continues, the cohesive covering sediments form a structural arch.

The cavity migrates upward by progressive roof collapse.

The cavity eventually breaches the ground surface, creating sudden and dramatic sinkholes.



Source: United States Geological Survey  
<http://water.usgs.gov/edu/sinkholes.html>  
Last Accessed on 3/22/2015



Subsidence generally occurs in areas with carbonate bedrock or underlying abandoned mines. Carbonate rocks underlie a large swath of central Dallas County (Figure 4.11), but there are no reported areas of active subsidence in this part of the county (Figure 4.12).



Source: Geological Survey of Alabama  
<http://www.gsa.al.state>  
Last accessed on 04/04/2014

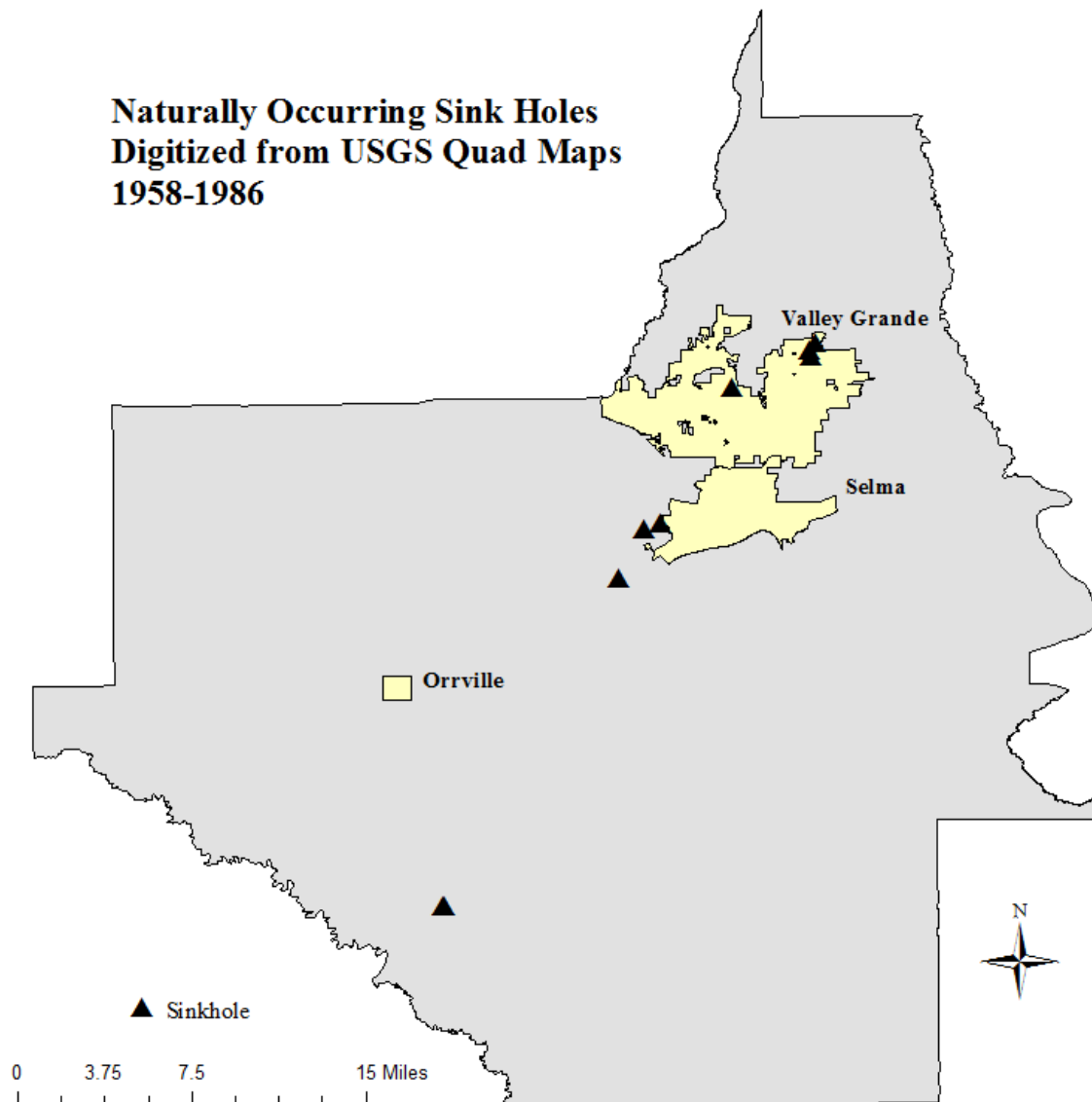
Subsidence can lead to changes in elevation; damage to structures such as storm drains, sanitary sewers, roads, railroads, canals, levees and bridges; structural damage to public and private buildings; and damage to wells. Most commonly, though, subsidence is known for causing an increase in the potential for flooding.

#### *Historical Occurrences*

Figure 4.13 shows sinkhole occurrences in Dallas County. There are nine occurrences on record for the county. Figure 4.13 only depicts natural occurring sinkholes and does not reflect any subsidence that is induced by the actions of man.



Figure 4.13 Dallas County Sinkholes



Map produced by the Alabama Tombigbee Regional Commission  
Source data Alabama Geological Survey  
Map produced 3/26/2015

*Probability of Occurrence*

Dallas County is at risk for land subsidence and more specifically sinkholes. A large portion of the county is underlain with carbonate rocks which are highly susceptible to subsidence; however, the county rates this hazard as having a low probability of causing major damage.

### K. Severe Storms (Hail, High Winds, Lightning, Thunderstorms)

*Hazard Classification: High*

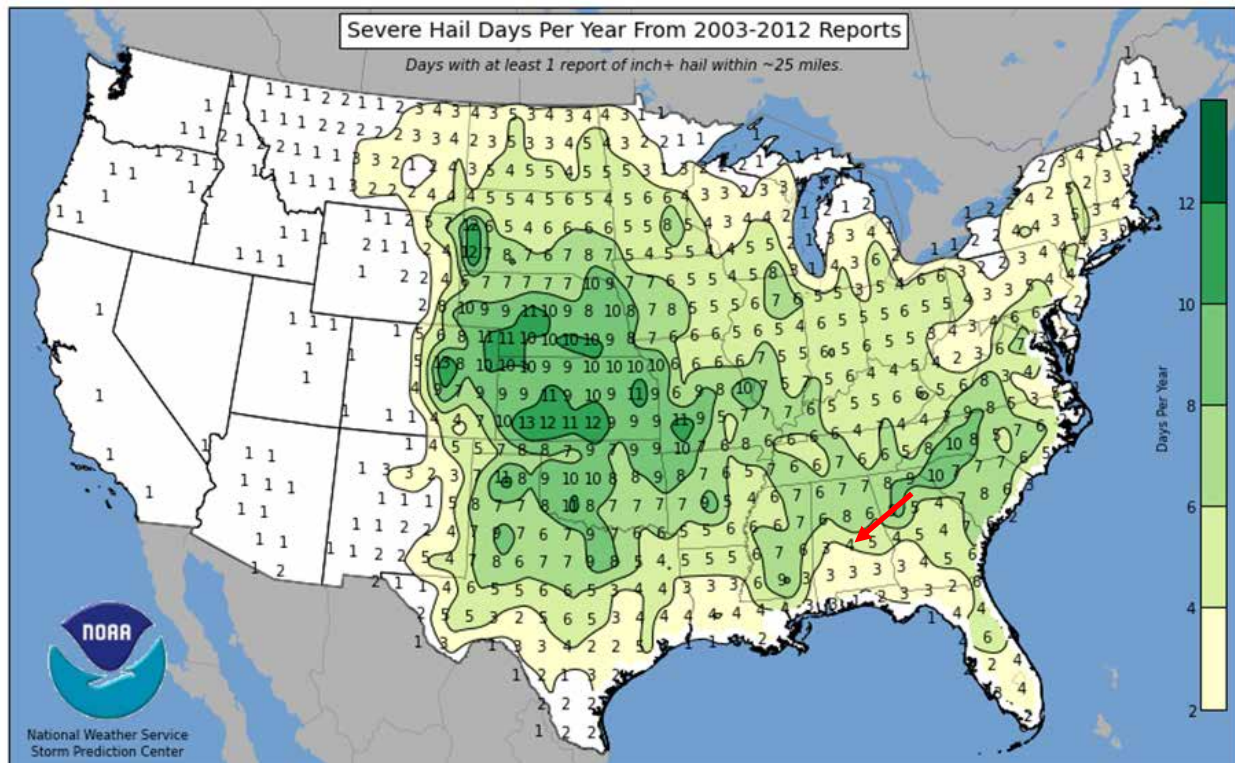
Hail, high winds, lightning, and thunderstorms will all be grouped into the category of severe storms in this analysis.

#### HAIL

Hail is precipitation in the form of irregular pellets or balls of ice more than 5 mm in diameter. Hail forms when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere where they freeze into ice. Hail can lead to injuries and significant property damage. The county has experienced hail up to 2.75 inches. It is possible that the county could experience hail that is greater than 4 inches or H10.

Figure 4.14 illustrates the average number of severe hail days each year. Dallas County lies within the 4 days per year range.

**Figure 4.14 Severe Hail Days per Year from 2003-2012 Reports**



Source: National Oceanic and Atmospheric Administration  
<http://www.spc.noaa.gov/wcm/2013/HAIL.png>  
Accessed: 11/23/2014

Tables 4.13 and 4.14 provide information on the Torro Hail Intensity Scale. In the past Dallas County has experienced hail up to H7 or tennis ball size.

**Table 4.13 TORRO Hailstorm Intensity Scale**

	<b>Intensity Category</b>	<b>Typical Hail Diameter (mm)*</b>	<b>Probable Kinetic Energy, J-m<sup>2</sup></b>	<b>Typical Damage Impacts</b>
H0	Hard Hail	5	0-20	No damage
H1	Potentially Damaging	5-15	>20	Slight general damage to plants, crops
H2	Significant	10-20	>100	Significant damage to fruit, crops, vegetation
H3	Severe	20-30	>300	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-40	>500	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50	>800	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60		Bodywork of grounded aircraft dented, brick walls pitted
H7	Destructive	50-75		Severe roof damage, risk of serious injuries
H8	Destructive	60-90		(Severest recorded in the British Isles) Severe damage to aircraft bodywork
H9	Super Hailstorms	75-100		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	>100		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

**Source: The Tornado and Storm Research Organisation**  
<http://www.torro.org.uk/site/hscale.php>  
 Last Accessed 12/20/2014

**Table 4.14 Hail size and diameter in relation to TORRO Hailstorm Intensity Scale**

<b>Size code*</b>	<b>Maximum Diameter (mm)</b>	<b>Description</b>
<b>0</b>	5-9	Pea
<b>1</b>	10-15	Mothball
<b>2</b>	16-20	Marble, grape
<b>3</b>	21-30	Walnut
<b>4</b>	31-40	Pigeon's egg > squash ball
<b>5</b>	41-50	Golf ball > Pullet's egg
<b>6</b>	51-60	Hen's egg
<b>7</b>	61-75	Tennis ball > cricket ball
<b>8</b>	76-90	Large orange > Soft ball
<b>9</b>	91-100	Grapefruit
<b>10</b>	>100	Melon

**\* The Size Code is the maximum reported size code accepted as consistent with other reports and evidence.**

**Source: The Tornado and Storm Research Organisation**  
<http://www.torro.org.uk/site/hscale.php>  
 Last Accessed 12/20/2014

### HIGH WIND

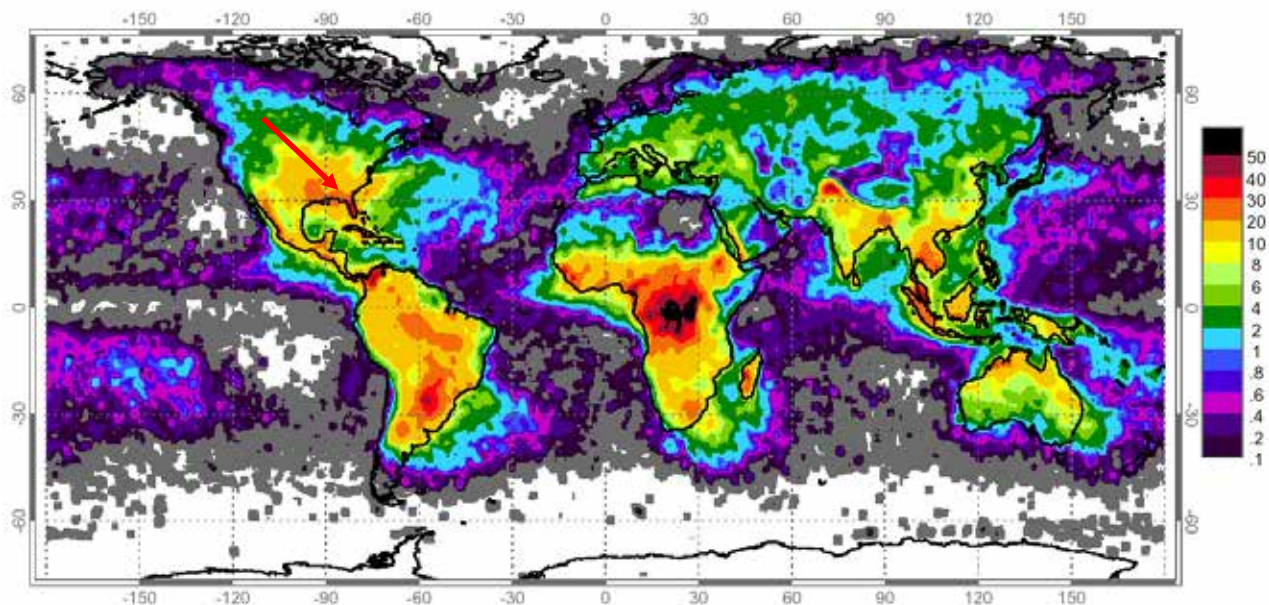
High winds are defined as winds 40 mph or greater lasting for an hour or longer, or winds of 58 mph or greater for any duration. High winds can lead to property damage and interruption in utility services. Trees may fall into homes and structures. Varying degrees of damage may occur depending on the structure and size of the tree. Persons in these structures are at risk of death and injury. Trees can fall across power lines leading to outages that can last several days.

### LIGHTNING

“Lightning is a rapid discharge of electrical energy in the atmosphere. The resulting clap of thunder is the result of a shock wave created by the rapid heating and cooling of the air in the lightning channel. ([http://www.lightningsafety.noaa.gov/resources/lightning3\\_050714.pdf](http://www.lightningsafety.noaa.gov/resources/lightning3_050714.pdf))”. Lightning is one of the most deadly weather occurrences in the United States.

Figure 4.15 shows the worldwide distribution of lightning strikes. Dallas County lies within the 20 flashes/km<sup>2</sup>/year range, which is significant.

**Figure 4.15 Distribution of Worldwide Lightning Strikes**  
Units: flashes/km<sup>2</sup>/yr.



Source: National Aeronautics and Space Administration  
[http://science.nasa.gov/media/medialibrary/2001/12/02/ast05dec\\_1\\_resources/lightningmap\\_large.gif](http://science.nasa.gov/media/medialibrary/2001/12/02/ast05dec_1_resources/lightningmap_large.gif)  
Accessed: 12/08/2014

Lightning is a very dangerous hazard. Lightning is responsible for deaths every year in the state. People often believe they aren't at risk and stay outside when lightning is near. A lightning strike can lead to death or serious injury. Lightning can also strike homes and trees leading to property damage. Lightning strikes can also cause a disruption in utility services.



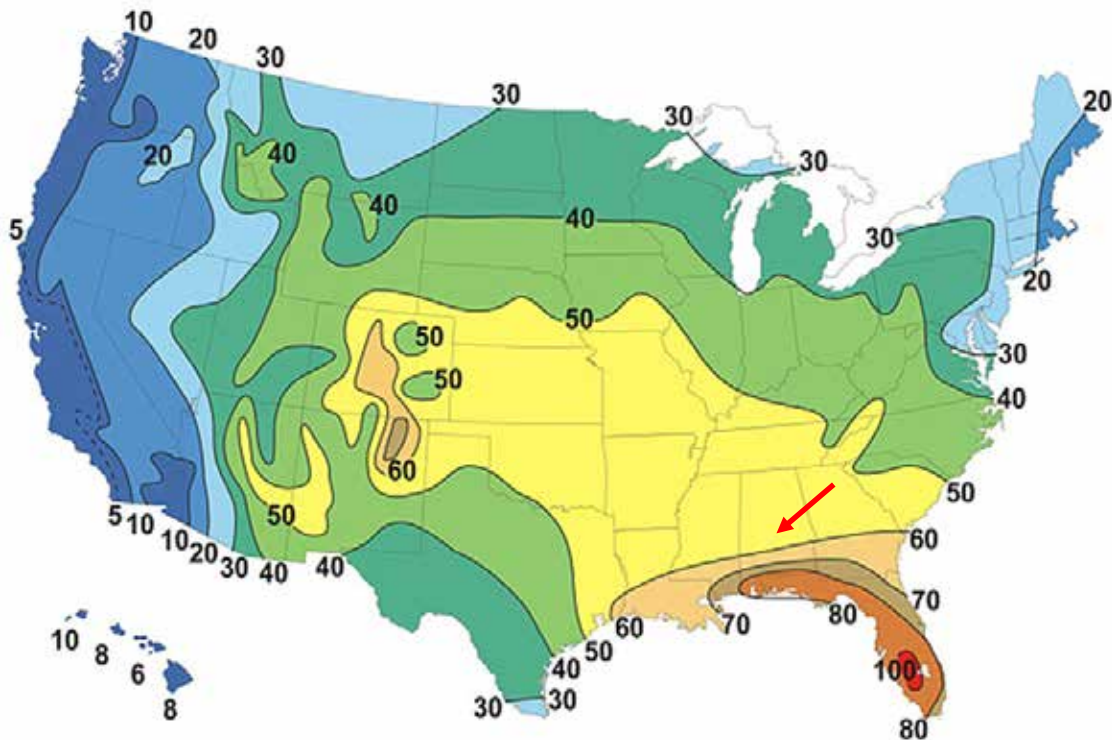
### THUNDERSTORM

“A thunderstorm is a local storm produced by a cumulonimbus cloud and accompanied by lightning and thunder (<http://w1.weather.gov/glossary/index.php?letter=t>).” According to the National Weather Service there are four types of thunderstorms:

- Ordinary Cell: A single cell consisting of a onetime updraft and onetime downdraft. They are short lived and typically not severe.
- Multi-cell Cluster: Thunderstorms that form in clusters with numerous cells in various stages of development merging together.
- Multi-cell Line: Thunderstorms which form in a line which can extend laterally for hundreds of miles. Also known as “squall lines”, they can persist for many hours and produce damaging winds and hail. Tornadoes may form on the leading edge of squall lines, but they primarily produce “straight line” winds. Derechos are long-lived strong squall lines that can travel hundreds of miles and can produce considerable wind and hail damage.
- Supercell: Highly organized storms characterized by updrafts that can attain speeds over 100 mph. They are able to produce large hail and strong, violent tornadoes that can produce damaging outflow in excess of 100 mph.

Dallas County is susceptible to each of the four types of thunderstorms described here. Figure 4.16 illustrates the average number of days of thunderstorms per year for the United States. Dallas County lies within the 50 days per year range.

Figure 4.16 Average Number of Thunderstorm Days Each Year



Source: National Oceanic and Atmospheric Administration  
[http://www.srh.noaa.gov/jetstream/tstorms/tstorms\\_intro.htm](http://www.srh.noaa.gov/jetstream/tstorms/tstorms_intro.htm)  
Accessed on 11/23/2014

### *Historical Occurrences*

All of these events have occurred in the county. Damages and injuries have also occurred as a result of these events.

Table 4.15 provides a record of historical occurrences of hail in the county. There have been 94 occurrences with property damage totaling \$297,000.00 and crop damage totaling \$22,000.00.

**Table 4.15 Hail Occurrences in Dallas County**

<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Magnitude</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Dallas	7/1/1959	Hail	2.75 in.	0	0	\$0.00	\$0.00
Dallas	4/28/1964	Hail	2.00 in.	0	0	\$0.00	\$0.00
Dallas	3/13/1971	Hail	0.75 in.	0	0	\$0.00	\$0.00
Dallas	6/15/1971	Hail	0.75 in.	0	0	\$0.00	\$0.00
Dallas	1/23/1974	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	6/12/1974	Hail	0.75 in.	0	0	\$0.00	\$0.00
Dallas	3/24/1975	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	4/18/1978	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	4/26/1979	Hail	1.00 in.	0	0	\$0.00	\$0.00
Dallas	3/18/1981	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	3/25/1982	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	4/26/1982	Hail	2.75 in.	0	0	\$0.00	\$0.00
Dallas	4/8/1983	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	3/27/1984	Hail	1.25 in.	0	0	\$0.00	\$0.00
Dallas	3/12/1988	Hail	1.00 in.	0	0	\$0.00	\$0.00
Dallas	4/18/1988	Hail	0.75 in.	0	0	\$0.00	\$0.00
Dallas	4/23/1988	Hail	0.75 in.	0	0	\$0.00	\$0.00
Dallas	5/24/1988	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	3/5/1989	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	3/15/1989	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	3/15/1989	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	3/20/1989	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	4/4/1989	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	4/4/1989	Hail	1.75 in.	0	0	\$0.00	\$0.00
Dallas	4/4/1989	Hail	1.00 in.	0	0	\$0.00	\$0.00
Dallas	6/21/1989	Hail	0.75 in.	0	0	\$0.00	\$0.00
Dallas	5/21/1990	Hail	0.75 in.	0	0	\$0.00	\$0.00
Dallas	6/5/1991	Hail	0.75 in.	0	0	\$0.00	\$0.00
Tyler	3/18/1996	Hail	1.75 in.	0	0	\$10,000.00	\$10,000.00
Orrville	3/18/1996	Hail	1.75 in.	0	0	\$15,000.00	\$10,000.00
Selma	5/24/1996	Hail	0.75 in.	0	0	\$5,000.00	\$2,000.00

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Location	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Summerfield	2/17/1998	Hail	0.88 in.	0	0	\$0.00	\$0.00
Pleasant Hill	3/20/1998	Hail	1.75 in.	0	0	\$0.00	\$0.00
Countywide	4/18/1998	Hail	0.75 in.	0	0	\$0.00	\$0.00
Selma	5/3/1998	Hail	0.88 in.	0	0	\$0.00	\$0.00
Plantersville	5/6/1998	Hail	0.75 in.	0	0	\$0.00	\$0.00
Selma	5/30/1998	Hail	0.88 in.	0	0	\$0.00	\$0.00
Selma	6/16/1998	Hail	0.88 in.	0	0	\$0.00	\$0.00
Selma	6/16/1998	Hail	1.00 in.	0	0	\$2,000.00	\$0.00
Selma	6/4/1999	Hail	1.75 in.	0	0	\$5,000.00	\$0.00
Orrville	4/2/2000	Hail	1.50 in.	0	0	\$15,000.00	\$0.00
Sardis	4/2/2000	Hail	4.50 in.	0	0	\$25,000.00	\$0.00
Selma	8/10/2000	Hail	0.75 in.	0	0	\$0.00	\$0.00
Safford	2/21/2001	Hail	0.88 in.	0	0	\$0.00	\$0.00
Sardis	2/21/2001	Hail	0.88 in.	0	0	\$0.00	\$0.00
Selma	3/12/2001	Hail	0.75 in.	0	0	\$0.00	\$0.00
Selma	4/3/2001	Hail	0.75 in.	0	0	\$0.00	\$0.00
Selma	4/3/2001	Hail	0.75 in.	0	0	\$0.00	\$0.00
Summerfield	4/25/2003	Hail	2.50 in.	0	0	\$85,000.00	\$0.00
Selma	4/25/2003	Hail	2.50 in.	0	0	\$35,000.00	\$0.00
Orrville	4/25/2003	Hail	1.00 in.	0	0	\$0.00	\$0.00
Safford	4/25/2003	Hail	1.00 in.	0	0	\$0.00	\$0.00
Selma	4/25/2003	Hail	1.75 in.	0	0	\$5,000.00	\$0.00
Orrville	5/2/2003	Hail	1.75 in.	0	0	\$45,000.00	\$0.00
Orrville	5/2/2003	Hail	1.75 in.	0	0	\$5,000.00	\$0.00
Minter	8/4/2003	Hail	0.88 in.	0	0	\$0.00	\$0.00
Orrville	4/7/2004	Hail	1.75 in.	0	0	\$16,000.00	\$0.00
Orrville	10/19/2004	Hail	1.00 in.	0	0	\$0.00	\$0.00
Orrville	2/22/2005	Hail	1.75 in.	0	0	\$3,000.00	\$0.00
Minter	2/22/2005	Hail	1.75 in.	0	0	\$5,000.00	\$0.00
Selma	3/22/2005	Hail	0.75 in.	0	0	\$0.00	\$0.00
Orrville	3/26/2005	Hail	0.75 in.	0	0	\$0.00	\$0.00
Orrville	3/27/2005	Hail	0.75 in.	0	0	\$0.00	\$0.00
Safford	3/30/2005	Hail	1.00 in.	0	0	\$0.00	\$0.00
Marion Junction	3/31/2005	Hail	0.75 in.	0	0	\$0.00	\$0.00
Selma	4/21/2005	Hail	0.75 in.	0	0	\$1,000.00	\$0.00
Orrville	4/21/2005	Hail	1.75 in.	0	0	\$2,000.00	\$0.00
Minter	4/21/2005	Hail	1.00 in.	0	0	\$1,000.00	\$0.00
Selma	4/22/2005	Hail	1.75 in.	0	0	\$8,000.00	\$0.00

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<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Magnitude</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Selma	4/22/2005	Hail	1.75 in.	0	0	\$9,000.00	\$0.00
Minter	7/19/2006	Hail	1.00 in.	0	0	\$0.00	\$0.00
selma	2/13/2007	Hail	1.00 in.	0	0	\$0.00	\$0.00
Selma	2/13/2007	Hail	2.75 in.	0	0	\$0.00	\$0.00
Summerfield	4/11/2007	Hail	1.75 in.	0	0	\$0.00	\$0.00
Safford	2/17/2008	Hail	1.25 in.	0	0	\$0.00	\$0.00
Selma Selfield Airport	2/17/2008	Hail	1.00 in.	0	0	\$0.00	\$0.00
Selma	2/22/2008	Hail	0.75 in.	0	0	\$0.00	\$0.00
Potter	2/18/2009	Hail	2.75 in.	0	0	\$0.00	\$0.00
Safford	2/27/2009	Hail	1.00 in.	0	0	\$0.00	\$0.00
Plantersville	2/27/2009	Hail	0.75 in.	0	0	\$0.00	\$0.00
Safford	2/27/2009	Hail	1.00 in.	0	0	\$0.00	\$0.00
Summerfield	3/26/2011	Hail	1.00 in.	0	0	\$0.00	\$0.00
Burnsville	3/26/2011	Hail	1.75 in.	0	0	\$0.00	\$0.00
Selma	4/15/2011	Hail	1.00 in.	0	0	\$0.00	\$0.00
Summerfield	4/15/2011	Hail	0.88 in.	0	0	\$0.00	\$0.00
Summerfield	6/10/2011	Hail	1.00 in.	0	0	\$0.00	\$0.00
Crumptonia	2/24/2012	Hail	1.00 in.	0	0	\$0.00	\$0.00
Berlin	4/5/2012	Hail	1.75 in.	0	0	\$0.00	\$0.00
Carlowville	5/6/2012	Hail	1.00 in.	0	0	\$0.00	\$0.00
Selma Selfield Airport	7/5/2012	Hail	0.75 in.	0	0	\$0.00	\$0.00
Selma	7/17/2012	Hail	0.75 in.	0	0	\$0.00	\$0.00
Selma Skyharbor Airport	5/17/2013	Hail	1.00 in.	0	0	\$0.00	\$0.00
Summerfield	6/8/2014	Hail	1.75 in.	0	0	\$0.00	\$0.00
Summerfield	6/8/2014	Hail	1.75 in.	0	0	\$0.00	\$0.00
Totals				0	0	\$297,000.00	\$22,000.00

**Source: NOAA Storm Events Database**  
**<https://www.ncdc.noaa.gov/stormevents/>**  
**Last Accessed on 3/23/2015**



Table 4.16 provides information pertaining to the two lightning occurrences in the county. It is felt by the county that this number is low as more occurrences are known to have occurred. The two events on record resulted in \$100,000.00 in property damage.

**Table 4.16 Lightning Occurrences in Dallas County**

Location	Date	Type	Deaths	Injuries	Property Damage	Crop Damage
Marion Junction	3/25/1996	Lightning	0	0	\$85,000.00	\$0.00
Selma	6/13/1996	Lightning	0	0	\$15,000.00	\$0.00
Totals			0	0	\$100,000.00	\$0.00

Source: NOAA Storm Events Database  
<https://www.ncdc.noaa.gov/stormevents/>  
Last Accessed on 3/23/2015

Table 4.17 provides the list of thunderstorm wind events on record for the county. There are 168 events on record with property damage totaling \$831,500.00 and crop damages totaling \$6,000.00. Sixteen injuries have also been reported as a result of these events.

**Table 4.17 Thunderstorm Wind Occurrences in Dallas County**

Location	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Dallas County	4/21/1955	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	3/11/1959	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	7/1/1959	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	7/15/1966	Thunderstorm Wind	56 kts.	0	0	\$0.00	\$0.00
Dallas County	4/26/1967	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	3/23/1969	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	3/22/1971	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	5/12/1971	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	6/15/1971	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/24/1973	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	11/27/1973	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	12/26/1973	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	12/26/1973	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	3/29/1974	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	6/12/1974	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00

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<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Magnitude</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Dallas County	6/12/1974	Thunderstorm Wind	59 kts.	0	0	\$0.00	\$0.00
Dallas County	6/4/1976	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	11/29/1978	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/9/1979	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/9/1979	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/25/1980	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	6/29/1980	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	2/10/1981	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	3/30/1981	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	3/31/1981	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	7/19/1981	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	3/17/1982	Thunderstorm Wind	65 kts.	0	0	\$0.00	\$0.00
Dallas County	3/21/1982	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/19/1982	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/19/1982	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/26/1982	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/26/1982	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	8/18/1982	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	8/31/1982	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	7/16/1983	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	12/3/1983	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	12/3/1983	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	12/3/1983	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	12/3/1983	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/28/1984	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/5/1985	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00

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<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Magnitude</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Dallas County	4/5/1985	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/24/1985	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	10/15/1985	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	5/18/1986	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	7/13/1986	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	8/8/1986	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	8/25/1986	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	8/25/1986	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	11/20/1986	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	6/18/1987	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	12/15/1987	Thunderstorm Wind	0 kts.	0	2	\$0.00	\$0.00
Dallas County	4/18/1988	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/18/1988	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	3/5/1989	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	3/29/1989	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	5/5/1989	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	6/5/1989	Thunderstorm Wind	0 kts.	0	1	\$0.00	\$0.00
Dallas County	6/26/1989	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	11/8/1989	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	11/8/1989	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	11/8/1989	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	2/10/1990	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	2/10/1990	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	2/10/1990	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	2/10/1990	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	2/10/1990	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00

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<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Magnitude</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Dallas County	2/16/1990	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	2/16/1990	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	2/22/1990	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	4/1/1990	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	5/21/1990	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	7/2/1990	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	3/29/1991	Thunderstorm Wind	0 kts.	0	6	\$0.00	\$0.00
Dallas County	3/29/1991	Thunderstorm Wind	0 kts.	0	6	\$0.00	\$0.00
Dallas County	5/12/1991	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	5/12/1991	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	6/5/1991	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	7/22/1991	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	3/18/1992	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	3/18/1992	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	7/5/1992	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	7/5/1992	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	8/10/1992	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	11/4/1992	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Dallas County	11/22/1992	Thunderstorm Wind	0 kts.	0	0	\$0.00	\$0.00
Selma	3/9/1994	Thunderstorm Wind	0 kts.	0	0	\$50,000.00	\$0.00
Salem	6/17/1994	Thunderstorm Wind	50 kts.	0	0	\$50,000.00	\$0.00
Selma	3/7/1995	Thunderstorm Wind	0 kts.	0	0	\$24,000.00	\$0.00
Selma	7/26/1995	Thunderstorm Wind	0 kts.	0	0	\$2,000.00	\$0.00
Selma	5/24/1996	Thunderstorm Wind	50 kts.	0	0	\$10,000.00	\$2,000.00
Selma	9/16/1996	Thunderstorm Wind	50 kts.	0	0	\$10,000.00	\$2,000.00
Orrville	2/21/1997	Thunderstorm Wind	55 kts.	0	0	\$15,000.00	\$2,000.00

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<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Magnitude</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Selma	4/22/1997	Thunderstorm Wind	50 kts.	0	0	\$5,000.00	\$0.00
Selma	4/22/1997	Thunderstorm Wind	55 kts.	0	1	\$10,000.00	\$0.00
Sardis	4/22/1997	Thunderstorm Wind	50 kts.	0	0	\$5,000.00	\$0.00
Selma	8/18/1997	Thunderstorm Wind	50 kts.	0	0	\$2,000.00	\$0.00
Selma	8/20/1997	Thunderstorm Wind	55 kts.	0	0	\$15,000.00	\$0.00
Selma	6/15/1998	Thunderstorm Wind	50 kts.	0	0	\$10,000.00	\$0.00
Plantersville	6/15/1998	Thunderstorm Wind	50 kts.	0	0	\$10,000.00	\$0.00
Selma	6/16/1998	Thunderstorm Wind	55 kts.	0	0	\$15,000.00	\$0.00
Selma	7/29/1998	Thunderstorm Wind	65 kts.	0	0	\$20,000.00	\$0.00
Selma	8/8/1998	Thunderstorm Wind	50 kts.	0	0	\$5,000.00	\$0.00
Orrville	3/3/1999	Thunderstorm Wind	70 kts.	0	0	\$60,000.00	\$0.00
Selma	4/15/1999	Thunderstorm Wind	50 kts.	0	0	\$0.00	\$0.00
Minter	4/15/1999	Thunderstorm Wind	50 kts.	0	0	\$0.00	\$0.00
Selma	8/2/1999	Thunderstorm Wind	60 kts.	0	0	\$8,000.00	\$0.00
Minter	8/25/1999	Thunderstorm Wind	55 kts.	0	0	\$5,000.00	\$0.00
Salem	1/9/2000	Thunderstorm Wind	50 kts. E	0	0	\$2,000.00	\$0.00
Selma	3/19/2000	Thunderstorm Wind	55 kts. E	0	0	\$5,000.00	\$0.00
Pinebelt	4/2/2000	Thunderstorm Wind	75 kts. E	0	0	\$15,000.00	\$0.00
Selma	4/3/2000	Thunderstorm Wind	60 kts. E	0	0	\$10,000.00	\$0.00
Selma	8/10/2000	Thunderstorm Wind	50 kts. E	0	0	\$4,000.00	\$0.00
Safford	2/21/2001	Thunderstorm Wind	60 kts. E	0	0	\$3,000.00	\$0.00
Countywide	3/2/2001	Thunderstorm Wind	50 kts. E	0	0	\$4,000.00	\$0.00
Selma	6/14/2001	Thunderstorm Wind	50 kts. E	0	0	\$2,000.00	\$0.00
Safford	10/13/2001	Thunderstorm Wind	50 kts. E	0	0	\$1,000.00	\$0.00
Selma	4/7/2003	Thunderstorm Wind	55 kts. EG	0	0	\$10,000.00	\$0.00
Minter	4/7/2003	Thunderstorm Wind	50 kts. EG	0	0	\$5,000.00	\$0.00

**Dallas County, Alabama Hazard Mitigation Plan  
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<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Magnitude</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Selma	6/12/2003	Thunderstorm Wind	50 kts. EG	0	0	\$25,000.00	\$0.00
Selma	7/29/2003	Thunderstorm Wind	50 kts. EG	0	0	\$13,000.00	\$0.00
Minter	8/4/2003	Thunderstorm Wind	50 kts. EG	0	0	\$1,000.00	\$0.00
Orrville	4/7/2004	Thunderstorm Wind	60 kts. EG	0	0	\$2,000.00	\$0.00
Orrville	10/19/2004	Thunderstorm Wind	50 kts. EG	0	0	\$2,000.00	\$0.00
Countywide	3/7/2005	Thunderstorm Wind	53 kts. EG	0	0	\$13,000.00	\$0.00
Minter	4/30/2005	Thunderstorm Wind	55 kts. EG	0	0	\$55,000.00	\$0.00
Orrville	7/19/2006	Thunderstorm Wind	50 kts. EG	0	0	\$20,000.00	\$0.00
Minter	7/19/2006	Thunderstorm Wind	60 kts. EG	0	0	\$15,000.00	\$0.00
Selma	8/11/2006	Thunderstorm Wind	50 kts. EG	0	0	\$2,000.00	\$0.00
Selma	8/15/2006	Thunderstorm Wind	50 kts. EG	0	0	\$4,000.00	\$0.00
Selma Selfield Airport	4/14/2007	Thunderstorm Wind	50 kts. EG	0	0	\$2,000.00	\$0.00
Selma	6/27/2007	Thunderstorm Wind	50 kts. EG	0	0	\$2,000.00	\$0.00
Selma	8/24/2007	Thunderstorm Wind	50 kts. EG	0	0	\$5,000.00	\$0.00
Selma	10/22/2007	Thunderstorm Wind	50 kts. EG	0	0	\$10,000.00	\$0.00
Safford	6/28/2008	Thunderstorm Wind	39 kts. EG	0	0	\$500.00	\$0.00
Selma	6/28/2008	Thunderstorm Wind	39 kts. EG	0	0	\$500.00	\$0.00
Central Mills	6/29/2008	Thunderstorm Wind	45 kts. EG	0	0	\$500.00	\$0.00
Polk	6/29/2008	Thunderstorm Wind	50 kts. EG	0	0	\$3,000.00	\$0.00
Potter	7/22/2008	Thunderstorm Wind	50 kts. EG	0	0	\$1,000.00	\$0.00
Selma Selfield Airport	2/18/2009	Thunderstorm Wind	61 kts. EG	0	0	\$140,000.00	\$0.00
Manila	2/18/2009	Thunderstorm Wind	52 kts. EG	0	0	\$30,000.00	\$0.00
Martin	2/27/2009	Thunderstorm Wind	50 kts. EG	0	0	\$1,000.00	\$0.00
Plantersville	3/26/2009	Thunderstorm Wind	43 kts. EG	0	0	\$1,000.00	\$0.00
Selma	4/5/2009	Thunderstorm Wind	50 kts. EG	0	0	\$1,000.00	\$0.00
Selma	7/27/2009	Thunderstorm Wind	55 kts. EG	0	0	\$23,000.00	\$0.00

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Location	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Selma	7/28/2009	Thunderstorm Wind	39 kts. EG	0	0	\$1,000.00	\$0.00
Sardis	10/24/2010	Thunderstorm Wind	60 kts. EG	0	0	\$2,000.00	\$0.00
Western Junction	10/24/2010	Thunderstorm Wind	60 kts. EG	0	0	\$10,000.00	\$0.00
Burnsville	10/24/2010	Thunderstorm Wind	60 kts. EG	0	0	\$4,000.00	\$0.00
Potter	3/9/2011	Thunderstorm Wind	50 kts. EG	0	0	\$0.00	\$0.00
Selma Selfield Airport	4/4/2011	Thunderstorm Wind	50 kts. EG	0	0	\$9,000.00	\$0.00
Summerfield	4/11/2011	Thunderstorm Wind	50 kts. EG	0	0	\$1,000.00	\$0.00
Selma	4/11/2011	Thunderstorm Wind	50 kts. EG	0	0	\$2,000.00	\$0.00
Selma Skyharbor Airport	4/15/2011	Thunderstorm Wind	50 kts. MG	0	0	\$3,000.00	\$0.00
Marion Junction	7/10/2011	Thunderstorm Wind	52 kts. EG	0	0	\$10,000.00	\$0.00
Selma Skyharbor Airport	8/10/2011	Thunderstorm Wind	50 kts. EG	0	0	\$1,000.00	\$0.00
Sardis	8/10/2011	Thunderstorm Wind	50 kts. EG	0	0	\$1,000.00	\$0.00
Potter	8/22/2011	Thunderstorm Wind	45 kts. EG	0	0	\$12,000.00	\$0.00
Selma	12/22/2011	Thunderstorm Wind	50 kts. EG	0	0	\$1,000.00	\$0.00
Selma Skyharbor Airport	4/5/2012	Thunderstorm Wind	50 kts. EG	0	0	\$0.00	\$0.00
Selma	7/4/2012	Thunderstorm Wind	39 kts. EG	0	0	\$10,000.00	\$0.00
Selma	9/3/2012	Thunderstorm Wind	60 kts. EG	0	0	\$0.00	\$0.00
Sardis	12/10/2012	Thunderstorm Wind	50 kts. EG	0	0	\$0.00	\$0.00
Beloit	6/17/2013	Thunderstorm Wind	50 kts. EG	0	0	\$0.00	\$0.00
Selma	6/17/2013	Thunderstorm Wind	50 kts. EG	0	0	\$0.00	\$0.00
Selma	6/17/2013	Thunderstorm Wind	50 kts. EG	0	0	\$0.00	\$0.00
Summerfield	6/17/2013	Thunderstorm Wind	55 kts. EG	0	0	\$0.00	\$0.00
Selma	6/28/2013	Thunderstorm Wind	55 kts. EG	0	0	\$0.00	\$0.00
Selma	7/23/2013	Thunderstorm Wind	60 kts. EG	0	0	\$0.00	\$0.00
Totals:				0	16	\$831,500.00	\$6,000.00

**Source: NOAA Storm Events Database**  
**<https://www.ncdc.noaa.gov/stormevents/>**  
**Last Accessed on 3/23/2015**

The entire county has the same risk for these hazards. These events have occurred throughout the county. Often these events have a small area of impact, such as hail or lightning. Countywide occurrences may also occur during spring and summer when large storm systems move through the state. The risk level assigned to these hazards is high.

*Probability of Occurrence*

All of these events have occurred historically in Dallas County. These events have resulted in property and crop damage on numerous occasions. The county rates these events as having a high probability of occurrence.

**L. Tornado**

*Hazard Classification:* High

The National Weather Service defines a tornado as, “A violently rotating column of air in contact with the ground and extending from the base of a thunderstorm

<http://www.srh.noaa.gov/oun/severewx/glossary4.php#Tornado>.” The occurrence of tornadoes cannot be predicted, but past occurrences and basic weather patterns can be used to identify areas more susceptible.

Table 4.18 shows the Fujita-Pearson scale. This scale is used to classify the intensity of tornadoes. Historically, the strongest tornado the county has experienced has been an EF-3.

**Table 4.18 Fujita- Pearson Tornado Scale**

FUJITA SCALE			DERIVED EF SCALE		OPERATIONAL EF SCALE	
F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

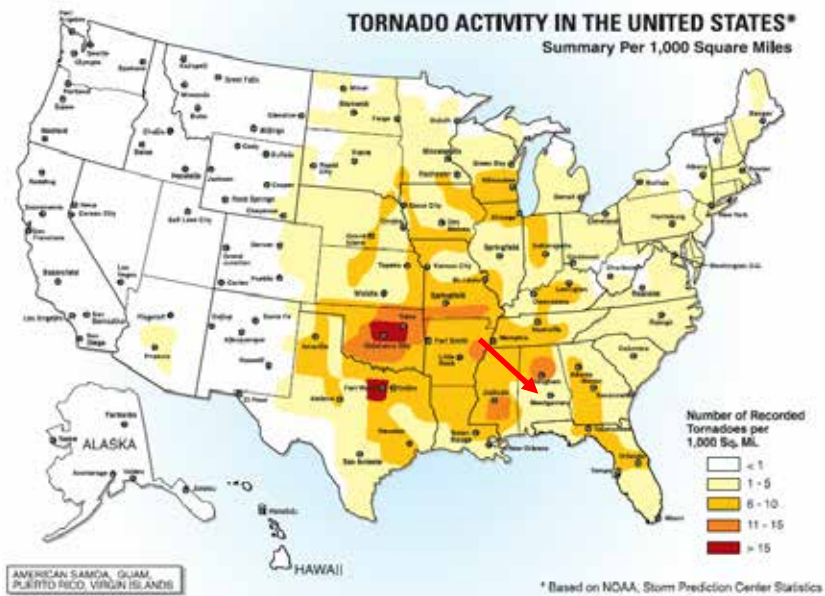
Source: <http://www.spc.noaa.gov/faq/tornado/ef-scale.html>

Last Accessed on 2/9/2015

Figure 4.17 shows tornado activity per 1,000 square miles, Dallas County falls in the one to five tornadoes per square mile range. The United States Wind Zone map (Figure 4.18) shows how intense and frequent strong winds occur across the United States. Dallas County lies in Wind Zone III, which has design wind speed of 200 miles per hour. Design wind speed is the wind speed that homes should be constructed to withstand. Locations within this zone have historically had the most intense and frequent occurrences of tornadoes and strong winds.



Figure 4.17 Tornadoes per 1,000 square miles.



Source: Federal Emergency Management Agency  
<http://www.fema.gov/pdf/library/2ismsec1.pdf>  
Last accessed on 07/27/2014

Figure 4.18 Wind Zones in the United States

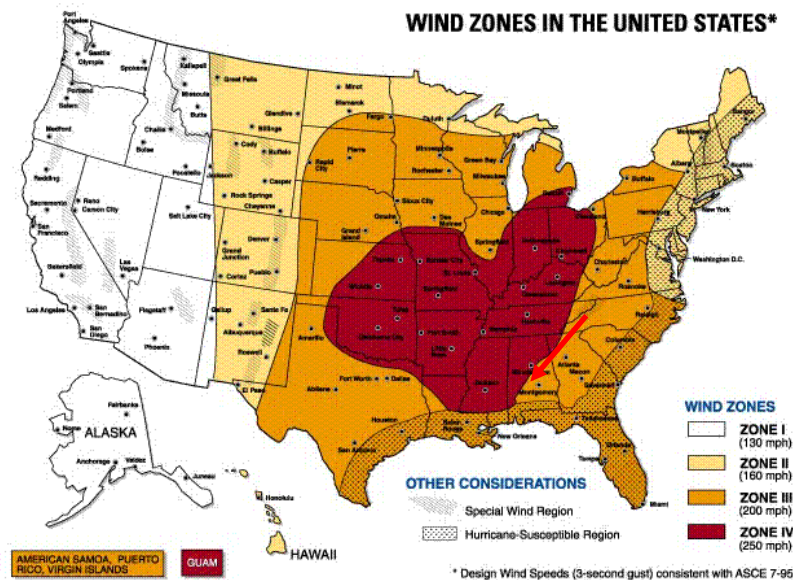


Figure 1.2 Wind zones in the United States

Source: Federal Emergency Management Agency  
<http://www.fema.gov/graphics/fima/tsfsm01.gif>  
Last accessed on 07/27/2014

**Dallas County, Alabama Hazard Mitigation Plan  
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The entire county is at the same risk for tornadoes. F3 is the highest rating on records of historical occurrences. EF 5 strength tornadoes are possible in the county. There is also the possibility of long track tornadoes occurring.

Tornadoes bring damage and devastation to affected areas. Significant property damage is possible. Utility infrastructure is often damaged or destroyed leading to extended outages. Economically important businesses and industries can be destroyed leading to unemployment. Injuries and death are possible. Hospitals can be overwhelmed with injured residents.

*Historical Occurrences*

There are 36 tornadoes on record for Dallas County. These occurrences range in magnitude from F0-F3. Five deaths and 65 injuries have resulted from these events. Over \$17 million of property damage and \$60,000 of crop damage have occurred. Table 4.19 provides a listing of the occurrences in the county.

**Table 4.19 Tornado Occurrences in Dallas County**

<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Magnitude</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Dallas County	1/8/1953	Tornado	F1	0	0	\$25,000.00	\$0.00
Dallas County	4/21/1955	Tornado	F2	0	1	\$25,000.00	\$0.00
Dallas County	9/18/1957	Tornado	F0	0	0	\$25,000.00	\$0.00
Dallas County	11/18/1957	Tornado	F1	0	0	\$25,000.00	\$0.00
Dallas County	5/20/1959	Tornado	F1	0	0	\$250.00	\$0.00
Dallas County	7/1/1959	Tornado	F2	0	3	\$25,000.00	\$0.00
Dallas County	11/4/1959	Tornado		0	0	\$250.00	\$0.00
Dallas County	4/2/1970	Tornado	F2	0	0	\$250,000.00	\$0.00
Dallas County	4/22/1972	Tornado	F2	0	0	\$25,000.00	\$0.00
Dallas County	3/12/1976	Tornado	F1	0	1	\$250,000.00	\$0.00
Dallas County	5/1/1978	Tornado	F2	0	0	\$2,500,000.00	\$0.00
Dallas County	4/9/1979	Tornado	F0	0	0	\$25,000.00	\$0.00
Dallas County	11/25/1979	Tornado	F0	0	0	\$0.00	\$0.00
Dallas County	9/1/1980	Tornado	F2	0	0	\$250,000.00	\$0.00
Dallas County	3/30/1981	Tornado	F1	0	0	\$25,000.00	\$0.00
Dallas County	3/30/1981	Tornado	F1	0	0	\$2,500.00	\$0.00
Dallas County	12/6/1983	Tornado	F3	1	19	\$2,500,000.00	\$0.00
Dallas County	5/3/1984	Tornado	F2	0	0	\$2,500,000.00	\$0.00
Dallas County	7/1/1992	Tornado	F0	0	0	\$0.00	\$0.00
Marion Junction	3/6/1996	Tornado	F3	4	40	\$8,000,000.00	\$50,000.00
Orrville	3/18/1996	Tornado	F1	0	0	\$120,000.00	\$10,000.00
Marion Junction	4/18/1998	Tornado	F0	0	0	\$0.00	\$0.00
Tilden	4/7/2003	Tornado	F0	0	0	\$1,000.00	\$0.00
Marion Junction	4/7/2003	Tornado	F0	0	0	\$0.00	\$0.00

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Location	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Safford	11/24/2004	Tornado	F0	0	0	\$18,000.00	\$0.00
Marion Junction	11/24/2004	Tornado	F1	0	1	\$100,000.00	\$0.00
Selma	11/24/2004	Tornado	F0	0	0	\$22,000.00	\$0.00
Selma	11/28/2005	Tornado	F0	0	0	\$28,000.00	\$0.00
Crumptonia	3/1/2007	Tornado	EF1	0	0	\$250,000.00	\$0.00
Potter	2/17/2008	Tornado	EF2	0	0	\$350,000.00	\$0.00
Summerfield	4/15/2011	Tornado	EF1	0	0	\$20,500.00	\$0.00
Marion Junction	4/15/2011	Tornado	EF1	0	0	\$25,000.00	\$0.00
Beloit	4/15/2011	Tornado	EF1	0	0	\$70,000.00	\$0.00
Tyler	4/15/2011	Tornado	EF1	0	0	\$45,000.00	\$0.00
Selma Selfield Airport	12/22/2011	Tornado	EF0	0	0	\$30,000.00	\$0.00
Summerfield	3/2/2012	Tornado	EF1	0	0	\$0.00	\$0.00
Totals				5	65	\$17,532,500.00	\$60,000.00

Source: NOAA Storm Events Database  
<https://www.ncdc.noaa.gov/stormevents/>  
 Last Accessed on 3/23/2015

Since the last mitigation plan update, there have been numerous tornadoes in Dallas County.

The following is a brief description of these events:

- Summerfield: On April 15, 2011 a tornado briefly touchdown along County Road 272 where it uprooted several hardwood and softwood trees. The fallen trees caused significant damage to one mobile home. Winds were estimated around 90 mph.
- Marion Junction: On April 15, 2011 A tornado touched down just north of County Road 58 and lifted northeast at County Road 944. A metal warehouse sustained considerable damage to its outer walls and roof.
- Beloit- Selma Skyharbor Airport: On April 15, 2011 a tornado touched down east of County Road 189 and north of County Road 205. The tornado traveled east-northeast for a total path length of 1.64 miles over pasture land. This touchdown uprooted and snapped hundreds of hardwood trees and destroyed a large cattle feeder. Winds were estimated around 105 mph.



Source: National Weather Service, Birmingham  
[http://www.srh.noaa.gov/bmx/?n=tornadodb\\_main](http://www.srh.noaa.gov/bmx/?n=tornadodb_main)  
Last Accessed: 3/25/2015



- Tyler: On April 15, 2011 a tornado touched down in Dallas County near the intersection of Dallas County Roads 461 and 460. The tornado moved northeastward and crossed the Alabama River and entered Autauga County. The tornado then crossed County Road 1 and Highway 14 near Mulberry and lifted just after it crossed County Road 45. Hundreds of trees were snapped of or were uprooted along the path. Several structures were damaged. Winds were estimated around 130 mph.
- Selma Selfield Airport/Manila: On December 22, 2011 a tornado touched down approximately 6 miles east of Selma along County Road 306 where tree damage minor occurred, along with roof damage to two mobile homes. The tornado then traveled further to the northeast, to Garner and Harville Roads where several soft and hardwood trees were damage or snapped. There was also some structure damage, with one outbuilding destroyed and one mobile home that was shifted off its foundation blocks. The tornado lifted shortly after, near River Road, with evidence of some additional tree damage.



Source: National Weather Service, Birmingham  
[http://www.srh.noaa.gov/bmx/?n=tornadodb\\_main](http://www.srh.noaa.gov/bmx/?n=tornadodb_main)  
Last Accessed: 3/25/2015



#### *Probability of Occurrence*

Over the span of 61 years there have been 36 tornado occurrences, leading to a 59% chance of a tornadic event occurring each year. Based on the information presented, tornadoes are rated as having a high probability of occurrence.

#### **M. Tsunami**

*Hazard Classification:* No Risk

“A tsunami is a sea wave of local or distant origin that results from large-scale seafloor displacements associated with large earthquakes, major submarine slides, or exploding volcanic islands ([http://earthquake.usgs.gov/image\\_glossary/tsunami.html](http://earthquake.usgs.gov/image_glossary/tsunami.html)).” Tsunamis occur predominately in the Pacific Ocean and more specifically as a result of seismic activity in the “Ring of Fire” of the Pacific Rim. Dallas County is not at risk of this hazard.

## **N. Volcano**

*Hazard Classification:* No Risk

Volcanoes are accumulations of volcanic materials erupted through volcanic vents on Earth's surface. Within the United States the risk from volcanic activity is only prevalent in the Pacific Northwest, Alaska, and Hawaii. The state of Alabama is not identified as being at risk for volcanic activity.

## **O. Wildfire**

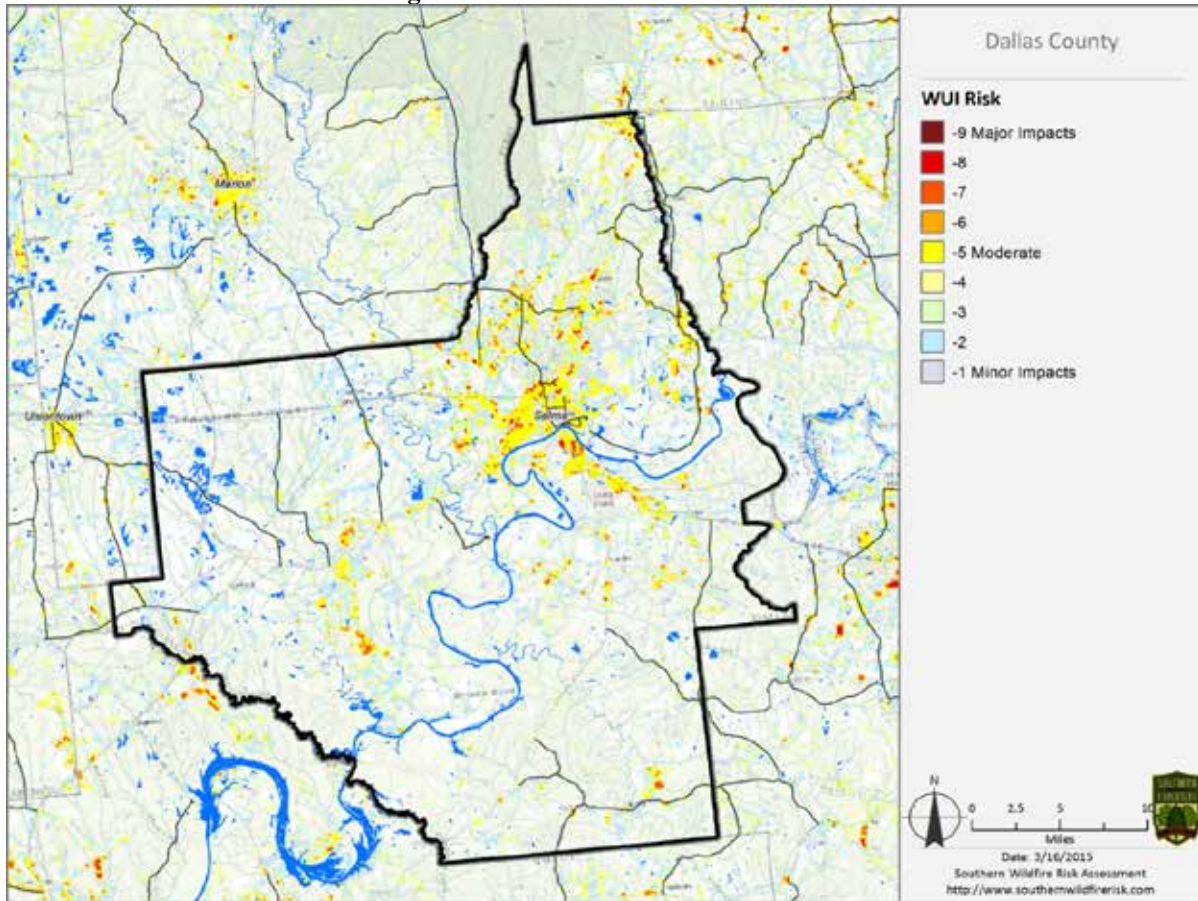
*Hazard Classification:* Medium

Wildfires are responsible for burning thousands of acres of land each year. These fires are uncontrolled and in dry conditions can spread rapidly through the surrounding vegetation and in some cases structures. There are two types of wildfires; these are wildland fires and urban-wildland interface fires. Wildland fires are those fires that occur in areas where the only development is utilities or infrastructure. Urban-wildland fires occur in areas where development occurs near or within the vegetative cover.

Dallas County used the *Southern Wildlife Risk Assessment Summary Report – Dallas* to analyze the county's susceptibility to wildfires. Figure 4.19 illustrates the Wildland Urban Interface (WUI) Risk Index layer. The WUI Risk is a rating of the potential impact a wildfire would have on people and their homes. Table 4.20 shows that approximately 29,210 acres of the land area in the county is classified as experiencing moderate or above impacts from WUI fires.



Figure 4.19 Wildland Urban Interface Risk



Source: *Southern Wildlife Risk Assessment Summary Report – Dallas*  
Report generated 3/16/2015

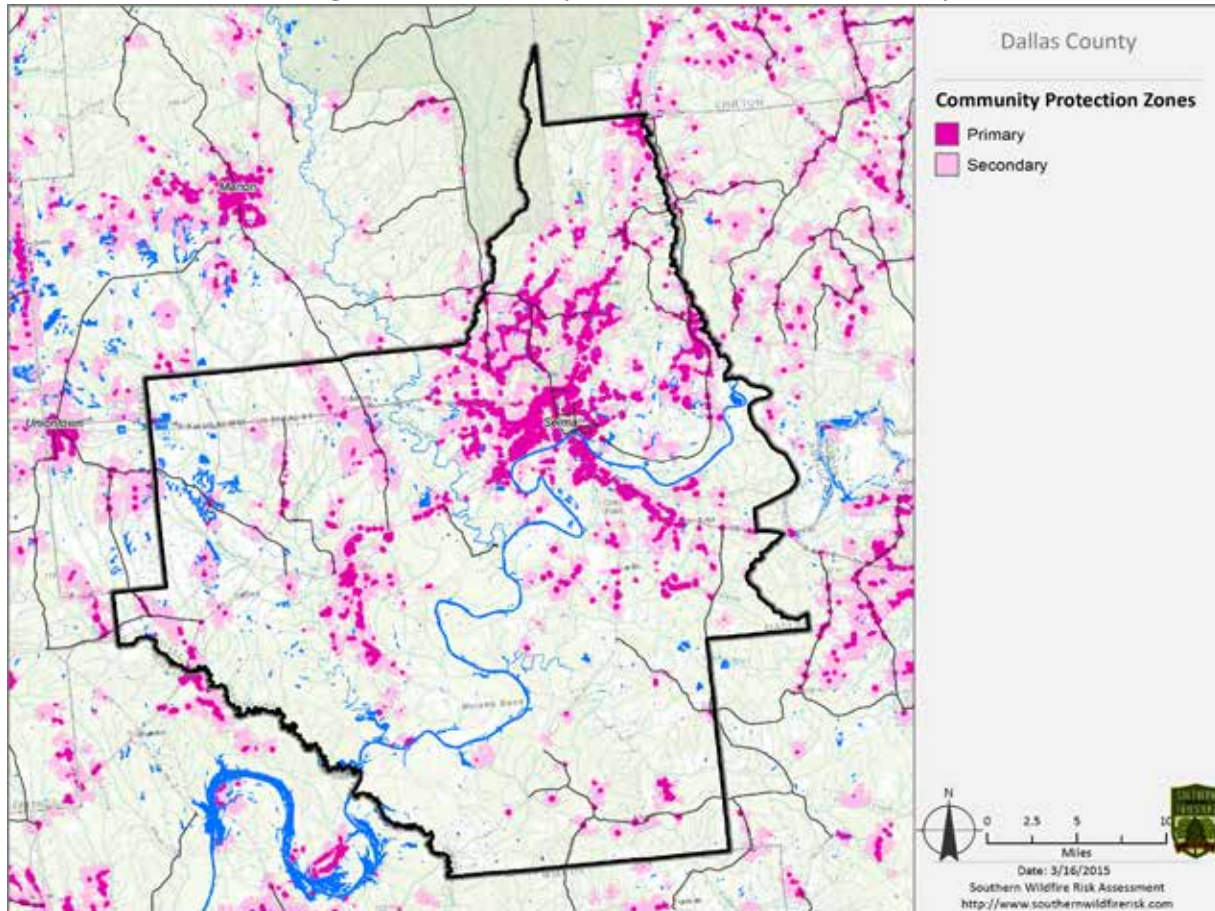
Table 4.20 Wildland Urban Interface Risk Index for Dallas County

Class	Acres	Percent
-9 Major Impacts	4	0.0%
-8	882	0.6%
-7	2,608	1.8%
-6	3,678	2.5%
-5 Moderate	22,038	15.0%
-4	29,268	20.0%
-3	15,993	10.9%
-2	46,077	31.5%
-1 Minor Impacts	25,928	17.7%
<b>Total</b>	<b>146,477</b>	<b>100.0%</b>

Source: *Southern Wildlife Risk Assessment Summary Report – Dallas*  
Report generated 3/16/2015

Figure 4.20 depicts Community Protection Zones (CPZ) in Dallas County. These zones represent those areas considered the highest priority for mitigation planning activities. These zones are based on population densities and surrounding fire behavior potential. Secondary CPZs are designated using rate of spread data to determine the areas that are within a 2-hour fire spread distance. It can be seen that primary CPZs are primarily designated in incorporated areas. As seen in Table 4.21, approximately 46,361 acres in the county is in a primary CPZ.

**Figure 4.20 Community Protection Zones- Dallas County**



Source: Southern Wildlife Risk Assessment Summary Report – Dallas  
Report generated 3/16/2015

**Table 4.21 Acres in Primary and Secondary CPZs for Dallas County**

	Class	Acres	Percent
	Primary	46,361	36.3%
	Secondary	81,493	63.7%
	<b>Total</b>	<b>127,854</b>	<b>100.0%</b>

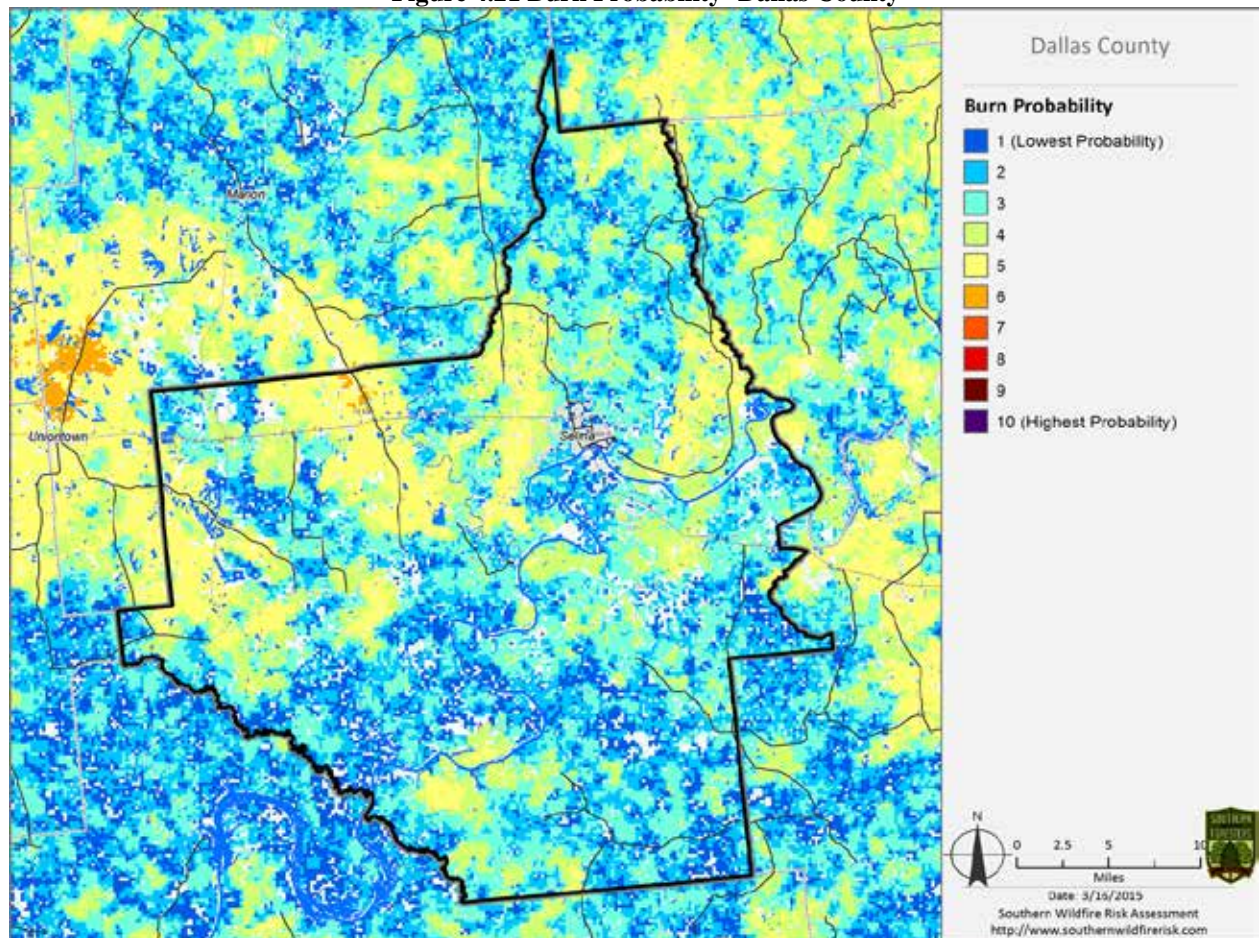
Source: Southern Wildlife Risk Assessment Summary Report – Dallas  
Report generated 3/16/2015



The county experiences a number of wildfires each year. It is possible that the county could experience multiple large wildfires that could char between 75-80% of the county. The impacts of wildfires can vary. The fires are unpredictable and fast spreading leading to serious risks to human life. First responders are at a high risk when dealing with these events. Property is at significant risk along with crops and vegetation. Wildlife is affected and can even be killed as a result of these events.

Figure 4.21 shows the burn probability for Dallas County. The burn probability of an area is the probability of an area burning given current landscape conditions, percentile weather, historical ignition patterns and historical fire prevention and suppression efforts. The areas with the highest burn probability are located in the northern half of the county. Table 4.22 shows that only a small area of 668 acres has over a moderate burn probability. Based on this information, this hazard is rated as having a medium probability of an occurrence causing major damage.

**Figure 4.21 Burn Probability- Dallas County**



Source: *Southern Wildlife Risk Assessment Summary Report – Dallas*  
Report generated 3/16/2015

**Table 4.22 Acres in Each Burn Probability Category for Dallas County**

	Class	Acres	Percent
	1	63,951	11.7%
	2	132,889	24.2%
	3	174,235	31.8%
	4	99,972	18.2%
	5	76,614	14.0%
	6	668	0.1%
	7	0	0.0%
	8	0	0.0%
	9	0	0.0%
	10	0	0.0%
	<b>Total</b>	<b>548,329</b>	<b>100.0%</b>

*Source: Southern Wildlife Risk Assessment Summary Report – Dallas*  
**Report generated 3/16/2015**

#### *Historical Occurrences*

The Alabama Forestry Commission-Dallas County Office provided a number of occurrences and acres burned for the years 2010-2014 for fires they responded to during that time period. Over the five year period the Forestry Commission responded to 68 fires, which burned 351 acres.

Information from the Alabama Forestry Commission gives a more detailed look at occurrences in the county. Table 4.23 provides occurrence information for the years 2010- September 2015.

**Table 4.23 Dallas County Fire Occurrences 2010-September 2015**

<b>Year</b>	<b>Number of Fires</b>	<b>Acres Burned</b>	<b>Average Number of Acres Burned</b>
2010	61	269.6	4.4
2011	46	369.9	8.0
2012	15	57.3	3.8
2013	5	17.5	3.5
2014	18	415.2	23.1
2015 (through 9/15)	14	159	11.4
<b>Totals</b>	<b>159</b>	<b>1288.5</b>	<b>8.1</b>

#### *Probability of Occurrence*

Wildfires occur in Dallas County every year. The extent and intensity of these fires cannot be predicted. The Hazard Mitigation Planning Committee assigns a medium probability to this hazard.

## **P. Winter Storms**

*Hazard Classification:* Medium

Winter storms can encompass any of the following:

- **Blizzard:** Winds of 35 mph or more with snow and blowing snow reducing visibility to less than ¼ mile for 3 hours or more.
- **Blowing snow:** Wind-driven snow that reduces visibility. Blowing snow may be falling snow and/or snow on the ground picked up by the wind.
- **Snow squalls:** Brief, intense snow showers accompanied by strong, gusty winds. Accumulation may be significant.
- **Snow showers:** Snow falling at varying intensities for brief periods of time. Some accumulation is possible.
- **Snow flurries:** Light snow falling for short durations with little or no accumulation.
- **Freezing rain:** Frozen precipitation melts in warm air, as rain falls and freezes on cold surfaces as a sheet of ice.
- **Sleet:** Frozen precipitation melts and refreezes into sleet before hitting ground

The National Weather Service monitors winter weather conditions and may issue the following type of alerts:

- **Winter Storm Outlook** - Winter storm conditions are possible in the next 2 to 5 days.
- **Winter Weather Advisory** - Winter weather conditions are expected to cause significant inconveniences and may be hazardous. When caution is used, these situations should not be life threatening.
- **Winter Storm Watch** - Winter storm conditions are possible within the next 36 to 48 hours. People in a watch area should review their winter storm plans and stay informed about weather conditions.
- **Winter Storm Warning** - Life-threatening, severe winter conditions have begun or will begin within 24 hours. People in a warning area should take precautions immediately.

Dallas County is at risk for winter weather conditions. These conditions are on an occasional basis and generally are light snowfall and sleet. The entire county is at the same risk for this hazard. The county could experience blizzard conditions that result in a foot or more of snow.

Dallas County is not accustomed to winter weather conditions. Snow can immobilize the county, stranding commuters and disrupting emergency and medical services. Large accumulations of snow can cause roofs to collapse and knock down trees and power lines. Homes and farms may be isolated for days and unprotected livestock may be lost. Due to its climate, many homes in the county are not insulated to the extent needed in winter weather situations, putting residents at risk for frostbite and hypothermia. Also, crop damage is a prime economic concern in the county. Winter weather often occurs in the spring leading to loss of crops.

Accumulations of ice can bring down trees and topple utility poles and communication towers. Ice can disrupt communications and power for days while utility companies repair extensive damage. Even small accumulations of ice can be extremely dangerous to motorists and

pedestrians. Bridges and overpasses are particularly dangerous because they freeze before other surfaces.

#### *Historical Occurrences*

There are seven occurrences of winter storm related weather on record for Dallas County. These occurrences have led to \$15,000.00 in property damage and \$20,000.00 in crop damage.

**Table 4.24 Winter Weather Occurrences in Dallas County**

Location	Date	Type	Deaths	Injuries	Property Damage	Crop Damage
Dallas (ZONE)	12/18/1996	Winter Storm	0	0	\$15,000.00	\$20,000.00
Dallas (ZONE)	1/2/2002	Heavy Snow	0	0	\$0.00	\$0.00
Dallas (ZONE)	1/19/2008	Heavy Snow	0	0	\$0.00	\$0.00
Dallas (ZONE)	2/12/2010	Heavy Snow	0	0	\$0.00	\$0.00
Dallas (ZONE)	12/15/2010	Winter Weather	0	0	\$0.00	\$0.00
Dallas (ZONE)	1/9/2011	Ice Storm	0	0	\$0.00	\$0.00
Dallas (ZONE)	1/28/2014	Winter Weather	0	0	\$0.00	\$0.00
Totals:			0	0	\$15,000.00	\$20,000.00

Source: NOAA Storm Events Database  
<https://www.ncdc.noaa.gov/stormevents/>  
Last Accessed on 3/23/2015

#### *Probability of Occurrence*

Dallas County is not at high risk for winter storms. The county experiences an event on the average of once every 2-3 years. The probability of an event causing major damage is ranked as medium (10-50 years).

#### **4.2 Dallas County Risk Assessment Summary Tables**

The following pages provide a set of tables summarizing the information provided in the Risk Assessment.

**Table 4.25 Dallas County Hazard Summary Table**

<b>Hazard</b>	<b>Risk</b>	<b>Orrville</b>	<b>Selma</b>	<b>Valley Grande</b>	<b>Source</b>	<b>Reason</b>
<b>Avalanche</b>	NR	NR	NR	NR	National Avalanche Center	No risk of avalanches.
<b>Coastal Erosion</b>	NR	NR	NR	NR	FEMA Coastal Erosion Hazards Reports	Dallas County is an inland area
<b>Dam Failure</b>	M	M	M	M	USACE National Inventory of Dams	Flooding concerns, high & significant risk dams
<b>Drought</b>	H	H	H	H	United States Drought Monitor NOAA National Climatic Data Center	Historic incidents
<b>Earthquake</b>	L	L	L	L	Alabama Geologic Survey	Proximity to Southeast Seismic zones
<b>Extreme Temperatures</b>	H	H	H	H	National Oceanic and Atmospheric Administration	Historic incidents
<b>Flooding</b>	H	NR-Riverine H-Flash	H	H	National Oceanic and Atmospheric Administration Flood Insurance Study for Dallas County, Alabama National Flood Insurance Program Maps	Historic incidents with damage Flood plain areas

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<b>Hazard</b>	<b>Risk</b>	<b>Orrville</b>	<b>Selma</b>	<b>Valley Grande</b>	<b>Source</b>	<b>Reason</b>
<b>Hurricanes/Tropical Storms</b>	M	M	M	M	National Hurricane Center	Historic incidents with damage
<b>Landslides</b>	L	L	L	L	Alabama Geologic Survey	Susceptible areas
<b>Land Subsidence</b>	L	L	L	L	Alabama Geologic Survey	Susceptible areas
<b>Severe Storms (Hail, High Wind, Lightning, Thunderstorms)</b>	H	H	H	H	National Weather Service Storm Database	Historic incidents with damage
<b>Tornadoes</b>	H	H	H	H	NWS Tornado Database	Historic incidents with damage
<b>Tsunami</b>	NR	NR	NR	NR	FEMA	Dallas County is an inland area
<b>Volcano</b>	NR	NR	NR	NR	FEMA	No volcanic activity nearby
<b>Wildfire</b>	H	H	H	H	Southern Wildfire Risk Assessment	Historic incidents
<b>Winter Storms</b>	M	M	M	M	NOAA National Climatic Data Center	Historic incidents

**RISK: NR= No Risk, L=Low, M=Medium, H=High**

Table compiled by the Alabama Tombigbee Regional Commission  
Information from the Risk Assessment  
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**Table 4.26 Dallas County Past Occurrences Summary Table**

<b>Hazard</b>	<b>Unincorporated</b>	<b>Orrville</b>	<b>Selma</b>	<b>Valley Grande</b>
<b>Avalanche</b>				
<b>Coastal Erosion</b>				
<b>Dam Failure</b>	None	None	None	None
<b>Drought</b>	30 time periods	30 time periods	30 time periods	30 time periods
<b>Earthquake</b>	None	None	None	None
<b>Extreme Temperatures</b>				
<i>Heat</i>	6	6	6	6
<i>Cold</i>	4	4	4	4
<b>Flood</b>				
<i>Riverine</i>	24		24	
<i>Flash</i>	7	5	10	5
<b>Hurricane/Tropical Systems</b>	6	6	6	6
<b>Landslides</b>	3	0	1	1
<b>Land Subsidence</b>	5	0	0	4
<b>Severe Storms</b>				
<i>Hail</i>	60	11	23	0
<i>Lightning</i>	1	0	1	0
<i>High Wind</i>	0	0	0	0
<i>Thunderstorms</i>	118	5	45	0
<b>Tornado</b>	32	1	3	0
<b>Tsunami</b>				
<b>Volcano</b>				
<b>Wildfire</b>	Not Available	Not Available	Not Available	Not Available
<b>Winter Storms</b>	7	7	7	7

Table compiled by the Alabama Tombigbee Regional Commission  
Information from the Risk Assessment  
August 15, 2015



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**Table 4.27 Dallas County Damage Summary Table**

<b>Hazard</b>	<b>Countywide</b>	<b>Unincorporated</b>	<b>Orrville</b>	<b>Selma</b>	<b>Valley Grande</b>
<b>Avalanche</b>					
<b>Coastal Erosion</b>					
<b>Dam Failure</b>					
<b>Drought</b>	Not Available	Not Available	Not Available	Not Available	Not Available
<b>Earthquake</b>					
<b>Extreme Temperatures</b>					
Heat	Not Available	Not Available	Not Available	Not Available	Not Available
Cold	\$1,000,000	\$0	\$0	\$0	\$0
<b>Flood</b>					
Riverine	\$122,000	\$85,000	\$0	\$1,126,514	\$0
Flash					
<b>Hurricane/Tropical Systems</b>	\$847,000	Not Available	Not Available	Not Available	Not Available
<b>Land Slide</b>	Not Available	Not Available	Not Available	Not Available	Not Available
<b>Land Subsidence</b>	Not Available	Not Available	Not Available	Not Available	Not Available
<b>Severe Storms</b>					
Hail	\$0	\$116,000	\$111,000	\$72,000	\$0
Lightning	\$0	\$85,000	\$0	\$15,000	\$0
High Wind	\$0	\$0	\$0	\$0	\$0
Thunderstorms	\$0	\$251,000	\$101,000	\$475,500	\$0
<b>Tornado</b>	\$0	\$17,337,500	\$130,000	\$80,000	\$0
<b>Tsunami</b>					
<b>Volcano</b>					
<b>Wildfire</b>	Not Available	Not Available	Not Available	Not Available	Not Available
<b>Winter Storms</b>	\$35,000	Not Available	Not Available	Not Available	Not Available

Table compiled by the Alabama Tombigbee Regional Commission  
Information from the Risk Assessment  
August 15, 2015

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**4.28 Dallas County Probability of Occurrence Summary Table**

<b>Hazard</b>	<b>Countywide</b>	<b>Unincorporated</b>	<b>Orrville</b>	<b>Selma</b>	<b>Valley Grande</b>
<b>Avalanche</b>					
<b>Coastal Erosion</b>					
<b>Dam Failure</b>	Low	Low	Low	Low	Low
<b>Drought</b>	High	High	High	High	High
<b>Earthquake</b>					
<b>Extreme Temperatures</b>	Medium	Medium	Medium	Medium	Medium
<b>Heat</b>					
<b>Cold</b>					
<b>Flood</b>	Medium	Medium	Low	Medium	Medium
<b>Riverine</b>					
<b>Flash</b>					
<b>Hurricane/Tropical Systems</b>	Medium	Medium	Medium	Medium	Medium
<b>Landslide</b>	Low	Low	Low	Low	Low
<b>Land Subsidence</b>	Low	Low	Low	Low	Low
<b>Severe Storms</b>	High	High	High	High	High
<b>Hail</b>					
<b>Lightning</b>					
<b>High Wind</b>					
<b>Thunderstorms</b>					
<b>Tornado</b>	High	High	High	High	High
<b>Tsunami</b>					
<b>Volcano</b>					
<b>Wildfire</b>	Medium	Medium	Medium	Medium	Medium
<b>Winter Storms</b>	Medium	Medium	Medium	Medium	Medium

High: Probability of major damage in the next 1-10 years  
Medium: Probability of major damage in the next 10-50 years  
Low: Probability of major damage in the next 100 years  
Very Low: major damage not expected

**Table compiled by the Alabama Tombigbee Regional Commission  
Information from the Risk Assessment  
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### 4.3 Dallas County Risk Assessment- Overview of Extent and Impact of Identified Hazards

**Table 4.29 Dallas County Impact and Extent Summary**

<b>Hazard</b>	<b>Unincorporated</b>	<b>Orrville</b>	<b>Selma</b>	<b>Valley Grande</b>
<b>Avalanche</b>				
<b>Coastal Erosion</b>				
<b>Dam Failure</b>	Immediate area inundated with food water 6-8 feet deep, death/injury, property damage, wildlife habitats destroyed, livestock killed	Immediate area inundated with food water 6-8 feet deep, death/injury, property damage, wildlife habitats destroyed, livestock killed	Immediate area inundated with food water 6-8 feet deep, death/injury, property damage, wildlife habitats destroyed, livestock killed	Immediate area inundated with food water 6-8 feet deep, death/injury, property damage, wildlife habitats destroyed, livestock killed
<b>Drought</b>	D4 drought, crop loss, public health concern, wildfire susceptibility	D4 drought, crop loss, public health concern, wildfire susceptibility	D4 drought, crop loss, public health concern, wildfire susceptibility	D4 drought, crop loss, public health concern, wildfire susceptibility
<b>Earthquake</b>	3-6 on Richter Scale, Property damage, injury	3-6 on Richter Scale, Property damage, injury	3-6 on Richter Scale, Property damage, injury	3-6 on Richter Scale, Property damage, injury
<b>Extreme Temperatures</b>	Temperatures above 100° or at or below 32°, crop and livestock loss, public health concern	Temperatures above 100° or at or below 32°, crop and livestock loss, public health concern	Temperatures above 100° or at or below 32°, crop and livestock loss, public health concern	Temperatures above 100° or at or below 32°, crop and livestock loss, public health concern
<b>Flood (riverine &amp; flash flood)</b>	8-10" of water, Road closures, property damage, injury or loss of life	8-10" of water, Road closures, property damage, injury or loss of life	8-10" of water, Road closures, property damage, injury or loss of life; Alabama River crests 15 feet above flood stage	8-10" of water, Road closures, property damage, injury or loss of life

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<b>Hazard</b>	<b>Unincorporated</b>	<b>Orrville</b>	<b>Selma</b>	<b>Valley Grande</b>
<b>Hurricane</b>	Category 3-4, Heavy flood and wind damage, loss of life, injuries, temporary loss of utilities, timber loss	Category 3-4, Heavy flood and wind damage, loss of life, injuries, temporary loss of utilities, timber loss	Category 3-4, Heavy flood and wind damage, loss of life, injuries, temporary loss of utilities, timber loss	Category 3-4, Heavy flood and wind damage, loss of life, injuries, temporary loss of utilities, timber loss
<b>Landslide</b>	3-4 acres in size, Road damage, environmental damage	3-4 acres in size, Road damage, environmental damage	3-4 acres in size, Road damage, environmental damage	3-4 acres in size, Road damage, environmental damage
<b>Land Subsidence</b>	Up to 10 meters in size, Property damage			Up to 10 meters in size, Property damage
<b>Severe Storms (Hail, High Wind, Lightning, and Thunderstorms)</b>	Large hail (4-5"), sustained winds over 50 mph for hours, 20-25 lightning strikes per hour, property damage, crop loss, death, injury	Large hail (4-5"), sustained winds over 50 mph for hours, 20-25 lightning strikes per hour, property damage, crop loss, death, injury	Large hail (4-5"), sustained winds over 50 mph for hours, 20-25 lightning strikes per hour, property damage, crop loss, death, injury	Large hail (4-5"), sustained winds over 50 mph for hours, 20-25 lightning strikes per hour, property damage, crop loss, death, injury
<b>Winter Storms</b>	8-12" of snow, blizzard conditions, 3-5" of ice, Tree damage, utility damage, property damage	8-12" of snow, blizzard conditions, 3-5" of ice, Tree damage, utility damage, property damage	8-12" of snow, blizzard conditions, 3-5" of ice, Tree damage, utility damage, property damage	8-12" of snow, blizzard conditions, 3-5" of ice, Tree damage, utility damage, property damage
<b>Tornado</b>	F0-F5 Extensive property damage possible, death, injury	F0-F5 Extensive property damage possible, death, injury	F0-F5 Extensive property damage possible, death, injury	F0-F5 Extensive property damage possible, death, injury
<b>Tsunami</b>				
<b>Volcano</b>				
<b>Wildfire</b>	All 994 square miles of the county affected, Property, timber, and revenue losses, death, injury	All 1 square mile of the town affected, Property, timber, and revenue losses, death, injury	All 14.44 square miles of the city affected, Property, timber, and revenue losses, death, injury	All 33.8 square miles of the city affected, Property, timber, and revenue losses, death, injury

**Table compiled by the Alabama Tombigbee Regional Commission**  
**Information from the Risk Assessment**  
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#### **4.4 Dallas County Vulnerability Assessment- Overview of Hazard Vulnerability and Impact**

##### **DAM FAILURE**

There are 138 dams listed in the NID for Dallas County. Of these dams, five are listed as high risk dams. During a dam failure, a large quantity of water is released which inundates everything in its path. Humans, crops, livestock, and infrastructure can all be affected by the inundation. Due to there not being a comprehensive inventory of dams or their conditions, the population at risk from failure can only be estimated. Using available information, the population at risk for dam failure is minimal, less than 1%.

##### **DROUGHT**

All 43,091 residents of Dallas County are at risk to the effects of drought. Droughts would affect agriculture and water supply the most. Economic losses due to insufficient water for large agricultural operations could be significant. Livestock could be lost due to a long term drought. The population that depends on private wells for water could be without water for weeks or months at a time. In addition, during droughts the risk of wildfire is greater and the resources available to fight them are affected.

##### **EXTREME TEMPERATURES**

Both extreme heat and extreme cold have occurred in Dallas County. Extreme temperatures lead to serious agricultural and livestock issues. Both cold and hot temperatures can affect the robustness of crops and livestock. Extreme heat can lead to heatstroke, heat cramps, heat syncope, and heat exhaustion. A widespread extreme heat event could possibly overcrowd local clinics and emergency rooms with persons suffering from the heat's effects. Increased use of electricity to run fans and air conditioners may also put a strain on electric utilities. Extreme cold temperatures can lead to frostbite and hypothermia. The elderly population, in particular, is extremely vulnerable to both hot and cold conditions. All 43,061 residents of Dallas County are at risk to the effects of extreme temperatures.

##### **FLOOD**

Flash floods may lead to property damage or loss depending on severity. Their rapid onset makes them even more deadly. Often waters rise so quickly that people have little time to protect themselves. These floods can also lead to death and injury. Flash flooding on roadways is a major risk. Many times drivers underestimate water depth and become stranded in floodwaters. Due to the nature of flash floods, every resident of the county is at risk. Lower areas and areas with poor drainage are at higher risks, but it is impossible to give an approximate number of residents living in these areas.

River flooding is also a risk along the Alabama and Cahaba Rivers. Floods may lead to property damage or loss depending on severity. Flooding can lead to agricultural and livestock related losses. Floods may also lead to death and injury. According to the State Mitigation Plan Update for Alabama, approximately 22,433 residents live in the 1-Percent-Annual-Chance Flood Hazard Area in Dallas County. Roughly, this is half of the population in the county.

### **HURRICANE/TROPICAL SYSTEM**

Atlantic hurricane season is from June 1 to November 30. Over the past fifty years Dallas County has been affected by hurricanes. Severe storms, tornadoes, high winds, hail, torrential rains, river flooding, and flash flooding are all associated with hurricanes as they move inland. Potentially all of Dallas County's residents and structures are at risk. The loss of life, property and possessions is common. Interruption of utility and communication service is expected. Dallas County is far enough inland that advance warning of the approaching storm can be heeded and residents can prepare themselves. In instances where spawned tornadoes and flash flooding occurs, warning time may be short or nonexistent increasing risk factors. In addition, low-lying areas and areas prone to flooding are at higher risk of hurricane related flood damage but it is impossible to give an approximate number of residents living in these areas.

### **LANDSLIDE**

There are very few areas identified as being affected by naturally occurring landslides in Dallas County. These occurrences are localized and the main effects are habitat damage. There are also a number of areas where human induced landslides have occurred. These slides' main impact would be disruption of traffic and possible environmental habitat damage. The county as a whole is at a very low susceptibility for landslides. It is impossible to determine an accurate estimate of the population vulnerable to landslides, but it would be less than 5% of the total population.

### **LAND SUBSIDENCE**

Around 90% of Dallas County is underlain by carbonate rock, which is susceptible to land subsidence. There are nine historical land subsidence events on record for the county. Based on this information it is estimated that approximately 38,781 residents live in areas susceptible to subsidence. Subsidence can lead to changes in elevation; damage to structures such as storm drains, sanitary sewers, roads, railroads, canals, levees and bridges; structural damage to public and private buildings; and damage to wells. Most commonly, though, subsidence is known for causing an increase in the potential for flooding.

### **SEVERE STORMS**

Damage from severe storms can have a wide range of severity. Common incidences are a result of falling trees and flying debris. Lightning can cause substantial property damage and death. Utility disruption and blocked roadways are common. Historically, Dallas County has experienced these storms every year with varying frequency and intensity. Hailstones as large as 2.75 inches have occurred in the county. Winds of seventy-five knots have been recorded during these events within the county. Generally severe storms follow no common track or an exact pathway; therefore, the whole county (population and building stock) is at risk.

### **TORNADO**

There are two tornado seasons in Alabama; these are in May and November. Tornadoes are not constrained to follow any definite path, so every area and every resident of Dallas County is at risk. A tornadoes path is generally 300-400 yards wide and four miles long (NOAA 1973). Areas within that path may suffer from slight to severe damage depending on the tornadoes

strength. Injury and death can occur as a result of even the weakest tornado. In Dallas County, historically there have been tornadoes as strong as F3 recorded.

The effects of any tornado may be far reaching. Life, property, and personal items are all at risk. Interruption of electric, telephone and other utility and communications services may occur. Transportation corridors may be blocked or in some cases destroyed. Debris must be removed and this is often a costly task. Citizens may suffer from posttraumatic syndrome, depression, anxiety, and grief for lost loved ones. Also another concern in rural areas, such as Dallas County, is housing and providing for storm victims. When large storms with widespread damage and injuries occur, these areas have a more difficult time providing adequate aid to all who are in need.

Overall, the entire county is at the same risk of tornadoes, but some populations and structures are at a higher risk. The highest potential for death or injuries resulting from tornadoes occurs in areas with higher population densities. As reviewed in the County Profile section of this report, the area that is the most densely populated is Selma. The occurrence of dense housing also increases the probability of not only death or injury, but also property damage. Selma also has the highest housing density in the county. Other areas that are more vulnerable to damage from a tornado include areas with high percentages of mobile homes. These structures are not capable of withstanding the strong winds associated with tornadoes as well as traditional housing. In Dallas County there are high percentages of mobile homes throughout the county.

#### **WILDFIRE**

Due to the large areas of forest-covered land in Dallas County, wildfires are a real threat to all residents of Dallas County. These fires can ignite and spread quickly, charring everything in their path. In Dallas County, wildfires are a threat to the residents' property and health. These fires not only threaten the lives of residents, but also may cause respiratory problems for many residents. Smoke from these fires may lead to limited visibility along roadways increasing the probability of accidents. In addition to these effects, wildfires in Dallas County threaten the economic livelihood of the county. The economy has a large timber component that could be damaged by wildfire.

#### **WINTER STORMS**

Winter storms are a rare occurrence in Dallas County, but when they do occur they have a significant impact. Local governments do not have snow removal equipment on hand. Local drivers are not used to driving in those adverse conditions and automobile accidents are common occurrences. Ice and snow can weigh down limbs and power lines causing them to break under pressure, resulting in power failure and property damage. During extended times of power failure, residents and businesses are not equipped with backup generators. Also many homes may not be properly insulated leading to health concerns. The impacts of these storms are generally the result of the infrequency of their occurrence. All residents of Dallas County are vulnerable to winter storms because these storms have no defined track.

## 4.5 Dallas County Vulnerability Assessment- Affected Populations and Buildings Summary

**Table 4.29 Population Potentially Affected by Hazard by Jurisdiction**

Hazard	Countywide	Unincorporated	Orrville	Selma	Valley Grande
Avalanche					
Coastal Erosion					
Dam Failure					
Drought	43,091	18,601	129	20,391	3,970
Earthquake					
Extreme Temperatures Heat Cold	43,091	18,601	129	20,391	3,970
Flood Riverine Flash	43,091	18,601	129	20,391	3,970
Hurricane/Tropical Systems	43,091	18,601	129	20,391	3,970
Landslide					
Land Subsidence					
Severe Storms <i>Hail</i> <i>Lightning</i> <i>High Wind</i> <i>Thunderstorms</i>	43,091	18,601	129	20,391	3,970
Tornado	43,091	18,601	129	20,391	3,970
Tsunami					
Volcano					
Wildfire	43,091	18,601	129	20,391	3,970
Winter Storms	43,091	18,601	129	20,391	3,970

Table compiled by the Alabama Tombigbee Regional Commission  
Information from the Risk Assessment and American Survey Five Year Estimates 2009-2013  
August 15, 2015



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**Table 4.30 Buildings Vulnerable to Hazard by Jurisdiction**

<b>Hazard</b>	<b>Countywide</b>	<b>Unincorporated</b>	<b>Orrville</b>	<b>Selma</b>	<b>Valley Grande</b>
<b>Avalanche</b>					
<b>Coastal Erosion</b>					
<b>Dam Failure</b>					
<b>Drought</b>	21,836	9,420	103	10,392	1,921
<b>Earthquake</b>	21,836	9,420	103	10,392	1,921
<b>Extreme Temperatures</b> <i>Heat</i> <i>Cold</i>	21,836	9,420	103	10,392	1,921
<b>Flood</b> <b>Riverine</b> <b>Flash</b>	21,836				
<b>Hurricane/Tropical Systems</b>	21,836	9,420	103	10,392	1,921
<b>Landslide</b>	*	*	*	*	*
<b>Land Subsidence</b>	*	*	*	*	*
<b>Severe Storms</b> <i>Hail</i> <i>Lightning</i> <i>High Wind</i> <i>Thunderstorms</i>	21,836	9,420	103	10,392	1,921
<b>Tornado</b>	21,836	9,420	103	10,392	1,921
<b>Tsunami</b>					
<b>Volcano</b>					
<b>Wildfire</b>	21,836	9,420	103	10,392	1,921
<b>Winter Storms</b>	21,836	9,420	103	10,392	1,921

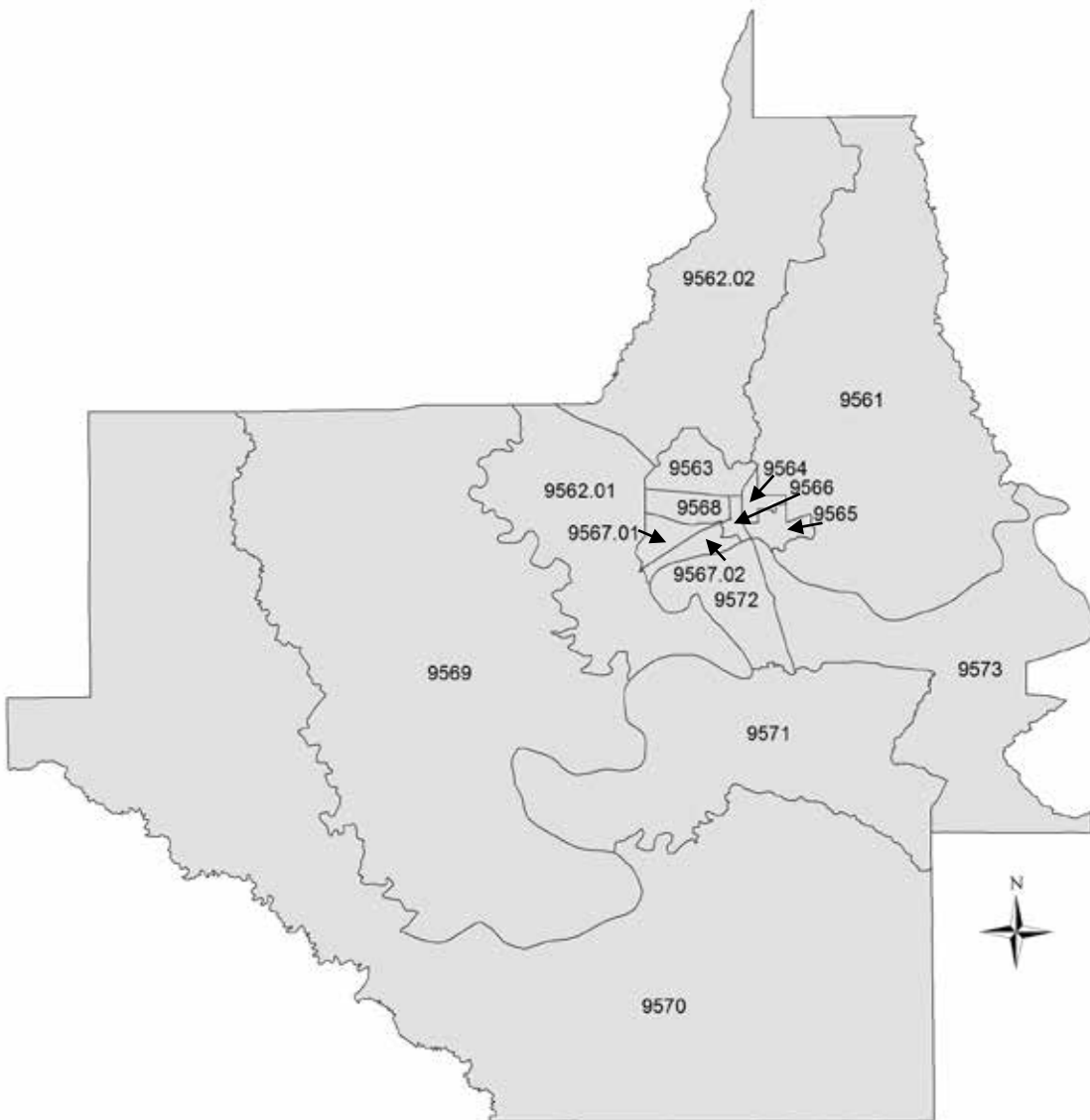
\*insufficient data available

Table compiled by the Alabama Tombigbee Regional Commission  
Information from HAZUS-MH and Local Property Records  
August 15, 2015

#### 4.6 Dallas County Vulnerability Assessment- Identification of Vulnerable Populations

Location is not the only factor in determining vulnerability. Social and economic characteristics can also be studied to determine vulnerability. Certain populations are generally more affected by any type of natural hazard and their after effects. These populations can be defined in terms of social, racial, and economic characteristics. The following section identifies Dallas County's socially vulnerable populations by jurisdiction. Figure 4.22 is a map that shows the census tracts in the county. These tracts will be referred to in the discussion below. Table 4.31 provides basic demographic, economic, and housing information for the county.

**Figure 4.22 Dallas County Census Tracts**



Map produced by the Alabama Tombigbee Regional Commission  
Source: 2012 TIGER Line Files  
Created 9/15/2015

**Table 4.31 Dallas County Demographic Information by Census Tract\***

Tract	Percent of Individuals Below Poverty Level	Percent of Population Under 18	Percent of Population Over 65	Percent of Housing Units that are Mobile Homes
9561	25.9	26.5	13.4	29.9
9562.01	26.8	20.9	11.2	44
9562.02	17.1	18.5	18.6	34.1
9563	33.4	24.7	17.2	4.9
9564	63.8	31.3	10	1
9565	54.1	28.1	7.8	2
9566	42.6	29.8	16.2	0.5
9567.01	10	19.3	16.4	1.1
9567.02	27.2	20.4	16.7	0
9568	26.4	24.4	20.9	1.8
9569	42	30.4	14.7	38.3
9570	39.5	27.8	22.6	48.7
9571	13.6	17.5	20.2	42.1
9572	37.3	28.5	11.6	40.2
9573	39.1	25.5	13.1	23.1

*\*Shaded areas indicate the tract is above the county average for that indicator.*

**Compiled by the Alabama Tombigbee Regional Commission  
Source: American Community Survey Five Year Estimates 2009-2013  
Created 9/15/2015**

The indicators provided in Table 4.31 can be used to determine populations that are considered socially vulnerable. Individuals under the poverty level do not have the resources necessary to recover from hazard events. It can be seen that the eastern and southern sections of the county have a higher than average percent of the population under the poverty level. With regards to age, both the population over 65 and the population under 18 are considered more vulnerable. These areas are more dispersed throughout the county with concentrations in the southern and western areas. Mobile homes are also considered more vulnerable to hazards. Concentrations of these can be found in the southern and most northern areas of the county.

#### **4.7 Dallas County Vulnerability Assessment- Critical Facilities**

Dallas County used the following criteria to identify critical facilities:

- A facility that is critical to the health and welfare of the entire jurisdiction. They become essential in the event of a natural disaster. These facilities include police stations, fire stations, schools, and hospitals.
- A facility which is a lifeline that provides the jurisdiction with necessities such as potable water.
- Transportation corridors necessary to keep the jurisdiction connected.

- Facilities that house persons with special needs (jails, nursing homes). They may also include locations where large groups often meet.
- Facilities where potential losses, both human and economic, are high.

Table 4.32 provides the critical facility listing for Dallas County. Included in the table are replacement values and locations. For some facilities, such as transportation corridors, providing a replacement value was impossible. Replacement values were also not provided for a number of other facilities, the county will work toward compiling these values for the next plan update.

**Table 4.32 Dallas County Critical Facilities**

<b>Dallas County Commission Facilities</b>				
<b>Facility Name</b>	<b>Address</b>	<b>Location</b>	<b>Replacement Value</b>	<b>Participating Jurisdiction</b>
Dallas County Jail	996 Selfield Road	Selma	\$9,129,324.00	Dallas County
Dallas County Juvenile Detention Center	996 Selfield Road	Selma	\$3,043,108.00	Dallas County
Camp Perry Varner Boot Camp	1002 Selfield Road	Selma	\$1,014,379.00	Dallas County
Dallas County Courthouse/Annex	105 Lauderdale Avenue	Selma	\$4,246,228.00	Dallas County
Dallas County Road Department Shop & Equipment	US Highway 80 West	Selma	\$3,193,756.00	Dallas County
Dallas County E-911	311 Dallas Avenue	Selma	\$952,000.00	Dallas County
			<b>\$21,578,795.00</b>	<b>Dallas County Total</b>
<b>Town of Orrville Facilities</b>				
<b>Facility Name</b>	<b>Address</b>	<b>Location</b>	<b>Replacement Value</b>	<b>Participating Jurisdiction</b>
Orrville Town Hall	14761 Main Street	Orrville	\$125,000.00	Orrville
Orrville Community Center			\$100,000.00	Orrville
Orrville Town Shop			\$40,000.00	Orrville
			<b>\$265,000.00</b>	<b>Orrville Total</b>
<b>City of Selma Facilities</b>				
<b>Facility Name</b>	<b>Address</b>	<b>Location</b>	<b>Replacement Value</b>	<b>Participating Jurisdiction</b>
Carl C. Morgan Convention Center	211 Washington Street	Selma	\$1,461,346.00	Selma
Red Cross Building	812 Selma Avenue	Selma	\$88,271.00	Selma
City Hall	222 Broad Street	Selma	\$2,570,403.00	Selma
Selma Fire Department Station #2	2401 Selma Avenue	Selma	\$77,413.00	Selma
Selma Fire Department Station #3	1500 Broad Street	Selma	\$1,957,160.00	Selma
Selma Fire Department Station #4	800 Cahaba Road	Selma	\$152,786.00	Selma
Selma Fire Department Station #5	1200 Woodrow Avenue	Selma	\$508,862.00	Selma
Selma Police Department	1300 Alabama Avenue	Selma	\$5,219,092.00	Selma
Public Works Building	4555 Water Avenue	Selma	\$9,708,780.00	Selma

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			<b>\$21,744,113.00</b>	<b>Selma Total</b>
<b>City of Valley Grande Facilities</b>				
<b>Facility Name</b>	<b>Address</b>	<b>Location</b>	<b>Replacement Value</b>	<b>Participating Jurisdiction</b>
Valley Grande City Hall & Fire Station #2	5914 Alabama Highway 22	Valley Grande	\$1,000,000.00	Valley Grande
Valley Grande Fire Station #1	8577 Alabama Highway 22	Valley Grande	\$800,000.00	Valley Grande
Summerfield Fire Station #1	106 Main Street	Valley Grande	\$800,000.00	Valley Grande
Summerfield Fire Station #2	14252 Alabama Highway 41 West	Valley Grande	\$600,000.00	Valley Grande
			<b>\$3,200,000.00</b>	<b>Valley Grande Total</b>
<b>Dallas County BOE Facilities</b>				
<b>Facility Name</b>	<b>Address</b>	<b>Location</b>	<b>Replacement Value</b>	<b>Participating Jurisdiction</b>
Alternative School	Building #37 Craig Industrial Park	Selma	\$151,544.00	Dallas County Schools
Bruce K Craig Elementary School	108 Craig Industrial Park	Selma	\$5,384,797.00	Dallas County Schools
Brantley Elementary School	5585 Water Avenue	Selma	\$6,306,109.00	Dallas County Schools
Dallas County Career Tech	1306 Roosevelt Street	Selma	\$3,021,781.00	Dallas County Schools
Dallas County High School	335 Fifth Avenue	Plantersville	\$11,485,798.00	Dallas County Schools
Dallas County Resource Center	5570 Water Avenue	Selma	\$1,967,024.00	Dallas County Schools
J.E. Terry Elementary School	70 Academy Street	Plantersville	\$3,129,296.00	Dallas County Schools
Keith High School	1166 County Road 115	Orrville	\$12,579,345.00	Dallas County Schools
Martin Middle School	2863 County Road 81	Valley Grande	\$6,322,011.00	Dallas County Schools

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Salem Elementary School	3486 County Road 30	Valley Grande	\$3,406,697.00	Dallas County Schools
Southside High School	7975 US Highway 80	Selma	\$14,071,723.00	Dallas County Schools
Southside Primary	3104 Old Orrville Road	Selma	\$6,678,586.00	Dallas County Schools
Tipton Middle School	2500 Tipton Avenue	Selma	\$7,660,588.00	Dallas County Schools
Dallas County BOE Central Office	429 Lauderdale Avenue	Selma	\$2,852,230.00	Dallas County Schools
			<b>\$85,017,529.00</b>	<b>Dallas County Schools Total</b>
<b>Selma City School Facilities</b>				
<b>Facility Name</b>	<b>Address</b>	<b>Location</b>	<b>Replacement Value</b>	<b>Participating Jurisdiction</b>
City of Selma BOE Central Office	2194 Broad Street	Selma	\$3,213,987.00	Selma City Schools
Byrd Elementary School	625 Lapsley Street	Selma	\$5,256,414.00	Selma City Schools
Cedar Park Elementary	1101 Woodrow Avenue	Selma	\$4,695,663.00	Selma City Schools
Clark Elementary School	405 Lawrence Street	Selma	\$7,400,418.00	Selma City Schools
Edgewood Elementary School	709 Highland Avenue	Selma	\$7,085,658.00	Selma City Schools
Kingston Elementary School	2224 Selma Avenue	Selma	\$4,867,298.00	Selma City Schools
Knox Elementary School	1002 Mabry Street	Selma	\$4,831,993.00	Selma City Schools
Meadowview Elementary School	1816 Old Orrville Road	Selma	\$6,075,693.00	Selma City Schools
Payne Elementary School	1529 Franklin Street	Selma	\$5,156,406.00	Selma City Schools
R.B. Hudson Middle School	1701 Summerfield Road	Selma	\$16,890,308.00	Selma City Schools
Selma High School	2180 Broad Street	Selma	\$33,281,418.00	Selma City Schools
			<b>\$98,755,256.00</b>	<b>Selma City Schools Total</b>
<b>Volunteer Fire Departments</b>				
<b>Facility Name</b>	<b>Address</b>	<b>Location</b>	<b>Replacement Value</b>	<b>Participating Jurisdiction</b>
Beloit VFD	8383 Alabama Highway 22 West	Orrville	*	Volunteer Fire Department

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Burnsville VFD	8950 Alabama Highway 14 East	Selma	*	Volunteer Fire Department
Carlowville VFD	5 County Road 4	Minter	\$550,000.00	Volunteer Fire Department
Craig VFD	Building #218 Avenue J Craig Field	Selma	\$991,500.00	Volunteer Fire Department
Marion Junction VFD	12873 US Highway 80 W	Marion Junction	\$370,000.00	Volunteer Fire Department
Orrville VFD	410 South Street	Orrville	*	Volunteer Fire Department
Plantersville VFD	111 Oak Street	Plantersville	\$549,000.00	Volunteer Fire Department
Potters Station VFD	2371 County Road 44	Marion Junction	*	Volunteer Fire Department
River Oaks VFD	115 County Road 326	Orrville	\$750,000.00	Volunteer Fire Department
Safford VFD	4331 Alabama Highway 5	Safford	*	Volunteer Fire Department
Sardis VFD	8100 County Road 30	Sardis	*	Volunteer Fire Department
Selma-Dallas County Rescue Squad	1500 Broad Street	Selma	\$740,000.00	Volunteer Fire Department
Tyler VFD	10248 US Highway 80 East	Tyler	\$464,000.00	Volunteer Fire Department
			<b>\$4,414,500.00</b>	<b>Volunteer Fire Department Total</b>
<b>Other</b>				
<b>Facility Name</b>	<b>Address</b>	<b>Location</b>	<b>Replacement Value</b>	<b>Participating Jurisdiction</b>
Craig Field		Selma	\$37,470,000.00	Private
			<b>\$37,470,000.00</b>	<b>Private Total</b>
<b>Transportation Facilities</b>				
<b>Facility Name</b>	<b>Address</b>	<b>Location</b>	<b>Replacement Value</b>	<b>Participating Jurisdiction</b>



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United States Highway 80			*	
Alabama State Highway 41			*	
Alabama State Highway 22			*	
Alabama State Highway 14			*	
Alabama State Highway 219			*	
<b>Communication Facilities</b>				
<b>Facility Name</b>	<b>Address</b>	<b>Location</b>	<b>Replacement Value</b>	<b>Participating Jurisdiction</b>
WHBB-AM			*	
WDXX-FM			*	
WALX-FM			*	
WJUS-FM			*	
WAKA-TV			*	
WSFA-TV			*	
<b>Water Facilities</b>				
<b>Facility Name</b>	<b>Address</b>	<b>Location</b>	<b>Replacement Value</b>	<b>Participating Jurisdiction</b>
Dallas County Water Authority			*	
North Dallas Water Authority			*	
Orrville Water System			*	
Selma Water Works & Sewer Board			*	
South Dallas Water Authority			*	
West Dallas			\$9,050,000.00	Water Facility
			<b>\$281,495,193</b>	<b>County Total</b>

\* Value unavailable or not provided by deadline

**Table compiled by the Alabama Tombigbee Regional Commission  
Source: Dallas County EMA, Plan Participants  
Created 9/15/2015**

#### 4.8 Dallas County Vulnerability Assessment- Critical Facilities by Hazard

Table 4.33 breaks critical facilities down by total exposure to each hazard. The sum of replacement costs of all buildings affected by each hazard in each location was used to compute these numbers. At this time, the data is incomplete and will be updated when all data becomes available.

**Table 4.33 Dollar Exposure of Critical Facilities by Hazard**

<b>Hazard</b>	<b>Unincorporated</b>	<b>Orrville</b>	<b>Selma</b>	<b>Valley Grande</b>
<b>Avalanche</b>				
<b>Coastal Erosion</b>				
<b>Dam Failure</b>	Not Available	Not Available	Not Available	Not Available
<b>Drought</b>	\$25,598,094	\$13,594,345	\$229,374,046	\$12,928,708
<b>Earthquake</b>	\$25,598,094	\$13,594,345	\$229,374,046	\$12,928,708
<b>Extreme Temperatures</b> <i>Heat</i> <i>Cold</i>	\$25,598,094	\$13,594,345	\$229,374,046	\$12,928,708
<b>Flood</b> <i>Riverine</i> <i>Flash</i>	\$0 \$25,598,094	\$0 \$13,594,345	\$9,786,193* \$229,374,046	\$0 \$12,928,708
<b>Hurricane/Tropical Systems</b>				
<b>Landslides</b>	Not Available	Not Available	Not Available	Not Available
<b>Land Subsidence</b>	Not Available	Not Available	Not Available	Not Available
<b>Severe Storms</b> <i>Hail</i> <i>Lightning</i> <i>High Wind</i> <i>Thunderstorms</i>	\$25,598,094	\$13,594,345	\$229,374,046	\$12,928,708
<b>Tornado</b>	\$25,598,094	\$13,594,345	\$229,374,046	\$12,928,708
<b>Tsunami</b>				
<b>Volcano</b>				
<b>Wildfire</b>	\$25,598,094	\$13,594,345	\$229,374,046	\$12,928,708
<b>Winter Storms</b>	\$25,598,094	\$13,594,345	\$229,374,046	\$12,928,708

\*critical facilities in flood plain: Public Works Building & Fire Station #2

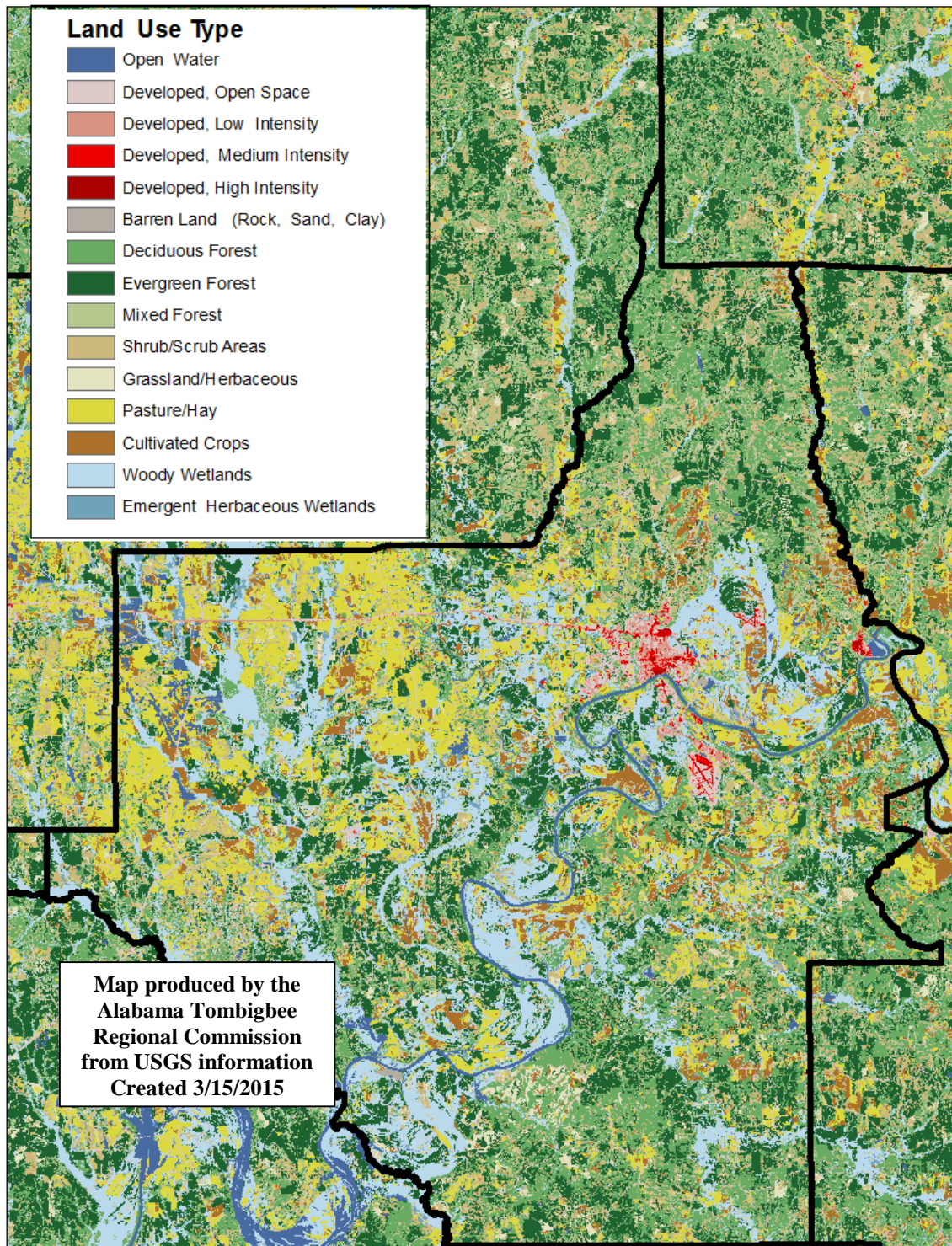
Table compiled by the Alabama Tombigbee Regional Commission  
Source: Dallas County EMA, Plan Participants  
Created 9/15/2015

#### **4.9 Dallas County Vulnerability Assessment- Analyzing Development Trends**

Figure 4.23 is a land use map for Dallas County. Green, brown, and yellow shades represent forest, pastureland, and shrubs. The majority of Dallas County is forested land. There are also significant areas of pastureland and flood plains along the Alabama and Cahaba Rivers. Red indicates developed land. Selma and Valley Grande are indicated by the red tones on the map. Table 4.34 gives population estimates for the county based on the 2010 Census. The population is projected to steadily decline over the next twenty five years. Based on the supplied information, there will be no major land use changes in the county in the foreseeable future.

Development patterns were reviewed and no growth or decline was observed which would have impacted the jurisdictions vulnerability. The Committee reviewed development patterns in the previous plan and declared this information still current and valid. No changes were made.

Figure 4.23 Dallas County Land Use Map



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**Table 4.34 Population Projections 2015-2040  
Dallas County Population 2000-2010 and Projections 2015-2040**

									Change	
									2010-2040	
	Census	Census								
	2000	2010	2015	2020	2025	2030	2035	2040	Number	Percent
<b>Dallas</b>	46,365	43,820	41,463	41,103	40,776	40,454	40,131	38,858	-3,962	-9.0

The following are a list of planned critical facilities in the county: No participants identified any planned critical facilities.

## **Summary of Changes Made in Plan Update Section V. Ongoing Mitigation Assessment**

**This section underwent major revisions from the last update. This section was previously titled “Capability Assessment.” A new section Existing Authorities, Policies, Programs, and Resources by Jurisdiction was added to detail capabilities by jurisdiction. Capabilities were determined by talking with each jurisdiction via phone calls. The information on the Dallas County EMA was moved to Section B.**

## V. Ongoing Mitigation Assessment

### 5.1 Existing Authorities, Policies, Programs, and Resources by Jurisdiction

A brief assessment was conducted by each jurisdiction before goals, objectives, and strategies were discussed. This assessment was completed by contacting local officials by phone, regional planning commission knowledge, and internet research. Table 5.1 details the results of the assessment by jurisdiction.

**Table 5.1 Local Mitigation Assessment**

Dallas County	Town of Orrville	City of Selma	City of Valley Grande
Member NFIP	Member NFIP	Member NFIP	Member NFIP
Flood Ordinance	Flood Ordinance	Flood Ordinance	Flood Ordinance
Building Codes	Zoning Ordinance	Zoning Ordinance	Subdivision Regulations
County Engineer	Ability to tax	Subdivision Regulations	Building Codes
Road & Bridge Department	Regional Hazmat Team	Planning Department	ISO Rating-5
Sheriff's Office	Volunteer Fire Department	Public Works	Certified Flood Plain Manager
Regional Hazmat Team		Certified Flood Plain Manager	Regional Hazmat Team
Volunteer Fire Departments		Engineer	Volunteer Fire Department
Rescue Squad		Regional Hazmat Team	Public Safety
		Police Force	
		Fire Department	

Compiled by the Alabama Tombigbee Regional Commission

Source: Local Resources

Created 9/15/2015

The extent to which each jurisdiction can expand on existing policies and programs varies. In the State of Alabama, home rule is limited by its Constitution. While municipalities have the power to levy taxes (subject to constitutional limitations on ad valorem taxes), adopt zoning regulations, annex property, select and change their form of government, construct streets and assess the cost against the abutting property, engage in redevelopment and urban renewal projects and establish public agencies to operate hospitals, libraries, recreational facilities, counties do not. Counties that hold these powers have received them through legislative acts, which are written at the local level and presented to the state legislature.

With regards to zoning ordinances, jurisdictions with ordinances in place (Selma and Orrville) may amend them to address any issues that may arise as long as adequate public notice and a public comment period are given. These jurisdictions have planning commissions that hear all requests with regards to the ordinances. For municipalities with no zoning ordinances (Valley Grande), ordinances can be drafted and enacted as long as adequate public notice and a public comment period are given. In order for the Dallas County Commission to enact a zoning ordinance, an act must be passed by the Alabama legislature in Montgomery. At this time, there is no indication that jurisdictions without ordinances in place desire to enact a new set of ordinances.

Each jurisdiction in the county has the ability to enforce building codes to the extent it sees fit. Depending on budget and available personnel, these jurisdictions may modify the extent of their enforcement at any time. Funding for public works, utility departments, police, and fire also depend on each jurisdiction's available funding. Taxes are the most significant source of funding for these activities. Municipalities may enact new taxes without legislative approval, but county's may not.

Comprehensive planning is an area where every jurisdiction has the opportunity to analyze hazard mitigation. Currently, the City of Selma is the only jurisdiction with a comprehensive plan in place.

The following is a list of additional mitigation measures already in place in Dallas County.

- Ø The Dallas County EMA director is available twenty-four hours a day to respond to any emergency that occurs within the county.
- Ø The EMA receives weather alerts from the national Weather Service out of Birmingham.
- Ø The local cable system is set up to interrupt programming in the event of severe weather warnings.
- Ø The Dallas County School System and Selma City School system has a severe weather plan in place.



## **5.2 DALLAS COUNTY EMERGENCY MANAGEMENT AGENCY**

The Dallas County EMA Director is available 24 hours a day. The EMA Office is located in Selma in the Dallas County Courthouse Annex. The Dallas County EMA is capable of communicating with all law enforcement, emergency medical, fire, search and rescue personnel, amateur radio users, adjacent jurisdictions, and the State Emergency Operations Center by phone and radio.

## **Summary of Changes Made in Plan Update Section VI. Plan Maintenance**

**The plan maintenance section was compiled by ATRC and the Dallas County EMA. Information regarding the annual review of the plan was updated. The Incorporation into Existing Planning Mechanisms section was also revised to provide information by jurisdiction. This section was approved by the Hazard Mitigation Planning Committee.**

## VI. Plan Maintenance

The planning cycle for the Dallas County, Alabama Hazard Mitigation Plan is five years. The Natural Hazards Steering Committee determined this planning cycle based on FEMA's guidelines. If FEMA changes their guidelines, the county's guidelines will be adjusted accordingly. In addition the plan maintenance section was compiled using suggestions from the Natural Hazards Steering Committee.

### 6.1 Hazard Mitigation Committee Structures

The structure of the committee will be kept as they were for the development of this plan. The Natural Hazard Steering Committee will be appointed by position. The following is the list of agencies or positions that will be requested to serve on the committee:

- ✓ Dallas EMA, EMA Director- Committee Chair
- ✓ Dallas County Board of Education, Superintendent
- ✓ Selma City Board of Education, Superintendent
- ✓ Town of Orrville, Mayor
- ✓ City of Selma, Mayor
- ✓ City of Valley Grande, Mayor
- ✓ Dallas County VFD Association, President
- ✓ VOAD- United Way, Director

### 6.2 Monitoring and Evaluation of the Plan

The county has not followed the Mitigation Plan review process outlined in the 2010 plan, due to staffing shortages. The method outlined in that plan was deemed too time consuming for the present staffing levels of the EMA. The EMA Director did review the plan on an annual basis. Once the Director completed her review, she presented her findings at the county's Local Emergency Planning Committee meetings. The Natural Hazard Mitigation Steering Committee is invited to each of these quarterly meetings. A midterm discussion of the plan was held in the second quarter meeting each year and an annual review discussion was held in the final quarter of each year. Minutes and agendas for these meetings are on file at the Dallas County EMA. The plan was also reviewed after the county was included in disaster declarations in 2012 (Hurricane Isaac) and 2011 (April tornado outbreak). In both instances, the plan was found to be sufficient.

For the next planning period, the Natural Hazards Steering Committee has decided on the following annual review procedures. The EMA Director will contact each participating jurisdiction during the third quarter of the year to review the following information:

- ✓ Do the goals and objectives outlined in the plan still apply to current conditions?
- ✓ Has the nature, magnitude, and/or type of risk changed?
- ✓ Are the resources currently available to implement the plan appropriately?
- ✓ Has any jurisdiction had implementation problems and if so, what is the nature of them (technical, political, funding, etc.)?
- ✓ Have the outcomes from implemented strategies been the expected outcomes?
- ✓ Has each jurisdiction or agency worked toward its hazard mitigation goals?

The EMA Director along with the participating jurisdictions will determine if the plan is still adequate. The findings of the review will be presented at the LEPC meeting held during the fourth quarter of each year. The Natural Hazards Steering Committee members are invited to these meetings and they are advertised public meetings. If it is found that the plan is not satisfying the above criteria, the EMA Director will begin a plan update process. EMA will call a special meeting of the Natural Hazards Steering Committee for changes that affect all jurisdictions. The public will be invited to this meeting through postings and community announcements. For revisions that affect all participating jurisdictions, the Natural Hazards Steering Committee will approve the changes. For jurisdiction specific revisions, only the jurisdiction making the revision will have to approve the change. The jurisdiction will work with the Natural Hazard Steering Committee Chairman to submit these changes.

### **6.3 Updating the Plan**

The Dallas County Natural Hazards Mitigation Plan will be updated every five years as required by FEMA. The EMA director will begin making arrangements for the plan's update eighteen months before expiration. The process of updating the plan will be undertaken in the same way as the development of this update. The Natural Hazards Mitigation Steering Committee will reconvene for the plan update.

The public participation component will be modified to encourage more participation. At least two public meetings will be held to involve the public in the update process. These meetings will be advertised in the county newspaper. The EMA will also identify local citizen groups such as senior centers, civic groups, and neighborhood associations to which hazard mitigation presentations can be made. Survey Monkey or an equivalent online survey website will be used to gather public opinion on hazard issues.

Special attention will be given to encouraging neighboring counties' EMA offices (Chilton, Perry, Marengo, Wilcox, Lowndes, and Autauga) to participate. EMA will contact them directly to solicit their participation. The county will also consult with the following agencies during the plan formation stage: Alabama Department of Transportation (ALDOT), Alabama Department of Environmental Management (ADEM), Alabama Historical Commission (AHC), US Army Corps of Engineers (USACE), US Fish and Wildlife (USFW), National Resource Conservation Service (NRCS), public utilities, institutions of higher education, large employers in the county, community service programs, American Red Cross, and local chambers of commerce. Included in the public utilities group will be invitations to each private water system in the county. These systems are not eligible applicants for FEMA funding and did not participate in this planning process. During the next update they will be encouraged to participate, so the county may apply on their behalf.

Drafts of the updated plan will be available for public comment. Once comments are received and incorporated when necessary, the plan will be submitted to AEMA and FEMA for review.

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

The Dallas County, Alabama Hazard Mitigation Plan will be incorporated into existing planning mechanisms in all participating jurisdictions.

*Dallas County Commission:* No formal planning is in place for unincorporated areas in Dallas County. If the county undertakes any planning effort, such as a comprehensive plan, mitigation goals and objectives will be reflected. No strategies will be included that would hinder the natural hazard mitigation goals and objectives.

*Town of Orrville:* The Town of Orrville will consider hazard mitigation while considering adjustments to zoning ordinances. No ordinances will be modified in such a way that mitigation efforts will be hindered. Hazard mitigation goals, objectives, and strategies will be reviewed and incorporated in the event the town updates its comprehensive plan.

*City of Selma:* The City of Selma will consider hazard mitigation while considering adjustments to building and zoning ordinances. No ordinances will be modified in such a way that mitigation efforts will be hindered. Hazard mitigation goals, objectives, and strategies will be reviewed and incorporated in the event the city updates its comprehensive plan.

*City of Valley Grande:* The City of Valley Grande will consider hazard mitigation while considering adjustments to subdivision regulations. No city ordinances will be modified in such a way that mitigation efforts will be hindered. Hazard mitigation goals, objectives, and strategies will be reviewed and incorporated in the event the city develops a comprehensive plan.

### **6.5 Continued Public Involvement**

In the event revisions that affect all jurisdictions are deemed necessary to the plan, the Natural Hazards Steering Committee will convene to approve all amendments/revisions. The public will also be encouraged to attend these meetings to provide input.

All jurisdictions and the EMA will encourage public participation in mitigation planning by emphasizing its purpose and importance during weather related events such as Severe Weather Awareness Week, Hurricane Preparedness Week, Summer Weather Safety Week, and Winter Weather Awareness Week.

Hard copies of the plan will be available to the public by submitting a request to the EMA. A copy of the plan will be on file at the EMA office and available for review. Copies of the plan will also be available in each jurisdiction. The plan will be available for download online. Information regarding where to send comments on the plan is provided inside of the front cover of the document. The EMA will be responsible for keeping a file of all comments received. All comments will be considered annually during the review of the plan. No public comments have been received to be integrated into this update.

**Summary of Changes Made in Plan Update**  
**Section VII. Mitigation Goals, Objectives, and Strategies**

Each participating jurisdiction received their information from the previous plan at the first committee meeting. Jurisdictions with no one present at the meeting were contacted directly by the Dallas County EMA. Each jurisdiction reviewed their information and either confirmed there were no revisions or submitted changes.

## VII. MITIGATION GOALS, OBJECTIVES, AND STRATEGIES

### 7.1 Overview of Mitigation, Goals, Objectives, and Strategies

After the risk assessment for the county was completed, each jurisdiction was asked to prioritize the profiled hazards. Prioritization was based on information from the risk assessment and personal knowledge of their jurisdictions. Each jurisdiction was also asked to provide goals, objectives, and strategies based on their prioritization. FEMA's definitions of goals and objectives were used.

“Goal: General guidelines that explain what you want to achieve. They are usually broad policy-type statements that are long term and represent global visions.”

“Objective: Define strategies or implementation steps to attain the identified goals.”

In the years following the historic 2011 tornado outbreak, the public and local officials in the county have shown greater interest in mitigation. The public has shown more interest in installing individual shelters. Local governments have begun to consider ways to fund community shelters throughout their jurisdictions. There has been a revived interest in installing tornado sirens at recreation fields and other outdoor gathering areas. The outbreak event was the single most discussed item at all meetings that were held.

Each committee member and everyone attending the committee meetings were asked to reevaluate the goals, objectives, and strategies for the jurisdiction they represented. A copy of the list from the last plan was presented to aid in the process. The reevaluation of goals was based solely on what the jurisdictions felt were their priorities. Objectives were chosen based on working towards achieving the stated goals.

Individual jurisdictions were responsible for submitting updated mitigation strategies. Each jurisdiction was asked to review and provide updates on the mitigation strategies they identified previously. Jurisdictions were also given an extensive list of additional strategies to consider. This comprehensive list, which emphasizes mitigating the built environment, was evaluated by each jurisdiction.

In the selection of mitigation strategies, each jurisdiction was reminded to consider the following: consistency with goals and objectives, funding options, political support, public support, public safety, education, legality, preservation of the environment, reduction of risk to new and existing infrastructure/buildings, and staff capability. Only strategies that jurisdictions felt were feasible with regards to these standards were selected.

All participants were reminded to consider the reduction of the effects of hazards on new and existing infrastructure/buildings, a number of strategies identified in the plan directly addresses this requirement (FEMA requirement §201.6 (c)(3)(ii)). These strategies include:

- retrofitting facilities to increase wind resistance (all jurisdictions)
- drainage and storm water management projects to protect existing infrastructure from flooding (all jurisdictions)

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- enforcement of zoning ordinances to ensure no new development occurs in hazard prone areas (all jurisdictions)
- enforcement of flood ordinances to ensure no development occurs in flood prone areas(all jurisdictions)

Once strategies were selected they were analyzed in terms of costs and benefits. A cost/benefit classification of Low, Moderate, or High was assigned to each action. These classifications are defined below:

- Low (L): Benefits: Projects benefitting only a small percentage of the population, or provides short-term benefits. Costs: Projects likely to cost over \$100,000 that require additional funding and/or staffing and are complicated to implement.
- Moderate (M): Benefits: Projects that would benefit a larger percentage (over 30%) in the jurisdiction, or alleviates the problem for several years. Costs: These projects that may need additional funding or staffing outside of normal operations, with estimated costs between \$10,000 and \$100,000.
- High (H): Benefits: Projects that benefit over 50% of the population and are long-term solutions. Costs: projects that can be implemented by existing personnel

Strategies were also assigned a status and priority. The following criteria were used:

**Status**

Complete- Action has been completed

Partially Complete- A percentage of the project has been completed

Active- Project is underway

Planned- Project is planned, but contingent on available funding

**Priority\***

Low (L) - Actions classified as needed (5-7 year timeframe)

Medium (M) - Actions classified as important (3-5 year timeframe)

High (H) - Actions classified as most important (1-3 year timeframe)

\*Timeframes for each priority classification were adjusted from the previous plan to be more realistic in terms of funding.

**All strategies are to be considered only possibilities at this point. These actions must be considered only possibilities due to budgetary and political concerns.**



## 7.2 Mitigation Goals and Objectives

The overall purpose of the mitigation planning process in the county remains the same:

*Reduce risks through actions and policies that limit the effects of natural hazards on the physical assets and citizens of Dallas County.*

The Hazard Mitigation Planning Committee and each participating jurisdiction reaffirmed the goals and objectives of the process. These apply to each jurisdiction and all plan participants. The goals and objectives are:

**Goal #1: Establish a comprehensive countywide hazard mitigation system**

Research and identify funding opportunities for mitigation related activities.  
Implement a countywide GIS system to help determine risk and mitigate hazards.

**Goal #2: Reduce Dallas County's risk from natural hazards**

Research and identify strategies to help minimize vulnerability to hazards.  
Prepare plans and identify resources to facilitate reestablishing operations after a disaster.  
Enforce building codes to ensure structures are more hazard resilient.

**Goal #3: Reduce vulnerability of new and future development**

Enforce ordinances to ensure development new development does not occur in high risk areas.  
Enforce zoning and subdivision regulations to regulate development.

**Goal #4: Reduce Dallas County's vulnerability to natural hazards**

Protect structures in Dallas County from natural disasters.  
Provide warning system for county residents.  
Research and identify funding opportunities for local first responders.

**Goal #5: Foster public support and acceptance of hazard mitigation**

Educate local business owners on how businesses may be affected by natural hazards.  
Educate citizens on safety issues related to natural hazards.  
Educate the public regarding natural hazards, including mitigation activities.  
Educate citizens about natural disaster preparedness.

## 6.3 Mitigation Measures by Participant

The following tables provide a listing of proposed mitigation measures by participant.

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**Table 7.1 Dallas County Mitigation Measures**

<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/ Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
DC1	H	Active	H	Continue to Participate in NFIP and enforce County's flood ordinance	Flooding	Dallas County Commission	Local
DC2	H	Active	H	Continue to clear debris from roads and drainage ways	All	Dallas County Road and Bridge	Local
DC3	H	Active	H	Continue to perform maintenance on roads, drainage culverts, creeks, and streams to mitigate the threat of floods	All	Dallas County Road and Bridge	Local
DC4	H	Active	H	Continue to maintain and improve the county road system	All	Dallas County Road and Bridge	Local
DC5	M	Planned	M	Drainage projects in areas that are flood prone	All	Dallas County Commission	CDBG/PDM/ HMGP/Local
DC6	M	Planned	M	Storm Water Management Project throughout the County	All	Dallas County Commission	CDBG/PDM/ HMGP/Local
DC7	H	Active	H	Explore ways to use Social Media to provide mitigation and emergency information to the public	All	Dallas County EMA	Local

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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/ Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
DC8	L	Planned	L	Retrofitting of critical facilities	Severe Storms, Hurricanes, Tornadoes	Dallas County Commission	CDBG/PDM/HMGP/Local
DC9	L	Planned	M	Acquire desktop GIS software for maintaining risk assessment data.	All	Dallas County EMA	HMGP/PDM/Local
DC10	L	Active	M	Complete a comprehensive inventory of critical facilities within all jurisdictions and maintain with GIS.	All	Dallas County EMA	Local
DC11	L	Planned	M	Integrate FEMA HAZUS-MH applications for hazard loss estimations within local GIS programs. Maintain up-to-date data within GIS to apply the full loss estimation capabilities of HAZUS.	Flooding	Dallas County EMA	Local
DC12	H	Completed	H	Seek a countywide update of all FIRMS, with an emphasis on detailed studies of developed and developing areas with elevations provided and floodways delineated.	Flooding	Dallas County Commission	Local

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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/ Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
DC13	L	Planned	M	Consider large lot size restrictions on flood-prone areas designated on Flood Insurance Rate Maps.	Flooding	Dallas County Commission	Local
DC14	L	Planned	M	Evaluate additional land use restrictions within designated flood zones, such as prohibition of storage of buoyant materials, storage of hazardous materials, restrictive development of flood ways, etc.	Flooding	Dallas County Commission	Local
DC15	H	Active	H	Train local floodplains managers through programs offered through the State Floodplain Manager and FEMA'S training center in Emmetsburg, Maryland	Flooding	Dallas County Commission	Local
DC16	H	Active	H	Maintain a library of technical assistance and guidance materials to support the local flood plain manager.	Flooding	Dallas County Commission	Local
DC17	H	Active	H	Obtain membership for local flood plain managers in the Association of State Flood plain manager.	Flooding	Dallas County Commission	Local

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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/ Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
DC18	L	Planned	M	Evaluate the effectiveness of higher regulatory standards, such as additional building elevation and limitation of fill within flood plains, to be included in local flood plain management regulations.	Flooding	Dallas County Commission	Local
DC19	L	Planned	M	Evaluate building code standards for roof construction to assure protection against wind damage from hurricanes, tornadoes, and windstorms; require installation of "hurricane clips"	Severe Storms, Hurricanes, Tornadoes	Dallas County Commission	Local
DC20	M	Planned	M	Enact local ordinances to require community storm shelters within sizeable mobile home parks and subdivisions.	Severe Storms, Hurricanes, Tornadoes	Dallas County Commission	Local
DC21	M	Planned	M	Require the construction of safe rooms within new public buildings, such as new schools, libraries, community centers, and other public buildings where feasible.	Severe Storms, Hurricanes, Tornadoes	Dallas County Commission	Local

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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/ Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
DC22	H	Active	H	Continue program to subsidize safe room construction in existing homes.	Severe Storms, Hurricanes, Tornadoes	Dallas County Commission	Local
DC23	M	Active	H	Construct free-standing public safe rooms in vulnerable locations.	Severe Storms, Hurricanes, Tornadoes	Dallas County Commission	CDBG/PDM/ HMGP/Local
DC24	L	Planned	M	Apply for and maintain membership in the CRS Program.	All	Dallas County Commission	Local
DC25	M	Planned	M	Provide technical assistance to owners of pre-FIRM buildings to advise on available retrofits to protect against flood damage.	Flooding	Dallas County Commission	Local
DC26	H	Active	H	Seek funding sources, such as Community Development Block Grant funds, to assist low income homeowners with building retrofits to protect against flood damage.	All	Dallas County Commission	CDBG/PDM/ HMGP/Local

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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/ Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
DC27	H	Active	H	Publicize the availability of FIRM information to real estate agents, builders, developers, and homeowners through local trade publications and newspaper announcements.	Flooding	Dallas County EMA	Local
DC28	H	Active	H	Establish an annual Severe Weather Awareness Day in conjunction with NWS.	All	Dallas County EMA	Local
DC29	H	Active	H	Identify other environmental awareness events to integrate public information on hazard exposure and protection measures.	All	Dallas County EMA	Local
DC30	L	Planned	M	Arrange with the Multiple Listing Service MLS to require flood plain location disclosure as a condition for each real estate listing.	Flooding	Dallas County EMA	Local
DC31	H	Active	H	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit these materials with local libraries.	All	Dallas County EMA	Local

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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/ Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
DC32	H	Active	H	Maintain local library repositories with the latest available publications.	All	Dallas County EMA	Local
DC33	H	Active	H	Distribute hazard mitigation brochures to area schools for distribution to students.	All	Dallas County EMA	Local
DC34	L	Planned	L	Enact and enforce dumping regulations.	All	Dallas County Commission	Local
DC35	L	Planned	L	Enact and enforce erosion and sedimentation control regulations.	Flooding	Dallas County Commission	Local
DC36	M	Active	M	Seek technical assistance through the Alabama Cooperative Extension System with Best Management Practices (BMP) for channel and drainage system maintenance.	Flooding	Dallas County Commission	Local



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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/ Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
DC37	M	Active	M	Install warning sirens at all public schools and other locations as needed.	Severe Storms, Hurricanes, Tornadoes	Dallas County Commission	CDBG/PDM/HMGP/Local
DC38	M	Active	M	Install an automated weather monitoring system that transmits data to the County EMA and the NWS, including all-weather stations, precipitation gages, wind gages, and temperature gages.	All	Dallas County EMA	Local
DC39	H	Active	H	Support the Alabama Skywarn Foundation efforts to distribute weather radios to low income households, especially in rural areas outside of siren coverage areas.	All	Dallas County EMA	Local
DC40	H	Active	H	Promote the use of weather radios in households and businesses.	All	Dallas County EMA	Local

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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/ Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
DC41	M	Partially Complete/ Planned	H	Purchase emergency generators for disaster mitigation, as needed. In particular, for the Dallas County Volunteer Reception Center, Dallas County VOAD, and the Dallas County Medical Reserve Corporation all located at 115 Vaughn Memorial Drive in Selma; Pioneer and Central Alabama Electric Cooperative that serve Dallas County; and at the Water Works Facilities and other facilities as needed.	All	Dallas County EMA	HMGP/Local
DC42	M	Planned	M	Update county mitigation plan	All	Dallas County EMA	HMGP/PDM/ Local

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**Table 7.2 Town of Orrville Mitigation Measures**

<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
O1	H	Active	H	Continue to Participate in NFIP	Flooding	Town of Orrville	Local
O2	H	Active	H	Continue to clear debris from roads and drainage ways	All	Town of Orrville	Local
O3	H	Active	H	Continue to perform maintenance on roads, drainage culverts, creeks, and streams to mitigate the threat of floods	All	Town of Orrville	Local
O4	H	Active	H	Continue to maintain and improve the town's road system	All	Town of Orrville	Local
O5	M	Planned	M	Drainage projects in areas that are flood prone	All	Town of Orrville	CDBG/PDM/HMGP/Local
O6	M	Planned	M	Storm Water Management Project throughout the town	All	Town of Orrville	CDBG/PDM/HMGP/Local
O7	H	Active	H	Promote safe rooms in residences	Severe Storms, Tornadoes, Hurricanes	Town of Orrville	Local
O8	M	Planned	M	Construct free standing public safe rooms in vulnerable locations.	Severe Storms, Tornadoes, Hurricanes	Town of Orrville	CDBG/PDM/HMGP/Local

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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
O9	H	Active	H	Support the Alabama Skywarn Foundation efforts to distribute weather radios to low income households, especially in rural areas outside of siren coverage areas.	All	Town of Orrville	Local
O10	H	Active	H	Promote the use of weather radios in households and businesses.	All	Town of Orrville	Local
O11	M	Planned	M	Purchase emergency generators for post-disaster mitigation, as needed.	All	Town of Orrville	HMGP
O12	L	Planned	M	Purchase tornado sirens for areas where people congregate outdoors	Tornadoes	Town of Orrville	HMGP

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**Table 7.3 City of Selma Mitigation Measures**

<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
S1	H	Active	H	Continue to Participate in NFIP and enforce City's flood ordinance	Flooding	City of Selma	Local
S2	H	Active	H	Continue to clear debris from roads and drainage ways	All	City of Selma Public Works	Local
S3	H	Active	H	Continue to perform maintenance on roads, drainage culverts, creeks, and streams to mitigate the threat of floods	All	City of Selma Public Works	Local
S4	H	Active	H	Continue to maintain and improve the city road system	All	City of Selma Public Works	Local

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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
S5	H	Active	H	Explore ways to use Social Media to provide mitigation and emergency information to the public	All	City of Selma	Local
S7	H	Active	H	Continue to enforce building codes	All	City of Selma	Local Funds
S8	H	Active	H	Continue to enforce subdivision regulations	All	City of Selma	Local Funds
S9	H	Active	H	Continue to enforce zoning regulations	All	City of Selma	Local Funds

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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
S10	H	Active	H	Continue to send law enforcement and fire personnel to emergency response training	All	City of Selma	Local Funds
S11	H	Active	H	Encourage inclusion of safe rooms in new construction	Tornadoes, Severe Storms	City of Selma	Local Funds
S12	M	Planned	M	Drainage projects in areas that are flood prone	All	City of Selma	CDBG/PDM/HMGP/Local
S13	M	Planned	M	Storm Water Management Project throughout the City	All	City of Selma	CDBG/PDM/HMGP/Local
S14	L	Planned	L	Retrofitting of Critical Facilities	Wind Events	City of Selma	CDBG/PDM/HMGP/Local

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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
S15	L	Planned	M	Purchase of warning systems	All	City of Selma	CDBG/PDM/HMGP/Local
S16	L	Planned	M	Community Safe Rooms	Wind Events	City of Selma	CDBG/PDM/HMGP/Local



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**Table 7.4 City of Valley Grande Mitigation Measures**

<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
VG1	H	Active	H	Continue to Participate in NFIP and enforce City's flood ordinance	Flooding	City of Valley Grande	Local
VG2	H	Active	H	Continue to clear debris from roads and drainage ways	All	City of Valley Grande	Local
VG3	H	Active	H	Continue to perform maintenance on roads, drainage culverts, creeks, and streams to mitigate the threat of floods	All	City of Valley Grande	Local
VG4	H	Active	H	Continue to maintain and improve the city road system	All	City of Valley Grande	Local

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<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
VG5	H	Active	H	Explore ways to use Social Media to provide mitigation and emergency information to the public	All	City of Valley Grande	Local
VG6	H	Active	H	Continue to enforce building codes	All	City of Valley Grande	Local Funds
VG7	H	Active	H	Continue to enforce subdivision regulations	All	City of Valley Grande	Local Funds
VG8	H	Active	H	Continue to send law enforcement and fire personnel to emergency response training	All	City of Valley Grande	Local Funds

**Dallas County, Alabama Hazard Mitigation Plan**  
**Section VII. Mitigation Goals, Objectives, and Strategies**

<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Cost/Benefit</b>	<b>Mitigation Measure</b>	<b>Hazards Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
VG9	H	Active	H	Encourage inclusion of safe rooms in new construction	Tornadoes, Severe Storms	City of Valley Grande	Local Funds
VG10	M	Planned	M	Drainage projects in areas that are flood prone	All	City of Valley Grande	CDBG/PDM/HMGP/Local
VG11	M	Planned	M	Storm Water Management Project throughout the City	All	City of Valley Grande	CDBG/PDM/HMGP/Local
VG12	L	Planned	L	Retrofitting of Critical Facilities	Wind Events	City of Valley Grande	CDBG/PDM/HMGP/Local
VG13	L	Planned	M	Purchase of warning systems	All	City of Valley Grande	CDBG/PDM/HMGP/Local
VG14	L	Planned	M	Community Safe Rooms	Wind Events	City of Valley Grande	CDBG/PDM/HMGP/Local

**Dallas County, Alabama Hazard Mitigation Plan**  
**Section VII. Mitigation Goals, Objectives, and Strategies**

**Table 7.5 Dallas County School System Mitigation Measures**

<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Mitigation Action</b>	<b>Hazard Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
DCBOE1	H	Planned	Provide storm shelters at all county schools	All	Dallas County BOE	HMGP/ALSDE Funds/Local Funds
DCBOE2	H	Planned	Purchase generators for each school	All	Dallas County BOE	HMGP/ALSDE Funds/Local Funds
DCBOE3	H	Planned	Retrofitting of schools	Tornadoes, Severe Storms	Dallas County BOE	HMGP/ALSDE Funds/Local Funds
DCBOE4	H	Planned	Tornado Sirens	Tornadoes	Dallas County BOE	HMGP/Local Funds

**Dallas County, Alabama Hazard Mitigation Plan**  
**Section VII. Mitigation Goals, Objectives, and Strategies**

<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Mitigation Action</b>	<b>Hazard Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
DCBOE5	H	Planned	Correct storm water/ drainage issues on school campuses	Flooding	Dallas County BOE	HMGP/ALSDE Funds/Local Funds
DCBOE6	H	Planned	Train all staff in hazard safety	All	Dallas County BOE	Local Funds

**Dallas County, Alabama Hazard Mitigation Plan  
Section VII. Mitigation Goals, Objectives, and Strategies**

**Table 7.6 Selma City Schools Mitigation Measures**

<b>Mitigation Measure #</b>	<b>Priority</b>	<b>Status</b>	<b>Mitigation Action</b>	<b>Hazard Addressed</b>	<b>Lead Agency</b>	<b>Funding Source</b>
SCBOE1	H	Planned	Provide storm shelters at all city schools	All	Selma City Schools	HMGP/ALSDE Funds/Local Funds
SCBOE2	H	Planned	Purchase generators for each school	All	Selma City Schools	HMGP/ALSDE Funds/Local Funds
SCBOE3	H	Planned	Retrofitting of Elementary School	Tornadoes, Severe Storms	Selma City Schools	HMGP/ALSDE Funds/Local Funds
SCBOE4	H	Planned	Tornado Sirens	Tornadoes	Selma City Schools	HMGP/Local Funds
SCBOE5	H	Planned	Correct storm water/drainage issues on school campuses	Flooding	Selma City Schools	HMGP/ALSDE Funds/Local Funds
SCBOE6	H	Planned	Train all staff in hazard safety	All	Selma City Schools	Local Funds

## **APPENDIX 1**

## Sign-in Sheet

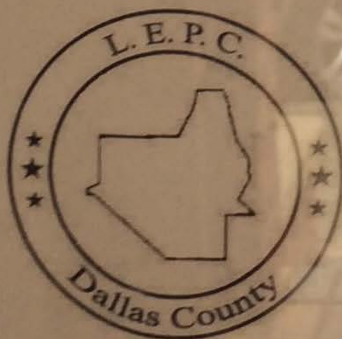
**E-Mail or Mailing Address  
and Phone Number**



**Joint LEPC and Hazard Mitigation Planning Committee Notice**

# LEPC

**Local Emergency  
Planning Committee  
Meeting**



**Bryan Johnson, Chairman  
Jamie Lee, Vice-Chairman**

**Please make plans to attend!!!**

**Thursday April 2, 2015**

**10:00 a.m.**

**At the**

**Dallas County Commission  
Courtroom**

**(Courthouse Annex)**

Located at  
102 Church Street  
Selma, AL 36701

**Contact: Rhonda Johnson  
874-2515**

**Dallas County EMA**

***Brandy Wilkerson, representing  
Alabama Tombigbee Regional  
Commission will be the guest  
speaker.***



# Marchers end journey on Capitol steps

By Marty Swant  
The Associated Press

MONTGOMERY (AP) — The daughters of two major figures of the civil rights era, Martin Luther King Jr. and former Alabama Gov. George Wallace, shared a stage on the steps of the Alabama Capitol on Wednesday to mark the 50th anniversary of the 1965 Selma-to-Montgomery voting rights march.

While their famous fathers were on opposite sides of history 50 years ago, the two came together to mark the milestone anniversary.

"I think it's important going forward that we really grab hold to and embrace my father's nonviolent philosophy and methodology. That's the way forward for any social change issue in this country," Bernice King said in an interview.

Bernice King stood in the same spot her father did in 1965 to read the "How Long, Not Long" speech he gave civil rights marchers on March 25, 1965.

Peggy Wallace Kennedy acknowledged her father's

See MARCHERS, Page 2A



Blake Deshazo | Times-Journal

**PLANTING LIFE:** James Henderson, Josh Pierce, the Rev. Jerry Light, Beth Spivey, Saprina Simmons and Warren Hinson help dig a hole for one of the four trees that were planted Wednesday by the city of Selma to honor martyrs of the voting rights movement.

## Movement martyrs honored

By Blake Deshazo  
The Selma Times-Journal

The legacy of the four martyrs of the march that were killed fighting for equal voting rights will be remembered for generations in the Riverfront Park, as the city of Selma planted four willow oak trees Wednesday in their honor.

In the months that led up to the passing of the Voting Rights Act, Jimmie Lee

Jackson, the Rev. James Reeb, Viola Liuzzo and Jonathan Daniels were each killed for standing for what they believed in.

"It is a tribute to their service and to them giving the ultimate sacrifice," said Director of Planning and Development James Benderson.

"Everyone in this city is familiar with them. They know about [the martyrs]."

See MARTYRS, Page 11A

# Mitigation plan to be finalized

By Blake Deshazo  
The Selma Times-Journal

The Dallas County Local Emergency Planning Committee will put the final stamp of approval on its updated hazard mitigation plan next week.

The LEPC will meet Thursday, April 2 at 10 a.m. in the Dallas County Commission Courtroom to present the updated plan to its members and the public.

While no major adjustments were made, Dallas County EMA Director Rhonda Johnson said it gives the committee a chance to review its plan and make changes if they are needed.

"It gives us an opportunity to take [the plan] section by section and read it to just make sure that everything is covered

See PLAN, Page 11A



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## TOURS

Continued from 1A

Dallas County Chamber of Commerce.

The tours are like walking classrooms in your community, she said. Smedley encourages people to attend the tours to gain more knowledge about the community they live in.

"A lot of people may take for granted what we have here," Smedley said. "It's an opportunity to meet tourists or your neighbor, [and] at the same time, learn about your community."

Other cities have joined Selma in presenting the wonders and beauties that

make their cities shine. Birmingham, Dothan and Greensboro are among some of the 26 cities that will show what their city has to offer. Tours will be held on Saturdays for three weeks in April.

Brian Jones of the Alabama Tourism Department is the coordinator of the tours. He said Alabama is the only state in the U.S. to produce statewide concurrent walking tours.

"These walking tours are a great way to get out and enjoy the spring weather and find out about the history of our state," Jones said. "We have done more than 2,000 walking tours since the beginning of the program twelve years ago, and they keep increasing in popularity every year."

## PLAN

Continued from 1A

in that plan," Johnson said.

By law, they are required to update the plan every five years.

The plan is designed to help local governments develop a strategy to decrease losses caused by a disaster and cut back on repeated damage.

Johnson said the plan helps EMA and first responders identify hazards in the area and how they can prevent damage from them when they do occur.

"In this plan we detail what we will do with hazard mitigation grant funding money," Johnson said. "After a disaster occurs, if it is declared one, our county is eligible for hazard mitigation funds. Those funds will revert back to our plan, and we identify what we can use those funds for."

In the past, Johnson said the funds have been used to purchase tornado sirens and community storm shelters, but there is a number of items the money can be used for.

The LEPC, which is made up of first responders and the general public, helps decide what the plan for Dallas County needs and doesn't

need.

"Everybody should be able to voice their opinions about what we do, how we do it and what needs to be put in these plans," Johnson said. "It is very important that all of our first responders have input and knowledge of what this emergency preparedness plan or the hazard mitigation plan is so that they can do

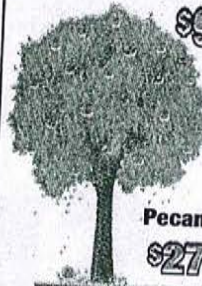
what they need to do as well.

Johnson encourages the public to attend.

"We try to take everybody's plans and mesh them into one, so if we're ever called upon on a large scale, everybody will be able to function and it be organized," Johnson said. "I always encourage public input."

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**Central Alabama  
Farmer's CO-OP**

2519 US Hwy. 80 W., Selma  
874-9083

# **HAZARD MITIGATION DRAFT AVAILABLE FOR REVIEW**

The Dallas County EMA and Alabama Tombigbee Regional Commission are in the process of updating Dallas County's Hazard Mitigation Plan. This plan is a multi-jurisdictional effort to evaluate and mitigate all natural hazards that may affect Dallas County and its residents. A draft of the plan update is available for review at [atrcregion6.org](http://atrcregion6.org).

The public is encouraged to review the plan and submit comments.