BE IT REMEMBERED that the Board of Supervisors of Clay County, Mississippi, met at the Courthouse in West Point, MS, on the 5th day of June, 2014, at 9 00 a m , and present were Lynn Horton, Luke Lummus, R B Davis, Shelton Deanes, and Floyd McKee, President Also present were Amy G Berry, Clerk of the Board, Bob Marshall, Board Attorney, and Ramirez Williams, Deputy Sheriff, when and where the following proceedings were as determined to wit,

NO _____

IN THE MATTER OF ADOPTING AND AMENDING THE AGENDA FOR THE BOARD OF SUPERVISORS MEETING HELD ON JUNE 5, 2014

There came on this day for consideration the matter of adopting and amending the agenda for the Board of Supervisors meeting held on June 5, 2014

It appears to this Board the items listed below should be added to the agenda for further discussion and consideration to wit

- Robert Calvert regarding request to go into closed session
- Clay County Justice Court Drug Court

After motion by Shelton Deanes and second by Luke Lummus the Board doth vote unanimously to adopt the agenda as presented and further to adopt the agenda as amended

SO ORDERED this the 5th day of June, 2014

Vice President

NO _____

IN THE MATTER OF TABLING THE JUSTICE COURT DRUG COURT ISSUE UNTILTHURSDAY JUNE 12, 2014

There came on this day for consideration the matter of tabling the Justice Court Drug Court issue until Thursday, June 12, 2014

It appears to this Board Drug Court has approximately $3,500 in cash as of 05/31/2014 and this Board had told the Clerk at such time the fund starts to get low on cash to inform them, and,

It appears at this time the Clerk is reporting further that after the 6/10/2014 account payable and 06/15/2014 claims are expensed the said fund will have approximately $500 00 remaining in the said fund, and,

It appears the MS Legislature did allocate funding for the Drug Court Programs and on Friday, June 6, 2014 the Supreme Court Advisory Committee Board who allocates and appropriates the funding for the year (2014-2015) will be meeting

After motion by Luke Lummus and second by Shelton Deanes this Board doth vote unanimously to table making any decisions about Justice Court Drug Court until the MS Supreme Court Advisory Board has made an official ruling as to how funds will be appropriated

SO ORDERED this the 5th day of June, 2014

Vice President

After motion by Luke Lummus and second by R B Davis this Board doth vote unanimously to recess until Thursday, June 12, 2014 at 9 00 a m

SO ORDERED this the 5th day of June, 2014

Vice President

BE IT REMEMBERED the Clay County Board of Supervisors met at the Clay County Courthouse in West Point, MS, on the 12th day of June, 2014, at 9 00 a m , and present were Lynn Horton, Luke Lummus, R. B Davis, Shelton Deanes, and Floyd McKee, President Also present were Amy G Berry, Clerk of the Board, Bob Marshall, Board Attorney, and Eddie Scott, Sheriff, when and where the following proceedings were as determined to wit,

NO _____

IN THE MATTER OF ADOPTING AND AMENDING THE AGENDA FOR THE BOARD OF SUPERVISORS MEETING HELD ON JUNE 12, 2014

There came on this day for consideration the matter of adopting and amending the agenda for the Board of Supervisors meeting held on June 12, 2014

It appears to this Board the items listed below should be added to the agenda for further discussion and consideration to wit

- Heavy Hauling Ordinance – Ben Knight, Cecil Johnson, and Mr Deanes

After motion by Floyd McKee and second by Shelton Deanes the Board doth vote unanimously to adopt the agenda as presented and further to adopt the agenda as amended

SO ORDERED this the 12th day of June, 2014

Vice President

NO _____

IN THE MATTER OF APPROVING THE SALE OF CERTAIN COUNTY VEHICLES

There came on this day for consideration the matter of approving the sale of certain county vehicles

It appears to this Board as attached hereto as Exhibit A are the Notice of Sale Posted in the three or more public places Noticing the public of the Board's intent to sale the designated vehicles, and,

It appears to this Board as attached hereto as Exhibit B are the minutes of this Board in which the sale of the said vehicles was authorized to take place, and,

It appears to this Board the sale was conducted on the front steps of the Courthouse lawn in which the said vehicles were present for inspection and auctioned off one at a time with the following sale being final to wit

SD797 2000 Crown Victoria	Eddie Quinn	$750 00
SD796 2000 Crown Victoria	Larry Amos	$575 00
BG340 Chevrolet Van C10	Eddie Quinn	$500 00
Seized Vehicle 1993 Toyota V39 4WY Maroon	David Blansett	$500 00

After motion by R B Davis and second by Shelton Deanes this Board doth vote unanimously to approve of the sale of the said vehicles listed above and for the vehicles to be deleted from the County's Fixed Asset Ledger

SO ORDERED this the 5th day of June, 2014

Vice President

NOTICE OF SALE

Notice is hereby given that the Clay County Board of Supervisors will auction for sale on the front steps of the Clay County Courthouse located on 205 Court Street, West Point, MS 39773, for the sale of the following equipment

#1, 3

	SD891	Dodge 150 PKY Green	S/N 1B7HC16X7WS6012141
	SD797	2000 Crown Victoria 4 door green	S/N 2FAFP71W3YX167389
	SD796	2000 Crown Victoria 4 door green	S/N 2FAFP71WXYX167390
Seized Vehicle		1993 Toyota V39 4WY Maroon	S/N JT3VN39W9P0110527

The said sale shall be without warranty as to condition Settlement shall be paid in full within four (4) hours following the sale by means of an official Bank Check, Money order, or with cash in advance of receiving said equipment

The said bids shall be opened at the Board of Supervisors regular meeting held Thursday, June 5 2014 at 9 00 a m

The Board of Supervisors reserves the right to accept and reject all bids received and to waive any and all formalities with the acceptance and rejection of the bids

Publish by order of the Board of Supervisors, this the 23rd day of May, 2014

Amy G Berry
Chancery Clerk

550

NOTICE OF SALE

Notice is hereby given that the Clay County Board of Supervisors will auction for sale on the front steps of the Clay County Courthouse located on 205 Court Street, West Point, MS 39773, for the sale of the following equipment

BG340 Chevrolet Van C10 S/N 1G8EG25H5G7141167

The said sale shall be without warranty as to condition Settlement shall be paid in full within four (4) hours following the sale by means of an official Bank Check, Money order, or with cash in advance of receiving said equipment

The said bids shall be opened at the Board of Supervisors regular meeting held Thursday, June 5, 2014 at 9 00 a m

The Board of Supervisors reserves the right to accept and reject all bids received and to waive any and all formalities with the acceptance and rejection of the bids

Publish by order of the Board of Supervisors, this the 23rd day of May, 2014

Amy G Berry
Chancery Clerk

551

DEPOSITORY RECEIPTS

CLAY COUNTY, MISSISSIPPI
P O BOX 815

WEST POINT, MS 39773-0000

REPRINT

RECEIPT DATE 6/05/2014 NO 2014 25083
RECEIPT DESCRIPTION SALE OF SD797

PLEASE RECEIVE FROM EDDIE QUINN THE AMOUNT SET OPPOSITE THE RESPECTIVE FUNDS FOR THE ACCOUNT OF SAID FUNDS, TO-WIT AND DEPOSIT TO ACCOUNT NUMBER BELOW LEFT CORNER

012 FORFEITURE FUND (SHERIFF)		
000-383 SALE OF CAPITAL ASSET		750 00
TOTAL FOR RECEIPT 2014	25083	750 00

WITNESS MY SIGNATURE, THIS THE 05 DAY OF JUNE, 2014

AMY BERRY,
CHANCERY CLERK OF CLAY COUNTY

DATED 6/5/14 BY

Clay County Board of Supervisors

P O Box 815
West Point, Mississippi 39773
Phone (662) 494-3313
Fax (662) 492-4059
Website. claycountyms.com
E-mail aberry@claycounty.ms.gov

Equipment No 50797 Serial No 2FAFP71W3YX167389

Pursuant to an order of the Clay County Board of Supervisors entered upon its minutes June 5, 2014, I Amy G Berry, Chancery Clerk of Clay County, do hereby sell and transfer to Eddie Quinn the equipment described below for the sum of $ 750.00 the receipt of which is hereby acknowledged

It is expressly understood and agreed upon herein that Clay County, MS seller, makes no warranties or expressions as to the quality or the capabilities of the said equipment, and that by this sale the seller shall be released from any and all liabilities which might now or in the future be incurred as a result of the said sale

Description of Property Sold

2000 Crown Victoria, 4-door Green, Serial Number 2FAFP71W3YX167389

SOLD by order of the Clay County Board of Supervisors this the 5th day of June, 2014

Amy G Berry

Amy G Berry, Chancery Clerk

Sworn and subscribed this the 5th day of June 2014

Notary Public Robert O Harrell Jr
By Gloria McNair, D C
Circuit Clerk & Ex-Officio Notary Public
My Commission Expires Jan. 4, 2016

Clay County Board of Supervisors

P O Box 815
West Point, Mississippi 39773
Phone (662) 494-3313
Fax (662) 492-4059
Website clay county ms com
E mail abarrett@claycounty ms gov

District 1
Lynn D Horton Vice President
District 2
Luke Lummus
District 3
R B Davis
District 4
Shelton Deanes
District 5
Floyd Vicke Pres

Equipment No SD796 Serial No 2FAFP71WXYX167390

Pursuant to an order of the Clay County Board of Supervisors entered upon its minutes June 5, 2014, I Amy G Berry, Chancery Clerk of Clay County, do hereby sell and transfer to Larry Amos the equipment described below for the sum of $ 575.00 the receipt of which is hereby acknowledged

It is expressly understood and agreed upon herein that Clay County MS, seller, makes no warranties or expressions as to the quality or the capabilities of the said equipment, and that by this sale the seller shall be released from any and all liabilities which might now or in the future be incurred as a result of the said sale

Description of Property Sold

2000 Crown Victoria, 4-door Green, Serial Number 2FAFP71W3YX167390

SOLD by order of the Clay County Board of Supervisors this the 5th day of June, 2014

Amy G Berry
Amy G Berry Chancery Clerk

Sworn and subscribed this the 5th day of June, 2014

Notary Public Robert O Harrell Jr.
By Gloria Minor, DC

Circuit Clerk & Ex-Officio Notary Public
My Commission Expires Jan 4, 2016

534

DEPOSITORY RECEIPTS

CLAY COUNTY, MISSISSIPPI
P O BOX 815

WEST POINT, MS 39773-0000

REPRINT

RECEIPT DATE 6/05/2014 NO 2014 25085
RECEIPT DESCRIPTION SALE OF SD796

PLEASE RECEIVE FROM LARRY AMOS THE AMOUNT SET OPPOSITE THE RESPECTIVE FUNDS FOR THE ACCOUNT OF SAID FUNDS, TO-WIT AND DEPOSIT TO ACCOUNT NUMBER BELOW LEFT CORNER

012 FORFEITURE FUND (SHERIFF)		
000-383 SALE OF CAPITAL ASSET		575 00
TOTAL FOR RECEIPT 2014	25085	575 00

WITNESS MY SIGNATURE, THIS THE 05 DAY OF JUNE, 2014

AMY BERRY,
CHANCERY CLERK OF CLAY COUNTY

DATED 6/5/14

BY

555

DEPOSITORY RECEIPTS

CLAY COUNTY, MISSISSIPPI
P O BOX 815

WEST POINT, MS 39773-0000

REPRINT

RECEIPT DATE 6/05/2014 NO 2014 25098
RECEIPT DESCRIPTION SALE OF BG340

PLEASE RECEIVE FROM EDDIE QUINN THE AMOUNT SET OPPOSITE THE RESPECTIVE FUNDS FOR THE ACCOUNT OF SAID FUNDS, TO-WIT AND DEPOSIT TO ACCOUNT NUMBER BELOW LEFT CORNER

001 GENERAL COUNTY		
000-383 SALE OF CAPITAL ASSET		500 00
TOTAL FOR RECEIPT 2014	25098	500 00

WITNESS MY SIGNATURE, THIS THE 05 DAY OF JUNE, 2014

AMY BERRY,
CHANCERY CLERK OF CLAY COUNTY

DATED 6/5/14

BY

Clay County Board of Supervisors

P O Box 815
West Point, Mississippi 39773
Phone (662) 494-3313
Fax (662) 492-4059
Website clay county ms.com
E mail aberry@clay county ms .ov

District 1
Lynn D Horton Vice
President
District 2
Luk Timmus
District 3
K B Davis
District 4
Shelton Deans
District 5
Floyd McKee, President

Equipment No BG340 **Serial No** 1G8EG25H5G7141167

Pursuant to an order of the Clay County Board of Supervisors entered upon its minutes June 5, 2014, I, Amy G Berry, Chancery Clerk of Clay County, do hereby sell and transfer to Eddie Quinn the equipment described below for the sum of $ 500.00 the receipt of which is hereby acknowledged

It is expressly understood and agreed upon herein that Clay County, MS, seller, makes no warranties or expressions as to the quality or the capabilities of the said equipment, and that by this sale the seller shall be released from any and all liabilities which might now or in the future be incurred as a result of the said sale

Description of Property Sold

Chevrolet Van C10, Serial Number 1G8EG25HG7141167

SOLD by order of the Clay County Board of Supervisors this the 5th day of June, 2014

Amy G. Berry
Amy G Berry, Chancery Clerk

Sworn and subscribed this the 5th day of June, 2014

Notary Public Robert D. Harrell, Jr
by Gloria Minor
Circuit Clerk & Ex-Officio Notary Public
My Commission Expires Jan 4, 2016

0557

DEPOSITORY RECEIPTS

CLAY COUNTY, MISSISSIPPI
P O BOX 815

WEST POINT, MS 39773-0000

REPRINT

RECEIPT DATE 6/05/2014 NO 2014 25084
RECEIPT DESCRIPTION SALE OF 1993 TOYOTA

PLEASE RECEIVE FROM DAVID BLANSETT THE AMOUNT SET OPPOSITE THE RESPECTIVE FUNDS FOR THE ACCOUNT OF SAID FUNDS, TO-WIT AND DEPOSIT TO ACCOUNT NUMBER BELOW LEFT CORNER

012 FORFEITURE FUND (SHERIFF)	
000-383 SALE OF CAPITAL ASSET	500 00
TOTAL FOR RECEIPT 2014 25084	500 00

WITNESS MY SIGNATURE, THIS THE 05 DAY OF JUNE, 2014

AMY BERRY,
CHANCERY CLERK OF CLAY COUNTY

DATED 6/5/14 BY

Clay County Board of Supervisors

P O Box 815
West Point, Mississippi 39773
Phone (662) 494-3313
Fax (662) 492-4059
Website claycountyms.com
Email ab.tryon@claycountyms.gov

Equipment No Seized vehicle Serial No JT3VN39W9P0110527

Pursuant to an order of the Clay County Board of Supervisors entered upon its minutes June 5, 2014 I, Amy G Berry, Chancery Clerk of Clay County, do hereby sell and transfer to David Blansett the equipment described below for the sum of $ 500.00 the receipt of which is hereby acknowledged

It is expressly understood and agreed upon herein that Clay County, MS, seller makes no warranties or expressions as to the quality or the capabilities of the said equipment, and that by this sale the seller shall be released from any and all liabilities which might now or in the future be incurred as a result of the said sale

Description of Property Sold

1993 Toyota V39 4WY Maroon Serial Number JT3VN39W9P0110527

SOLD by order of the Clay County Board of Supervisors this the 5th day of June 2014

Amy G. Berry
Amy G Berry, Chancery Clerk

Sworn and subscribed this the 5th day of June 2014

Notary Public Robert O Harrell Jr
By Glenda Minor, DC

Circuit Clerk & Ex-Officio Notary Public
My Commission Expires Jan 4, 2016

0559

NO _____

IN THE MATTER OF AUTHORIZING RETAINING SD891 AND TRANSFERRING FROM THE SHERIFF'S DEPARTMENT INVENTORY TO DISTRICT 1

There came on this day for consideration the matter of authorizing retaining SD891 and transferring from the Sheriff's Department inventory to District 1

It appears to this Board the Sheriff had approved to sale the said truck SD891, Dodge 150 PKY Green, at the sale today, however, District 1 Supervisor, Lynn Horton, stated his district needed the said truck and that he would agree to purchase the truck from the Sheriff for $_____, and it be transferred to District 1 Mobile Equipment Schedule

After motion by Lynn Horton and second by Shelton Deanes this Board doth vote unanimously to authorize the said vehicle, SD891, Dodge 150 PKY Green, to be transferred from the Sheriff's Department inventory to the District 1 Mobile Equipment Inventory at the agreed sales price of $ _____

SO ORDERED this the 5th day of June, 2014

Vice President

RESOLUTION TO ADOPT THE MEMA DISTRICT 4 REGIONAL HAZARD MITIGATION PLAN

WHEREAS, Clay County Mississippi is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property, and

WHEREAS, the Clay County Mississippi Board of Supervisors desires to seek ways to mitigate situations that may aggravate such circumstances, and

WHERAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards, and

WHEREAS, it is the intent of the Clay County Board of Supervisors to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan, and

WHEREAS it is also the intent of the Clay County Board of Supervisors to fulfill its obligations under Section 322 Mitigation Planning, of the Robert T Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive federal assistance in the event of a declared disaster affecting the Clay County MS, and

WHEREAS, the Clay County Board of Supervisors, with input from the appropriate local and state officials has participated in the development of a multi-jurisdictional hazard mitigation plan, called the MEMA District 4 Regional Hazard Mitigation Plan

WHEREAS, the Mississippi Emergency Management Agency and the Federal Emergency Management Agency have reviewed the MEMA District 4 Regional Hazard Mitigation Plan for legislative compliance and has approved the plan pending the completion of local adoption procedures,

NOW, THEREFORE, BE IT RESOLVED that the Clay County Board of Supervisors of Clay County MS hereby

1 Adopts the MEMA District 4 Regional Hazard Mitigation Plan, and

2 Agrees to take such other official action as may be reasonably necessary to carry out the proposed actions of the Plan

SO ORDERED, this the 5th day of June, 2014

Vice President

ATTEST:

561

Chancery Clerk

AFFP

Affidavit of Publication

STATE OF MISSISSIPPI} SS
COUNTY OF CLAY}

Cindy Cannon being duly sworn, says

That she is Classified Clerk of the Daily Times Leader, a daily newspaper of general circulation, printed and published in West Point, Clay County, Mississippi, that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

May 25, 2014

That said newspaper was regularly issued and circulated on those dates

SIGNED

Cindy Cannon

Classified Clerk

Subscribed to and sworn to me this 2nd day of June, 2014

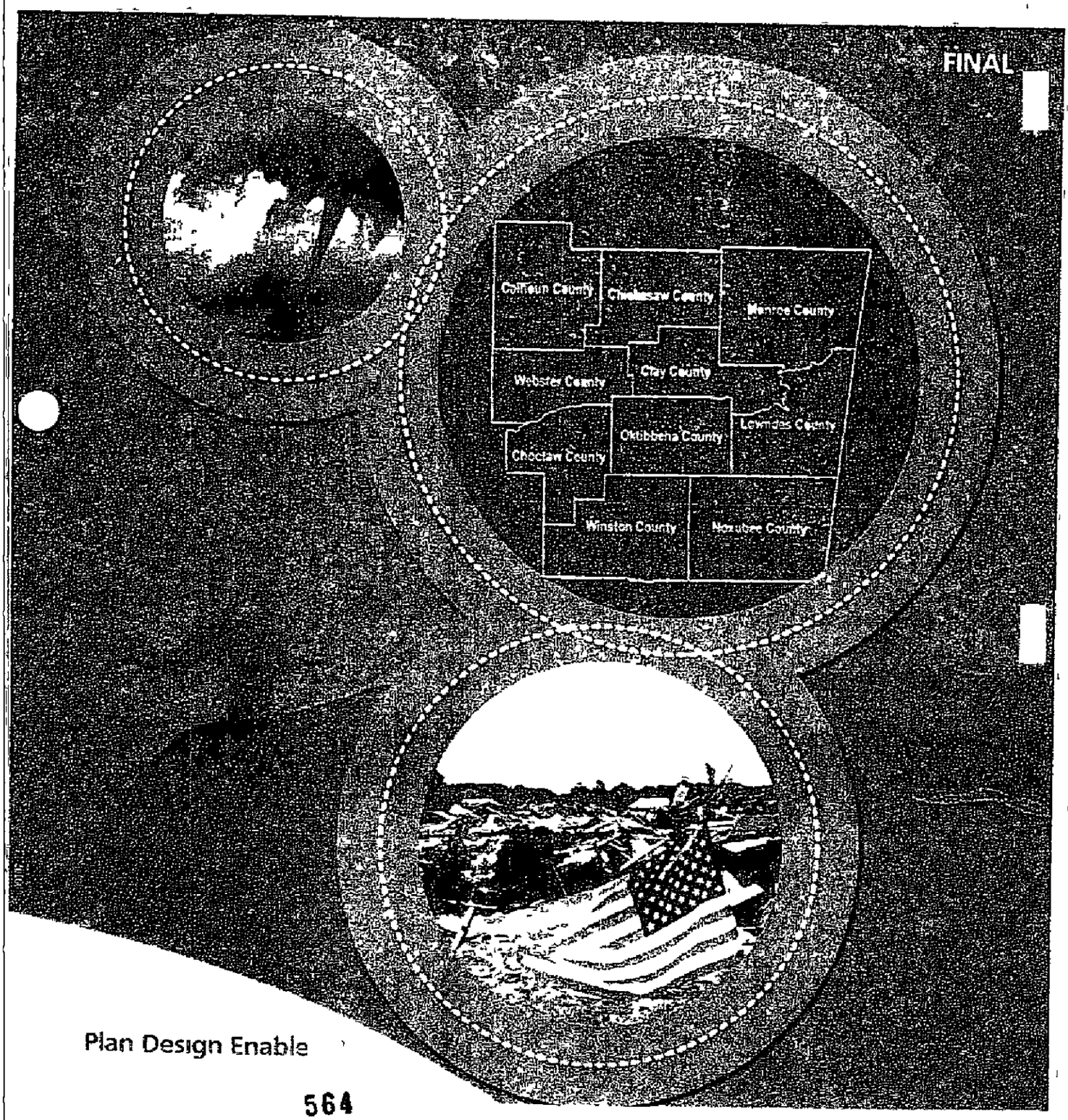
Amy D. Berry

By Cindy H Keeys, D.C.

Chancery Clerk & Ex Officio Notary Public
My Commission Expires Jan 4 2[illegible]

MEMA Distri[illegible]

Regional Hazard Mitigation Plan



Plan Design Enable

Annex D
Clay County

This annex includes jurisdiction-specific information for Clay County and its participating municipalities It consists of the following five subsections

- D 1 Clay County Community Profile
- D 2 Clay County Risk Assessment
- D 3 Clay County Vulnerability Assessment
- D 4 Clay County Capability Assessment
- D 5 Clay County Mitigation Strategy

D 1 CLAY COUNTY COMMUNITY PROFILE

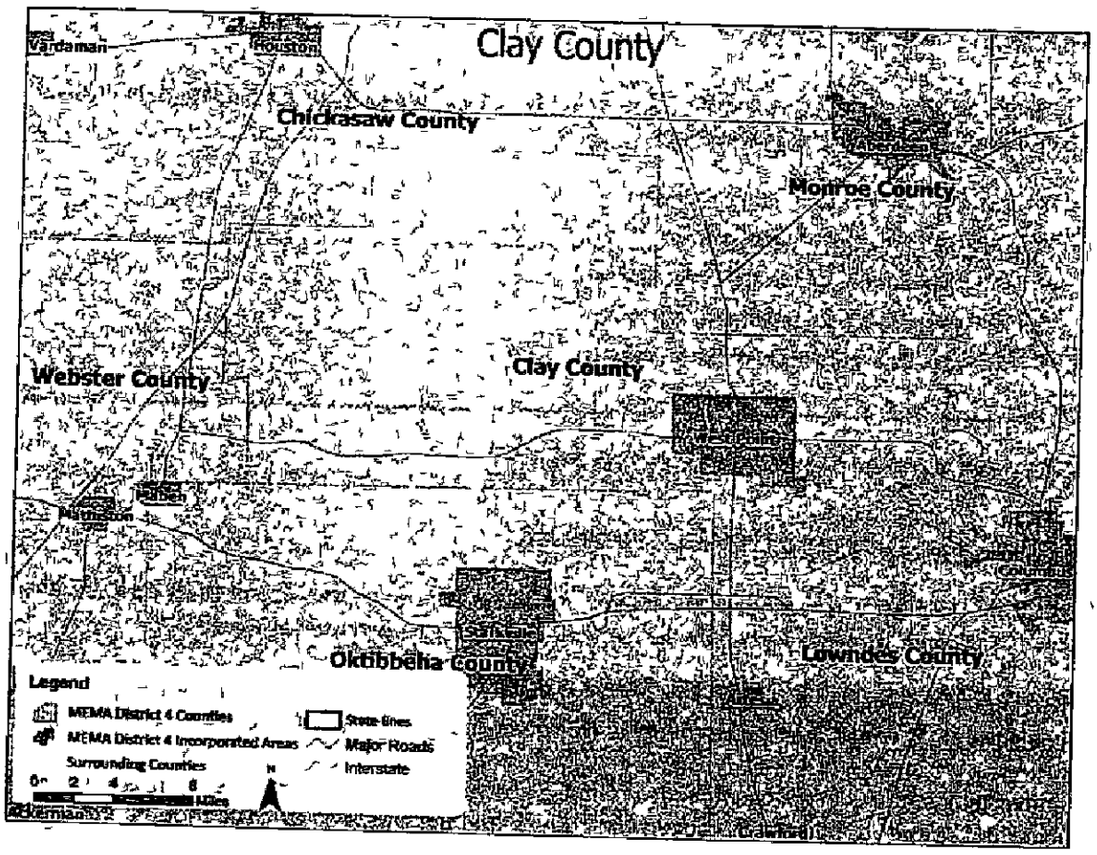
D 1 1 Geography and the Environment

Clay County is located in north east Mississippi It comprises one city, the City of West Point as well as several small unincorporated communities An orientation map is provided as **Figure D 1**

The county is situated to the west of the Tombigbee River at the intersection of several major railways and highways The total area of the county is 416 square miles 6 square miles of which is water area

Summer temperatures in the county range from highs of about 92 degrees Fahrenheit (F) to lows in the upper 60s Winter temperatures range from highs in the upper 50s to low 60s to lows around 35°F Average annual rainfall is approximately 56 inches with the wettest months being December through March

FIGURE D 1 CLAY COUNTY ORIENTATION MAP



D 1 2 Population and Demographics

According to the 2010 Census, Clay County has a population of 20 634 people The county has seen a decline in population between 2000 and 2010 of around 6 percent, and the population density is around 50 people per square mile Population counts from the US Census Bureau for 1990 2000, and 2010 for the county and both of the participating jurisdictions are presented in **Table D 1**

TABLE D 1 POPULATION COUNTS FOR CLAY COUNTY

Jurisdiction	1990 Census Population	2000 Census Population	2010 Census Population	% Change 2000-2010
Clay County	21 120	21,979	20,634	-6.1%
West Point	8 489	12 145	11 203	7 8%

Source US Census Bureau

Based on the 2010 Census the median age of residents of Clay County is 33 9 years The racial characteristics of the county are presented in **Table D 2** Blacks make up the majority of the population in the county accounting for close to 60 percent of the population

TABLE D 2 DEMOGRAPHICS OF CLAY COUNTY

Jurisdiction	White Persons Percent (2010)	Black Persons Percent (2010)	American Indian or Alaska Native Percent (2010)	Other Race Percent (2010)	Persons of Hispanic Origin* Percent (2010)
Clay County	**40 1%**	**58 9%**	**0 1%**	**0 9%**	**1 1%**
West Point	37 6%	61 4%	0 1%	0 9%	0 9%

*Hispanics may be of any race so also are included in applicable race categories
Source US Census Bureau

D 1 3 Housing

According to the 2010 US Census there are 8 810 housing units in Clay County the majority of which are single family homes or mobile homes Housing information for the county and city is presented in **Table D 3** As shown in the table the City of West Point has a roughly proportional housing stock as the county

TABLE D 3 HOUSING CHARACTERISTICS

Jurisdiction	Housing Units (2000)	Housing Units (2010)	Seasonal Units Percent (2010)	Median Home Value (2007-2011)
Clay County	**8,152**	**8,810**	**2 1%**	**$78,200**
West Point	4 897	5 011	1 7%	$80 100

Source US Census Bureau

D 1 4 Infrastructure

TRANSPORTATION

There are several US and state highways that serve Clay County and link it with other regions of Mississippi and the neighboring state of Alabama US 82 is an east-west highway that passes just to the south of the county Meanwhile US 45 is another major highway that travels north south through West Point and connects the city with other major regional hubs such as Tupelo, Mississippi to the north and Mobile Alabama to the south

The McCharen Field Airport provides limited local service and regional air travel connections are available through Golden Triangle Regional Airport in Lowndes County

With roots as a railroad town West Point and the county are served by the Kansas City Southern Railway and one short line railroad but there is no passenger service offered at this time

UTILITIES

Electrical power in Clay County is provided by the Tennessee Valley Authority and several local distributors including the City of West Point Four County Electric Power Association (EPA) and Natchez Trace EPA The City of Okolona also serves residents in parts of Clay County

Water and sewer service is provided to residents by the City of West Point as well as variety of lift stations and rural water associations

COMMUNITY FACILITIES

There are a number of buildings and community facilities located throughout Clay County According to the data collected for the vulnerability assessment (Section 6 4 1) there are 2 fire stations, 2 police stations and 10 public schools located within the county

There is one hospital located in Clay County Clay County Medical Corporation is a 60-bed medical-surgical hospital located in the City of West Point

Recreational opportunities in Clay County include hunting camping fishing boating, swimming golf and tennis These activities are available at the Tennessee-Tombigbee Waterway Kennedy Lake Columbus Lake Waverly Recreation Area Town Creek Recreation Area Barton Ferry Recreation Area Prairie Wildlife Preserve Kitty Dill National Memorial Parkway, Town Creek Campground Marshall Park Zuber Park Old Waverly Golf Club, and West Point Country Club The West Point Recreation Department also offers many sports and activities for both children and adults of West Point and the surrounding community

D 1 5 Land Use

Many areas of Clay County are undeveloped or sparsely developed There are several small incorporated municipalities located throughout the region, with a few larger hubs interspersed These areas are where the region s population is generally concentrated The incorporated areas are also where many of the businesses, commercial uses and institutional uses are located Land uses in the balance of the study area generally consist of rural residential development, agricultural uses and recreational areas although there are some notable exceptions in the larger municipalities

D 1 6 Employment and Industry

According to the Mississippi Employment Security Commission in 2012 Clay County had an average annual employment of 5 138 workers and an average unemployment rate of 16 8 percent (compared to 9 2 percent for the state) In 2012 the Retail Trade industry employed 25 7 percent of the workforce Manufacturing was the second largest industry employing 19 9 percent of workers and Education Services followed closely behind (17 9%) The average annual wage in 2012 for Clay County was $32,708 compared to $37 440 for the State of Mississippi

D 2 CLAY COUNTY RISK ASSESSMENT

This subsection includes hazard profiles for each of the significant hazards identified in Section 4 *Hazard Identification* as they pertain to Clay County Each hazard profile includes a description of the hazard s location and extent notable historical occurrences, and the probability of future occurrences Additional information can be found in Section 5 *Hazard Profiles*

D 2 1 Flood

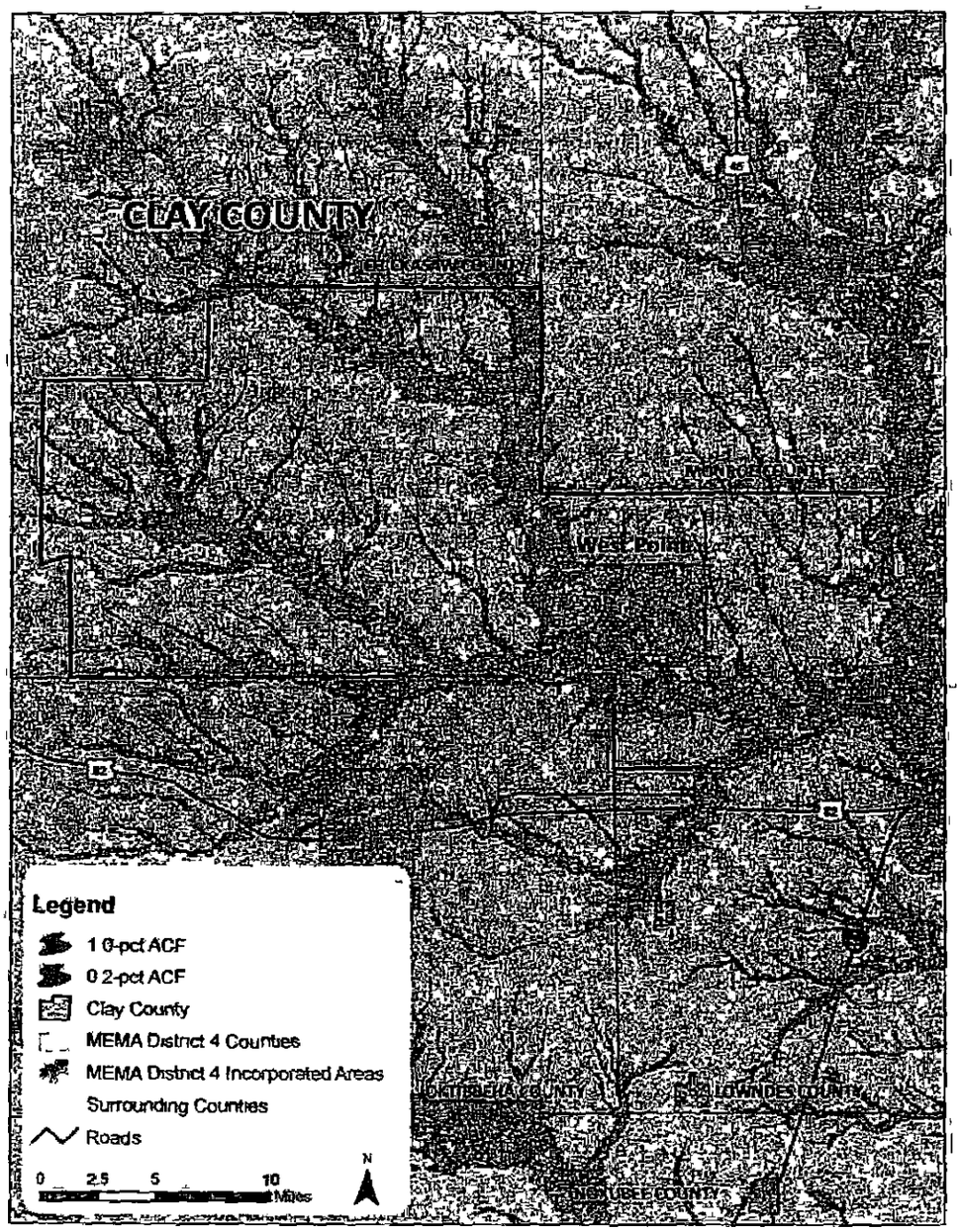
LOCATION AND SPATIAL EXTENT

There are areas in Clay County that are susceptible to flood events Special flood hazard areas in the county were mapped using Geographic Information System (GIS) and FEMA Digital Flood Insurance Rate Maps (DFIRM) [1] This includes Zone A (1-percent annual chance floodplain) Zone AE (1-percent annual chance floodplain with elevation), and the 0 2 percent annual chance floodplain According to GIS analysis, of the 414 square miles that make up Clay County, there are 125 square miles of land in zones A and AE (1 percent annual chance floodplain/100-year floodplain) and 0 4 square mile of land in the 0 2-percent annual chance floodplain (500-year floodplain)

These flood zone values account for 30 3 percent of the total land area in Clay County It is important to note that while FEMA digital flood data is recognized as best available data for planning purposes it does not always reflect the most accurate and up-to-date flood risk Flooding and flood-related losses often do occur outside of delineated special flood hazard areas **Figure D 2** and **Figure D 3** illustrate the location and extent of currently mapped special flood hazard areas for Clay County and the City of West Point based on best available FEMA Digital Flood Insurance Rate Map (DFIRM) data

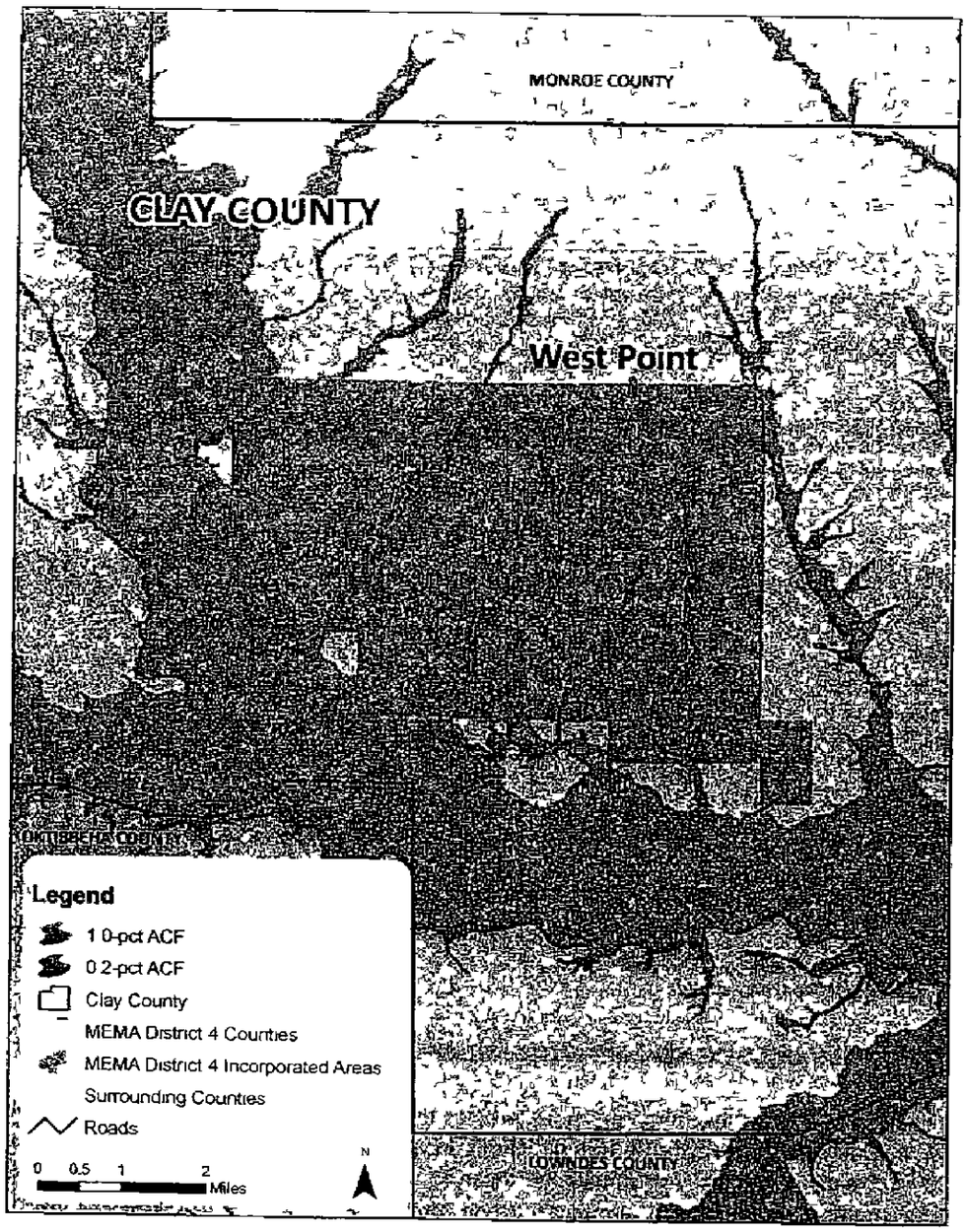
[1] The county level DFIRM data used for Clay County were updated in 2011

FIGURE D 2 SPECIAL FLOOD HAZARD AREAS IN CLAY COUNTY



Source Federal Emergency Management Agency

FIGURE D 3 SPECIAL FLOOD HAZARD AREAS IN WEST POINT



Source Federal Emergency Management Agency

HISTORICAL OCCURRENCES

Floods resulted in six disaster declarations in Clay County in 1973 1979 three times in 1991, and 2011 [2] Information from the National Climatic Data Center was used to ascertain historical flood events The National Climatic Data Center reported a total of nine events in Clay County since 1997 [3] A summary of these events is presented in **Table D 4** These events accounted for almost $1 2 million (2013 dollars) in property damage in the county Specific information on flood events including date type of flooding and deaths and injuries can be found in **Table D 5**

TABLE D 4 SUMMARY OF FLOOD OCCURRENCES IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
West Point	6	0/0	$723 481
Unincorporated Area	3	0/0	$464 329
CLAY COUNTY TOTAL	**9**	**0/0**	**$1,187,810**

Source National Climatic Data Center

TABLE D 5 HISTORICAL FLOOD EVENTS IN CLAY COUNTY

Location	Date	Type	Deaths/Injuries	Property Damage*
West Point				
West Point	02 MAY 97	FLASH FLOOD	0/0	$1 573 00
West Point	02 MAY 97	FLASH FLOOD	0/0	$ 3 933 00
West Point	22 FEB 03	FLASH FLOOD	0/0	$1 344 00
West Point	07 JUN-04	FLASH FLOOD	0/0	$1 305 00
West Point	23 SEP 09	FLASH FLOOD	0/0	$78 786 00
West Point	15 APR 11	FLASH FLOOD	0/0	$636 540 00
Unincorporated Area				
EAST PORTION	29-AUG 05	FLASH FLOOD	0/0	$126 677 00
WAVERLY STATION	06-JAN 09	FLASH FLOOD	0/0	$56 275 00
PHEBA	27 FEB 09	FLASH FLOOD	0/0	$281 377 00

*Property Damage is reported in 2013 dollars
Source National Climatic Data Center

HISTORICAL SUMMARY OF INSURED FLOOD LOSSES

According to FEMA flood insurance policy records as of March 2013, there have been 81 flood losses reported in Clay County through the National Flood Insurance Program (NFIP) since 1978 totaling over $798,000 in claims payments A summary of these figures for the county is provided in **Table D 6** It should be emphasized that these numbers include only those losses to structures that were insured through the NFIP policies, and for losses in which claims were sought and received It is likely that many additional instances of flood loss in Clay County were either uninsured denied claims payment or not reported

[2] A complete listing of historical disaster declarations can be found in Section 4 Hazard Identification
[3] These events are only inclusive of those reported by NCDC It is likely that additional occurrences have occurred and have gone unreported

TABLE D 6 SUMMARY OF INSURED FLOOD LOSSES IN CLAY COUNTY

Location	Flood Losses	Claims Payments
West Point	57	$624 288
Unincorporated Area	24	$174 198
CLAY COUNTY TOTAL	81	$798,486

Source FEMA NFIP

REPETITIVE LOSS PROPERTIES

As of May 2013, there are eight non mitigated repetitive loss properties located in Clay County which accounted for losses and approximately $157 000 in claims payments under the NFIP The average claim amount for these properties is $6 556 All eight of the properties are single family residential Without mitigation these properties will likely continue to experience flood losses **Table D 7** presents detailed information on repetitive loss properties and NFIP claims and policies for Clay County

TABLE D 7 REPETITIVE LOSS PROPERTIES IN CLAY COUNTY

Location	Number of Properties	Types of Properties	Number of Losses	Building Payments	Content Payments	Total Payments	Average Payment
West Point	4	4 single family	9	$116 033	$11 519	$29 779	$3 309
Unincorporated Area	4	4 single family	15	$23 931	$5 847	$127 553	$8 504
CLAY COUNTY TOTAL	8		24	$139,965	$17,367	$157,332	$6,556

Source National Flood Insurance Program

PROBABILITY OF FUTURE OCCURRENCES

Flood events will remain a threat in areas prone to flooding in Clay County and the probability of future occurrences will remain likely (between 10 and 100 percent annual probability) The participating jurisdictions and unincorporated areas of the county have risk to flooding though not all areas will experience flood The probability of future flood events based on magnitude and according to best available data is illustrated in the figures above, which indicates those areas susceptible to the 1-percent annual chance flood (100-year floodplain) and the 0 2 percent annual chance flood (500-year floodplain)

It can be inferred from the floodplain location maps previous occurrences and repetitive loss properties that risk varies throughout the county and participating jurisdictions For example the central and southeastern portions of the county have more floodplain and thus a higher risk of flood than other areas of the county Flood is not the greatest hazard of concern but will continue occur and cause damage Therefore mitigation actions may be warranted particularly for repetitive loss properties

D 2 2 Erosion

LOCATION AND SPATIAL EXTENT

Erosion in Clay County is typically caused by flash flooding events Unlike coastal areas areas of concern for erosion in Clay County are primarily rivers and streams Generally vegetation helps to prevent erosion in the area and it is not an extreme threat to any of the participating counties and jurisdictions No areas of concern were reported by the planning committee

HISTORICAL OCCURRENCES

Several sources were vetted to identify areas of erosion in Clay County This includes searching local newspapers interviewing local officials, and reviewing previous hazard mitigation plans No historical erosion occurrences were found in these sources

PROBABILITY OF FUTURE OCCURRENCES

Erosion remains a natural dynamic and continuous process for Clay County and it will continue to occur The annual probability level assigned for erosion is possible (between 1 and 10 percent annually)

A 2 3 Dam Failure

LOCATION AND SPATIAL EXTENT

According to the Mississippi Division of Environmental Quality there are no high hazard dams in Clay County [4]

HISTORICAL OCCURRENCES

There is no record of dam breaches in Clay County However several breach scenarios in the county could be catastrophic

PROBABILITY OF FUTURE OCCURRENCES

Given the current dam inventory and historic data a dam breach is unlikely (less than 1 percent annual probability) in the future However as has been demonstrated in the past regular monitoring is necessary to prevent these events

[4] The list of high hazard dams obtained from the Mississippi Division of Environmental Quality was reviewed and amended by local officials to the best of their knowledge

D 2 4 Winter Storm and Freeze

LOCATION AND SPATIAL EXTENT

Nearly the entire continental United States is susceptible to winter storm and freeze events Some ice and winter storms may be large enough to affect several states while others might affect limited localized areas The degree of exposure typically depends on the normal expected severity of local winter weather Clay County is not accustomed to severe winter weather conditions and rarely receives severe winter weather even during the winter months Events tend to be mild in nature however even relatively small accumulations of snow ice or other wintery precipitation can lead to losses and damage due to the fact that these events are not commonplace Given the atmospheric nature of the hazard the entire county has uniform exposure to a winter storm

HISTORICAL OCCURRENCES

Winter weather has resulted in one disaster declaration in Clay County in 1999[5] According to the National Climatic Data Center, there have been a total of eight recorded winter storm events in Clay County since 1996 (**Table D 8**)[6] These events resulted in almost $1 million (2013 dollars) in damages Detailed information on the recorded winter storm events can be found in **Table D 9**[7]

TABLE D 8 SUMMARY OF WINTER STORM EVENTS IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
Clay County	8	0/0	$957 309

Source National Climatic Data Center

TABLE D 9 HISTORICAL WINTER STORM IMPACTS IN CLAY COUNTY

Location	Date	Type	Deaths / Injuries	Property Damage*
West Point				
None Reported	–	–	–	–
Unincorporated Area				
CLAY COUNTY	01 FEB 96	WINTER STORM	0/0	$33 523
CLAY COUNTY	22 DEC 98	ICE STORM	0/0	$829 407
CLAY COUNTY	21 DEC 00	ICE STORM	0/0	$1 958
CLAY COUNTY	27 JAN 00	HEAVY SNOW	0/0	$92 431
CLAY COUNTY	07 JAN 10	WINTER STORM	0/0	$0
CLAY COUNTY	15 DEC 10	WINTER WEATHER	0/0	$0
CLAY COUNTY	09 JAN 11	HEAVY SNOW	0/0	$0
CLAY COUNTY	09 FEB 11	HEAVY SNOW	0/0	$0

*Property Damage is reported in 2013 dollars

[5] A complete listing of historical disaster declarations including the affected counties can be found in Section 4 Hazard Identification

[6] These ice and winter storm events are only inclusive of those reported by the National Climatic Data Center (NCDC) It is certain that additional winter storm conditions have affected Clay County

[7] The dollar amount of damages provided by NCDC is divided by the number of affected counties to reflect a damage estimate for the county

Location	Date	Type	Deaths / Injuries	Property Damage

Source National Climatic Data Center

There have been several severe winter weather events in Clay County The text below describes two of the major events and associated impacts on the county Similar impacts can be expected with severe winter weather

December 1998
Much of north Mississippi was hit with an ice storm Most counties reported between 0 25 to 0 5 inches of ice on their roads with some locations in the southern part of the region reporting as much as 3 inches of ice The ice caused numerous power outages and brought down many trees and power lines Thousands of people in north Mississippi were without power some for as long as one week Christmas travel was severely hampered for several days with motorists stranded at airports, bus stations and truck stops Travel did not return to normal until after Christmas in some locations

January 2000
A winter storm brought a swath of heavy snow across north central Mississippi The snow began falling over western portions of the area during the early morning of the 27th and spread eastward during the day The snow was heavy at times and did not end until the morning of the 28th Snowfall amounts generally ranged from 4 to 10 inches The heaviest amounts fell along the Highway 82 corridor from Greenville to Starkville where isolated snow depths of 12 inches were reported Damage from the heavy snow was relatively minimal with reports limited to a few collapsed roofs and downed trees Power outages were sporadic, but travelling was more than just an inconvenience as numerous reports of vehicles running off the road were received

Winter storms throughout the county have several negative externalities including hypothermia cost of snow and debris cleanup business and government service interruption traffic accidents and power outages Furthermore, citizens may resort to using inappropriate heating devices that could to fire or an accumulation of toxic fumes

PROBABILITY OF FUTURE OCCURRENCES

Winter storm events will continue to occur in Clay County According to historical information the annual probability is likely (between 10 and 100 percent)

FIRE-RELATED HAZARDS

D 2 5 Drought

LOCATION AND SPATIAL EXTENT

Drought and heat waves typically cover a large area and cannot be confined to any geographic or political boundaries Furthermore, it is assumed that Clay County would be uniformly exposed to drought and heat waves making the spatial extent potentially widespread It is also notable that drought and extreme heat conditions typically do not cause significant damage to the built environment but may exacerbate wildfire conditions

HISTORICAL OCCURRENCES

Drought

According to the U S Drought Monitor Clay County had drought levels (including abnormally dry) in twelve of the last thirteen years (2000 2012) **Table D 10** shows the most severe drought classification for each year according to U S Drought Monitor classifications It should be noted that the U S Drought Monitor also estimates what percentage of the county is in each classification of drought severity For example the most severe classification reported may be exceptional but a majority of the county may actually be in a less severe condition

TABLE D 10 HISTORICAL DROUGHT OCCURRENCES IN CLAY COUNTY

Abnormally Dry **Moderate Drought** **Severe Drought** **Extreme Drought** **Exceptional Drought**

	Clay County
2000	**EXCEPTIONAL**
2001	ABNORMAL
2002	ABNORMAL
2003	NONE
2004	ABNORMAL
2005	ABNORMAL
2006	SEVERE
2007	**EXCEPTIONAL**
2008	SEVERE
2009	ABNORMAL
2010	SEVERE
2011	MODERATE
2012	ABNORMAL

Source U S Drought Monitor

There were no reported drought events for Clay County according to the National Climatic Data Center

Heat Wave

The National Climatic Data Center was used to determine historical heat wave occurrences in the county

July 2005 – A five day heat wave covered the area Temperatures were consistently above 95 degrees The agricultural industry was hit particularly hard in the cattle and catfish sectors Water supply issues were encountered by cities and a burn ban was implemented due to the high fire risk

August 2005 –A heat wave covering the south began in mid August and lasted about 10 days High temperatures were consistently over 95 degrees and surpassed 100 degrees on some days It was the first time since August 2000 that 100 degree temperatures reached the area

July 2006 – A short heat wave impacted most of the area temperatures in the 90s to around 100 for five straight days

August 2007 – A heat wave lasting around 11 days occurred with all areas in the region reaching more than 100 degrees at some point during the last 5 days High humidity levels also pushed the heat index values into the 105-112 range leading to the hottest August on record in some areas

PROBABILITY OF FUTURE OCCURRENCES

Drought
Based on historical occurrence information it is assumed that Clay County has a probability level of likely (10 100 percent annual probability) for future drought events However, the extent (or magnitude) of drought and the amount of geographic area covered by drought varies with each year Historic information indicates that there is a much lower probability for extreme, long lasting drought conditions

Heat Wave
Based on historical occurrence information it is assumed that all of Clay County has a probability level of likely (10-100 percent annual probability) for future heat wave events

D 2 6 Wildfire

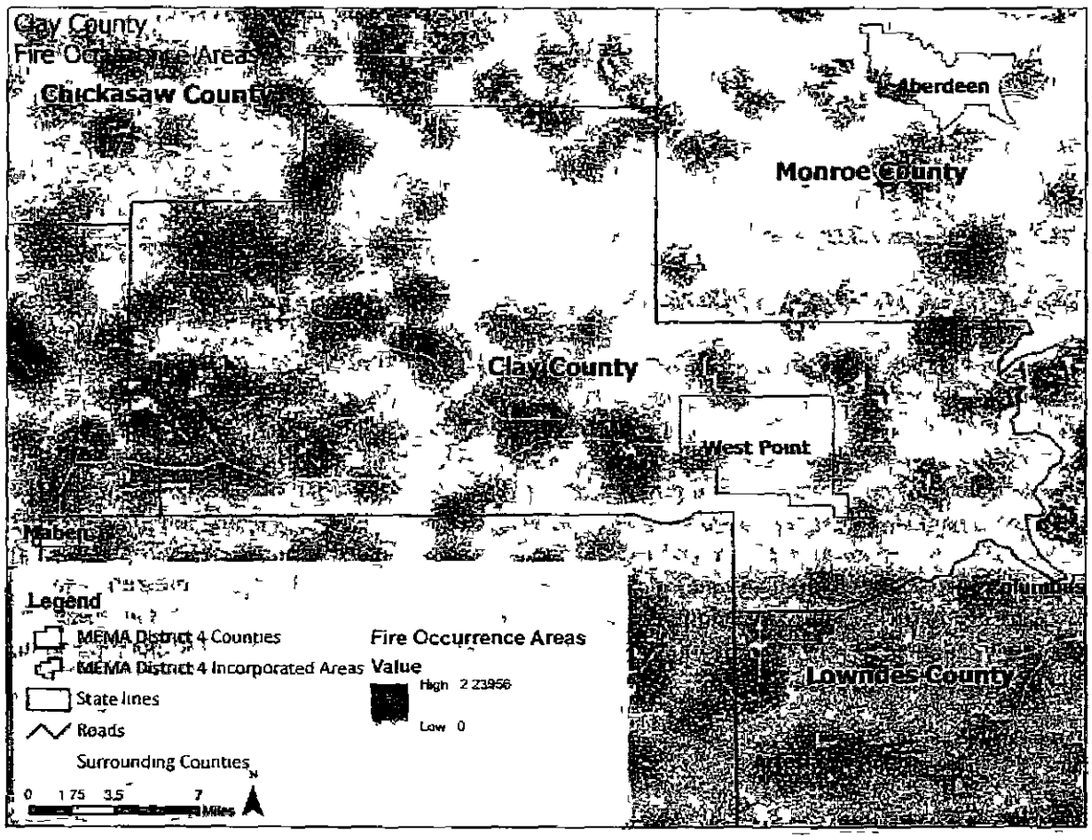
LOCATION AND SPATIAL EXTENT

The entire county is at risk to a wildfire occurrence However several factors such as drought conditions or high levels of fuel on the forest floor may make a wildfire more likely Furthermore areas in the urban-wildland interface are particularly susceptible to fire hazard as populations abut formerly undeveloped areas The Fire Occurrence Areas in the figure below give an indication of historic location

HISTORICAL OCCURRENCES

Figure A 4 shows the Fire Occurrence Areas (FOA) in Clay County based on data from the Southern Wildfire Risk Assessment This data is based on historical fire ignitions and is reported as the number of fires that occur per 1 000 acres each year

FIGURE D 4 HISTORIC WILDFIRE EVENTS IN CLAY COUNTY



Source Southern Wildfire Risk Assessment

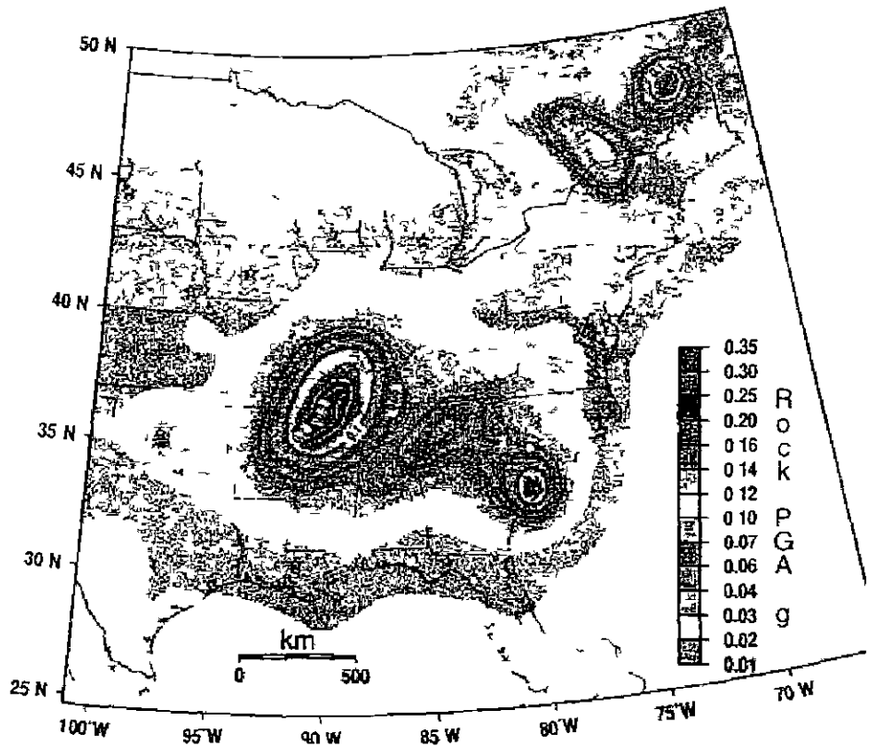
Based on data from the Mississippi Forestry Commission from 2002 to 2011 Clay County experiences an average of 14 wildfires annually which burn an average of 90 acres per year The data indicates that most of these fires are small averaging six acres per fire **Table D 11** provides a summary of wildfire occurrences in Clay County and **Table D 12** lists the number of reported wildfire occurrences in the county between the years 2002 and 2011

TABLE D 11 SUMMARY TABLE OF ANNUAL WILDFIRE OCCURRENCES (2002 -2011)*

	Clay County
Average Number of Fires per year	14 2
Average Number or Acres Burned per year	89 6
Average Number or Acres Burned per fire	6 3

*These values reflect averages over a 10 year period
Source Mississippi Forestry Commission

FIGURE D 5 PEAK ACCELERATION WITH 10 PERCENT PROBABILITY OF EXCEEDANCE IN 50 YEARS



Source USGS 2008

HISTORICAL OCCURRENCES

At least one earthquake is known to have affected Clay County since 1931 This earthquake measured a III on the Modified Mercalli Intensity (MMI) scale **Table D 13** provides a summary of earthquake events reported by the National Geophysical Data Center between 1638 and 1985 **Table D 14** presents a detailed occurrence of each event including the date distance for the epicenter magnitude and Modified Mercalli Intensity (if known) [8]

TABLE D 13 SUMMARY OF SEISMIC ACTIVITY IN CLAY COUNTY

Location	Number of Occurrences	Greatest MMI Reported	Richter Scale Equivalent
West Point	1	III	< 4 8
Unincorporated Area	0	–	–
CLAY COUNTY TOTAL	**1**	**III (slight)**	**< 4.8**

Source National Geophysical Data Center

[8] Due to reporting mechanisms not all earthquakes events were recorded during this time Furthermore some are missing data such as the epicenter location due to a lack of widely used technology In these instances a value of unknown is reported

TABLE D 14 SIGNIFICANT SEISMIC EVENTS IN CLAY COUNTY (1638 -1985)

Location	Date	Epicentral Distance	Magnitude	MMI
West Point				
West Point	12/17/1931	119 0 km	*Unknown*	III
Unincorporated Area				
None Reported	–	–	–	–

Source National Geophysical Data Center

PROBABILITY OF FUTURE OCCURRENCES

The probability of significant damaging earthquake events affecting Clay County is unlikely However, it is possible that future earthquakes resulting in light to moderate perceived shaking and damages ranging from none to very light will affect the county The annual probability level for the region is estimated to be between 1 and 10 percent (possible)

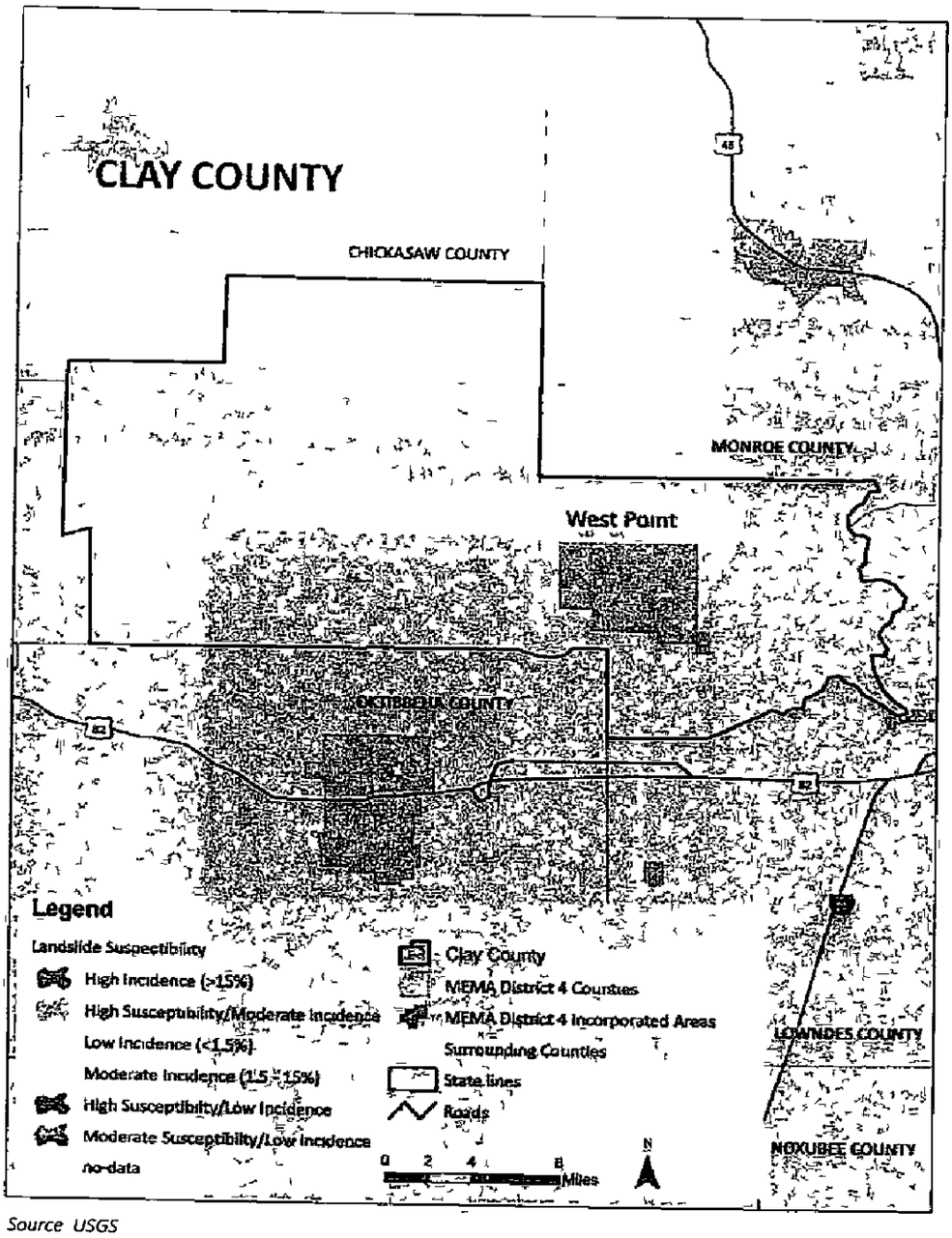
D 2 8 Landslide

LOCATION AND SPATIAL EXTENT

Landslides occur along steep slopes when the pull of gravity can no longer be resisted (often due to heavy rain) Human development can also exacerbate risk by building on previously undevelopable steep slopes Landslides are possible throughout Clay County but there is a very low incidence rate of less than 1 5 percent of the area involved (according to the USGS data)

According to **Figure D 6** below the entire county falls under a low incidence area This indicates that less than 1 5 percent of the area is involved in landsliding

FIGURE D 6 LANDSLIDE SUSCEPTIBILITY AND INCIDENCE MAP OF CLAY COUNTY



Source USGS

HISTORICAL OCCURRENCES

There is no extensive history of landslides in Clay County Landslide events typically occur in isolated areas

PROBABILITY OF FUTURE OCCURRENCES

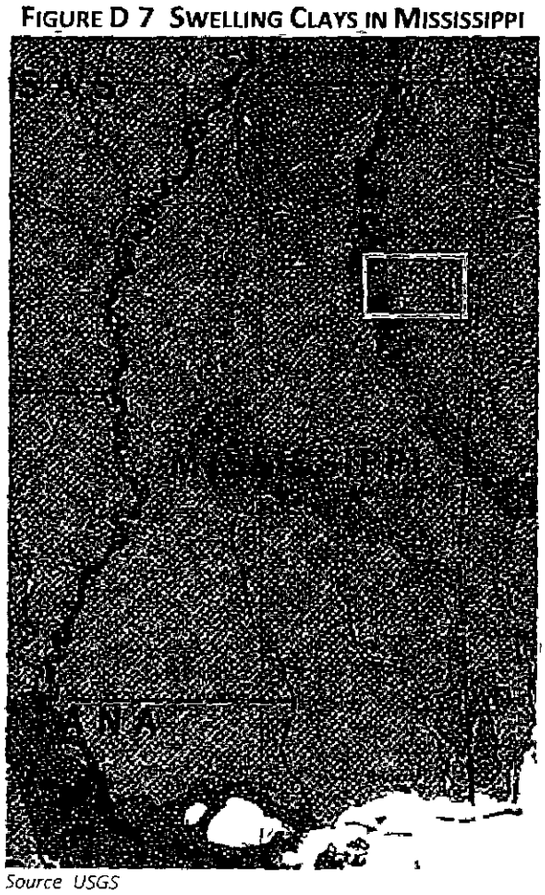
Based on historical information and the USGS susceptibility index, the probability of future landslide events is unlikely (less than 1 percent probability) The USGS data indicates that all areas in Lowndes County have a low incidence rate and low susceptibly to landsliding activity Local conditions may become more favorable for landslides due to heavy rain for example This would increase the likelihood of occurrence It should also be noted that some areas in Clay County have greater risk than others given factors such as steepness on slope and modification of slopes

D 2 9 Expansive Soils

LOCATION AND SPATIAL EXTENT

Due to the amount of clay minerals present in Clay County, expansive soils present a threat to the county Areas underlain by soils with swelling potential are shown in Figure D 7 The areas in blue are underlain with generally less than 50 percent clay having high swelling potential and the areas in red are underlain with abundant clay having high swelling potential

FIGURE D 7 SWELLING CLAYS IN MISSISSIPPI



Source USGS

HISTORICAL OCCURRENCES

There is no historical record of significant expansive soil events in Clay County However expansive soils have been known to cause considerable damage to structural foundations in the county although they have not posed a significant threat to human life

PROBABILITY OF FUTURE OCCURRENCES

Based on historical information the probability of future expansive soil events is likely (between 1 and 100 percent annually)

WIND-RELATED HAZARDS

D 2 10 Hurricane and Tropical Storm

LOCATION AND SPATIAL EXTENT

Hurricanes and tropical storms threaten the entire Atlantic and Gulf seaboard of the United States While coastal areas are most directly exposed to the brunt of landfalling storms their impact is often felt hundreds of miles inland and they can affect Clay County All areas in Clay County are equally susceptible to hurricane and tropical storms

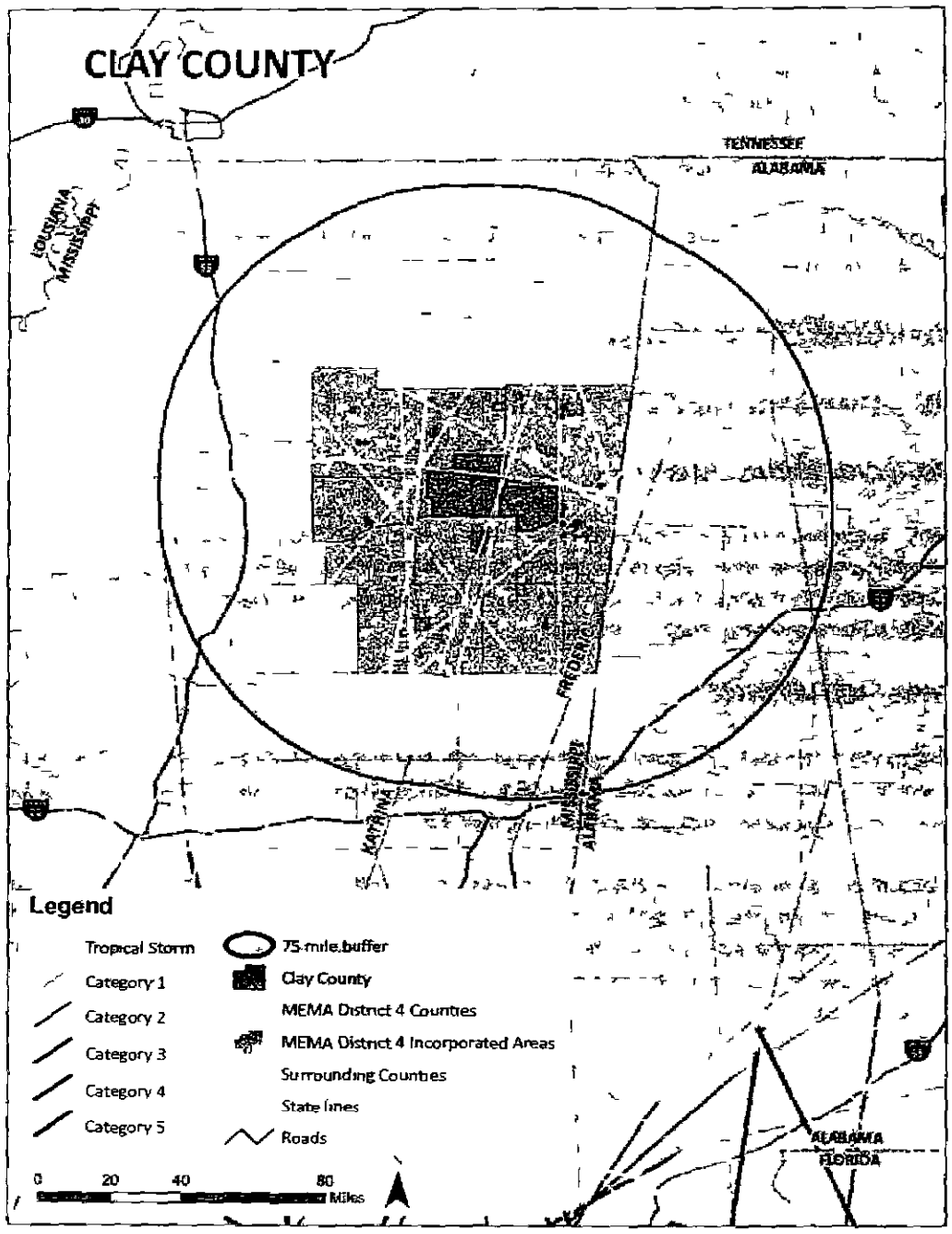
HISTORICAL OCCURRENCES

According to the National Hurricane Center's historical storm track records a total of 31 hurricanes have passed within 75 miles of the county since 1851 This included 1 Category 2 hurricane, 2 Category 1 hurricanes, and 28 tropical storms as shown in **Figure D 8** [9]

Of the recorded storm events a total of four tracks passed directly through the county These events were all tropical storm strength at the time they traversed the county **Table D 15** provides the detail for each storm that passed through the county including date of occurrence name (if applicable) maximum wind speed (as recorded when traversing the county) and category of the storm based on the Saffir-Simpson Scale

[9] These storm track statistics do not include extra tropical storms Though these related hazard events are less severe in intensity they may cause significant local impact in terms of rainfall and high winds

FIGURE D 8 HISTORICAL HURRICANE STORM TRACKS WITHIN 75 MILES OF CLAY COUNTY



Source National Oceanic and Atmospheric Administration National Hurricane Center

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TABLE D 15 HISTORICAL STORM TRACKS WITHIN 75 MILES OF CLAY COUNTY (1850–2012)

Date of Occurrence	Storm Name	Maximum Wind Speed (miles per hour)	Storm Category
8/16/1901	UNNAMED	40	Tropical Storm
10/18/1923	UNNAMED	46	Tropical Storm
9/5/1948	UNNAMED	46	Tropical Storm
9/5/1949	UNNAMED	40	Tropical Storm

Source National Hurricane Center

Federal records indicate that two disaster declarations were made in 2004 (Hurricane Ivan) and 2005 (Hurricane Dennis) [10] Hurricane and tropical storm events can cause substantial damage in the area due to high winds and flooding

Flooding and high winds from hurricanes and tropical storms can cause damage throughout the county Anecdotes are available from NCDC for the major storms that have impacted the county as found below

Hurricane Ivan – September 16 2004
Thousands of trees were blown down across Eastern Mississippi during the event as well as hundreds of power lines The strong wind itself did not cause much structural damage however the fallen trees did These downed trees accounted for several hundred homes, mobile homes and businesses to be damaged or destroyed Most locations across Eastern Mississippi reported sustained winds between 30 and 40 mph with Tropical Storm force gusts between 48 and 54 mph The strongest reported winds occurred in Newton Lauderdale and Oktibbeha Counties

Overall, rainfall totals were held in check as Ivan steadily moved north The heaviest rains were confined to far Eastern Mississippi where 3 to 4 inches fell over a 15 hour period Due to the duration of the rain no flooding was reported Across Eastern Mississippi Hurricane Ivan was responsible for one fatality This fatality occurred in Brooksville (Noxubee County) when a tree fell on a man Damage from Ivan was estimated at $200 million

Tropical Storm Arlene – June 11 2005
The western periphery of Tropical Storm Arlene affected far Eastern Mississippi during the evening and brought gusty winds and locally heavy rains to that portion of the state Peak wind gusts were reported up to 40 mph and the combination of wet soils allowed for a few hundred trees to get blown down or uprooted Several of the downed trees took down power lines and a small few landed on homes causing damage Additionally the counties across Eastern Mississippi received 3 to 5 inches of rain as Arlene lifted north

Hurricane Dennis – July 10 2005
Hurricane Dennis moved north-northwest across Southwest Alabama and then into East-Central Mississippi and finally across Northeast Mississippi Wind gusts over tropical storm force were common across areas east of a line from Starkville to Newton to Hattiesburg These winds caused several hundred trees to uproot or snap and took down numerous power lines Additionally a total of 21 homes or businesses sustained minor to major damage from fallen trees or gusty winds

[10] A complete listing of historical disaster declarations can be found in Section 4 Hazard Identification

The remnants of Hurricane Dennis brought windy conditions to northeast Mississippi A church under construction was damaged in Calhoun County Several trees were blown down in the area A light pole was broken in Lee County A fallen tree damaged a house in Itawamba County

Heavy rainfall was not a major issue as Dennis steadily moved across the region Rainfall totals between 2 and 5 inches fell across Eastern Mississippi over a 12 hour period One indirect fatality occurred in Jasper County from an automobile accident due to wet roads

Hurricane Katrina – August 29 2005
Hurricane Katrina will likely go down as the worst and costliest natural disaster in United States history The amount of destruction, the cost of damaged property/agriculture and the large loss of life across the affected region has been overwhelming Catastrophic damage was widespread across a large portion of the Gulf Coast region The devastation was not only confined to the coastal region widespread and significant damage occurred well inland up to the Hattiesburg area and northward past Interstate 20

Devastation from Hurricane Katrina was widespread across the region Hurricane force winds were common across the area The region received sustained winds of 60-80 mph with gusts ranging from 80-120 mph There was widespread damage to trees and power lines Wind damage to structures was also widespread with roofs blown off or partially peeled Hundreds of signs were shredded or blown down Businesses sustained structural damage Power outages lasted from a few days to as long as four weeks Agriculture and timber industries were severely impacted Row crops including cotton rice, corn, and soybeans, took a hard hit Other impacted industries were the catfish industry dairy and cattle industry, and nursery businesses

Hurricane Katrina had weakened to tropical storm strength when it reached north Mississippi An electrical transformer was blown down on a house in Oxford (Lafayette County) Some awnings were ripped off in Ripley (Tippah County) Several buildings were damaged in Calhoun County due to the winds Numerous trees and power lines along with some telephone poles were blown down Some trees fell on cars, mobile homes, and apartment buildings Four to eight inches of rain fell in some parts of northeast Mississippi producing some flash flooding Overall at least 100 000 customers lost power

PROBABILITY OF FUTURE OCCURRENCES

Given the inland location of the county, it is more likely to be affected by remnants of hurricane and tropical storm systems (as opposed to a major hurricane) which may result in flooding or high winds The probability of being impacted is less than coastal areas, but still remains a real threat to Clay County due to induced events like flooding Based on historical evidence, the probability level of future occurrence is likely (annual probability between 10 and 100 percent) Given the regional nature of the hazard, all areas in the county are equally exposed to this hazard When the county is impacted, the damage could be catastrophic threatening lives and property throughout the planning area

D 2 11 Thunderstorm

LOCATION AND SPATIAL EXTENT

Thunderstorm / High Wind
A thunderstorm event is an atmospheric hazard and thus has no geographic boundaries It is typically a widespread event that can occur in all regions of the United States However, thunderstorms are most common in the central and southern states because atmospheric conditions in those regions are favorable for generating these powerful storms Also Clay County typically experiences several straight-line wind events each year These wind events can and have caused significant damage It is assumed that Clay County has uniform exposure to an event and the spatial extent of an impact could be large

Hailstorm
Hailstorms frequently accompany thunderstorms so their locations and spatial extents coincide It is assumed that Clay County is uniformly exposed to severe thunderstorms therefore all areas of the county are equally exposed to hail which may be produced by such storms

Lightning
Lightning occurs randomly therefore it is impossible to predict where and with what frequency it will strike It is assumed that all of Clay County is uniformly exposed to lightning

HISTORICAL OCCURRENCES

Thunderstorm / High Wind
Severe storms resulted in eight disaster declarations in Clay County in 1979 three times in 1991, 2001, 2002 2003 and 2010 [11] According to NCDC, there have been 102 reported thunderstorm and high wind events since 1967 in Clay County [12] These events caused over $2 8 million (2013 dollars) in damages There were also reports of one injury **Table D 16** summarizes this information **Table D 17** presents detailed thunderstorm and high wind event reports including date, magnitude, and associated damages for each event. [13]

TABLE D 16 SUMMARY OF THUNDERSTORM / HIGH WIND OCCURRENCES IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
West Point	34	0/0	$2 070 424
Unincorporated Area	68	0/1	$731 474
CLAY COUNTY TOTAL	**102**	**0/1**	**$2,801,898**

Source National Climatic Data Center

[11] A complete listing of historical disaster declarations can be found in Section 4 Hazard Identification.
[12] These thunderstorm events are only inclusive of those reported by the National Climatic Data Center (NCDC) It is likely that additional thunderstorm events have occurred in Clay County As additional local data becomes available this hazard profile will be amended
[13] The dollar amount of damages provided by NCDC is divided by the number of affected counties to reflect a damage estimate for the county

TABLE D 17 HISTORICAL THUNDERSTORM / HIGH WIND OCCURRENCES IN CLAY COUNTY

Location	Date	Type	Magnitude	Deaths / Injuries	Property Damage
West Point					
West Point	30-MAR 93	THUNDERSTORM WINDS	55 kts	0/0	$0
West Point	25 JUL 94	THUNDERSTORM WINDS	0 kts	0/0	$852 283
WEST PT	20 APR 96	TSTM WIND	0 kts	0/0	$3 218
WEST PT	29 APR 96	TSTM WIND	0 kts	0/0	$24 137
WEST PT	14 APR 96	TSTM WIND	0 kts	0/0	$16 091
WEST PT	16 JUN 97	TSTM WIND	0 kts	0/0	$1 573
WEST PT	27 JAN 97	TSTM WIND	0 kts	0/0	$787
WEST PT	05 JUN 98	TSTM WIND	0 kts	0/0	$38 722
WEST PT	15 JUN 98	TSTM WIND	0 kts	0/0	$15 489
WEST PT	20 JUL 00	TSTM WIND	0 kts	0/0	$5 874
WEST PT	02 MAY 00	TSTM WIND	0 kts	0/0	$117 483
WEST PT	16 FEB 01	TSTM WIND	0 kts	0/0	$42 773
WEST PT	30 APR 02	TSTM WIND	52 kts	0/0	$1 384
WEST PT	08 APR 02	TSTM WIND	0 kts	0/0	$69 212
WEST PT	13 JUL 03	TSTM WIND	50 kts	0/0	$13,439
WEST PT	17 MAY 04	TSTM WIND	51 kts	0/0	$0
WEST PT	20 MAY-05	TSTM WIND	53 kts	0/0	$6 334
WEST PT	19 JUL 06	TSTM WIND	57 kts	0/0	$36 896
WEST PT	09 MAR 06	TSTM WIND	60 kts	0/0	$122 987
WEST PT	21 JUN 06	TSTM WIND	50 kts	0/0	$0
WEST PT	07 APR 06	TSTM WIND	50 kts	0/0	$61 494
WEST PT	08 JAN 08	THUNDERSTORM WIND	50 kts	0/0	$11 593
WEST PT	10 JAN 08	THUNDERSTORM WIND	74 kts	0/0	$347 782
WEST PT	27 MAY 08	THUNDERSTORM WIND	53 kts	0/0	$9 274
WEST PT	27 FEB-09	THUNDERSTORM WIND	50 kts	0/0	$225
WEST PT	02 APR 09	THUNDERSTORM WIND	55 kts	0/0	$6 753
WEST PT	30 JUL-09	THUNDERSTORM WIND	58 kts	0/0	$13 506
WEST PT	24 FEB 11	THUNDERSTORM WIND	65 kts	0/0	$159 135
WEST PT	05 JUN 11	THUNDERSTORM WIND	50 kts	0/0	$5 305
WEST PT	10-AUG 11	THUNDERSTORM WIND	50 kts	0/0	$5 305
WEST PT	11 JUN-12	THUNDERSTORM WIND	50 kts	0/0	$2 060
WEST PT	05 JUL 12	THUNDERSTORM WIND	55 kts	0/0	$15 450
WEST PT	20-DEC 12	THUNDERSTORM WIND	50 kts	0/0	$2 060
WEST PT	10 DEC 12	THUNDERSTORM WIND	55 kts	0/0	$61 800
Unincorporated Area					
CLAY COUNTY	24 OCT 67	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	17 JUL 77	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	26 MAY 60	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	21 JUN 69	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	26 JAN 74	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	20 MAR 80	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	14 MAY 80	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	18 MAY 89	TSTM WIND	0 kts	0/0	$0

Location	Date	Type	Magnitude	Deaths/ Injuries	Property Damage
CLAY COUNTY	09 SEP 90	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	05 MAY 91	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	13 JUL 92	TSTM WIND	0 kts	0/4	$0
CLAY COUNTY	01 AUG 85	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	20 FEB 89	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	31 MAY 82	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	30 DEC 90	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	10-OCT 92	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	06 AUG 89	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	22 MAY 88	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	18 JUN 90	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	28 APR 91	TSTM WIND	0 kts	0/0	$0
PHEBA	09 JUN 94	THUNDERSTORM WINDS	0 kts	0/0	$852
CLAY COUNTY	27 JUN 94	THUNDERSTORM WINDS	0 kts	0/0	$8 523
CLAY COUNTY	27 JUN 94	THUNDERSTORM WINDS	0 kts	0/0	$8 523
CLAY COUNTY	27 JAN 95	THUNDERSTORM WINDS	44 kts	0/0	$0
CLAY COUNTY	20 APR 95	THUNDERSTORM WINDS	0 kts	0/0	$8 286
PHEBA	14 APR 96	TSTM WIND	0 kts	0/0	$3 218
PHEBA	02 MAY 97	TSTM WIND	0 kts	0/0	$1 573
MONTPELIER	02 MAY 97	TSTM WIND	0 kts	0/0	$1 573
MONTPELIER	02 MAR 99	TSTM WIND	0 kts	0/0	$3 025
COUNTYWIDE	27 FEB 99	TSTM WIND	0 kts	0/0	$45 378
MONTPELIER	27 FEB 99	TSTM WIND	0 kts	0/0	$30 252
WHITES	15 JUL 00	TSTM WIND	0 kts	0/0	$2 937
MONTPELIER	16 DEC 00	TSTM WIND	0 kts	0/0	$4 406
PHEBA	24-OCT 01	TSTM WIND	0 kts	0/0	$1 426
COUNTYWIDE	20 AUG 02	TSTM WIND	0 kts	0/0	$2 768
PHEBA	02 JUN-03	TSTM WIND	60 kts	0/0	$94 074
COUNTYWIDE	11 JUN 03	TSTM WIND	50 kts	0/0	$6 720
MONTPELIER	11 JUN 03	TSTM WIND	50 kts	0/0	$6 720
MONTPELIER	04 JUL 04	TSTM WIND	51 kts	0/0	$0
MONTPELIER	13 JAN 05	TSTM WIND	50 kts	0/0	$2 534
MONTPELIER	10 MAY 06	TSTM WIND	53 kts	0/0	$12 299
PINEBLUFF	18 JUN 07	THUNDERSTORM WIND	55 kts	0/0	$17 911
CAHNS	20 JUL 07	THUNDERSTORM WIND	50 kts	0/0	$0
WEST PT MC CHAREN AR	10 JAN-08	THUNDERSTORM WIND	72 kts	0/1	$173 891
CAHNS	01 JUN 08	THUNDERSTORM WIND	60 kts	0/0	$0
ABBOTT	01 JUN 08	THUNDERSTORM WIND	55 kts	0/0	$11 593
MONTPELIER	02 AUG 08	THUNDERSTORM WIND	61 kts	0/0	$13 911
PHEBA	23 JUL 08	THUNDERSTORM WIND	50 kts	0/0	$2 319
ABBOTT	22 JUL 08	THUNDERSTORM WIND	50 kts	0/0	$17 389
CLAY COUNTY	28 MAR-09	STRONG WIND	43 kts	0/0	$5 628
ABBOTT	02 APR 09	THUNDERSTORM WIND	65 kts	0/0	$11 255
MONTPELIER	02 APR 09	THUNDERSTORM WIND	65 kts	0/0	$11 255
MONTPELIER	26 JUL 10	THUNDERSTORM WIND	53 kts	0/0	$27 318

Location	Date	Type	Magnitude	Deaths / Injuries	Property Damage*
PHEBA	23 JUN-09	THUNDERSTORM WIND	53 kts	0/0	$0
PHEBA	12 JUN-09	THUNDERSTORM WIND	55 kts	0/0	$16 883
MONTPELIER	12 JUN 09	THUNDERSTORM WIND	57 kts	0/0	$16 883
PHEBA	30-JUL-09	THUNDERSTORM WIND	58 kts	0/0	$33 765
MONTPELIER	09 OCT-09	THUNDERSTORM WIND	50 kts	0/0	$0
TIBBEE	05 AUG 10	THUNDERSTORM WIND	52 kts	0/0	$16 391
ABBOTT	15 JUN 10	THUNDERSTORM WIND	52 kts	0/0	$0
CEDARBLUFF	20 APR 11	THUNDERSTORM WIND	62 kts	0/0	$79 568
TIBBEE	24-FEB 11	THUNDERSTORM WIND	58 kts	0/0	$3 183
MONTPELIER	24-FEB 11	THUNDERSTORM WIND	50 kts	0/0	$3 183
WEST PT MC CHAREN AR	05 JUN 11	THUNDERSTORM WIND	50 kts	0/0	$10 609
MONTPELIER	16 JUN 11	THUNDERSTORM WIND	50 kts	0/0	$2 122
PINEBLUFF	02 MAR 12	THUNDERSTORM WIND	55 kts	0/0	$5 150
PHEBA	01 AUG 12	THUNDERSTORM WIND	50 kts	0/0	$3 090
PINEBLUFF	10 DEC 12	THUNDERSTORM WIND	50 kts	0/0	$3 090

*Property damage is reported in 2013 dollars All damage may not have been reported
Source National Climatic Data Center

Hailstorm

According to the National Climatic Data Center 54 recorded hailstorm events have affected Clay County since 1965 [14] **Table D 18** is a summary of the hail events in Clay County **Table D 19** provides detailed information about each event that occurred in the county In all, hail occurrences resulted in approximately $75,000 (2013 dollars) in property damages Hail ranged in diameter from 0 75 inches to 2 0 inches It should be noted that hail is notorious for causing substantial damage to cars, roofs, and other areas of the built environment that may not be reported to the National Climatic Data Center Therefore it is likely that damages are greater than the reported value

TABLE D 18 SUMMARY OF HAIL OCCURRENCES IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
West Point	16	0/0	$16 045
Unincorporated Area	38	0/0	$59,327
CLAY COUNTY TOTAL	54	0/0	$75,372

Source National Climatic Data Center

TABLE D 19 HISTORICAL HAIL OCCURRENCES IN CLAY COUNTY

Location	Date	Magnitude	Deaths / Injuries	Property Damage*
West Point				
West Point	30-MAR 93	1.00 in	0/0	$0
WEST PT	20 APR 96	0 75 in	0/0	$16
WEST PT	24 APR 99	0 75 in	0/0	$0

[14] These hail events are only inclusive of those reported by the National Climatic Data Center (NCDC) It is likely that additional hail events have affected Clay County As additional local data becomes available this hazard profile will be amended

Location	Date	Magnitude	Deaths/Injuries	Property Damage
WEST PT	24 APR 99	1 00 in	0/0	$0
WEST PT	02 MAY-00	1 00 in	0/0	$14 685
WEST PT	17 OCT-03	0 88 in	0/0	$1 344
WEST PT	19 JUL 06	0 75 in	0/0	$0
WEST PT	04-MAY-06	1 00 in	0/0	$0
WEST PT	19 APR 06	1 00 in	0/0	$0
WEST PT	20 APR 06	1 00 in	0/0	$0
WEST PT	07-APR-06	0 88 in	0/0	$0
WEST PT	09-MAY 06	1 00 in	0/0	$0
WEST PT	12-MAY-07	0 75 in	0/0	$0
WEST PT	11-APR 07	1 00 in	0/0	$0
WEST PT	30-JUN-07	0 75 in	0/0	$0
WEST PT	06 FEB-08	1 00 in	0/0	$0
WEST PT	02 APR 09	0 75 in	0/0	$0
Unincorporated Area				
CLAY COUNTY	28 MAR 65	1 75 in	0/0	$0
CLAY COUNTY	26-APR 67	2 00 in	0/0	$0
CLAY COUNTY	30-MAR 92	0 75 in	0/0	$0
PHEBA	30-MAR 93	1 75 in	0/0	$0
CEDARBLUFF	21-APR 96	0 88 in	0/0	$80
PHEBA	21 APR 97	1 75 in	0/0	$787
PHEBA	02 MAY 97	0 88 in	0/0	$94
MONTPELIER	28 MAY 98	1 75 in	0/0	$1 162
COUNTYWIDE	05 MAY 99	0 75 in	0/0	$0
CEDARBLUFF	02 JUN-01	0 88 in	0/0	$0
PHEBA	02 MAY 03	0 88 in	0/0	$1 344
MONTPELIER	05-MAY-03	1 75 in	0/0	$26 878
CEDARBLUFF	30-MAR 05	1 00 in	0/0	$0
ABBOTT	09-MAY-06	0 75 in	0/0	$0
PHEBA	08 JAN-08	1 00 in	0/0	$0
CAHNS	10-JAN-08	1 00 in	0/0	$0
WHITES	24-MAY 08	1 75 in	0/0	$28 982
WHITES	04-JUL 08	0 75 in	0/0	$0
MONTPELIER	09 DEC-08	0 75 in	0/0	$0
WEST PT MC CHAREN AR	12 JUN-09	0 75 in	0/0	$0
ABBOTT	24-APR-10	1 00 in	0/0	$0
CEDARBLUFF	24-APR 10	0 75 in	0/0	$0
WEST PT MC CHAREN AR	24 APR 10	0 75 in	0/0	$0
GRIFFITH	26 JUN 10	1 00 in	0/0	$0
ABBOTT	28 JUN 10	1 00 in	0/0	$0
TIBBEE	20 APR-11	1 00 in	0/0	$0
MONTPELIER	16-JUN 11	1 00 in	0/0	$0
CAHNS	14 MAR 12	1 00 in	0/0	$0
CAHNS	14-MAR-12	1 00 in	0/0	$0
CAHNS	14 MAR-12	0 88 in	0/0	$0

Location	Date	Magnitude	Deaths / Injuries	Property Damage*
WHITES	01 AUG 12	0 88 in	0/0	$0
PHEBA	01 AUG 12	1 00 in	0/0	$0
PHEBA	01 AUG 12	1 00 in	0/0	$0

*Property damage is reported in 2013 dollars All damage may not have been reported
Source National Climatic Data Center

Lightning
According to the National Climatic Data Center there have been no recorded lightning events in Clay County since 1950 as listed in summary **Table D 20** [15] However it is likely that lightning events have in fact impacted the county Many of the reported events are only those that caused damage and it should be expected that damages are likely much higher for this hazard than what is reported[1]

TABLE D 20 SUMMARY OF LIGHTNING OCCURRENCES IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
West Point	0	0/0	$0
Unincorporated Area	0	0/0	$0
CLAY COUNTY TOTAL	0	0/0	$0

Source National Climatic Data Center

PROBABILITY OF FUTURE OCCURRENCES

Thunderstorm / High Wind
Given the high number of previous events, it is certain that thunderstorm events including straight-line wind events will occur in the future This results in a probability level of highly likely (100 percent annual probability) for the entire county

Hailstorm
Based on historical occurrence information it is assumed that the probability of future hail occurrences is likely (10 – 100 percent annual probability) Since hail is an atmospheric hazard (coinciding with thunderstorms) it is assumed that Clay County has equal exposure to this hazard It can be expected that future hail events will continue to cause minor damage to property and vehicles throughout the county

Lightning
Although there were no historical lightning events reported in Clay County via NCDC data it is a regular occurrence accompanied by thunderstorms In fact lightning events will assuredly happen on an annual basis though not all events will cause damage According to Vaisala s U S National Lightning Detection Network (NLDN) Clay County is located in an area of the country that experienced an average of 6 to 8 lightning flashes per square kilometer per year between 1997 and 2010 Therefore the probability of future events is highly likely (100 percent annual probability) It can be expected that future lightning events will continue to threaten life and cause minor property damages throughout the county

[1] These lightning events are only inclusive of those reported by the National Climatic Data Center (NCDC) It is likely that additional lightning events have occurred in Clay County As additional local data becomes available this hazard profile will be amended

D 2 12 Tornado

LOCATION AND SPATIAL EXTENT

Tornadoes occur throughout the state of Mississippi and thus in Clay County Tornadoes typically impact a relatively small area but damage may be extensive Event locations are completely random and it is not possible to predict specific areas that are more susceptible to tornado strikes over time Therefore it is assumed that Clay County is uniformly exposed to this hazard

HISTORICAL OCCURRENCES

Tornadoes resulted in eight disaster declarations in Clay County in 1973 1979 twice in 1991 2001 2002 2003 and 2011 [16] According to the National Climatic Data Center there have been a total of 14 recorded tornado events in Clay County since 1950 (**Table D 21**) resulting in nearly $16 3 million (2013 dollars) in property damages [17] In addition one fatality and four injuries were reported The magnitude of these tornadoes ranges from F0 to F3 in intensity although an F5 event is possible Detailed information on historic tornado events can be found in **Table D 22**

TABLE D 21 SUMMARY OF TORNADO OCCURRENCES IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
West Point	3	0/0	$274,487
Unincorporated Area	11	1/4	$16 019 493
CLAY COUNTY TOTAL	14	1/4	$16,293,980

Source National Climatic Data Center

TABLE A 22 HISTORICAL TORNADO IMPACTS IN CLAY COUNTY

Location	Date	Magnitude	Deaths / Injuries	Property Damage	Details
West Point					
WEST PT	18-OCT 04	F0	0/0	$1 305	Storm chasers captured this weak tornado on video as it moved east across northern Clay county six miles northeast of West Point
WEST PT	13 MAR 06	F0	0/0	$0	This weak tornado was witnessed along the Clay / Monroe County line as it moved across a Houlka Creek west of Highway 45 Traffic was stopped along the highway as many people viewed the tornado

[16] A complete listing of historical disaster declarations can be found in Section 4 Hazard Identification
[17] These tornado events are only inclusive of those reported by the National Climatic Data Center (NCDC) It is likely that additional tornadoes have occurred in Clay County As additional local data becomes available this hazard profile will be amended

Location	Date	Magnitude	Deaths / Injuries	Property Damage	Details
					The tornado started near Highway 45 Alternate north-northwest of West Point where a few trees were snapped and a road sign was twisted A billboard was blown apart with tin from the billboard scattered across a field Near the intersection of Tva Road and Hazelwood Road six homes had minor shingle damage and five sheds were damaged or destroyed Multiple trees were also uprooted and snapped Maximum winds
WEST PT	29 NOV-10	F1	0/0	$273 182	were around 90 mph
Unincorporated Area					
CLAY COUNTY	27 MAR-50	F2	0/0	$0	
CLAY COUNTY	14 APR-53	F0	0/0	$236 634	
CLAY COUNTY	14 MAY 53	F2	0/1	$0	
CLAY COUNTY	03 APR 56	F2	0/2	$2 325 304	
CLAY COUNTY	26-JUN 66	F0	0/0	$19 528	
CLAY COUNTY	20-MAR-76	F3	0/1	$1 111 264	
CLAY COUNTY	20-MAR-80	F1	1/0	$76 624	
CLAY COUNTY	25-AUG-85	F0	0/0	$5 872 665	
CLAY COUNTY	19-JAN-88	F3	0/0	$5 335 246	
					This tornado touched down near Barton Ferry Road and tracked northeast for a short distance. Three sets of metal power poles were blown down in a field off Barton Ferry Road Several trees and power lines were also blown down along with an outbuilding destroyed Maximum
WHITES	24 APR 10	F2	0/0	$87 418	winds were around 115 mph
					This tornado touched down in northern Choctaw County and eventually tracked across multiple counties as it moved northeast Many thousands of trees were snapped or uprooted along the path of this tornado Numerous roofs of homes were severely damaged Numerous mobile homes were severely damaged and several mobile homes were completely destroyed Numerous barns and sheds received heavy damage or were destroyed Numerous power poles and power lines were down Extensive damage occurred to a school in Cumberland Webster County and this was the basis for the EF 3 rating Maximum winds were around 140 mph Total path length across Choctaw Webster Clay Chickasaw and Monroe Counties was 59
PINEBLUFF	27 APR 11	F2	0/0	$954 810	miles

0598

Location	Date	Magnitude	Deaths / Injuries	Property Damage*	Details

*Property Damage is reported in 2013 dollars
Source National Climatic Data Center

From April 25 to 28, 2011, the largest tornado outbreak ever recorded affected the Southern, Midwestern and Northeastern U S , leaving catastrophic destruction in its wake especially across the states of Alabama and Mississippi During this outbreak one F2 tornado was reported in Choctaw County on April 27, 2011 This tornado resulted in over $954 000 (2013 dollars) in property damages

PROBABILITY OF FUTURE OCCURRENCES

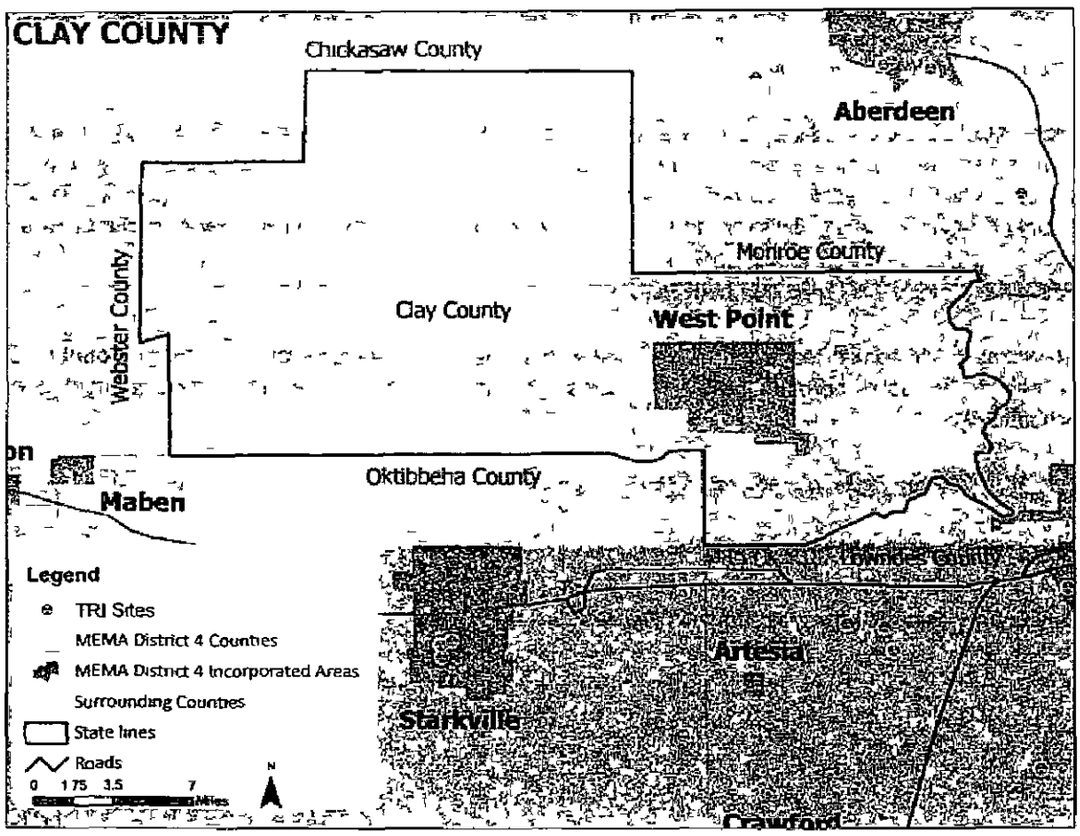
According to historical information tornado events pose a significant threat to Clay County The probability of future tornado occurrences affecting Clay County is likely (10 – 100 percent annual probability)

D 2 13 Hazardous Materials Incidents

LOCATION AND SPATIAL EXTENT

Clay County as no TRI sites, as shown in **Figure A.9**

FIGURE D 9 TOXIC RELEASE INVENTORY (TRI) SITES IN CLAY COUNTY



Source EPA

In addition to fixed hazardous materials locations hazardous materials may also impact the county via roadways and rail Many roads in the county are narrow making hazardous material transport in the area especially treacherous All roads that permit hazardous material transport are considered potentially at risk to an incident

HISTORICAL OCCURRENCES

There have been a total of 13 recorded HAZMAT incidents in Clay County since 1971 (**Table D 23**) resulting in $900 in property damages **Table D 24** presents detailed information on historic HAZMAT incidents in Clay County as reported by the U S Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA)

TABLE D 23 SUMMARY OF HAZMAT INCIDENTS IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage
West Point	12	0/0	$900
Unincorporated Area	1	0/0	$0

598

Location	Number of Occurrences	Deaths/Injuries	Property Damage
CLAY COUNTY TOTAL	13	0/0	$900

Source USDOT PHMSA

TABLE D 24 HAZMAT INCIDENTS IN CLAY COUNTY

Report Number	Date	City	Mode	Serious Incident?	Fatalities/ Injuries	Damages ($)	Quantity Released
West Point							
I 1975110453	11/7/1975	WEST POINT	Highway	No	0/0	$0	0
I 1999090907	8/15/1999	WEST POINT	Highway	Yes	0/0	$900	1 300 SLB
I 1993050548	5/10/1993	WEST POINT	Highway	No	0/0	$0	0
I 1988100253	9/28/1988	WEST POINT	Highway	No	0/0	$0	100 LGA
I 1989020262	2/7/1989	WEST POINT	Highway	No	0/0	$0	25 LGA
I 1987120048	12/8/1987	WEST POINT	Highway	Yes	0/0	$0	40 780 SLB
I 1971100126	10/7/1971	WEST POINT	Highway	No	0/0	$0	0
I 1971050037	4/29/1971	WEST POINT	Highway	No	0/0	$0	0
I 1995040367	3/20/1995	WEST POINT	Highway	No	0/0	$0	6 LGA
I 1995050551	4/29/1995	WEST POINT	Highway	No	0/0	$0	2 LGA
I 1980100372	9/11/1980	WEST POINT	Highway	No	0/0	$0	20 LGA
I 1997041188	3/25/1997	WEST POINT	Highway	No	0/0	$0	2 LGA
Unincorporated Area							
I 1992020028	12/11/1991	PHEBA	Highway	No	0/0	$0	50 LGA

Source USDOT PHMSA

PROBABILITY OF FUTURE OCCURRENCES

Although there are no toxic release inventory sites in Clay County there have been several roadway and rail incidents Therefore it is possible that a hazardous material incident may occur in the county (between one percent and ten percent annual probability) County and town officials are mindful of this possibility and take precautions to prevent such an event from occurring Furthermore there are detailed plans in place to respond to an occurrence

Despite the fact that there are no TRI sites and a limited record of previous events in the county hazardous materials incidents will continue to be a threat The county may also be impacted by neighboring counties which also face risk due to TRI sites and narrow roadways

D 2 14 Pandemic

LOCATION AND SPATIAL EXTENT

Pandemics are global in nature However they may start anywhere Clay County chose to analyze this hazard given the large number of poultry farms in the area Poultry has served as host for viruses that ultimately mutate to infect humans

All populations should be considered at risk to pandemic Buildings and infrastructure are not directly impacted by the virus but could be indirectly impacted if people are not able to operate and maintain them due to illness Many buildings may be shutdown, at least temporarily as a result Employers may initiate work from home procedures for non essential workers in order to help stop infection Commerce activities and thus the economy may suffer greatly during this time

HISTORICAL OCCURRENCES[18]

Several pandemics have been reported throughout history The first known pandemic dates back to 430 B C with the Plague of Athens It reportedly killed a quarter of the population over four years due to typhoid fever In 165-180 A D the Antonine Plague killed nearly 5 million people Next the Plague of Justinian (the first bubonic plague pandemic) occurred from 541 to 566 It killed 10 000 people a day at its peak and resulted in a 50 percent drop in Europe s population

Since the 1500s, influenza pandemics have occurred about three times every century or roughly every 10 50 years The Black Death devastated European populations in the 14th century Nearly a third of the population (20 30 million) was killed over six years From 1817 to present seven Cholera Pandemics have impacted to the world and killed millions Perhaps most severe, was the Third Cholera Pandemic (1852 1959) which started in China Isolated cases can still be found in the Western U S today There were three major pandemics in the 20th century (1918 1919, 1957 1958 and 1968-1969) The most infamous pandemic flu of the 20th century however was that of 1918-1919 Since the 1960s, there has only been one pandemic the 2009 H1N1 influenza The pandemics of the 20th and 21st centuries that impacted the United States are detailed below

1918 Spanish Flu This was the most devastating flu of the 20th century This pandemic spread across the world in three waves between 1918 and 1919 It typically impacted areas for around twelve weeks and then would largely disappear However it would frequently reemerge several months later Worldwide approximately 50 million persons died and over a quarter of the population was infected Nearly 675 000 people died in the United States The illness came on suddenly and could cause death within a few hours The virus impacted those aged 15 to 35 especially hard The movement of troops during World War I is thought to have facilitated the spread of the virus

In Mississippi state officials noted that "epidemics have been reported from a number of places in the State on October 4th 1918 By the 18th twenty-six localities reported 1 934 cases (the real number of cases was likely much higher) West Point Mississippi was hit especially hard and quarantine was established Throughout the state, African Americans were impacted at a greater rate than white populations This is thought to be partly caused from a shortage of caretakers It is estimated that over 6 000 people died in Mississippi though that number may be much higher as death records were not widely recorded [19]

1957 Asian Flu It is estimated that the Asian Flu caused 2 million deaths worldwide Approximately 70 000 deaths were in the U S However the proportion of people impacted was substantially higher than that of the Spanish Flu This flu was characterized as having much milder effects than the Spanish Flu and greater survivability Similar to other pandemics this pandemic has two waves Elderly and

[18] Information in this section comes from http //www flu gov/pandemic/history# and http //www flupandemic gov au/internet/panflu/publishing nsf/Content/history 1
[19] http //historicaltextarchive com/sections php?action=read&artid=773

0600

infant populations were more likely to succumb to death This flu is thought to have originated from a genetic mutation of a bird virus

1968 Hong Kong Flu The Hong Kong Flu is thought to have caused one million deaths worldwide It was milder than both the Asian and Spanish influenza viruses It was similar to the Asian Flu which may have provided some immunity to the virus It had the most severe impact on elderly populations

2009 H1N1 Influenza This flu was derived from human swine and avian virus strains It was initially reported in Mexico in April 2009 On April 26 the U S government declared H1N1 a public health emergency A vaccine was developed and over 80 million were vaccinated which helped minimize the impacts The virus had mild impacts on most of the population but did cause death (usually from viral pneumonia) in high risk populations such as pregnant women obese persons indigenous people and those with chronic respiratory cardiac neurological or immunity conditions Worldwide it is estimated that 43 million to 89 million people contracted H1N1 between April 2009 and April 2010 and between 8 870 and 18 300 H1N1 cases resulted in death

In addition to the pandemics above, there have been several cases of pandemic threats some of which reached epidemic levels They were contained before spreading globally Examples include Smallpox Polio Tuberculosis Malaria AIDS SARS and Yellow Fever Advances in medicine and technology have been instrumental in containing the spread of viruses in recent history

It is notable that no birds have been infected with Avian Flu in North and South America

PROBABILITY OF FUTURE OCCURRENCES

Based on historical occurrence information it is assumed that Clay County has a probability level of unlikely (less than 1 percent annual probability) for future pandemics events While pandemic can have devastating impacts they are relatively rare

The Mississippi State Department of Health maintains a state pandemic plan which can be found here **http //www msdh.state.ms us/msdhsite/index.cfm/44,1136,122,154,pdf/SNSPlan pdf**

D 2 15 Conclusions on Hazard Risk

The hazard profiles presented above were developed using best available data and result in what may be considered principally a qualitative assessment as recommended by FEMA in its How-to guidance document titled *Understanding Your Risks Identifying Hazards and Estimating Losses* (FEMA Publication 386-2) It relies heavily on historica and anecdotal data stakeholder input and professional and experienced judgment regarding observed and/or anticipated hazard impacts It also carefully considers the findings in other relevant plans, studies and technical reports

HAZARD EXTENT

Table D 25 describes the extent of each natural hazard identified for Clay County The extent of a hazard is defined as its severity or magnitude as it relates to the planning area

TABLE D 25 EXTENT OF CLAY COUNTY HAZARDS

Flood-related Hazards	
	Flood extent can be measured by the amount of land and property in the floodplain as well as flood height and velocity The amount of land in the floodplain accounts for 30 3 percent of the total land area in Clay County
Flood	Flood depth and velocity are recorded via United States Geological Survey stream gages throughout the region While a gage does not exist for each participating jurisdiction there is one at or near many areas The greatest peak discharge recorded for the county was at the Chuquatonchee Creek near West Point in 1973 Water reached a discharge of 57 100 cubic feet per second and the stream gage height was recorded at 24 58 feet
Erosion	The extent of erosion can be defined by the measurable rate of erosion that occurs There are no erosion rate records located in Clay County
Dam Failure	Dam Failure extent is defined using the Mississippi Division of Environmental Quality criteria (Table 5 7) No dams are classified as high hazard in Clay County
Winter Storm and Freeze	The extent of winter storms can be measured by the amount of snowfall received (in inches) Official long term snow records are not kept for any areas in Clay County However the greatest snowfall reported in Jackson (southwest of the county) was 11 7 inches in 1904 and in Meridian (south of the county) was 14 0 inches in 1963
Fire-related Hazards	
Drought / Heat Wave	Drought extent is defined by the U S Drought Monitor Classifications which include Abnormally Dry Moderate Drought Severe Drought Extreme Drought and Exceptional Drought According to the U S Drought Monitor Classifications the most severe drought condition is Exceptional Clay County has received this ranking twice over the thirteen year reporting period The extent of extreme heat can be measured by the record high temperature recorded Official long term temperature records are not kept for any areas in Choctaw County However the highest recorded temperature in Jackson (southwest of the county) was 107 F in 2000 and in Meridian (south of the county) was 107 F in 1980
Wildfire	Wildfire data was provided by the Mississippi Forestry Commission and is reported annually by county from 2002 2011 The greatest number of fires to occur in Clay County in any year was 29 in 2011 The greatest number of acres to burn in the county in a single year occurred in 2004 when 198 acres were burned Although this data lists the extent that has occurred larger and more frequent wildfires are possible throughout the county
Geologic Hazards	
Earthquake	Earthquake extent can be measured by the Richter Scale (Table 5 15) and the Modified Mercalli Intensity (MMI) scale (Table 5 16) and the distance of the epicenter from Clay County According to data provided by the National Geophysical Data Center the greatest MMI to impact the county was reported in West Point with a MMI of III (slight) with a correlating Richter Scale measurement of less than 4 8

0602

Landslide	As noted above in the landslide profile there is no extensive history of landslides in Clay Coun y and landslide events typically occur in isolated areas This provides a challenge when trying to determine an accurate extent for the landslide hazard However when using USGS landslide susceptibility index extent can be measured with incidence which is low throughout the county There is also low susceptibility throughout the county
Expansive Soils	As noted above in the expansive soils profile there is no historical record of significant expansive soil events in Clay County Again this provides a challenge when trying to determine an accurate extent for the expansive soils hazard However when using USGS data on soils with clay swelling potential extent can be measured with swelling potential which is high in Clay County
Wind-related Hazards	
Hurricane and Tropical Storm	Hurricane extent is defined by the Saffir Simpson Scale which classifies hurricanes into Category 1 through Category 5 (Table 5 19) The greatest classification of hurricane to traverse directly through Clay County was a tropical storm (unnamed storms in 1923 and 1948) which carried tropical force winds of 46 miles per hour upon arrival in the county
Thunderstorm / Hail / Lightning	Thunderstorm extent is defined by the number of thunder events and wind speeds reported According to a 63 year history from the National Climatic Data Center, the strongest recorded wind event in Clay County was last reported on January 10 2008 at 74 knots (approximately 51 mph) It should be noted that future events may exceed these historical occurrences Hail extent can be defined by the size of the hail stone The largest hail stone reported in Clay County was 2 0 inches (reported on April 26 1967) It should be noted that future events may exceed this According to the Vaisala s flash density map (Figure 5 16) Clay County is located in an area that experiences 6 to 8 lightning flashes per square kilometer per year It should be noted that future lightning occurrences may exceed these figures
Tornado	Tornado hazard extent is measured by tornado occurrences in the US provided by FEMA (Figure 5 17) as well as the Fujita/Enhanced Fujita Scale (Tables 5 26 and 5 27) The greatest magnitude reported in Clay County was an F3 (last reported on January 19 1988)
Other Hazards	
Hazardous Materials Incident	According to USDOT PHMSA the largest hazardous materials incident reported in the county is 40 780 SLB released on the highway in West Point It should be noted that larger events are possible
Pandemic	The extent of a pandemic impacting the county is difficult to estimate It could result in thousands of deaths and extreme disruption of commerce and everyday life

PRIORITY RISK INDEX RESULTS

In order to draw some meaningful planning conclusions on hazard risk for Clay County, the results of the hazard profiling process were used to generate countywide hazard classifications according to a Priority Risk Index (PRI) More information on the PRI and how it was calculated can be found in Section 5 16 2

Table D 26 summarizes the degree of risk assigned to each category for all initially identified hazards based on the application of the PRI Assigned risk levels were based on the detailed hazard profiles

developed for this section as well as input from the Regional Hazard Mitigation Council The results were then used in calculating PRI values and making final determinations for the risk assessment

TABLE D 26 SUMMARY OF PRI RESULTS FOR CLAY COUNTY

Hazard	Category/Degree of Risk					
	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Flood-related Hazards						
Flood	Likely	Limited	Moderate	6 to 12 hours	Less than 24 hours	26
Erosion	Possible	Minor	Small	More than 24 hours	More than 1 week	18
Dam Failure	Unlikely	Critical	Moderate	More than 24 hours	Less than 6 hours	20
Winter Storm and Freeze	Likely	Limited	Moderate	More than 24 hours	Less than 24 hours	24
Fire-related Hazards						
Drought / Heat Wave	Likely	Minor	Large	More than 24 hours	More than 1 week	25
Wildfire	Likely	Minor	Small	Less than 6 hours	Less than one week	21
Geologic Hazards						
Earthquake	Possible	Minor	Moderate	Less than 6 hours	Less than 6 hours	20
Landslide	Unlikely	Minor	Small	Less than 6 hours	Less than 6 hours	15
Expansive	Likely	Minor	Small	Less than 6 hours	Less than 6 hours	21
Wind-related Hazards						
Hurricane and Tropical Storm	Likely	Minor	Large	More than 24 hours	Less than 24 hours	23
Thunderstorm Wind / High Wind	Highly Likely	Critical	Moderate	Less than 6 hours	Less than 6 hours	32
Hailstorm	Likely	Limited	Moderate	Less than 6 hours	Less than 6 hours	26
Lighting	Highly Likely	Minor	Negligible	Less than 6 hours	Less than 6 hours	22
Tornado	Likely	Catastrophic	Small	Less than 6 hours	Less than 6 hours	30
Other Hazards						
Hazardous Materials Incident	Unlikely	Limited	Small	Less than 6 hours	Less than 24 hours	19
Pandemic	Unlikely					

D 2 16 Final Determinations on Hazard Risk

The conclusions drawn from the hazard profiling process for Clay County including the PRI results and input from the Regional Hazard Mitigation Council resulted in the classification of risk for each identified hazard according to three categories High Risk Moderate Risk and Low Risk (**Table D 27**) For purposes of these classifications risk is expressed in relative terms according to the estimated impact that a hazard will have on human life and property throughout all of Clay County A more quantitative analysis to estimate potential dollar losses for each hazard has been performed separately, and is described in Section 6 *Vulnerability Assessment* and below in Section A 3 It should be noted that although some hazards are classified below as posing low risk their occurrence of varying or unprecedented magnitudes is still possible in some cases and their assigned classification will continue to be evaluated during future plan updates

TABLE D 27 CONCLUSIONS ON HAZARD RISK FOR CLAY COUNTY

[redacted]	Thunderstorm Wind / High Wind Tornado Flood Hailstorm Winter Storm and Freeze
[redacted]	Drought / Heat Wave Hurricane and Tropical Storm Lightning
LOW RISK	Expansive Soils Earthquake Dam Failure Erosion Landslide Wildfire Pandemic Hazardous Materials Incident

D 3 CLAY COUNTY VULNERABILITY ASSESSMENT

This subsection identifies and quantifies the vulnerability of Clay County to the significant hazards previously identified This includes identifying and characterizing an inventory of assets in the county and assessing the potential impact and expected amount of damages caused to these assets by each identified hazard event More information on the methodology and data sources used to conduct this assessment can be found in Section 6 *Vulnerability Assessment*

D 3 1 Asset Inventory

Table D 28 lists the estimated number of improved properties and the total value of improvements for Clay County and its participating jurisdictions (study area of vulnerability assessment) This data was obtained from Hazus-MH 2 1 since digital parcel data was not available in this county

TABLE D 28 IMPROVED PROPERTY IN CLAY COUNTY

Location	Number of Improved Properties	Total Assessed Value of Improvements
West Point	5,532	$1,262,664,000
Unincorporated Area	3,981*	$523,678,000
CLAY COUNTY TOTAL	9,513	$1,786,342,000

*Improvement values for these communities were obtained from Hazus MH

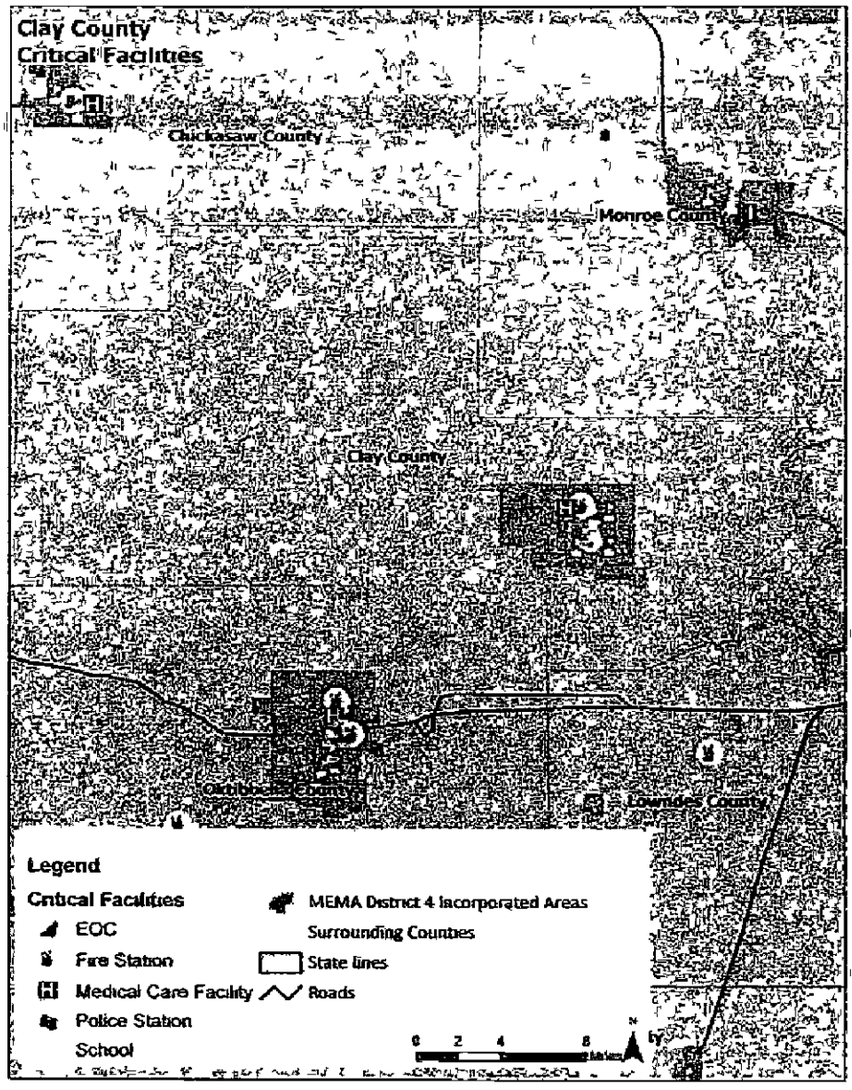
Table D 29 lists the fire stations police stations emergency operations centers (EOCs) medical care facilities and schools located in Clay County Hazus 2 1 was used to obtain the critical facilities for the county and this data was updated to reflect current conditions In addition **Figure D 10** shows the locations of essential facilities in Clay County **Table D 41**, near the end of this section, shows a complete list of the critical facilities by name as well as the hazards that affect each facility As noted previously this list is not all-inclusive and only includes information provided by the county

TABLE D 29 CRITICAL FACILITY INVENTORY IN CLAY COUNTY

Location	Fire Stations	Police Stations	Medical Care Facilities	EOC	Schools
West Point	2	2	1	1	9
Unincorporated Area	0	0	0	0	1
CLAY COUNTY TOTAL	2	2	1	1	10

Source Hazus MH

FIGURE D 10 CRITICAL FACILITY LOCATIONS IN CLAY COUNTY



Source Hazus MH 2 1

D 3 2 Social Vulnerability

In addition to identifying those assets potentially at risk to identified hazards it is important to identify and assess those particular segments of the resident population in Clay County that are potentially at risk to these hazards

Table D 30 lists the population by jurisdiction according to U S Census 2010 population estimates This data is presented at the county and municipal level The total population in Clay County according to Census data is 20 634 persons Additional population estimates are presented above in Section A 1

TABLE D 30 TOTAL POPULATION IN CLAY COUNTY

Location	Total 2010 Population
West Point	11 203
Unincorporated Area	9 431
CLAY COUNTY TOTAL	20 634

Source U S Census 2010

In addition **Figure D 11** illustrates the population density by census tract as it was reported by the U S Census Bureau in 2010 [20]

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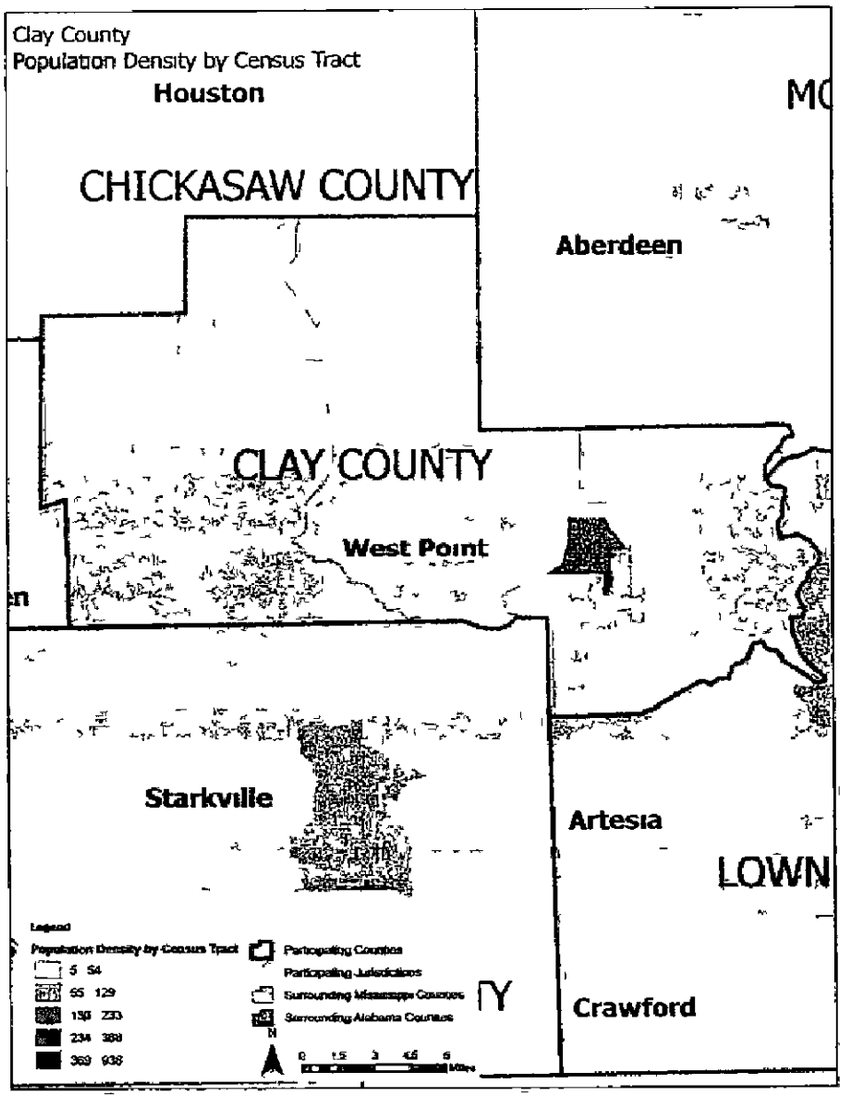
[20] Population by census block was not available at the time this plan was completed

FIGURE D 11 POPULATION DENSITY IN CLAY COUNTY



Source U S Census Bureau 2010

D 3 3 Vulnerability Assessment Results

As noted in Section 6 *Vulnerability Assessment*, only hazards with a specific geographic boundary, available modeling tool or sufficient historical data allow for further analysis Those results, specific to Clay County are presented here All other hazards are assumed to impact the entire planning region (drought, hailstorm lightning, pandemic thunderstorm wind tornado and winter storm and freeze) or due to lack of data analysis would not lead to credible results (dam and levee failure erosion expansive soils, and landslide) The total county exposure, and thus risk, was presented in **Table D 29**

The hazards to be further analyzed in this section include flood wildfire earthquake hurricane and tropical storm winds and hazardous materials incident

The annualized loss estimate for all hazards is presented at the end of this section in **Table D 41**

FLOOD

Historical evidence indicates that Clay County is susceptible to flood events A total of nine flood events have been reported by the National Climatic Data Center resulting in $1 2 million (2013 dollars) in damages On an annualized level these damages amounted to $103 259 for Clay County

Since digital parcel data was not available an analysis of improved property was not completed as it was determined that an analysis using the inventory from Hazus MH 2 1 would have been inaccurate and the results would not have been useful

TABLE D 31 ESTIMATED EXPOSURE OF PARCELS TO THE FLOOD HAZARD

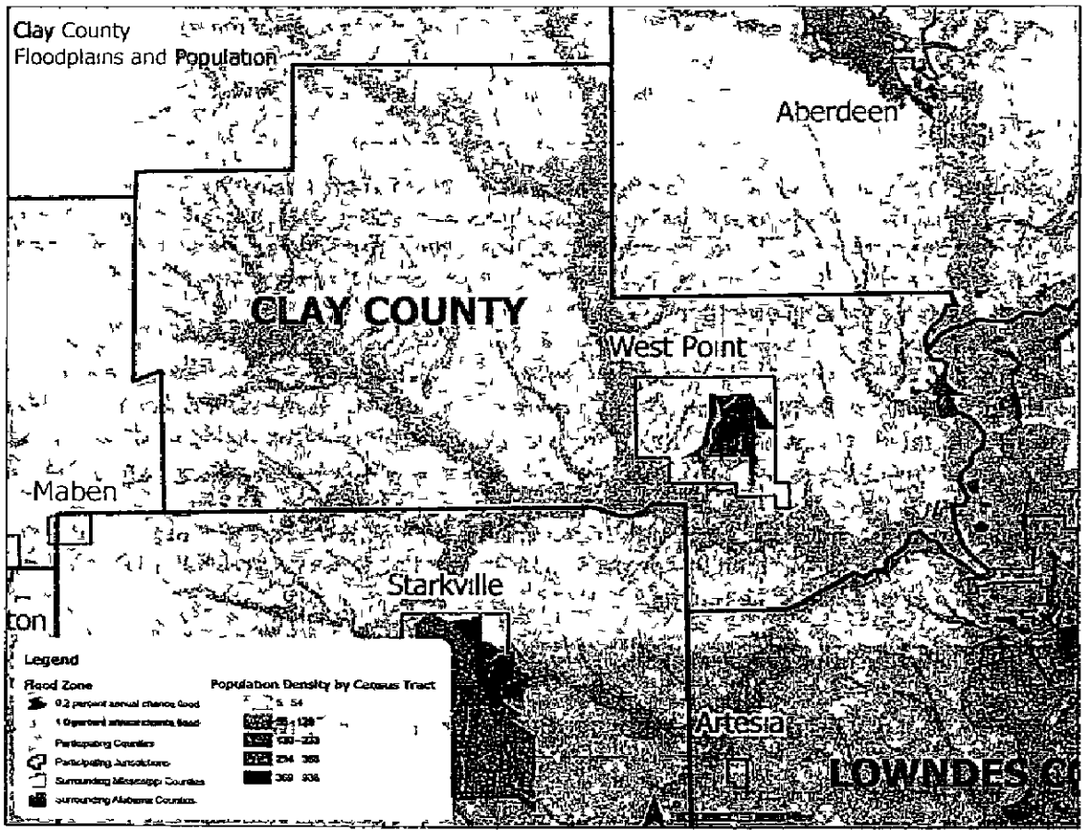
Level of Flood Event	1-percent ACE		0 2-percent ACE		Total percent of value in a floodplain
Location	Approx. Number of Parcels	Approx. Improved Value	Approx. Number of Parcels	Approx. Improved Value	
West Point	N/A	N/A	N/A	N/A	N/A
Unincorporated Area	N/A	N/A	N/A	N/A	N/A
CLAY COUNTY TOTAL					

Source FEMA DFIRM

Social Vulnerability

Since 2010 population was only available at the tract level, it was difficult to determine a reliable figure on population at-risk to flood due to tract level population data **Figure D 12** is presented to gain a better understanding of at risk population

FIGURE D 12 POPULATION DENSITY NEAR FLOODPLAINS



Source FEMA DFIRM U S Census 2010

Critical Facilities

The critical facility analysis revealed that there are a no critical facilities located in the Clay County 1 0-percent annual chance floodplain and 0 2 percent annual chance floodplain based on FEMA DFIRM boundaries and GIS analysis A list of specific critical facilities and their associated risk can be found in **Table D 41** at the end of this section

In conclusion a flood has the potential to impact many existing and future buildings and populations in Clay County though some areas are at a higher risk than others All types of structures in a floodplain are at risk though elevated structures will have a reduced risk As noted the floodplains used in this analysis include the 100-year and 500-year FEMA regulated floodplain boundaries It is certainly possible that more severe events could occur beyond these boundaries or urban (flash) flooding could impact additional structures Such site specific vulnerability determinations are outside the scope of this assessment but will be considered during future plan updates Furthermore areas subject to repetitive flooding should be analyzed for potential mitigation actions

WILDFIRE

Although historical evidence indicates that Clay County is susceptible to wildfire events there are few reports of damage Therefore it is difficult to calculate a reliable annualized loss figure Annualized loss is considered negligible though it should be noted that a single event could result in significant damages throughout the county

To estimate exposure to wildfire building data was obtained from Hazus-MH 2 1 which includes information that has been aggregated at the Census block level and which has been deemed useful for analyzing wildfire vulnerability However it should be noted that the accuracy of Hazus data is somewhat lower than that of parcel data—For the critical facility analysis areas of concern were intersected with critical facility locations

Figure D 13 shows the Level of Concern data Initially provided as raster data it was converted to a polygon to allow for analysis The LOC data is a range of 0 to 100 with higher values being most severe (as previously noted this is a relative risk) Three was the highest level recorded in the MEMA District 4 planning area Therefore areas with a value above 1 were chosen to be displayed as areas of risk The county contains some lands where the value falls into the at risk category Clay County has very little land labeled as at-risk much like most of the other counties in the MEMA District 4 Region Since all of this land area is on the lower tenth of the overall LOC scale there is likely considerably less risk in Clay County than in other areas of the country

Table D 31 shows the results of the analysis

FIGURE D 13 WILDFIRE RISK AREAS IN CLAY COUNTY

Source Southern Wildfire Risk Assessment Data

TABLE D 32 EXPOSURE OF IMPROVED PROPERTY TO WILDFIRE AREAS OF CONCERN

	Wildfire Risk	
Location	Approx. Number of Improved Properties	Approx. Improved Value
West Point*	0	$0
Unincorporated Area*	161	$22 139 000
CLAY COUNTY TOTAL	161	$22,139,000

*Improvement values for these communities were obtained from Hazus MH at the Census Block level

Source Southern Wildfire Risk Assessment and Hazus MH

Looking at jurisdictional level unincorporated areas of the county face the highest level of concern areas While the jurisdictions report a fairly low level of concern each should mindful that wildfire potential exists throughout the county and fire may quickly spread to those lower areas of concern

Social Vulnerability

Although not all areas have equal vulnerability there is some susceptibility across the entire county It is assumed that the total population is at risk to the wildfire hazard Determining the exact number of people in certain wildfire zones is difficult with existing data and could be misleading

Critical Facilities
The critical facility analysis revealed that there are no critical facilities located in wildfire areas of concern It should be noted however that several factors could impact the spread of a wildfire putting all facilities at risk A list of specific critical facilities and their associated risk can be found in **Table A 41** at the end of this section

In conclusion a wildfire event has the potential to impact many existing and future buildings critical facilities and populations in Clay County

EARTHQUAKE

As the Hazus-MH model suggests below and historical occurrences confirm any earthquake activity in the area is likely to inflict minor damage to the county Hazus-MH 2 1 estimates a total exposure of approximately $1 8 billion which includes buildings inventory and contents throughout the county While this number is not an exact representation of assessed tax value it is helpful in assessing the results of the Hazus MH scenario

For the earthquake hazard vulnerability assessment a probabilistic scenario was created to estimate the average annualized loss[21] for the county The results of the analysis are generated at the Census Tract level within Hazus-MH and then aggregated to the county level Since the scenario is annualized no building counts are provided Losses reported included losses due to structure failure building loss contents and inventory They do not include losses to business interruption lost income or relocation **Table D 32** summarizes the findings with results rounded to the nearest thousand

TABLE D 33 AVERAGE ANNUALIZED LOSS ESTIMATIONS FOR EARTHQUAKE HAZARD

Location	Total Annualized Loss	Exposure by County	Percent of Exposure
Clay County	$54 000	$1 786 293 000	0 00%

Source Hazus MH 2 1

Social Vulnerability
It can be assumed that all existing future populations are at risk to the earthquake hazard No fatalities or injuries were reported in the above Hazus-MH probabilistic scenario

Critical Facilities
The Hazus MH probabilistic analysis indicated that no critical facilities would sustain measurable damage in an earthquake event However all critical facilities should be considered at risk to minor damage should an event occur Specific vulnerabilities for these assets will be greatly dependent on their individual design and the mitigation measures in place where appropriate Such site-specific vulnerability determinations are outside the scope of this assessment but will be considered during future plan updates
In conclusion an earthquake has the potential to impact all existing and future buildings facilities and populations in Clay County The Hazus MH scenario indicates that minimal damage is expected from an earthquake occurrence While Clay County may not experience a large earthquake (the greatest on record is a magnitude III MMI) localized damage is possible with an occurrence A list of specific critical facilities and their associated risk can be found in **Table D 40** at the end of this section

[21] Annualized Loss is defined by Hazus MH as the expected value of loss in any one year

HURRICANE AND TROPICAL STORM

Historical evidence indicates that Clay County has an elevated risk to the hurricane and tropical storm hazard There have been two disaster declarations due to hurricanes (Hurricanes Ivan and Dennis) Several tracks have come near or traversed through the county as shown and discussed in Section D 2 10

Hurricanes and tropical storms can cause damage through numerous additional hazards such as flooding erosion tornadoes, and high winds thus it is difficult to estimate total potential losses from these cumulative effects The current Hazus MH hurricane model only analyzes hurricane winds and is not capable of modeling and estimating cumulative losses from all hazards associated with hurricanes therefore only hurricane winds are analyzed in this section It can be assumed that all existing and future buildings and populations are at risk to the hurricane and tropical storm hazard Hazus MH 2 1 was used to determine average annualized losses[22] for the county as shown below in **Table D 33** Only losses to buildings inventory and contents are included in the results

TABLE D 34 ANNUALIZED LOSS ESTIMATIONS FOR HURRICANE WIND HAZARD

Location	Total Annualized Loss	Exposure	% of Exposure
Clay County	$61 000	$1 786 293 000	0 00%

Source Hazus MH 2 1

In addition Hazus-MH 2 1 was used to recreate the 1916 Unnamed Hurricane and potential estimate losses in the county The scenario investigates potential losses based on the same track impacting the county today shown below in **Table D 34**

TABLE D 35 UNNAMED STORM OF 1916 SCENARIO

Location	Total Annualized Loss	Exposure by County	Percent of Exposure
Clay County	$0	$1 786 293 000	0 00%

Source Hazus MH 2 1

Social Vulnerability

Given equal susceptibility across the county it is assumed that the total population is at risk to the hurricane and tropical storm hazard

Critical Facilities

Given equal vulnerability across Clay County, all critical facilities are considered to be at risk Some buildings may perform better than others in the face of such an event due to construction and age among other factors Determining individual building response is beyond the scope of this plan However this plan will consider mitigation action for especially vulnerable and/or critical facilities to mitigation against the effects of the hurricane hazard A list of specific critical facilities can be found in **Table D 41** at the end of this section

In conclusion a hurricane event has the potential to impact many existing and future buildings critical facilities and populations in Clay County

[22] Annualized Loss is defined by Hazus MH as the expected value of loss in any one year

HAZARDOUS MATERIALS INCIDENT

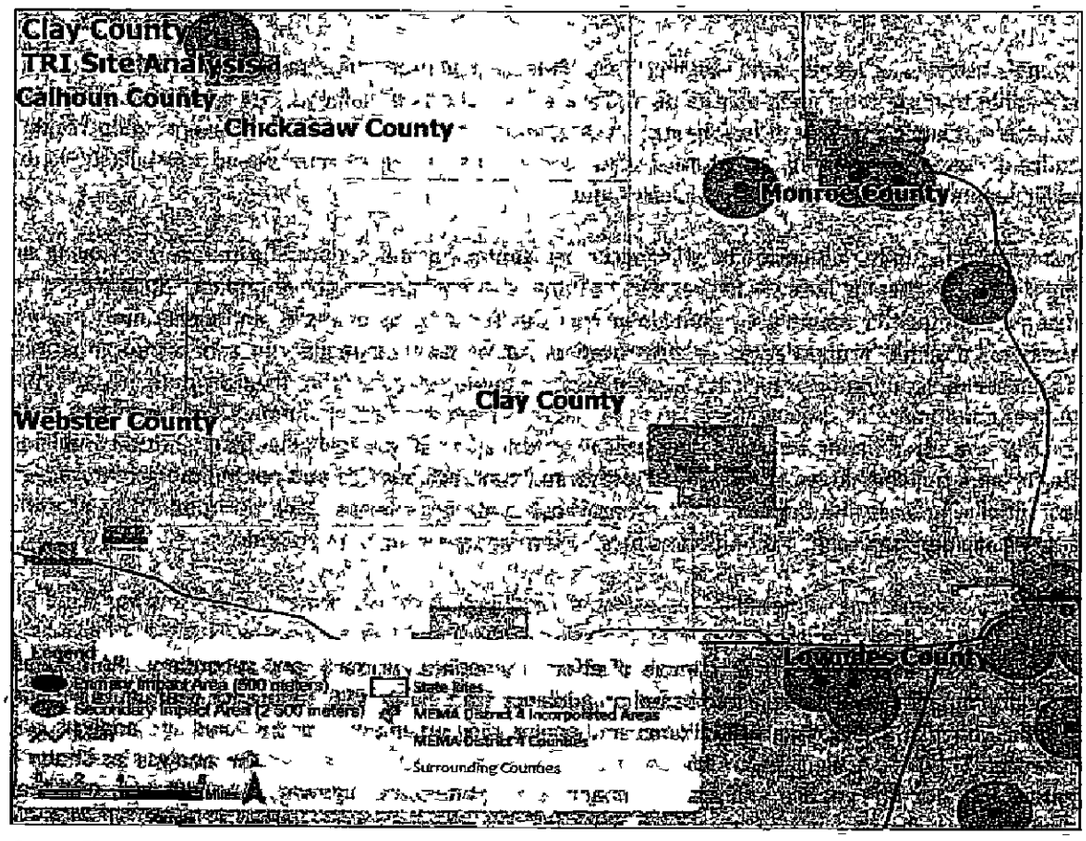
Although historical evidence and existing Toxic Release Inventory sites indicate that Clay County is susceptible to hazardous materials events there are few reports of damage Therefore it is difficult to calculate a reliable annualized loss figure It is assumed that while one major event could result in significant losses annualizing structural losses over a long period of time would most likely yield a negligible annualized loss estimate for Clay County

Most hazardous materials incidents that occur are contained and suppressed before destroying any property or threatening lives However they can have a significant negative impact Such events can cause multiple deaths completely shut down facilities for 30 days or more and cause more than 50 percent of affected properties to be destroyed or suffer major damage In a hazardous materials incident solid liquid, and/or gaseous contaminants may be released from fixed or mobile containers Weather conditions will directly affect how the hazard develops Certain chemicals may travel through the air or water affecting a much larger area than the point of the incidence itself Non compliance with fire and building codes as well as failure to maintain existing fire and containment features can substantially increase the damage from a hazardous materials release The duration of a hazardous materials incident can range from hours to days Warning time is minimal to none

In order to conduct the vulnerability assessment for this hazard GIS analysis was used for fixed and mobile areas In both scenarios two sizes of buffers—500 and 2,500 meters—were used These areas are assumed to respect the different levels of effect immediate (primary) and secondary Primary and secondary impact sites were selected based on guidance from FEMA 426 Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings and engineering judgment For the fixed site analysis geo-referenced TRI listed toxic sites in Clay County, along with buffers were used for analysis as shown in **Figure D 14** For the mobile analysis the major roads (Interstate highway U S highway and State highway) and railroads where hazardous materials are primarily transported that could adversely impact people and buildings were used for the GIS buffer analysis **Figure D 15** shows the areas used for mobile toxic release buffer analysis The results indicate the approximate number of improved properties and improved value, as shown in **Table D 35** (fixed sites) and **Table D 36** (mobile sites) [23]

[-3] Note that parcels included in the 2 500 meter analysis are also included in the 500 meter analysis

FIGURE D 14 TRI SITES WITH BUFFERS IN CLAY COUNTY



Source EPA

TABLE D 36 EXPOSURE OF IMPROVED PROPERTY TO HAZARDOUS MATERIALS (FIXED SITES)

	500-meter buffer		2,500-meter buffer	
Location	Approx Number of Improved Properties	Approx Improved Value	Approx Number of Improved Properties	Approx Improved Value
West Point	0	$0	0	$0
Unincorporated Area	0	$0	0	$0
CLAY COUNTY TOTAL	0	$0	0	$0

*Improvement values for these communities were obtained from Hazus MH at the Census Block level
Source TRI and Hazus MH

FIGURE D 15 MOBILE HAZMAT BUFFERS IN CLAY COUNTY

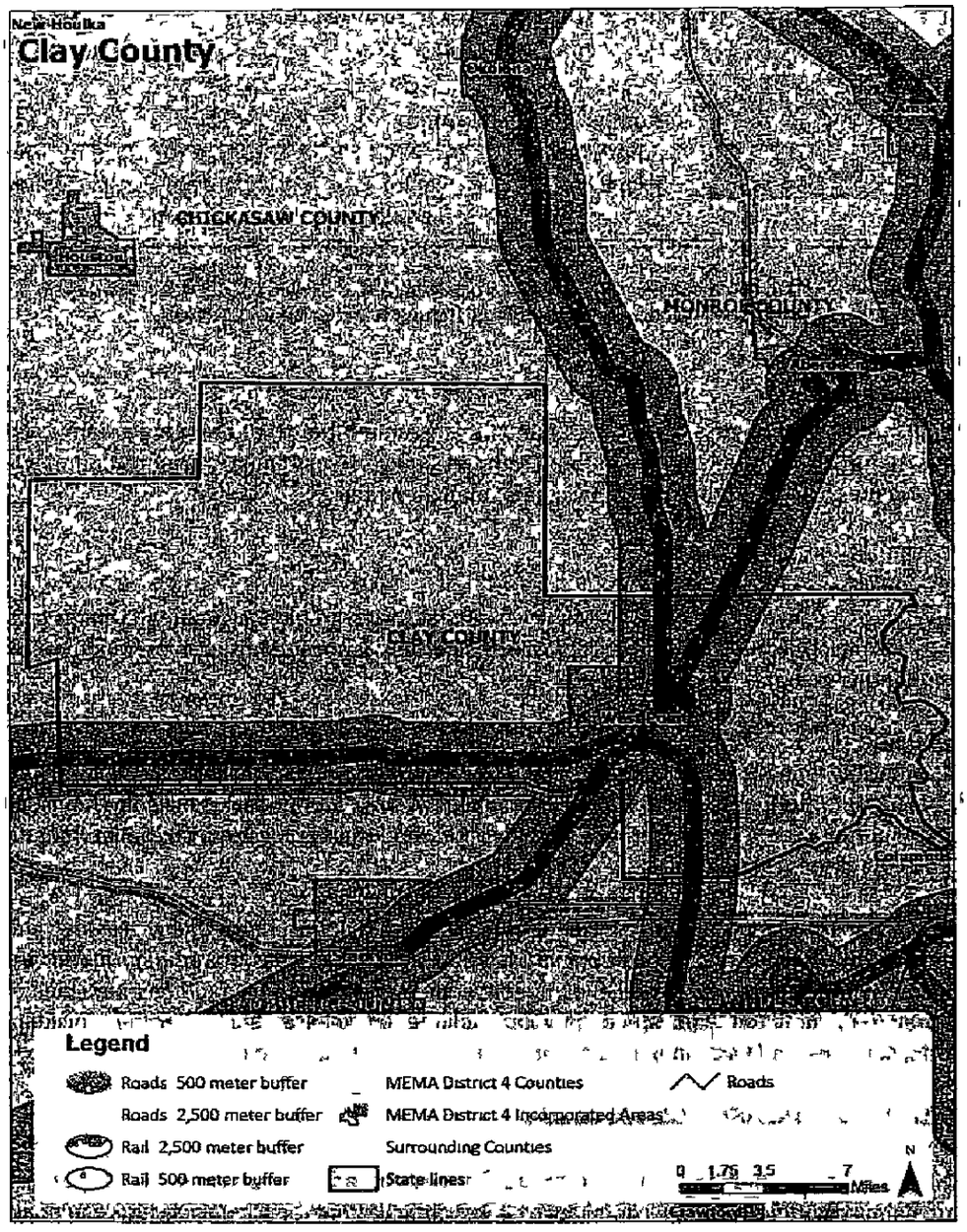


TABLE D 37 EXPOSURE OF IMPROVED PROPERTY TO HAZARDOUS MATERIALS SPILL (MOBILE ANALYSIS – ROAD AND RAILROAD)

Location	500-meter buffer		1,000-meter buffer	
	Approx Number of Improved Properties	Approx Improved Value	Approx Number of Improved Properties	Approx Improved Value
West Point	2,572	$690 150 000	1,401	$391 345 000
Unincorporated Area	774	$107 695 000	588	$87 847 000
CLAY COUNTY TOTAL	3,346	$797,845,000	1,989	$479,192,000

*Improvement values for these communities were obtained from Hazus MH at the Census Block level
Source Hazus MH

Social Vulnerability

Given high susceptibility across the entire county it is assumed that the total population is at risk to a hazardous materials incident It should be noted that areas of population concentration may be at an elevated risk due to a greater burden to evacuate population quickly

Critical Facilities

Fixed Site Analysis

The critical facility analysis for fixed TRI sites revealed that there are no Clay County facilities located in a HAZMAT risk zone A list of specific critical facilities and their associated risk can be found in **Table D 41** at the end of this section

Mobile Analysis

The critical facility analysis for transportation corridors in Clay County revealed that there are 14 critical facilities located in the primary and secondary mobile HAZMAT buffer areas including four facilities in the primary buffer area A list of specific critical facilities and their associated risk can be found in **Table D 41** at the end of this section

In conclusion a hazardous material incident has the potential to impact many existing and future buildings, critical facilities and populations in Clay County Those areas in a primary buffer are at the highest risk, though all areas carry some vulnerability due to variations in conditions that could alter the impact area (i e , direction and speed of wind, volume of release etc) Further incidents from neighboring counties could also impact the county and participating jurisdictions

CONCLUSIONS ON HAZARD VULNERABILITY

Table D 37 presents a summary of annualized loss for each hazard in Clay County Due to the reporting of hazard damages primarily at the county level it was difficult to determine an accurate annualized loss estimate for each municipality Therefore, an annualized loss was determined through the damage reported through historical occurrences at the county level These values should be used as an additional planning tool or measure risk for determining hazard mitigation strategies throughout the region

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TABLE D 38 ANNUALIZED LOSS FOR CLAY COUNTY

Event	Clay County
Flood-related Hazards	
Flood	$103 259
Erosion	Negligible
Dam Failure	Negligible
Winter Storm & Freeze	$56 313
Fire-related Hazards	
Drought / Heat Wave	Negligible
Wildfire	Negligible
Geologic Hazards	
Earthquake	$54,000
Landslide	Negligible
Expansive	Negligible
Wind-related Hazards	
Hurricane & Tropical Storm	$61 000
Thunderstorm Wind / High Wind	$117 323
Hail	$2 180
Lightning	Negligible
Tornado	$284 776
Other Hazards	
HAZMAT Incident	Negligible
Pandemic	Negligible

As noted previously all existing and future buildings and populations (including critical facilities) are vulnerable to atmospheric hazards including drought, hailstorm, hurricane and tropical storm, lightning thunderstorm wind, tornado, and winter storm and freeze Some buildings may be more vulnerable to these hazards based on locations, construction, and building type **Table D 38** shows the critical facilities vulnerable to additional hazards analyzed in this section The table lists those assets that are determined to be exposed to each of the identified hazards (marked with an **X**)

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TABLE D 39 AT-RISK CRITICAL FACILITIES IN CLAY COUNTY

		ATMOSPHERIC							GEOLOGIC			HYDROLOGIC			OTHER				
FACILITY NAME	FACILITY TYPE	Drought	Hailstorm	Hurricane and Tropical Storm	Lightning	Thunderstorm	Tornado	Winter Storm and Freeze	Earthquake	Landslide - Mod	Landslide - High	Dam and Levee Failure	Flood - 100 yr	Flood - 500 yr	Fire - Wildland	Fire - Urban			
CLAY COUNTY																			
West Clay Elem	School	X	X	X	X	X	X	X	X										
West Point City Emergency Mgmt	EOC	X	X	X	X	X	X	X	X									X	
West Point Fire Department	Fire Station	X	X	X	X	X	X	X	X								X	X	
West Point Fire Department #2	Fire Station	X	X	X	X	X	X	X	X									X	
North Mississippi Medical Center WP	Medical Care Facility	X	X	X	X	X	X	X	X									X	
West Point Police Dept	Police Station	X	X	X	X	X	X	X	X									X	
West Point Police Chief	Police Station	X	X	X	X	X	X	X	X								X	X	
Oak Hill Academy	School	X	X	X	X	X	X	X	X								X	X	
South Side Elementary School	School	X	X	X	X	X	X	X	X										
Church Hill Elementary School	School	X	X	X	X	X	X	X	X									X	
West Side Alternative School	School	X	X	X	X	X	X	X	X									X	
East Side Elementary School	School	X	X	X	X	X	X	X	X									X	
Fifth Street School	School	X	X	X	X	X	X	X	X								X	X	

[24] As noted previously these facilities could be at risk to dam failure if located in an inundation area Data was not available to conduct such an analysis There was no local knowledge of these facilities being at risk to dam failure As additional data becomes available more in depth analysis will be conducted

FACILITY NAME	FACILITY TYPE	ATMOSPHERIC							GEOLOGIC			HYDROLOGIC			OTHER				
		Drought	Hailstorm	Hurricane and Tropical Storm	Lightning	Thunderstorm	Tornado	Winter Storm and Freeze	Earthquake	Landslide	Land Subsidence	Dam Failure	Flood - 100 Yr	Flood - 500 Yr	Fire HAZMAT 500m	Fire HAZMAT 1000m	Fire HAZMAT 1 Mile	Wildfire	
West Point High School	School	X	X	X	X	X	X	X	X									X	
Central School	School	X	X	X	X	X	X	X	X									X	
Catherine Bryan Preschool	School	X	X	X	X	X	X	X	X									X	

D 4 CLAY COUNTY CAPABILITY ASSESSMENT

This subsection discusses the capability of Clay County to implement hazard mitigation activities More information on the purpose and methodology used to conduct the assessment can be found in Section 7 *Capability Assessment*

D 4 1 Planning and Regulatory Capability

Table D 39 provides a summary of the relevant local plans ordinances and programs already in place or under development for Clay County A checkmark (✓) indicates that the given item is currently in place and being implemented An asterisk (*) indicates that the given item is currently being developed for future implementation Each of these local plans, ordinances and programs should be considered available mechanisms for incorporating the requirements of the MEMA District 4 Regional Hazard Mitigation Plan

TABLE D 40 RELEVANT PLANS, ORDINANCES, AND PROGRAMS

Planning Tool/Regulatory Tool	Hazard Mitigation Plan	Comprehensive/Land Use Plan	Floodplain Management Plan	Open Space Management Plan (Parks & Rec/Greenway) Plan	Storm Water Management Plan/Ordinance	Natural Resource Protection Plan	Flood Response Plan	Emergency Operations Plan	Continuity of Operations Plan	Evacuation Plan	Disaster Recovery Plan	Capital Improvements Plan	Economic Development Plan	Historic Preservation Plan	Flood Damage Prevention Ordinance	Zoning Ordinance	Subdivision Ordinance	Unified Development Ordinance	Post-Disaster Redevelopment Ordinance	Building Code	Fire Code	National Flood Insurance Program (NFIP)	NFIP Community Rating System
CLAY COUNTY	✓	✓						✓					✓		✓	✓	✓					✓	
West Point	✓	✓			✓			✓					✓		✓	✓	✓	✓		✓	✓	✓	

A more detailed discussion on the county's planning and regulatory capabilities follows

EMERGENCY MANAGEMENT

Hazard Mitigation Plan
Clay County has previously adopted a hazard mitigation plan The City of West Point was also included in this plan

Emergency Operations Plan
Clay County maintains an emergency operations plan through its Emergency Management Agency The City of West Point is also covered by this plan

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GENERAL PLANNING

Comprehensive Land Use Plan
Clay County adopted a county comprehensive plan in 1973 The City of West Point also adopted a comprehensive plan which is included as a chapter in the city development code, in 2000

Zoning Ordinance
Clay County adopted a zoning ordinance in 1972 The City of West Point also adopted a zoning ordinance which is included in the city development code in 2000

Subdivision Ordinance
Clay County adopted subdivision regulations in 1976 The City of West Point also adopted subdivision regulations which are included in the city development code in 2000

Building Codes, Permitting, and Inspections
Clay County has not adopted a building code However the City of West Point has adopted a building

FLOODPLAIN MANAGEMENT

Table D 40 provides NFIP policy and claim information for each participating jurisdiction in Clay County

TABLE D 41 NFIP POLICY AND CLAIM INFORMATION

Jurisdiction	Date Joined NFIP	Current Effective Map Date	NFIP policies in force	Insurance in Force	Closed Claims	Total Payments to Date
CLAY COUNTY†	7/16/90	5/3/11	107	$16 216 600	24	$174 198
West Point	1/5/78	5/3/11	153	$18 592 700	57	$624 288

†Includes unincorporated areas of county only
Source NFIP Community Status information as of 3/31/13 NFIP claims and policy information as of 5/15/13

Flood Damage Prevention Ordinance
All communities participating in the NFIP are required to adopt a local flood damage prevention ordinance Clay County and the City of West Point both participate in the NFIP and have adopted flood damage prevention ordinances

Stormwater Management Plan
Clay County has not adopted a stormwater management plan However, the City of West Point includes standards for stormwater retention in the city development code

D 4 2 Administrative and Technical Capability

Table D 41 provides a summary of the capability assessment results for Clay County with regard to relevant staff and personnel resources A checkmark (✓) indicates the presence of a staff member(s) in that jurisdiction with the specified knowledge or skill

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TABLE D 42 RELEVANT STAFF / PERSONNEL RESOURCES

Staff / Personnel Resource	Planners with knowledge of land development and management practices	Engineers or professionals trained in construction practices related to buildings and/or infrastructure	Planners or engineers with knowledge of natural and/or human caused hazards	Emergency Manager	Floodplain Manager	Land Surveyors	Scientists familiar with the hazards of the community	Staff with education or expertise to assess the community's vulnerability to hazards	Personnel skilled in GIS and/or Hazus	Resource development staff or grant writers
CLAY COUNTY		✓		✓	✓		✓	✓		
West Point		✓	✓	✓	✓		✓	✓		

Credit for having a floodplain manager was given to those jurisdictions that have a flood damage prevention ordinance, and therefore an appointed floodplain administrator regardless of whether the appointee was dedicated solely to floodplain management Credit was given for having a scientist familiar with the hazards of the community if a jurisdiction has a Cooperative Extension Service or Soil and Water Conservation Department Credit was also given for having staff with education or expertise to assess the community s vulnerability to hazards if a staff member from the jurisdiction was a participant on the existing hazard mitigation plan's planning committee

D 4 3 Fiscal Capability

Table D 42 provides a summary of the results for Clay County with regard to relevant fiscal resources A checkmark (✓) indicates that the given fiscal resource is locally available for hazard mitigation purposes (including match funds for state and federal mitigation grant funds) according to the previous county hazard mitigation plan

TABLE D 43 RELEVANT FISCAL RESOURCES

Jurisdiction / Resource	Capital Improvements Project Funding	Authority to Levy Taxes for Specific Purposes	Fees for Water, Sewer, Gas or Electric Services	Impact Fees for New Development	Incur Debt through General Obligation Bonds	Incur Debt through Special Tax Bonds	Withhold Spending in Hazard Prone Areas	Other	Flood Insurance Rate Map
CLAY COUNTY	✓								✓
West Point	✓	✓							✓

D 4 4 Political Capability

During the months immediately following a disaster local public opinion in Clay County is more likely to shift in support of hazard mitigation efforts

D 4 5 Conclusions on Local Capability

Table D 436 shows the results of the capability assessment using the designed scoring methodology described in Section 7 *Capability Assessment* The capability score is based solely on the information found in existing hazard mitigation plans and readily available on the jurisdictions government websites According to the assessment the average local capability score for the county and its jurisdictions is 28 0 which falls into the moderate capability ranking

TABLE D 44 CAPABILITY ASSESSMENT RESULTS

Jurisdiction	Overall Capability Score	Overall Capability Rating
CLAY COUNTY	26	Moderate
West Point	30	Moderate

D 5 CLAY COUNTY MITIGATION STRATEGY

This subsection provides the blueprint for Clay County to follow in order to become less vulnerable to its identified hazards It is based on general consensus of the Hazard Mitigation Council and the findings and conclusions of the capability assessment and risk assessment Additional Information can be found in Section 8 *Mitigation Strategy* and Section 9 *Mitigation Action Plan*

D 5 1 Mitigation Goals

Clay County developed seven mitigation goals in coordination with the other participating MEMA District 4 Region jurisdictions The regional mitigation goals are presented in **Table D 44**

TABLE D 45 MEMA DISTRICT 4 REGIONAL MITIGATION GOALS

	Goal
Goal #1	Protect the health safety and welfare of residents and visitors
Goal #2	Protect existing and future buildings critical facilities and infrastructure
Goal #3	Prevent the destruction of natural historical and cultural resources
Goal #4	Reduce economic losses including response and recovery costs and disruption of economic activity
Goal #5	Understand the hazards that threaten the region and the techniques to minimize vulnerability to those hazards
Goal #6	Foster cooperation among the public and private sectors to promote effective hazard mitigation planning and create disaster resistant communities
Goal #7	Increase public awareness of hazard mitigation and hazard risk.

D 5 2 Mitigation Action Plan

The mitigation actions proposed by Clay County and the City of West Point are listed in the following individual Mitigation Action Plans

Clay County Mitigation Action Plan

Action No.	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	Status
Prevention								
P 1	Participate in the National Flood Insurance Program	FL	High	N/A	N/A	County Supervisors	Ongoing	Implemented
P 2	Participate in Hazard Mitigation Committee activities	FL	High	N/A	N/A	County Supervisors	Ongoing	Implemented
P 3	Participate in pre disaster hazard mitigation training and disaster drills	HU	High	General Funds County EMA	$1 500	County EMA	Ongoing	Implemented
P 4	Clay County has fire contracts with eight volunteer fire departments Current mitigation of fire hazards includes regular thinning and control burning	WF	High	State Rebate, County Tax	$45,000	County EMA	Ongoing	Implemented
Property Protection								
PP 1	Encourage people building any structure in Clay County to have soil samples tested before building on site If Yazoo Clay is found in the test results, place good soil on building site	ES	High	N/A	N/A	County Supervisors	Ongoing	Implemented
PP 2	Keep tree limbs trimmed above houses and power lines	S/I	High	NA	N/A	County EMA	Ongoing	Implemented

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Action #	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	2013 Actions
PP 3	Determine where the most important critical facilities are at greatest risk This information will be used for future mitigation projects and may assist community planners with prioritizing structural maintenance of existing structures/Infrastructure facilities and provide necessary measures for future structure/ developments	FL EQ	High	N/A	N/A	County EMA	Ongoing	Implemented
				Emergency Services				
ES 1	Covered by Clay County Comprehensive Emergency Management Plan	FL	High	N/A	N/A	County Supervisors	Ongoing	Implemented
ES 2	Apply for grant funds to build or retrofit shelters in needed locations publicize information on designated shelters	T	High	FEMA, MEMA, General Funds	25% of grants	County EMA	Ongoing	Implemented
ES 3	Evaluate current storm warning systems, and apply for funding to upgrade or replace outdoor warning sirens	T	High	FEMA, MEMA, General Funds	25% of grants	County EMA	Ongoing	Implemented
ES 4	Train storm spotters	T	High	FEMA MEMA, General Funds	25% of grants	County EMA	Ongoing	Implemented
ES 5	Purchase generators for critical facilities to provide uninterrupted service for the residents in absence of power during hazards	All	High	FEMA, MEMA	N/A	County EMA	Ongoing	Completed

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Action #	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	
Public Education and Awareness								
PEA 1	Adopt and implement a public outreach strategy designed to enhance and expand efforts to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks	All	High	General Funds MEMA	N/A	County EMA	Ongoing	Implemented
PEA 2	Public education materials regarding water conservation and heat exhaustion will be made available to the local newspaper radio stations and television stations during periods of drought or extreme heat	DR	High	N/A	N/A	County EMA	Ongoing	Implemented
PEA 3	Encourage public to monitor winter weather advisories provided by local media radio, and television stations	S/I	High	NA	N/A	County EMA	Ongoing	Implemented
PEA 4	Provide public information through local newspapers regarding winter weather and ice precautions	S/I	High	NA	N/A	County EMA	Ongoing	Implemented
PEA 5	Provide public information regarding extreme heat safety measures pertaining to dehydration heat exhaustion and heat strokes	ET	High	N/A	N/A	County EMA	Ongoing	Implemented

Action #	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	2013 Action Status
PEA 6	Provide public information regarding extreme cold safety measures pertaining to hypothermia and frostbite	ET	High	N/A	N/A	County EMA	Ongoing	Implemented

FL = Flood; DR = Drought; ES = Expansive Soils; HU = Hurricane; T = Tornado; WF = Wildfire; S/I = Snow/Ice; ET = Extreme Temperatures; EQ = Earthquake

County EMA = Clay County Emergency Management Agency

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City of West Point Mitigation Action Plan

[illegible]	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	[illegible]	[illegible]
Prevention								
P 1	Participate in the National Flood Insurance Program	FL	High	N/A	N/A	County Supervisors	Ongoing	Implemented
P 2	Participate in Hazard Mitigation Committee activities	FL	High	N/A	N/A	County Supervisors	Ongoing	Implemented
P 3	Participate in pre disaster hazard mitigation training and disaster drills	HU	High	General Funds, County EMA	$1 500	County EMA	Ongoing	Implemented
P 4	Clay County has fire contracts with eight volunteer fire departments Current mitigation of fire hazards includes regular thinning and control burning	WF	High	State Rebate, County Tax	$45 000	County EMA	Ongoing	Implemented
Property Protection								
PP 1	Encourage people building any structure in Clay County to have soil samples tested before building on site If Yazoo Clay is found in the test results place good soil on building site	ES	High	N/A	N/A	County Supervisors	Ongoing	Implemented
PP 2	Keep tree limbs trimmed above houses and power lines	S/I	High	NA	N/A	County EMA	Ongoing	Implemented

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Action #	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	2013 Action Status
PP 3	Determine where the most important critical facilities are at greatest risk This information will be used for future mitigation projects and may assist community planners with prioritizing structural maintenance of existing structures/infrastructure facilities and provide necessary measures for future structure/ developments	FL, EQ	High	N/A	N/A	County EMA	Ongoing	Implemented
				Emergency Services				
ES 1	Covered by Clay County Comprehensive Emergency Management Plan	FL	High	N/A	N/A	County Supervisors	Ongoing	Implemented
ES 2	Apply for grant funds to build or retrofit shelters in needed locations publicize information on designated shelters	T	High	FEMA, MEMA General Funds	25% of grants	County EMA	Ongoing	Implemented
ES 3	Evaluate current storm warning systems and apply for funding to upgrade or replace outdoor warning sirens	T	High	FEMA, MEMA, General Funds	25% of grants	County EMA	Ongoing	Implemented
ES 4	Train storm spotters	T	High	FEMA MEMA, General Funds	25% of grants	County EMA	Ongoing	Implemented
ES 5	Purchase generators for critical facilities to provide uninterrupted service for the residents in absence of power during hazards	All	High	FEMA MEMA	N/A	County EMA	Ongoing	Completed

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	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	
Public Education and Awareness								
PEA 1	Adopt and implement a public outreach strategy designed to enhance and expand efforts to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks	All	High	General Funds, MEMA	N/A	County EMA	Ongoing	Implemented
PEA 2	Public education materials regarding water conservation and heat exhaustion will be made available to the local newspaper radio stations, and television stations during periods of drought or extreme heat	DR	High	N/A	N/A	County EMA	Ongoing	Implemented
PEA 3	Encourage public to monitor winter weather advisories provided by local media radio, and television stations	S/I	High	NA	N/A	County EMA	Ongoing	Implemented
PEA 4	Provide public information through local newspapers regarding winter weather and ice precautions	S/I	High	NA	N/A	County EMA	Ongoing	Implemented
PEA 5	Provide public information regarding extreme heat safety measures pertaining to dehydration heat exhaustion and heat strokes	ET	High	N/A	N/A	County EMA	Ongoing	Implemented

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Action #	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	2014 Action Status
PEA 6	Provide public information regarding extreme cold safety measures pertaining to hypothermia and frostbite	ET	High	N/A	N/A	County EMA	Ongoing	Implemented

FL = Flood; DR = Drought; ES = Expansive Soils; HU = Hurricane; T = Tornado; WF = Wildfire; S/I = Snow/Ice; ET = Extreme Temperatures; EQ = Earthquake
County EMA = Clay County Emergency Management Agency

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Annex D
Clay County

This annex includes jurisdiction specific information for Clay County and its participating municipalities It consists of the following five subsections

- D 1 Clay County Community Profile
- D 2 Clay County Risk Assessment
- D 3 Clay County Vulnerability Assessment
- D 4 Clay County Capability Assessment
- D 5 Clay County Mitigation Strategy

D 1 CLAY COUNTY COMMUNITY PROFILE

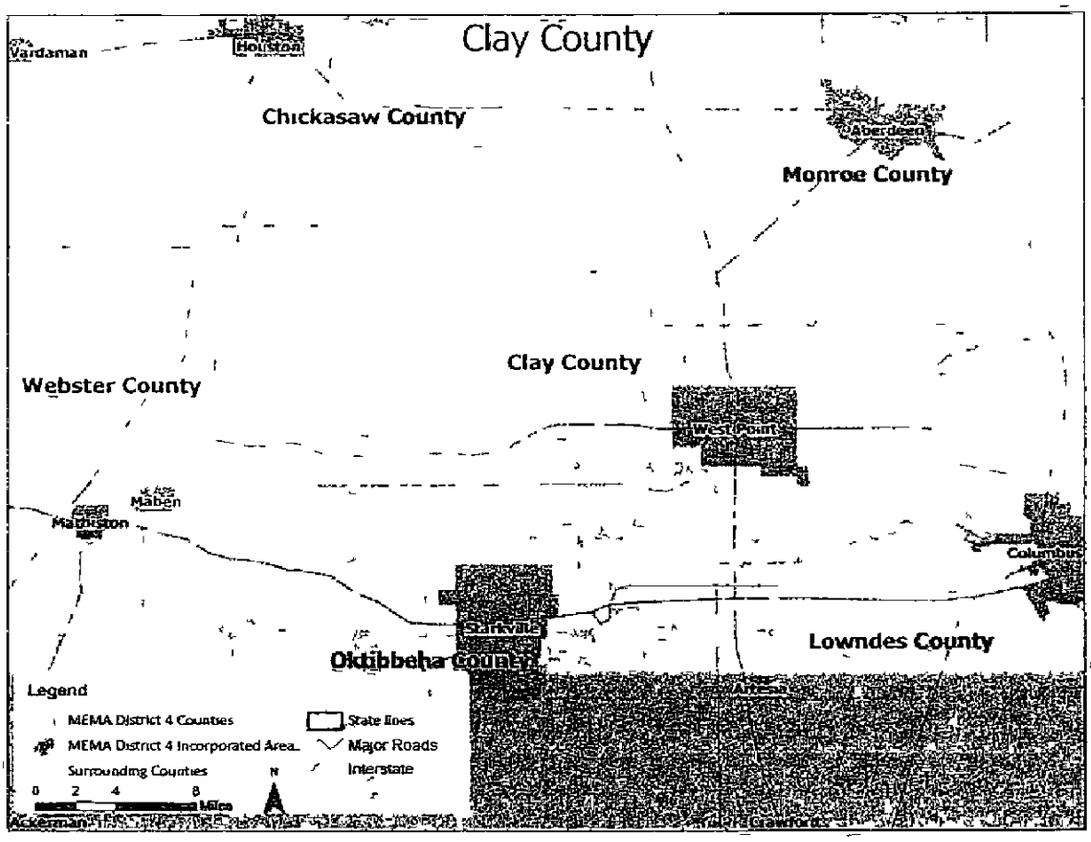
D 1 1 Geography and the Environment

Clay County is located in north east Mississippi It comprises one city the City of West Point, as well as several small unincorporated communities An orientation map is provided as **Figure D 1**

The county is situated to the west of the Tombigbee River at the intersection of several major railways and highways The total area of the county is 416 square miles, 6 square miles of which is water area

Summer temperatures in the county range from highs of about 92 degrees Fahrenheit (F) to lows in the upper 60s Winter temperatures range from highs in the upper 50s to low 60s to lows around 35 F Average annual rainfall is approximately 56 inches with the wettest months being December through March

FIGURE D 1 CLAY COUNTY ORIENTATION MAP



D 1 2 Population and Demographics

According to the 2010 Census Clay County has a population of 20 634 people The county has seen a decline in population between 2000 and 2010 of around 6 percent and the population density is around 50 people per square mile Population counts from the US Census Bureau for 1990 2000 and 2010 for the county and both of the participating jurisdictions are presented in **Table D 1**

TABLE D 1 POPULATION COUNTS FOR CLAY COUNTY

Jurisdiction	1990 Census Population	2000 Census Population	2010 Census Population	% Change 2000-2010
Clay County	**21 120**	**21 979**	**20,634**	**-6 1%**
West Point	8 489	12 145	11 203	7 8%

Source US Census Bureau

Based on the 2010 Census the median age of residents of Clay County is 33 9 years The racial characteristics of the county are presented in **Table D 2** Blacks make up the majority of the population in the county accounting for close to 60 percent of the population

TABLE D 2 DEMOGRAPHICS OF CLAY COUNTY

			American		
Clay County	40 1%	58 9%	0 1%	0 9%	1 1%
West Point	37 6%	61 4%	0 1%	0 9%	0 9%

Hispanics may be of any race so also are included in applicable race categories
Source US Census Bureau

D 1 3 Housing

According to the 2010 US Census there are 8 810 housing units in Clay County the majority of which are single family homes or mobile homes Housing information for the county and city is presented in **Table D 3** As shown in the table the City of West Point has a roughly proportional housing stock as the county

TABLE D 3 HOUSING CHARACTERISTICS

Jurisdiction	Housing Units (2000)	Housing Units (2010)	Seasonal Units, Percent (2010)	Median Home Value (2007-2011)
Clay County	8 152	8 810	1 1%	$76 200
West Point	4 897	5 011	1 7%	$80 100

Source US Census Bureau

D 1 4 Infrastructure

TRANSPORTATION

There are several US and state highways that serve Clay County and link it with other regions of Mississippi and the neighboring state of Alabama US 82 is an east west highway that passes just to the south of the county Meanwhile US 45 is another major highway that travels north-south through West Point and connects the city with other major regional hubs such as Tupelo, Mississippi to the north and Mobile Alabama to the south

The McCharen Field Airport provides limited local service and regional air travel connections are available through Golden Triangle Regional Airport in Lowndes County

With roots as a railroad town West Point and the county are served by the Kansas City Southern Railway and one short line railroad but there is no passenger service offered at this time

UTILITIES

Electrical power in Clay County is provided by the Tennessee Valley Authority and several local distributors including the City of West Point, Four County Electric Power Association (EPA) and Natchez Trace EPA The City of Okolona also serves residents in parts of Clay County

Water and sewer service is provided to residents by the City of West Point as well as variety of lift stations and rural water associations

COMMUNITY FACILITIES

There are a number of buildings and community facilities located throughout Clay County According to the data collected for the vulnerability assessment (Section 6 4 1) there are 2 fire stations 2 police stations and 10 public schools located within the county

There is one hospital located in Clay County Clay County Medical Corporation is a 60 bed medical surgical hospital located in the City of West Point

Recreational opportunities in Clay County include hunting camping fishing boating swimming, golf and tennis These activities are available at the Tennessee-Tombigbee Waterway Kennedy Lake Columbus Lake Waverly Recreation Area Town Creek Recreation Area Barton Ferry Recreation Area Prairie Wildlife Preserve Kitty Dill National Memorial Parkway, Town Creek Campground Marshall Park Zuber Park Old Waverly Golf Club and West Point Country Club The West Point Recreation Department also offers many sports and activities for both children and adults of West Point and the surrounding community

D 1 5 Land Use

Many areas of Clay County are undeveloped or sparsely developed There are several small incorporated municipalities located throughout the region with a few larger hubs interspersed These areas are where the region s population is generally concentrated The incorporated areas are also where many of the businesses commercial uses, and institutional uses are located Land uses in the balance of the study area generally consist of rural residential development, agricultural uses and recreational areas although there are some notable exceptions in the larger municipalities

D 1 6 Employment and Industry

According to the Mississippi Employment Security Commission in 2012 Clay County had an average annual employment of 5 138 workers and an average unemployment rate of 16 8 percent (compared to 9 2 percent for the state) In 2012 the Retail Trade industry employed 25 7 percent of the workforce Manufacturing was the second largest industry employing 19 9 percent of workers and Education Services followed closely behind (17 9%) The average annual wage in 2012 for Clay County was $32 708 compared to $37 440 for the State of Mississippi

D 2 CLAY COUNTY RISK ASSESSMENT

This subsection includes hazard profiles for each of the significant hazards identified in Section 4 *Hazard Identification* as they pertain to Clay County Each hazard profile includes a description of the hazard s location and extent notable historical occurrences and the probability of future occurrences Additional information can be found in Section 5 *Hazard Profiles*

D 2 1 Flood

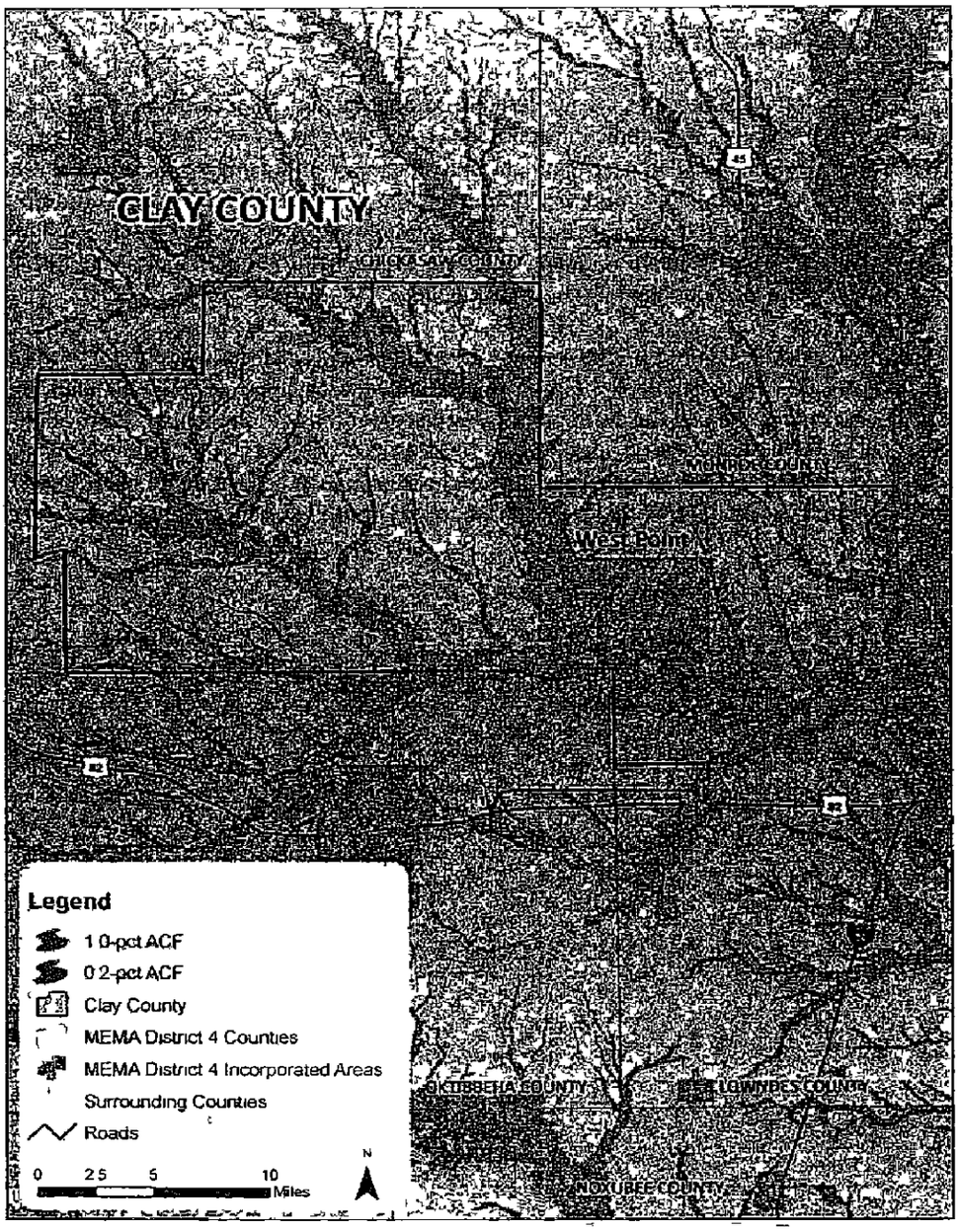
LOCATION AND SPATIAL EXTENT

There are areas in Clay County that are susceptible to flood events Special flood hazard areas in the county were mapped using Geographic Information System (GIS) and FEMA Digital Flood Insurance Rate Maps (DFIRM) [1] This includes Zone A (1-percent annual chance floodplain) Zone AE (1-percent annual chance floodplain with elevation) and the 0 2-percent annual chance floodplain According to GIS analysis of the 414 square miles that make up Clay County there are 125 square miles of land in zones A and AE (1-percent annual chance floodplain/100-year floodplain) and 0 4 square mile of land in the 0 2-percent annual chance floodplain (500-year floodplain)

These flood zone values account for 30 3 percent of the total land area in Clay County It is important to note that while FEMA digital flood data is recognized as best available data for planning purposes, it does not always reflect the most accurate and up to-date flood risk Flooding and flood-related losses often do occur outside of delineated special flood hazard areas **Figure D 2** and **Figure D 3** illustrate the location and extent of currently mapped special flood hazard areas for Clay County and the City of West Point based on best available FEMA Digital Flood Insurance Rate Map (DFIRM) data

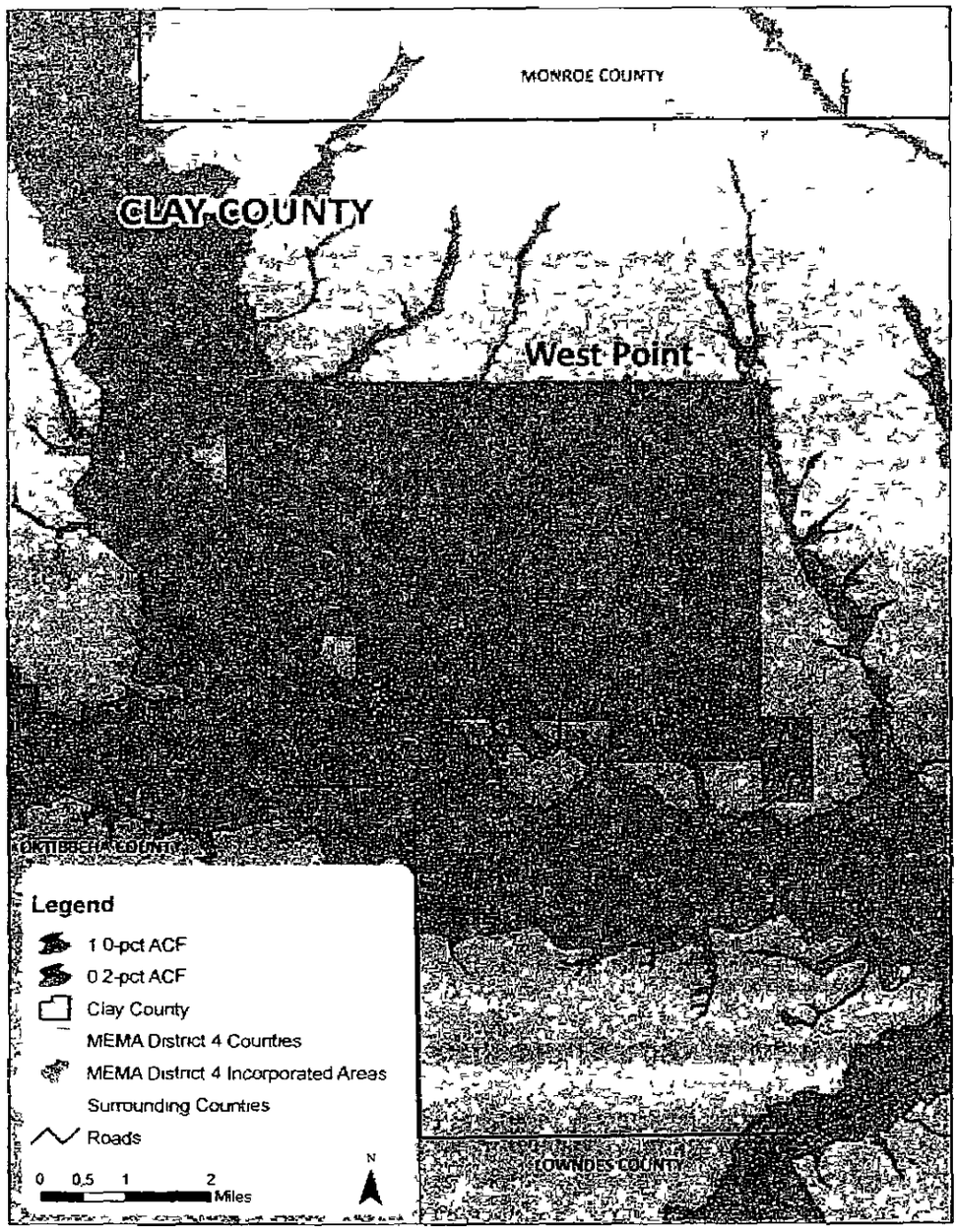
[1] The county level DFIRM data used for Clay County were updated in 2011

FIGURE D 2 SPECIAL FLOOD HAZARD AREAS IN CLAY COUNTY



Source Federal Emergency Management Agency

FIGURE D 3 SPECIAL FLOOD HAZARD AREAS IN WEST POINT



Source Federal Emergency Management Agency

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HISTORICAL OCCURRENCES

Floods resulted in six disaster declarations in Clay County in 1973 1979 three times in 1991 and 2011 [2] Information from the National Climatic Data Center was used to ascertain historical flood events The National Climatic Data Center reported a total of nine events in Clay County since 1997 [3] A summary of these events is presented in **Table D 4** These events accounted for almost $1 2 million (2013 dollars) in property damage in the county Specific information on flood events including date type of flooding and deaths and injuries can be found in **Table D 5**

TABLE D 4 SUMMARY OF FLOOD OCCURRENCES IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
West Point	6	0/0	$723 481
Unincorporated Area	3	0/0	$464 329
CLAY COUNTY TOTAL	9	0/0	$1,187,810

Source[1] National Climatic Data Center

TABLE D 5 HISTORICAL FLOOD EVENTS IN CLAY COUNTY

Location	Date	Type	Deaths / Injuries	Property Damage*
West Point				
West Point	02 MAY 97	FLASH FLOOD	0/0	$1 573 00
West Point	02 MAY 97	FLASH FLOOD	0/0	$ 3 933 00
West Point	22 FEB 03	FLASH FLOOD	0/0	$1 344 00
West Point	07 JUN-04	FLASH FLOOD	0/0	$1 305 00
West Point	23 SEP 09	FLASH FLOOD	0/0	$78 786 00
West Point	15 APR 11	FLASH FLOOD	0/0	$636 540 00
Unincorporated Area				
EAST PORTION	29 AUG 05	FLASH FLOOD	0/0	$126 677 00
WAVERLY STATION	06 JAN 09	FLASH FLOOD	0/0	$56 275 00
PHEBA	27 FEB 09	FLASH FLOOD	0/0	$281 377 00

Property Damage is reported in 2013 dollars
Source National Climatic Data Center

HISTORICAL SUMMARY OF INSURED FLOOD LOSSES

According to FEMA flood insurance policy records as of March 2013 there have been 81 flood losses reported in Clay County through the National Flood Insurance Program (NFIP) since 1978 totaling over $798 000 in claims payments A summary of these figures for the county is provided in **Table D 6** It should be emphasized that these numbers include only those losses to structures that were insured through the NFIP policies and for losses in which claims were sought and received It is likely that many additional instances of flood loss in Clay County were either uninsured denied claims payment or not reported

[2] A complete listing of historical disaster declarations can be found in Section 4 Hazard Identification
[3] These events are only inclusive of those reported by NCDC It is likely that additional occurrences have occurred and have gone unreported

TABLE D 6 SUMMARY OF INSURED FLOOD LOSSES IN CLAY COUNTY

Location	Flood Losses	Claims Payments
West Point	57	$624 288
Unincorporated Area	24	$174 198
CLAY COUNTY TOTAL	81	$798,486

Source FEMA NFIP

REPETITIVE LOSS PROPERTIES

As of May 2013 there are eight non mitigated repetitive loss properties located in Clay County which accounted for losses and approximately $157 000 in claims payments under the NFIP The average claim amount for these properties is $6 556 All eight of the properties are single family residential Without mitigation these properties will likely continue to experience flood losses **Table D 7** presents detailed information on repetitive loss properties and NFIP claims and policies for Clay County

TABLE D 7 REPETITIVE LOSS PROPERTIES IN CLAY COUNTY

Location	Number of Properties	Types of Properties	Number of Losses	Building Payments	Content Payments	Total Payments	Average Payment
West Point	4	4 single family	9	$116 033	$11 519	$29 779	$3 309
Unincorporated Area	4	4 single family	15	$23 931	$5 847	$127 553	$8 504
CLAY COUNTY TOTAL	8		24	$139,965	$17,367	$157,332	$6,556

Source National Flood Insurance Program

PROBABILITY OF FUTURE OCCURRENCES

Flood events will remain a threat in areas prone to flooding in Clay County and the probability of future occurrences will remain likely (between 10 and 100 percent annual probability) The participating jurisdictions and unincorporated areas of the county have risk to flooding though not all areas will experience flood The probability of future flood events based on magnitude and according to best available data is illustrated in the figures above which indicates those areas susceptible to the 1-percent annual chance flood (100 year floodplain) and the 0 2-percent annual chance flood (500 year floodplain)

It can be inferred from the floodplain location maps previous occurrences and repetitive loss properties that risk varies throughout the county and participating jurisdictions For example the central and southeastern portions of the county have more floodplain and thus a higher risk of flood than other areas of the county Flood is not the greatest hazard of concern but will continue occur and cause damage Therefore mitigation actions may be warranted particularly for repetitive loss properties

D 2 2 Erosion

LOCATION AND SPATIAL EXTENT

Erosion in Clay County is typically caused by flash flooding events Unlike coastal areas areas of concern for erosion in Clay County are primarily rivers and streams Generally vegetation helps to prevent erosion in the area and it is not an extreme threat to any of the participating counties and jurisdictions No areas of concern were reported by he planning committee

HISTORICAL OCCURRENCES

Several sources were vetted to identify areas of erosion in Clay County This includes searching local newspapers interviewing local officials and reviewing previous hazard mitigation plans No historical erosion occurrences were found in these sources

PROBABILITY OF FUTURE OCCURRENCES

Erosion remains a natural dynamic and continuous process for Clay County, and it will continue to occur The annual probability level assigned for erosion is possible (between 1 and 10 percent annually)

A 2 3 Dam Failure

LOCATION AND SPATIAL EXTENT

According to the Mississippi Division of Environmental Quality there are no high hazard dams in Clay County [4]

HISTORICAL OCCURRENCES

There is no record of dam breaches in Clay County However several breach scenarios in the county could be catastrophic

PROBABILITY OF FUTURE OCCURRENCES

Given the current dam inventory and historic data a dam breach is unlikely (less than 1 percent annual probability) in the future However as has been demonstrated in the past regular monitoring is necessary to prevent these events

[4] The list of high hazard dams obtained from the Mississippi Division of Environmental Quality was reviewed and amended by local officials to the best of their knowledge

D 2 4 Winter Storm and Freeze

LOCATION AND SPATIAL EXTENT

Nearly the entire continental United States is susceptible to winter storm and freeze events Some ice and winter storms may be large enough to affect several states while others might affect limited localized areas The degree of exposure typically depends on the normal expected severity of local winter weather Clay County is not accustomed to severe winter weather conditions and rarely receives severe winter weather even during the winter months Events tend to be mild in nature however even relatively small accumulations of snow ice or other wintery precipitation can lead to losses and damage due to the fact that these events are not commonplace Given the atmospheric nature of the hazard the entire county has uniform exposure to a winter storm

HISTORICAL OCCURRENCES

Winter weather has resulted in one disaster declaration in Clay County in 1999[5] According to the National Climatic Data Center there have been a total of eight recorded winter storm events in Clay County since 1996 (**Table D 8**)[6] These events resulted in almost $1 million (2013 dollars) in damages Detailed information on the recorded winter storm events can be found in **Table D 9**[7]

TABLE D 8 SUMMARY OF WINTER STORM EVENTS IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
Clay County	8	0/0	$957 309

Source National Climatic Data Center

TABLE D 9 HISTORICAL WINTER STORM IMPACTS IN CLAY COUNTY

Location	Date	Type	Deaths / Injuries	Property Damage*
West Point				
None Reported	–	–	–	–
Unincorporated Area				
CLAY COUNTY	01 FEB 96	WINTER STORM	0/0	$33 523
CLAY COUNTY	22 DEC 98	ICE STORM	0/0	$829 407
CLAY COUNTY	21 DEC 00	ICE STORM	0/0	$1 958
CLAY COUNTY	27 JAN 00	HEAVY SNOW	0/0	$92 431
CLAY COUNTY	07 JAN 10	WINTER STORM	0/0	$0
CLAY COUNTY	15 DEC 10	WINTER WEATHER	0/0	$0
CLAY COUNTY	09 JAN 11	HEAVY SNOW	0/0	$0
CLAY COUNTY	09 FEB 11	HEAVY SNOW	0/0	$0

*Property Damage is reported in 2013 dollars

[5] A complete listing of historical disaster declarations including the affected counties can be found in Section 4 Hazard Identification

[6] These ice and winter storm events are only inclusive of those reported by the National Climatic Data Center (NCDC) It is certain that additional winter storm conditions have affected Clay County

The dollar amount of damages provided by NCDC is divided by the number of affected counties to reflect a damage estimate for the county

Location	Date	Type	Deaths / Injuries	Property Damage*

Source National Climatic Data Center

There have been several severe winter weather events in Clay County The text below describes two of the major events and associated impacts on the county Similar impacts can be expected with severe winter weather

December 1998
Much of north Mississippi was hit with an ice storm Most counties reported between 0 25 to 0 5 inches of ice on their roads with some locations in the southern part of the region reporting as much as 3 inches of ice The ice caused numerous power outages and brought down many trees and power lines Thousands of people in north Mississippi were without power some for as long as one week Christmas travel was severely hampered for several days with motorists stranded at airports bus stations and truck stops Travel did not return to normal until after Christmas in some locations

January 2000
A winter storm brought a swath of heavy snow across north central Mississippi The snow began falling over western portions of the area during the early morning of the 27th and spread eastward during the day The snow was heavy at times and did not end until the morning of the 28th Snowfall amounts generally ranged from 4 to 10 inches The heaviest amounts fell along the Highway 82 corridor from Greenville to Starkville where isolated snow depths of 12 inches were reported Damage from the heavy snow was relatively minimal with reports limited to a few collapsed roofs and downed trees Power outages were sporadic but travelling was more than just an inconvenience as numerous reports of vehicles running off the road were received

Winter storms throughout the county have several negative externalities including hypothermia cost of snow and debris cleanup business and government service interruption traffic accidents, and power outages Furthermore citizens may resort to using inappropriate heating devices that could to fire or an accumulation of toxic fumes

PROBABILITY OF FUTURE OCCURRENCES

Winter storm events will continue to occur in Clay County According to historical information the annual probability is likely (between 10 and 100 percent)

FIRE-RELATED HAZARDS

D 2 5 Drought

LOCATION AND SPATIAL EXTENT

Drought and heat waves typically cover a large area and cannot be confined to any geographic or political boundaries Furthermore it is assumed that Clay County would be uniformly exposed to drought and heat waves making the spatial extent potentially widespread It is also notable that drought and extreme heat conditions typically do not cause significant damage to the built environment but may exacerbate wildfire conditions

HISTORICAL OCCURRENCES

Drought

According to the U S Drought Monitor Clay County had drought levels (including abnormally dry) in twelve of the last thirteen years (2000 2012) **Table D 10** shows the most severe drought classification for each year according to U S Drought Monitor classifications It should be noted that the U S Drought Monitor also estimates what percentage of the county is in each classification of drought severity For example the most severe classification reported may be exceptional but a majority of the county may actually be in a less severe condition

TABLE D 10 HISTORICAL DROUGHT OCCURRENCES IN CLAY COUNTY

Abnormally Dry Moderate Drought Severe Drought Extreme Drought Exceptional Drought

	Clay County
2000	**EXCEPTIONAL**
2001	ABNORMAL
2002	ABNORMAL
2003	NONE
2004	ABNORMAL
2005	ABNORMAL
2006	SEVERE
2007	**EXCEPTIONAL**
2008	SEVERE
2009	ABNORMAL
2010	SEVERE
2011	MODERATE
2012	ABNORMAL

Source U S Drought Monitor

There were no reported drought events for Clay County according to the National Climatic Data Center

Heat Wave

The National Climatic Data Center was used to determine historical heat wave occurrences in the county

July 2005 – A five day heat wave covered the area Temperatures were consistently above 95 degrees The agricultural industry was hit particularly hard in the cattle and catfish sectors Water supply issues were encountered by cities and a burn ban was implemented due to the high fire risk

August 2005 –A heat wave covering the south began in mid August and lasted about 10 days High temperatures were consistently over 95 degrees and surpassed 100 degrees on some days It was the first time since August 2000 that 100 degree temperatures reached the area

July 2006 – A short heat wave impacted most of the area temperatures in the 90s to around 100 for five straight days

August 2007 – A heat wave lasting around 11 days occurred with all areas in the region reaching more than 100 degrees at some point during the last 5 days High humidity levels also pushed the heat index values into the 105-112 range leading to the hottest August on record in some areas

PROBABILITY OF FUTURE OCCURRENCES

Drought
Based on historical occurrence information it is assumed that Clay County has a probability level of likely (10 100 percent annual probability) for future drought events However, the extent (or magnitude) of drought and the amount of geographic area covered by drought varies with each year Historic information indicates that there is a much lower probability for extreme long-lasting drought conditions

Heat Wave
Based on historical occurrence information it is assumed that all of Clay County has a probability level of likely (10-100 percent annual probability) for future heat wave events

D 2 6 Wildfire

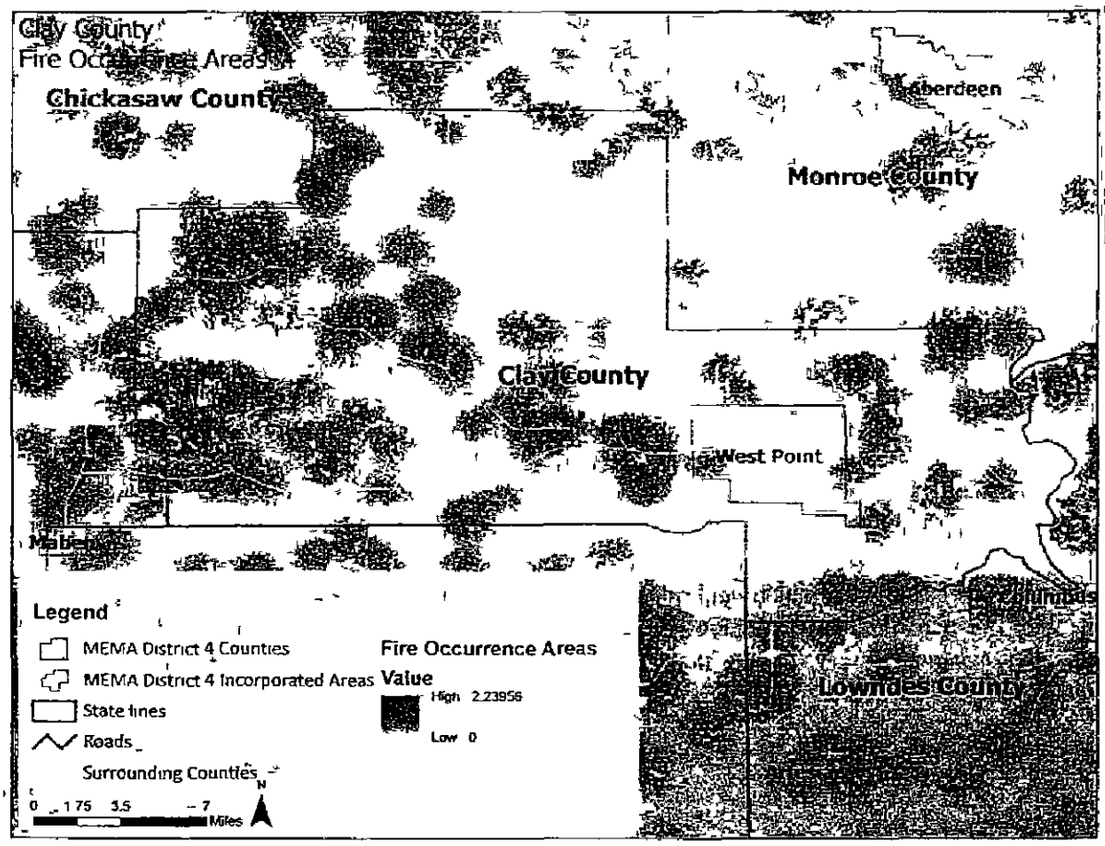
LOCATION AND SPATIAL EXTENT

The entire county is at risk to a wildfire occurrence However several factors such as drought conditions or high levels of fuel on the forest floor may make a wildfire more likely Furthermore areas in the urban-wildland interface are particularly susceptible to fire hazard as populations abut formerly undeveloped areas The Fire Occurrence Areas in the figure below give an indication of historic location

HISTORICAL OCCURRENCES

Figure A 4 shows the Fire Occurrence Areas (FOA) in Clay County based on data from the Southern Wildfire Risk Assessment This data is based on historical fire ignitions and is reported as the number of fires that occur per 1 000 acres each year

FIGURE D 4 HISTORIC WILDFIRE EVENTS IN CLAY COUNTY



Source Southern Wildfire Risk Assessment

Based on data from the Mississippi Forestry Commission from 2002 to 2011 Clay County experiences an average of 14 wildfires annually which burn an average of 90 acres per year The data indicates that most of these fires are small averaging six acres per fire **Table D 11** provides a summary of wildfire occurrences in Clay County and **Table D 12** lists the number of reported wildfire occurrences in the county between the years 2002 and 2011

TABLE D 11 SUMMARY TABLE OF ANNUAL WILDFIRE OCCURRENCES (2002 -2011)*

	Clay County
Average Number of Fires per year	14 2
Average Number of Acres Burned per year	89 6
Average Number of Acres Burned per fire	6 3

*These values reflect averages over a 10 year period
Source Mississippi Forestry Commission

650

TABLE D 12 HISTORICAL WILDFIRE OCCURRENCES IN CLAY COUNTY

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Clay County										
Number of Fires	6	3	14	14	17	26	14	4	15	29
Number of Acres Burned	76	9	198	81	89	160	67	13	149	54

Source Mississippi Forestry Commission

PROBABILITY OF FUTURE OCCURRENCES

Wildfire events will be an ongoing occurrence in Clay County The likelihood of wildfires increases during drought cycles and abnormally dry conditions Fires are likely to stay small in size but could increase due local climate and ground conditions Dry windy conditions with an accumulation of forest floor fuel (potentially due to ice storms or lack of fire) could create conditions for a large fire that spreads quickly It should also be noted that some areas do vary somewhat in risk For example highly developed areas are less susceptible unless they are located near the urban wildland boundary The risk will also vary due to assets Areas in the urban-wildland interface will have much more property at risk resulting in increased vulnerability and need to mitigate compared to rural mainly forested areas In this case, the participating jurisdictions appear to have a similar risk to the surrounding areas The probability assigned to Clay County for future wildfire events is likely (a 10 and 100 percent annual probability)

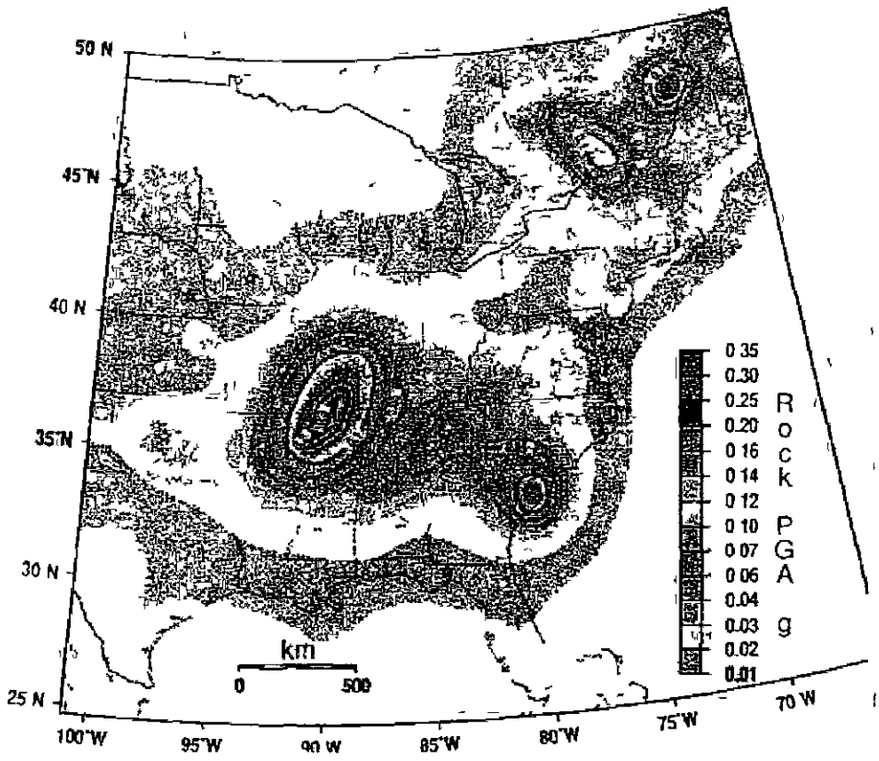
GEOLOGIC HAZARDS

D 2 7 Earthquake

LOCATION AND SPATIAL EXTENT

Figure D 5 shows the intensity level associated with Clay County based on the national USGS map of peak acceleration with 10 percent probability of exceedance in 50 years It is the probability that ground motion will reach a certain level during an earthquake The data show peak horizontal ground acceleration (the fastest measured change in speed for a particle at ground level that is moving horizontally due to an earthquake) with a 10 percent probability of exceedance in 50 years The map was compiled by the U S Geological Survey (USGS) Geologic Hazards Team which conducts global investigations of earthquake geomagnetic, and landslide hazards According to this map Clay County lies within an approximate zone of level 3" to '4 ground acceleration This indicates that the county exists within an area of moderate seismic risk

FIGURE D 5 PEAK ACCELERATION WITH 10 PERCENT PROBABILITY OF EXCEEDANCE IN 50 YEARS



Source USGS 2008

HISTORICAL OCCURRENCES

At least one earthquake is known to have affected Clay County since 1931 This earthquake measured a III on the Modified Mercalli Intensity (MMI) scale **Table D 13** provides a summary of earthquake events reported by the National Geophysical Data Center between 1638 and 1985 **Table D 14** presents a detailed occurrence of each event including the date distance for the epicenter magnitude and Modified Mercalli Intensity (if known) [8]

TABLE D 13 SUMMARY OF SEISMIC ACTIVITY IN CLAY COUNTY

Location	Number of Occurrences	Greatest MMI Reported	Richter Scale Equivalent
West Point	1	III	< 4 8
Unincorporated Area	0	--	--
CLAY COUNTY TOTAL	1	III (slight)	< 4.8

Source National Geophysical Data Center

[8] Due to reporting mechanisms not all earthquakes events were recorded during this time Furthermore some are missing data such as the epicenter location due to a lack of widely used technology In these instances a value of unknown is reported

TABLE D 14 SIGNIFICANT SEISMIC EVENTS IN CLAY COUNTY (1638 -1985)

Location	Date	Epicentral Distance	Magnitude	MMI
West Point				
West Point	12/17/1931	119 0 km	*Unknown*	III
Unincorporated Area				
None Reported	–		–	

Source National Geophysical Data Center

PROBABILITY OF FUTURE OCCURRENCES

The probability of significant damaging earthquake events affecting Clay County is unlikely However it is possible that future earthquakes resulting in light to moderate perceived shaking and damages ranging from none to very light will affect the county The annual probability level for the region is estimated to be between 1 and 10 percent (possible)

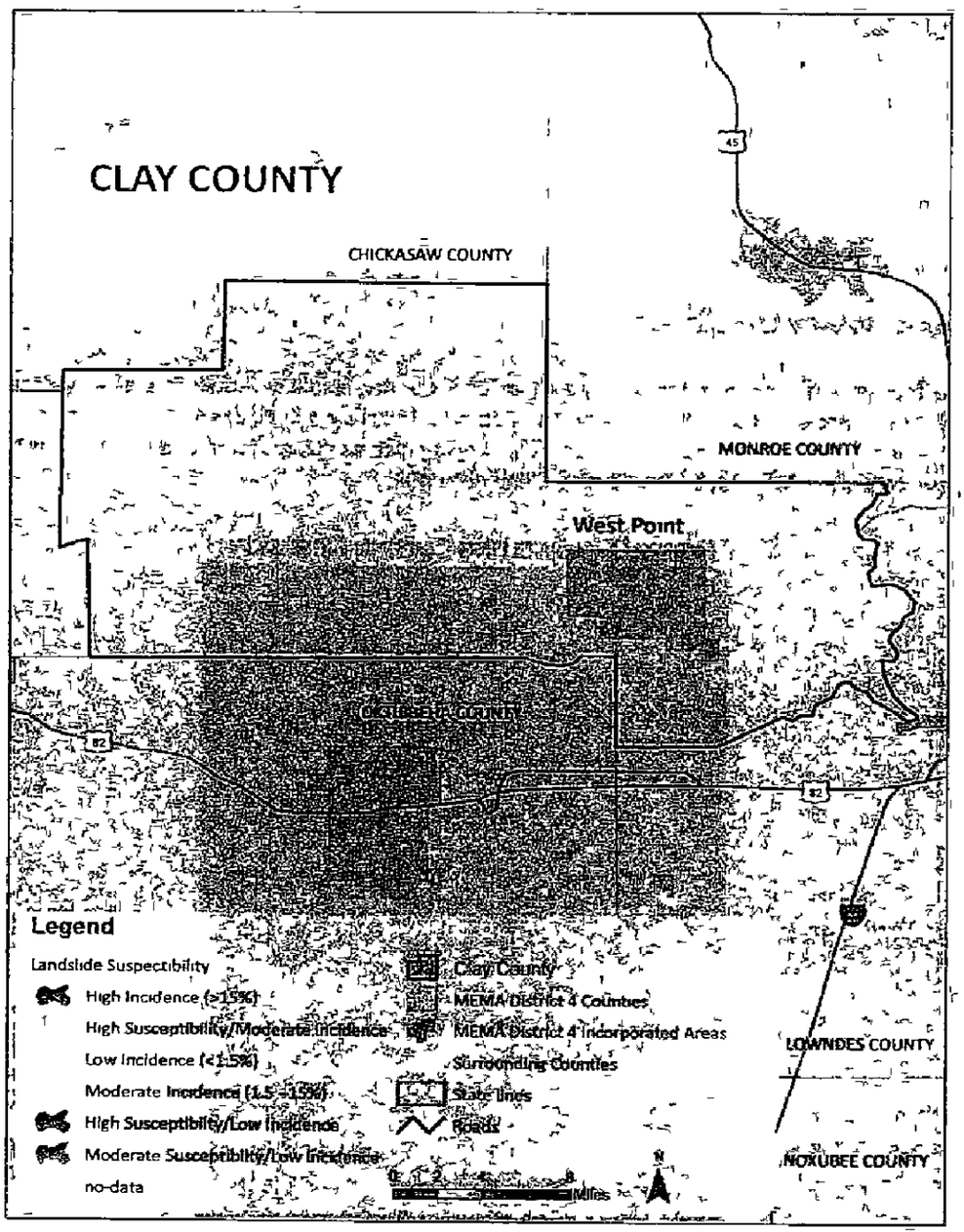
D 2 8 Landslide

LOCATION AND SPATIAL EXTENT

Landslides occur along steep slopes when the pull of gravity can no longer be resisted (often due to heavy rain) Human development can also exacerbate risk by building on previously undevelopable steep slopes Landslides are possible throughout Clay County but there is a very low incidence rate of less than 1 5 percent of the area involved (according to the USGS data)

According to **Figure D 6** below the entire county falls under a low incidence area This indicates that less than 1 5 percent of the area is involved in landsliding

FIGURE D 6 LANDSLIDE SUSCEPTIBILITY AND INCIDENCE MAP OF CLAY COUNTY



Source USGS

HISTORICAL OCCURRENCES

There is no extensive history of landslides in Clay County Landslide events typically occur in isolated areas

PROBABILITY OF FUTURE OCCURRENCES

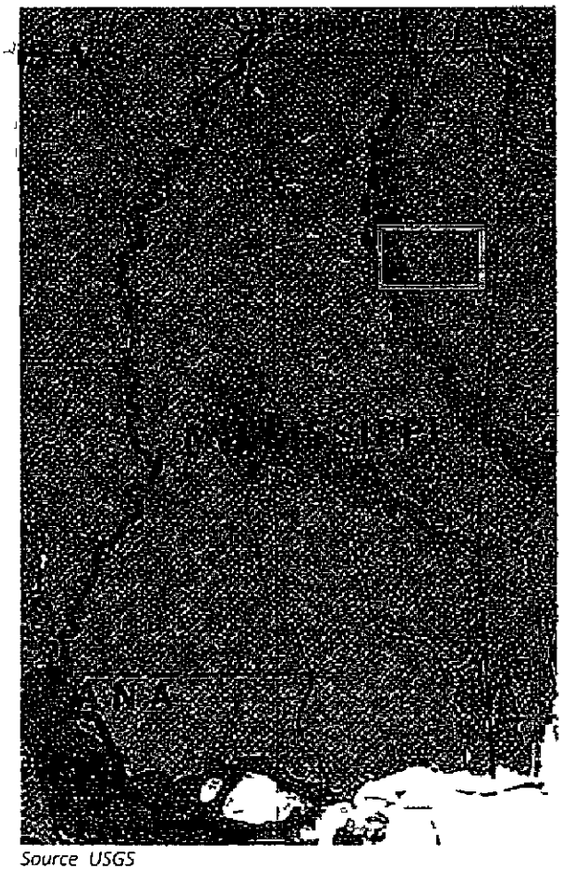
Based on historical information and the USGS susceptibility index the probability of future landslide events is unlikely (less than 1 percent probability) The USGS data indicates that all areas in Lowndes County have a low incidence rate and low susceptibly to landsliding activity Local conditions may become more favorable for landslides due to heavy rain for example This would increase the likelihood of occurrence It should also be noted that some areas in Clay County have greater risk than others given factors such as steepness on slope and modification of slopes

D 2 9 Expansive Soils

LOCATION AND SPATIAL EXTENT

Due to the amount of clay minerals present in Clay County expansive soils present a threat to the county Areas underlain by soils with swelling potential are shown in **Figure D 7** The areas in blue are underlain with generally less than 50 percent clay having high swelling potential and the areas in red are underlain with abundant clay having high swelling potential

FIGURE D 7 SWELLING CLAYS IN MISSISSIPPI



Source USGS

HISTORICAL OCCURRENCES

There is no historical record of significant expansive soil events in Clay County However expansive soils have been known to cause considerable damage to structural foundations in the county although they have not posed a significant threat to human life

PROBABILITY OF FUTURE OCCURRENCES

Based on historical information, the probability of future expansive soil events is likely (between 1 and 100 percent annually)

WIND-RELATED HAZARDS

D 2 10 Hurricane and Tropical Storm

LOCATION AND SPATIAL EXTENT

Hurricanes and tropical storms threaten the entire Atlantic and Gulf seaboard of the United States While coastal areas are most directly exposed to the brunt of landfalling storms their impact is often felt hundreds of miles inland and they can affect Clay County All areas in Clay County are equally susceptible to hurricane and tropical storms

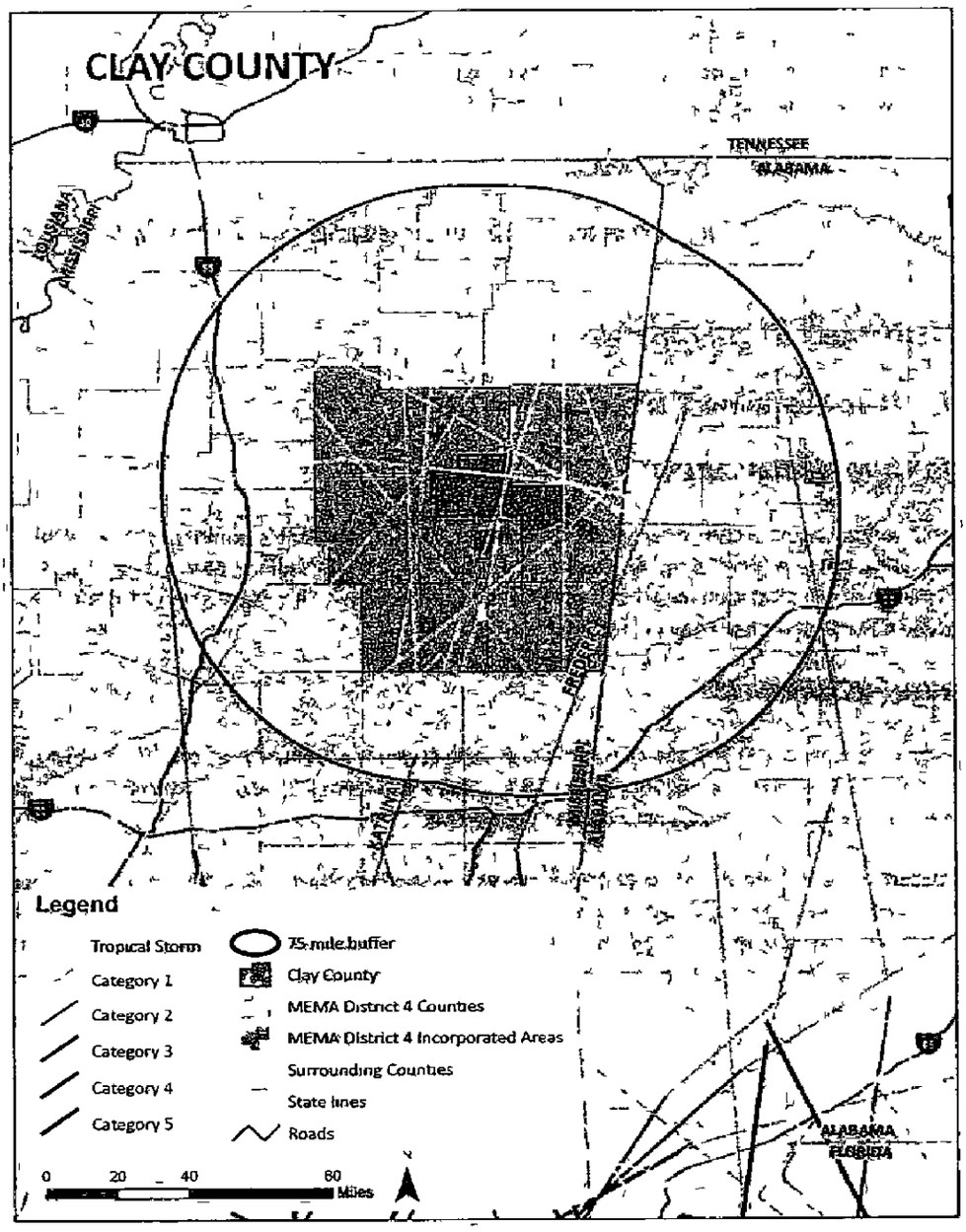
HISTORICAL OCCURRENCES

According to the National Hurricane Center's historical storm track records a total of 31 hurricanes have passed within 75 miles of the county since 1851 This included 1 Category 2 hurricane 2 Category 1 hurricanes and 28 tropical storms as shown in **Figure D 8** [9]

Of the recorded storm events a total of four tracks passed directly through the county These events were all tropical storm strength at the time they traversed the county **Table D 15** provides the detail for each storm that passed through the county including date of occurrence name (if applicable) maximum wind speed (as recorded when traversing the county) and category of the storm based on the Saffir Simpson Scale

[9] These storm track statistics do not include extra tropical storms Though these related hazard events are less severe in intensity they may cause significant local impact in terms of rainfall and high winds

FIGURE D 8 HISTORICAL HURRICANE STORM TRACKS WITHIN 75 MILES OF CLAY COUNTY



Source National Oceanic and Atmospheric Administration National Hurricane Center

TABLE D 15 HISTORICAL STORM TRACKS WITHIN 75 MILES OF CLAY COUNTY (1850–2012)

Date of Occurrence	Storm Name	Maximum Wind Speed (miles per hour)	Storm Category
8/16/1901	UNNAMED	40	Tropical Storm
10/18/1923	UNNAMED	46	Tropical Storm
9/5/1948	UNNAMED	46	Tropical Storm
9/5/1949	UNNAMED	40	Tropical Storm

Source National Hurricane Center

Federal records indicate that two disaster declarations were made in 2004 (Hurricane Ivan) and 2005 (Hurricane Dennis) [10] Hurricane and tropical storm events can cause substantial damage in the area due to high winds and flooding

Flooding and high winds from hurricanes and tropical storms can cause damage throughout the county Anecdotes are available from NCDC for the major storms that have impacted the county as found below

Hurricane Ivan – September 16 2004
Thousands of trees were blown down across Eastern Mississippi during the event as well as hundreds of power lines The strong wind itself did not cause much structural damage however the fallen trees did These downed trees accounted for several hundred homes mobile homes and businesses to be damaged or destroyed Most locations across Eastern Mississippi reported sustained winds between 30 and 40 mph with Tropical Storm force gusts between 48 and 54 mph The strongest reported winds occurred in Newton Lauderdale and Oktibbeha Counties

Overall, rainfall totals were held in check as Ivan steadily moved north The heaviest rains were confined to far Eastern Mississippi where 3 to 4 inches fell over a 15 hour period Due to the duration of the rain no flooding was reported Across Eastern Mississippi Hurricane Ivan was responsible for one fatality This fatality occurred in Brooksville (Noxubee County) when a tree fell on a man Damage from Ivan was estimated at $200 million

Tropical Storm Arlene – June 11 2005
The western periphery of Tropical Storm Arlene affected far Eastern Mississippi during the evening and brought gusty winds and locally heavy rains to that portion of the state Peak wind gusts were reported up to 40 mph and the combination of wet soils allowed for a few hundred trees to get blown down or uprooted Several of the downed trees took down power lines and a small few landed on homes causing damage Additionally the counties across Eastern Mississippi received 3 to 5 inches of rain as Arlene lifted north

Hurricane Dennis – July 10, 2005
Hurricane Dennis moved north northwest across Southwest Alabama and then into East-Central Mississippi and finally across Northeast Mississippi Wind gusts over tropical storm force were common across areas east of a line from Starkville to Newton to Hattiesburg These winds caused several hundred trees to uproot or snap and took down numerous power lines Additionally a total of 21 homes or businesses sustained minor to major damage from fallen trees or gusty winds

[10] A complete listing of historical disaster declarations can be found in Section 4 Hazard Identification

The remnants of Hurricane Dennis brought windy conditions to northeast Mississippi A church under construction was damaged in Calhoun County Several trees were blown down in the area A light pole was broken in Lee County A fallen tree damaged a house in Itawamba County

Heavy rainfall was not a major issue as Dennis steadily moved across the region Rainfall totals between 2 and 5 inches fell across Eastern Mississippi over a 12 hour period One indirect fatality occurred in Jasper County from an automobile accident due to wet roads

Hurricane Katrina – August 29 2005
Hurricane Katrina will likely go down as the worst and costliest natural disaster in United States history The amount of destruction the cost of damaged property/agriculture and the large loss of life across the affected region has been overwhelming Catastrophic damage was widespread across a large portion of the Gulf Coast region The devastation was not only confined to the coastal region widespread and significant damage occurred well inland up to the Hattiesburg area and northward past Interstate 20

Devastation from Hurricane Katrina was widespread across the region Hurricane force winds were common across the area The region received sustained winds of 60 80 mph with gusts ranging from 80-120 mph There was widespread damage to trees and power lines Wind damage to structures was also widespread with roofs blown off or partially peeled Hundreds of signs were shredded or blown down Businesses sustained structural damage Power outages lasted from a few days to as long as four weeks Agriculture and timber industries were severely impacted Row crops including cotton rice corn, and soybeans took a hard hit Other impacted industries were the catfish industry dairy and cattle industry, and nursery businesses

Hurricane Katrina had weakened to tropical storm strength when it reached north Mississippi An electrical transformer was blown down on a house in Oxford (Lafayette County) Some awnings were ripped off in Ripley (Tippah County) Several buildings were damaged in Calhoun County due to the winds Numerous trees and power lines along with some telephone poles were blown down Some trees fell on cars mobile homes and apartment buildings Four to eight inches of rain fell in some parts of northeast Mississippi producing some flash flooding Overall at least 100 000 customers lost power

PROBABILITY OF FUTURE OCCURRENCES

Given the inland location of the county it is more likely to be affected by remnants of hurricane and tropical storm systems (as opposed to a major hurricane) which may result in flooding or high winds The probability of being impacted is less than coastal areas but still remains a real threat to Clay County due to induced events like flooding Based on historical evidence the probability level of future occurrence is likely (annual probability between 10 and 100 percent) Given the regional nature of the hazard all areas in the county are equally exposed to this hazard When the county is impacted the damage could be catastrophic threatening lives and property throughout the planning area

D 2 11 Thunderstorm

LOCATION AND SPATIAL EXTENT

Thunderstorm / High Wind
A thunderstorm event is an atmospheric hazard and thus has no geographic boundaries It is typically a widespread event that can occur in all regions of the United States However thunderstorms are most common in the central and southern states because atmospheric conditions in those regions are favorable for generating these powerful storms Also Clay County typically experiences several straight-line wind events each year These wind events can and have caused significant damage It is assumed that Clay County has uniform exposure to an event and the spatial extent of an impact could be large

Hailstorm
Hailstorms frequently accompany thunderstorms so their locations and spatial extents coincide It is assumed that Clay County is uniformly exposed to severe thunderstorms therefore all areas of the county are equally exposed to hail which may be produced by such storms

Lightning
Lightning occurs randomly therefore it is impossible to predict where and with what frequency it will strike It is assumed that all of Clay County is uniformly exposed to lightning

HISTORICAL OCCURRENCES

Thunderstorm / High Wind
Severe storms resulted in eight disaster declarations in Clay County in 1979 three times in 1991 2001 2002 2003 and 2010 [11] According to NCDC there have been 102 reported thunderstorm and high wind events since 1967 in Clay County [12] These events caused over $2 8 million (2013 dollars) in damages There were also reports of one injury **Table D 16** summarizes this information **Table D 17** presents detailed thunderstorm and high wind event reports including date magnitude and associated damages for each event [13]

TABLE D 16 SUMMARY OF THUNDERSTORM / HIGH WIND OCCURRENCES IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
West Point	34	0/0	$2 070 424
Unincorporated Area	68	0/1	$731 474
CLAY COUNTY TOTAL	102	0/1	$2,801,898

Source National Climatic Data Center

[11] A complete listing of historical disaster declarations can be found in Section 4 Hazard Identification
[12] These thunderstorm events are only inclusive of those reported by the National Climatic Data Center (NCDC) It is likely that additional thunderstorm events have occurred in Clay County As additional local data becomes available this hazard profile will be amended
[13] The dollar amount of damages provided by NCDC is divided by the number of affected counties to reflect a damage estimate for the county

TABLE D 17 HISTORICAL THUNDERSTORM / HIGH WIND OCCURRENCES IN CLAY COUNTY

Location	Date	Type	Magnitude	Deaths / Injuries	Property Damage
West Point					
West Point	30 MAR 93	THUNDERSTORM WINDS	55 kts	0/0	$0
West Point	25 JUL 94	THUNDERSTORM WINDS	0 kts	0/0	$852 283
WEST PT	20 APR 96	TSTM WIND	0 kts	0/0	$3 218
WEST PT	29 APR 96	TSTM WIND	0 kts	0/0	$24 137
WEST PT	14 APR 96	TSTM WIND	0 kts	0/0	$16 091
WEST PT	16 JUN 97	TSTM WIND	0 kts	0/0	$1 573
WEST PT	27 JAN 97	TSTM WIND	0 kts	0/0	$787
WEST PT	05 JUN 98	TSTM WIND	0 kts	0/0	$38 722
WEST PT	15 JUN 98	TSTM WIND	0 kts	0/0	$15 489
WEST PT	20 JUL 00	TSTM WIND	0 kts	0/0	$5 874
WEST PT	02 MAY 00	TSTM WIND	0 kts	0/0	$117 483
WEST PT	16 FEB 01	TSTM WIND	0 kts	0/0	$42 773
WEST PT	30 APR 02	TSTM WIND	52 kts	0/0	$1 384
WEST PT	08 APR 02	TSTM WIND	0 kts	0/0	$69 212
WEST PT	13 JUL 03	TSTM WIND	50 kts	0/0	$13 439
WEST PT	17 MAY-04	TSTM WIND	51 kts	0/0	$0
WEST PT	20 MAY 05	TSTM WIND	53 kts	0/0	$6 334
WEST PT	19 JUL 06	TSTM WIND	57 kts	0/0	$36 896
WEST PT	09 MAR 06	TSTM WIND	60 kts	0/0	$122 987
WEST PT	21 JUN 06	TSTM WIND	50 kts	0/0	$0
WEST PT	07 APR 06	TSTM WIND	50 kts	0/0	$61 494
WEST PT	08 JAN 08	THUNDERSTORM WIND	50 kts	0/0	$11 593
WEST PT	10 JAN 08	THUNDERSTORM WIND	74 kts	0/0	$347 782
WEST PT	27 MAY 08	THUNDERSTORM WIND	53 kts	0/0	$9 274
WEST PT	27 FEB 09	THUNDERSTORM WIND	50 kts	0/0	$225
WEST PT	07 APR 09	THUNDERSTORM WIND	55 kts	0/0	$6 753
WEST PT	30 JUL 09	THUNDERSTORM WIND	58 kts	0/0	$13 506
WEST PT	24 FEB 11	THUNDERSTORM WIND	65 kts	0/0	$159 135
WEST PT	05 JUN 11	THUNDERSTORM WIND	50 kts	0/0	$5 305
WEST PT	10 AUG 11	THUNDERSTORM WIND	50 kts	0/0	$5 305
WEST PT	11 JUN 12	THUNDERSTORM WIND	50 kts	0/0	$2 060
WEST PT	05 JUL 12	THUNDERSTORM WIND	55 kts	0/0	$15 450
WEST PT	20 DEC 12	THUNDERSTORM WIND	50 kts	0/0	$2 060
WEST PT	10 DEC 12	THUNDERSTORM WIND	55 kts	0/0	$61 800
Unincorporated Area					
CLAY COUNTY	24 OCT 67	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	17 JUL 77	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	26 MAY 60	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	21 JUN 69	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	26 JAN 74	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	20 MAR 80	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	14 MAY 80	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	18 MAY 89	TSTM WIND	0 kts	0/0	$0

LOCATION	DATE	TYPE	MAG	DEATHS/INJ	DAMAGE
CLAY COUNTY	09 SEP 90	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	05 MAY 91	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	13 JUL 92	TSTM WIND	0 kts	0/4	$0
CLAY COUNTY	01 AUG 85	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	20 FEB 89	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	31 MAY 82	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	30 DEC 90	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	10 OCT 92	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	06 AUG 89	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	22 MAY 88	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	18 JUN 90	TSTM WIND	0 kts	0/0	$0
CLAY COUNTY	28 APR 91	TSTM WIND	0 kts	0/0	$0
PHEBA	09 JUN 94	THUNDERSTORM WINDS	0 kts	0/0	$852
CLAY COUNTY	27 JUN 94	THUNDERSTORM WINDS	0 kts	0/0	$8 523
CLAY COUNTY	27 JUN 94	THUNDERSTORM WINDS	0 kts	0/0	$8 523
CLAY COUNTY	27 JAN 95	THUNDERSTORM WINDS	44 kts	0/0	$0
CLAY COUNTY	20 APR 95	THUNDERSTORM WINDS	0 kts	0/0	$8 286
PHEBA	14 APR 96	TSTM WIND	0 kts	0/0	$3 218
PHEBA	02 MAY 97	TSTM WIND	0 kts	0/0	$1 573
MONTPELIER	02 MAY 97	TSTM WIND	0 kts	0/0	$1 573
MONTPELIER	02 MAR 99	TSTM WIND	0 kts	0/0	$3 025
COUNTYWIDE	27 FEB 99	TSTM WIND	0 kts	0/0	$45 378
MONTPELIER	27 FEB 99	TSTM WIND	0 kts	0/0	$30 252
WHITES	15 JUL 00	TSTM WIND	0 kts	0/0	$2 937
MONTPELIER	16 DEC 00	TSTM WIND	0 kts	0/0	$4 406
PHEBA	24-OCT 01	TSTM WIND	0 kts	0/0	$1 426
COUNTYWIDE	20 AUG 02	TSTM WIND	0 kts	0/0	$2 768
PHEBA	02 JUN 03	TSTM WIND	60 kts	0/0	$94 074
COUNTYWIDE	11 JUN-03	TSTM WIND	50 kts	0/0	$6 720
MONTPELIER	11 JUN-03	TSTM WIND	50 kts	0/0	$6 720
MONTPELIER	04 JUL 04	TSTM WIND	51 kts	0/0	$0
MONTPELIER	13 JAN 05	TSTM WIND	50 kts	0/0	$2 534
MONTPELIER	10 MAY 06	TSTM WIND	53 kts	0/0	$12 299
PINEBLUFF	18 JUN-07	THUNDERSTORM WIND	55 kts	0/0	$17 911
CAHNS	20-JUL 07	THUNDERSTORM WIND	50 kts	0/0	$0
WEST PT MC CHAREN AR	10 JAN 08	THUNDERSTORM WIND	72 kts	0/1	$173 891
CAHNS	01 JUN 08	THUNDERSTORM WIND	60 kts	0/0	$0
ABBOTT	01 JUN-08	THUNDERSTORM WIND	55 kts	0/0	$11 593
MONTPELIER	02 AUG 08	THUNDERSTORM WIND	61 kts	0/0	$13 911
PHEBA	23 JUL 08	THUNDERSTORM WIND	50 kts	0/0	$2 319
ABBOTT	22 JUL 08	THUNDERSTORM WIND	50 kts	0/0	$17 389
CLAY COUNTY	28 MAR 09	STRONG WIND	43 kts	0/0	$5 628
ABBOTT	02 APR 09	THUNDERSTORM WIND	65 kts	0/0	$11 255
MONTPELIER	02 APR 09	THUNDERSTORM WIND	65 kts	0/0	$11 255
MONTPELIER	26 JUL 10	THUNDERSTORM WIND	53 kts	0/0	$27 318

Location	Date	Type	Magnitude	Deaths / Injuries	Property Damage*
PHEBA	23 JUN 09	THUNDERSTORM WIND	53 kts	0/0	$0
PHEBA	12 JUN 09	THUNDERSTORM WIND	55 kts	0/0	$16 883
MONTPELIER	12 JUN 09	THUNDERSTORM WIND	57 kts	0/0	$16 883
PHEBA	30 JUL 09	THUNDERSTORM WIND	58 kts	0/0	$33 765
MONTPELIER	09 OCT 09	THUNDERSTORM WIND	50 kts	0/0	$0
TIBBEE	05 AUG 10	THUNDERSTORM WIND	52 kts	0/0	$16 391
ABBOTT	15 JUN 10	THUNDERSTORM WIND	52 kts	0/0	$0
CEDARBLUFF	20 APR 11	THUNDERSTORM WIND	62 kts	0/0	$79 568
TIBBEE	24 FEB 11	THUNDERSTORM WIND	58 kts	0/0	$3 183
MONTPELIER	24 FEB 11	THUNDERSTORM WIND	50 kts	0/0	$3 183
WEST PT MC CHAREN AR	05 JUN 11	THUNDERSTORM WIND	50 kts	0/0	$10 609
MONTPELIER	16 JUN 11	THUNDERSTORM WIND	50 kts	0/0	$2 122
PINEBLUFF	02 MAR 12	THUNDERSTORM WIND	55 kts	0/0	$5 150
PHEBA	01 AUG 12	THUNDERSTORM WIND	50 kts	0/0	$3 090
PINEBLUFF	10 DEC 12	THUNDERSTORM WIND	50 kts	0/0	$3 090

*Property damage is reported in 2013 dollars All damage may not have been reported
Source National Climatic Data Center

Hailstorm

According to the National Climatic Data Center 54 recorded hailstorm events have affected Clay County since 1965 [14] **Table D 18** is a summary of the hail events in Clay County **Table D 19** provides detailed information about each event that occurred in the county In all hail occurrences resulted in approximately $75 000 (2013 dollars) in property damages Hail ranged in diameter from 0 75 inches to 2 0 inches It should be noted that hail is notorious for causing substantial damage to cars roofs and other areas of the built environment that may not be reported to the National Climatic Data Center Therefore it is likely that damages are greater than the reported value

TABLE D 18 SUMMARY OF HAIL OCCURRENCES IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
West Point	16	0/0	$16 045
Unincorporated Area	38	0/0	$59 327
CLAY COUNTY TOTAL	54	0/0	$75,372

Source National Climatic Data Center

TABLE D 19 HISTORICAL HAIL OCCURRENCES IN CLAY COUNTY

Location	Date	Magnitude	Deaths / Injuries	Property Damage*
West Point				
West Point	30 MAR 93	1 00 in	0/0	$0
WEST PT	20 APR 96	0 75 in	0/0	$16
WEST PT	24 APR 99	0 75 in	0/0	$0

[14] These hail events are only inclusive of those reported by the National Climatic Data Center (NCDC) It is likely that additional hail events have affected Clay County As additional local data becomes available this hazard profile will be amended

Location	Date	Magnitude	Deaths/Injuries	Property Damage
WEST PT	24 APR 99	1 00 in	0/0	$0
WEST PT	02 MAY 00	1 00 in	0/0	$14 685
WEST PT	17 OCT 03	0 88 in	0/0	$1 344
WEST PT	19 JUL 06	0 75 in	0/0	$0
WEST PT	04 MAY 06	1 00 in	0/0	$0
WEST PT	19 APR 06	1 00 in	0/0	$0
WEST PT	20 APR 06	1 00 in	0/0	$0
WEST PT	07 APR 06	0 88 in	0/0	$0
WEST PT	09 MAY 06	1 00 in	0/0	$0
WEST PT	12 MAY 07	0 75 in	0/0	$0
WEST PT	11 APR 07	1 00 in	0/0	$0
WEST PT	30 JUN 07	0 75 in	0/0	$0
WEST PT	06 FEB 08	1 00 in	0/0	$0
WEST PT	02 APR 09	0 75 in	0/0	$0
Unincorporated Area				
CLAY COUNTY	28 MAR 65	1 75 in	0/0	$0
CLAY COUNTY	26 APR 67	2 00 in	0/0	$0
CLAY COUNTY	30 MAR 92	0 75 in	0/0	$0
PHEBA	30 MAR 93	1 75 in	0/0	$0
CEDARBLUFF	21 APR 96	0 88 in	0/0	$80
PHEBA	21 APR 97	1 75 in	0/0	$787
PHEBA	02 MAY 97	0 88 in	0/0	$94
MONTPELIER	28 MAY 98	1 75 in	0/0	$1 162
COUNTYWIDE	05 MAY 99	0 75 in	0/0	$0
CEDARBLUFF	02 JUN 01	0 88 in	0/0	$0
PHEBA	02 MAY 03	0 88 in	0/0	$1 344
MONTPELIER	05 MAY 03	1 75 in	0/0	$26 878
CEDARBLUFF	30 MAR 05	1 00 in	0/0	$0
ABBOTT	09 MAY-06	0 75 in	0/0	$0
PHEBA	08 JAN 08	1 00 in	0/0	$0
CAHNS	10 JAN 08	1 00 in	0/0	$0
WHITES	24 MAY-08	1 75 in	0/0	$28 982
WHITES	04-JUL 08	0 75 in	0/0	$0
MONTPELIER	09 DEC 08	0 75 in	0/0	$0
WEST PT MC CHARENAR	12 JUN 09	0 75 in	0/0	$0
ABBOTT	24 APR 10	1 00 in	0/0	$0
CEDARBLUFF	24 APR 10	0 75 in	0/0	$0
WEST PT MC CHARENAR	24 APR 10	0 75 in	0/0	$0
GRIFFITH	26 JUN 10	1 00 in	0/0	$0
ABBOTT	28 JUN 10	1 00 in	0/0	$0
TIBBEE	20 APR 11	1 00 in	0/0	$0
MONTPELIER	16 JUN 11	1 00 in	0/0	$0
CAHNS	14 MAR 12	1 00 in	0/0	$0
CAHNS	14 MAR 12	1 00 in	0/0	$0
CAHNS	14 MAR 12	0 88 in	0/0	$0

Location	Date	Magnitude	Deaths / Injuries	Property Damage*
WHITES	01 AUG 12	0 88 in	0/0	$0
PHEBA	01 AUG 12	1 00 in	0/0	$0
PHEBA	01 AUG 12	1 00 in	0/0	$0

*Property damage is reported in 2013 dollars All damage may not have been reported
Source National Climatic Data Center

Lightning
According to the National Climatic Data Center there have been no recorded lightning events in Clay County since 1950 as listed in summary **Table D 20** [15] However it is likely that lightning events have in fact impacted the county Many of the reported events are only those that caused damage and it should be expected that damages are likely much higher for this hazard than what is reported

TABLE D 20 SUMMARY OF LIGHTNING OCCURRENCES IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
West Point	0	0/0	$0
Unincorporated Area	0	0/0	$0
CLAY COUNTY TOTAL	**0**	**0/0**	**$0**

Source National Climatic Data Center

PROBABILITY OF FUTURE OCCURRENCES

Thunderstorm / High Wind
Given the high number of previous events it is certain that thunderstorm events including straight line wind events will occur in the future This results in a probability level of highly likely (100 percent annual probability) for the entire county

Hailstorm
Based on historical occurrence information it is assumed that the probability of future hail occurrences is likely (10 – 100 percent annual probability) Since hail is an atmospheric hazard (coinciding with thunderstorms) it is assumed that Clay County has equal exposure to this hazard It can be expected that future hail events will continue to cause minor damage to property and vehicles throughout the county

Lightning
Although there were no historical lightning events reported in Clay County via NCDC data it is a regular occurrence accompanied by thunderstorms In fact lightning events will assuredly happen on an annual basis though not all events will cause damage According to Vaisala s U S National Lightning Detection Network (NLDN®) Clay County is located in an area of the country that experienced an average of 6 to 8 lightning flashes per square kilometer per year between 1997 and 2010 Therefore the probability of future events is highly likely (100 percent annual probability) It can be expected that future lightning events will continue to threaten life and cause minor property damages throughout the county

[15] These lightning events are only inclusive of those reported by the National Climatic Data Center (NCDC) It is likely that additional lightning events have occurred in Clay County As additional local data becomes available this hazard profile will be amended

D 2 12 Tornado

LOCATION AND SPATIAL EXTENT

Tornadoes occur throughout the state of Mississippi and thus in Clay County Tornadoes typically impact a relatively small area but damage may be extensive Event locations are completely random and it is not possible to predict specific areas that are more susceptible to tornado strikes over time Therefore it is assumed that Clay County is uniformly exposed to this hazard

HISTORICAL OCCURRENCES

Tornadoes resulted in eight disaster declarations in Clay County in 1973 1979 twice in 1991 2001 2002 2003 and 2011 [16] According to the National Climatic Data Center there have been a total of 14 recorded tornado events in Clay County since 1950 (**Table D 21**) resulting in nearly $16 3 million (2013 dollars) in property damages [17] In addition one fatality and four injuries were reported The magnitude of these tornadoes ranges from F0 to F3 in intensity although an F5 event is possible Detailed information on historic tornado events can be found in **Table D 22**

TABLE D 21 SUMMARY OF TORNADO OCCURRENCES IN CLAY COUNTY

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
West Point	3	0/0	$274 487
Unincorporated Area	11	1/4	$16 019 493
CLAY COUNTY TOTAL	**14**	**1/4**	**$16,293,980**

Source National Climatic Data Center

TABLE A 22 HISTORICAL TORNADO IMPACTS IN CLAY COUNTY

Location	Date	Magnitude	Deaths / Injuries	Property Damage	Details
West Point					
WEST PT	18 OCT 04	F0	0/0	$1 305	Storm chasers captured this weak tornado on video as it moved east across northern Clay county six miles northeast of West Point
WEST PT	13 MAR 06	F0	0/0	$0	This weak tornado was witnessed along the Clay / Monroe County line as it moved across a Houlka Creek west of Highway 45 Traffic was stopped along the highway as many people viewed the tornado

[16] A complete listing of historical disaster declarations can be found in Section 4 Hazard Identification

[1] These tornado events are only inclusive of those reported by the National Climatic Data Center (NCDC) It is likely that additional tornadoes have occurred in Clay County As additional local data becomes available this hazard profile will be amended

Location	Date	Magnitude	Deaths /	Property	Details
WEST PT	29 NOV 10	F1	0/0	$273 182	The tornado started near Highway 45 Alternate north northwest of West Point where a few trees were snapped and a road sign was twisted A billboard was blown apart with tin from the billboard scattered across a field Near the intersection of Tva Road and Hazelwood Road six homes had minor shingle damage and five sheds were damaged or destroyed Multiple trees were also uprooted and snapped Maximum winds were around 90 mph
Unincorporated Area					
CLAY COUNTY	27 MAR 50	F2	0/0	$0	
CLAY COUNTY	14-APR 53	F0	0/0	$236 634	
CLAY COUNTY	14 MAY 53	F2	0/1	$0	
CLAY COUNTY	03 APR 56	F2	0/2	$2 325 304	
CLAY COUNTY	26 JUN 66	F0	0/0	$19 528	
CLAY COUNTY	20 MAR 76	F3	0/1	$1 111 264	
CLAY COUNTY	20 MAR-80	F1	1/0	$76 624	
CLAY COUNTY	25 AUG 85	F0	0/0	$5 872 665	
CLAY COUNTY	19 JAN 88	F3	0/0	$5 335 246	
WHITES	24 APR 10	F2	0/0	$87 418	This tornado touched down near Barton Ferry Road and tracked northeast for a short distance Three sets of metal power poles were blown down in a field off Barton Ferry Road Several trees and power lines were also blown down along with an outbuilding destroyed Maximum winds were around 115 mph
PINEBLUFF	27 APR 11	F2	0/0	$954 810	This tornado touched down in northern Choctaw County and eventually tracked across multiple counties as it moved northeast Many thousands of trees were snapped or uprooted along the path of this tornado Numerous roofs of homes were severely damaged Numerous mobile homes were severely damaged and several mobile homes were completely destroyed Numerous barns and sheds received heavy damage or were destroyed Numerous power poles and power lines were down Extensive damage occurred to a school in Cumberland Webster County and this was the basis for the EF 3 rating Maximum winds were around 140 mph Total path length across Choctaw Webster Clay Chickasaw and Monroe Counties was 59 miles

Property Damage is reported in 2013 dollars
Source National Climatic Data Center

From April 25 to 28 2011 the largest tornado outbreak ever recorded affected the Southern Midwestern and Northeastern U S leaving catastrophic destruction in its wake especially across the states of Alabama and Mississippi During this outbreak one F2 tornado was reported in Choctaw County on April 27 2011 This tornado resulted in over $954 000 (2013 dollars) in property damages

PROBABILITY OF FUTURE OCCURRENCES

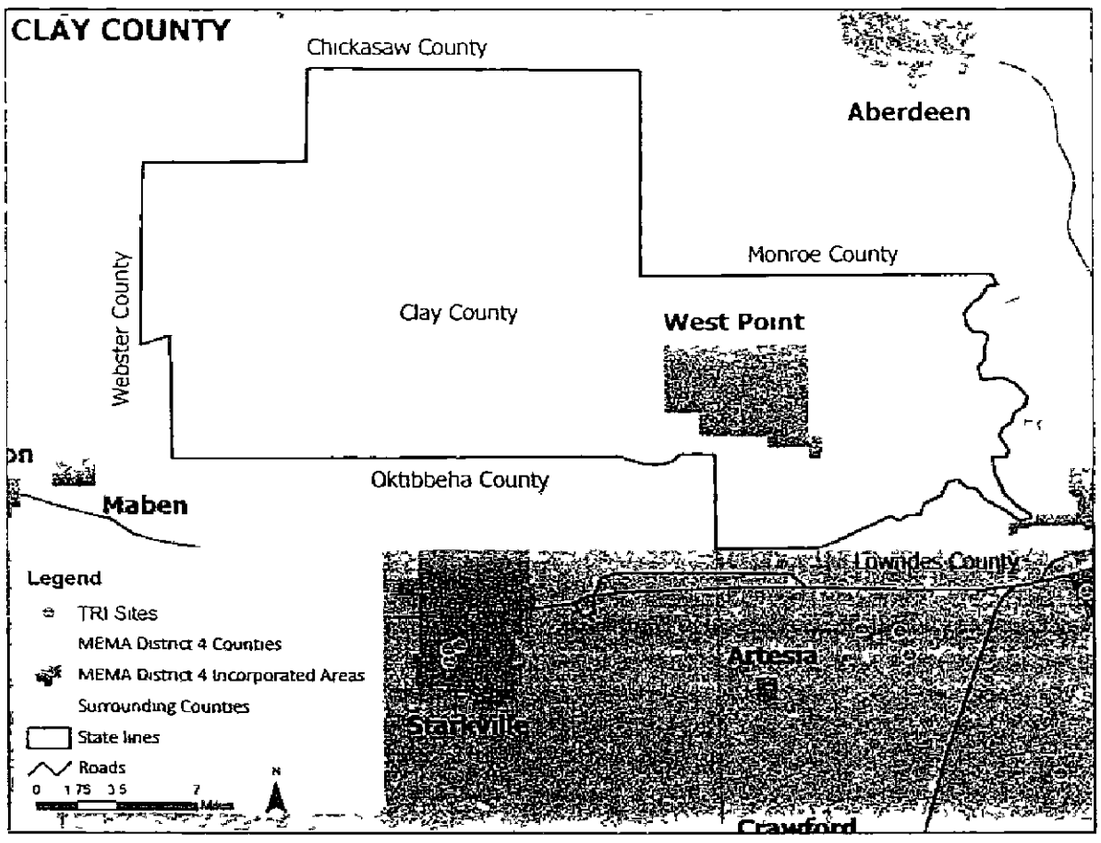
According to historical information tornado events pose a significant threat to Clay County The probability of future tornado occurrences affecting Clay County is likely (10 – 100 percent annual probability)

D 2 13 Hazardous Materials Incidents

LOCATION AND SPATIAL EXTENT

Clay County as no TRI sites as shown in **Figure A 9**

FIGURE D 9 TOXIC RELEASE INVENTORY (TRI) SITES IN CLAY COUNTY



Source EPA

In addition to fixed hazardous materials locations hazardous materials may also impact the county via roadways and rail Many roads in the county are narrow making hazardous material transport in the area especially treacherous All roads that permit hazardous material transport are considered potentially at risk to an incident

HISTORICAL OCCURRENCES

There have been a total of 13 recorded HAZMAT incidents in Clay County since 1971 (**Table D 23**) resulting in $900 in property damages **Table D 24** presents detailed information on historic HAZMAT incidents in Clay County as reported by the U S Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA)

TABLE D 23 SUMMARY OF HAZMAT INCIDENTS IN CLAY COUNTY

Location	Number of Occurrences	Deaths/Injuries	Property Damage
West Point	12	0/0	$900
Unincorporated Area	1	0/0	$0

Location	Number of [illegible]	Deaths / Injuries	Property Damage
[illegible]	[illegible]	0/0	$0.00

Source USDOT PHMSA

TABLE D 24 HAZMAT INCIDENTS IN CLAY COUNTY

Report Number	Date	City	Mode	Serious Incident?	Fatalities/ Injuries	Damages ($)	Quantity Released
West Point							
I 1975110453	11/7/1975	WEST POINT	Highway	No	0/0	$0	0
I 1999090907	8/15/1999	WEST POINT	Highway	Yes	0/0	$900	1 300 SLB
I 1993050548	5/10/1993	WEST POINT	Highway	No	0/0	$0	0
I 1988100253	9/28/1988	WEST POINT	Highway	No	0/0	$0	100 LGA
I 1989020262	2/7/1989	WEST POINT	Highway	No	0/0	$0	25 LGA
I 1987120048	12/8/1987	WEST POINT	Highway	Yes	0/0	$0	40 780 SLB
I 1971100126	10/7/1971	WEST POINT	Highway	No	0/0	$0	0
I 1971050037	4/29/1971	WEST POINT	Highway	No	0/0	$0	0
I 1995040367	3/20/1995	WEST POINT	Highway	No	0/0	$0	6 LGA
I 1995050551	4/29/1995	WEST POINT	Highway	No	0/0	$0	2 LGA
I 1980100372	9/11/1980	WEST POINT	Highway	No	0/0	$0	20 LGA
I 1997041188	3/25/1997	WEST POINT	Highway	No	0/0	$0	2 LGA
Unincorporated Area							
I 1992020028	12/11/1991	PHEBA	Highway	No	0/0	$0	50 LGA

Source USDOT PHMSA

PROBABILITY OF FUTURE OCCURRENCES

Although there are no toxic release inventory sites in Clay County there have been several roadway and rail incidents Therefore it is possible that a hazardous material incident may occur in the county (between one percent and ten percent annual probability) County and town officials are mindful of this possibility and take precautions to prevent such an event from occurring Furthermore there are detailed plans in place to respond to an occurrence

Despite the fact that there are no TRI sites and a limited record of previous events in the county hazardous materials incidents will continue to be a threat The county may also be impacted by neighboring counties which also face risk due to TRI sites and narrow roadways

D 2 14 Pandemic

LOCATION AND SPATIAL EXTENT

Pandemics are global in nature However they may start anywhere Clay County chose to analyze this hazard given the large number of poultry farms in the area Poultry has served as host for viruses that ultimately mutate to infect humans

All populations should be considered at risk to pandemic Buildings and infrastructure are not directly impacted by the virus but could be indirectly impacted if people are not able to operate and maintain them due to illness Many buildings may be shutdown at least temporarily as a result Employers may initiate work from home procedures for non essential workers in order to help stop infection Commerce activities and thus the economy may suffer greatly during this time

HISTORICAL OCCURRENCES[18]

Several pandemics have been reported throughout history The first known pandemic dates back to 430 B C with the Plague of Athens It reportedly killed a quarter of the population over four years due to typhoid fever In 165-180 A D the Antonine Plague killed nearly 5 million people Next the Plague of Justinian (the first bubonic plague panoemic) occurred from 541 to 566 It killed 10 000 people a day at its peak and resulted in a 50 percent drop in Europe s population

Since the 1500s influenza pandemics have occurred about three times every century or roughly every 10 50 years The Black Death devastated European populations in the 14th century Nearly a third of the population (20-30 million) was killed over six years From 1817 to present seven Cholera Pandemics have impacted to the world and killed millions Perhaps most severe, was the Third Cholera Pandemic (1852-1959) which started in China Isolated cases can still be found in the Western U S today There were three major pandemics in the 20th century (1918-1919 1957-1958 and 1968-1969) The most infamous pandemic flu of the 20th century however was that of 1918-1919 Since the 1960s there has only been one pandemic the 2009 H1N1 influenza The pandemics of the 20th and 21st centuries that impacted the United States are detailed below

1918 Spanish Flu This was the most devastating flu of the 20th century This pandemic spread across the world in three waves between 1918 and 1919 It typically impacted areas for around twelve weeks and then would largely disappear However it would frequently reemerge several months later Worldwide approximately 50 million persons died and over a quarter of the population was infected Nearly 675 000 people died in the United States The illness came on suddenly and could cause death within a few hours The virus impacted those aged 15 to 35 especially hard The movement of troops during World War I is thought to have facilitated the spread of the virus

In Mississippi state officials noted that epidemics have been reported from a number of places in the State on October 4th 1918 By the 18th twenty six localities reported 1 934 cases (the real number of cases was likely much higher) West Point Mississippi was hit especially hard and quarantine was established Throughout the state African Americans were impacted at a greater rate than white populations This is thought to be partly caused from a shortage of caretakers It is estimated that over 6 000 people died in Mississippi though that number may be much higher as death records were not widely recorded [19]

1957 Asian Flu It is estimated that the Asian Flu caused 2 million deaths worldwide Approximately 70,000 deaths were in the U S However the proportion of people impacted was substantially higher than that of the Spanish Flu This flu was characterized as having much milder effects than the Spanish Flu and greater survivability Similar to other pandemics this pandemic has two waves Elderly and

[18] Information in this section comes from http //www flu gov/pandemic/history# and http //www flupandemic gov au/internet/panflu/publishing nsf/Content/history 1
[19] http //hustoncaltextarchive com/sections php?action=read&artid=773

infant populations were more likely to succumb to death This flu is thought to have originated from a genetic mutation of a bird virus

1968 Hong Kong Flu The Hong Kong Flu is thought to have caused one million deaths worldwide It was milder than both the Asian and Spanish influenza viruses It was similar to the Asian Flu which may have provided some immunity to the virus It had the most severe impact on elderly populations

2009 H1N1 Influenza This flu was derived from human swine and avian virus strains It was initially reported in Mexico in April 2009 On April 26 the U S government declared H1N1 a public health emergency A vaccine was developed and over 80 million were vaccinated which helped minimize the impacts The virus had mild impacts on most of the population but did cause death (usually from viral pneumonia) in high risk populations such as pregnant women obese persons, indigenous people and those with chronic respiratory cardiac neurological or immunity conditions Worldwide it is estimated that 43 million to 89 million people contracted H1N1 between April 2009 and April 2010, and between 8 870 and 18 300 H1N1 cases resulted in death

In addition to the pandemics above there have been several cases of pandemic threats some of which reached epidemic levels They were contained before spreading globally Examples include Smallpox Polio, Tuberculosis, Malaria, AIDS SARS and Yellow Fever Advances in medicine and technology have been instrumental in containing the spread of viruses in recent history

It is notable that no birds have been infected with Avian Flu in North and South America

PROBABILITY OF FUTURE OCCURRENCES

Based on historical occurrence information, it is assumed that Clay County has a probability level of unlikely (less than 1 percent annual probability) for future pandemics events While pandemic can have devastating impacts, they are relatively rare

The Mississippi State Department of Health maintains a state pandemic plan which can be found here http //www msdh.state ms.us/msdhsite/index.cfm/44,1136,122,154,pdf/SNSPlan pdf

D 2 15 Conclusions on Hazard Risk

The hazard profiles presented above were developed using best available data and result in what may be considered principally a qualitative assessment as recommended by FEMA in its "How-to guidance document titled *Understanding Your Risks Identifying Hazards and Estimating Losses* (FEMA Publication 386-2) It relies heavily on historical and anecdotal data stakeholder input and professional and experienced judgment regarding observed and/or anticipated hazard impacts It also carefully considers the findings in other relevant plans studies, and technical reports

HAZARD EXTENT

Table D 25 describes the extent of each natural hazard identified for Clay County The extent of a hazard is defined as its severity or magnitude as it relates to the planning area

TABLE D 25 EXTENT OF CLAY COUNTY HAZARDS

Flood-related Hazards	
	Flood extent can be measured by the amount of land and property in the floodplain as well as flood height and velocity The amount of land in the floodplain accounts for 30 3 percent of the total land area in Clay County
Flood	Flood depth and velocity are recorded via United States Geological Survey stream gages throughout the region While a gage does not exist for each participating jurisdiction there is one at or near many areas The greatest peak discharge recorded for the county was at the Chuquatonchee Creek near West Point in 1973 Water reached a discharge of 57 100 cubic feet per second and the stream gage height was recorded at 24 58 feet
Erosion	The extent of erosion can be defined by the measurable rate of erosion that occurs There are no erosion rate records located in Clay County
Dam Failure	Dam Failure extent is defined using the Mississippi Division of Environmental Quality criteria (Table 5 7) No dams are classified as high-hazard in Clay County
Winter Storm and Freeze	The extent of winter storms can be measured by the amount of snowfall received (in inches) Official long term snow records are not kept for any areas in Clay County However the greatest snowfall reported in Jackson (southwest of the county) was 11 7 inches in 1904 and in Meridian (south of the county) was 14 0 inches in 1963
Fire-related Hazards	
Drought / Heat Wave	Drought extent is defined by the U S Drought Monitor Classifications which include Abnormally Dry Moderate Drought Severe Drought Extreme Drought and Exceptional Drought According to the U S Drought Monitor Classifications the most severe drought condition is Exceptional Clay County has received this ranking twice over the thirteen year reporting period The extent of extreme heat can be measured by the record high temperature recorded Official long term temperature records are not kept for any areas in Choctaw County However the highest recorded temperature in Jackson (southwest of the county) was 107 F in 2000 and in Meridian (south of the county) was 107 F in 1980
Wildfire	Wildfire data was provided by the Mississippi Forestry Commission and is reported annually by county from 2002 2011 The greatest number of fires to occur in Clay County in any year was 29 in 2011 The greatest number of acres to burn in the county in a single year occurred in 2004 when 198 acres were burned Although this data lists the extent that has occurred larger and more frequent wildfires are possible throughout the county
Geologic Hazards	
Earthquake	Earthquake extent can be measured by the Richter Scale (Table 5 15) and the Modified Mercalli Intensity (MMI) scale (Table 5 16) and the distance of the epicenter from Clay County According to data provided by the National Geophysical Data Center the greatest MMI to impact the county was reported in West Point with a MMI of III (slight) with a correlating Richter Scale measurement of less than 4 8

Landslide	As noted above in the landslide profile there is no extensive history of landslides in Clay County and landslide events typically occur in isolated areas This provides a challenge when trying to determine an accurate extent for the landslide hazard However when using USGS landslide susceptibility index extent can be measured with incidence which is low throughout the county There is also low susceptibility throughout the county
Expansive Soils	As noted above in the expansive soils profile there is no historical record of significant expansive soil events in Clay County Again this provides a challenge when trying to determine an accurate extent for the expansive soils hazard However when using USGS data on soils with clay swelling potential extent can be measured with swelling potential which is high in Clay County
Wind-related Hazards	
Hurricane and Tropical Storm	Hurricane extent is defined by the Saffir Simpson Scale which classifies hurricanes into Category 1 through Category 5 (Table 5 19) The greatest classification of hurricane to traverse directly through Clay County was a tropical storm (unnamed storms in 1923 and 1948) which carried tropical force winds of 46 miles per hour upon arrival in the county
Thunderstorm / Hail / Lightning	Thunderstorm extent is defined by the number of thunder events and wind speeds reported According to a 63 year history from the National Climatic Data Center the strongest recorded wind event in Clay County was last reported on January 10 2008 at 74 knots (approximately 51 mph) It should be noted that future events may exceed these historical occurrences Hail extent can be defined by the size of the hail stone The largest hail stone reported in Clay County was 2 0 inches (reported on April 26 1967) It should be noted that future events may exceed this According to the Vaisala s flash density map (Figure 5 16) Clay County is located in an area that experiences 6 to 8 lightning flashes per square kilometer per year It should be noted that future lightning occurrences may exceed these figures
Tornado	Tornado hazard extent is measured by tornado occurrences in the US provided by FEMA (Figure 5 17) as well as the Fujita/Enhanced Fujita Scale (Tables 5 26 and 5 27) The greatest magnitude reported in Clay County was an F3 (last reported on January 19, 1988)
Other Hazards	
Hazardous Materials Incident	According to USDOT PHMSA the largest hazardous materials incident reported in the county is 40 780 SLB released on the highway in West Point It should be noted that larger events are possible
Pandemic	The extent of a pandemic impacting the county is difficult to estimate It could result in thousands of deaths and extreme disruption of commerce and everyday life

PRIORITY RISK INDEX RESULTS

In order to draw some meaningful planning conclusions on hazard risk for Clay County the results of the hazard profiling process were used to generate countywide hazard classifications according to a Priority Risk Index (PRI) More information on the PRI and how it was calculated can be found in Section 5 16 2

Table D 26 summarizes the degree of risk assigned to each category for all initially identified hazards based on the application of the PRI Assigned risk levels were based on the detailed hazard profiles

developed for this section as well as input from the Regional Hazard Mitigation Council The results were then used in calculating PRI values and making final determinations for the risk assessment

TABLE D 26 SUMMARY OF PRI RESULTS FOR CLAY COUNTY

Hazard	Probability	Impact/Degree of Risk				
Flood-related Hazards						
Flood	Likely	Limited	Moderate	6 to 12 hours	Less than 24 hours	26
Erosion	Possible	Minor	Small	More than 24 hours	More than 1 week	18
Dam Failure	Unlikely	Critical	Moderate	More than 24 hours	Less than 6 hours	20
Winter Storm and Freeze	Likely	Limited	Moderate	More than 24 hours	Less than 24 hours	24
Fire-related Hazards						
Drought / Heat Wave	Likely	Minor	Large	More than 24 hours	More than 1 week	25
Wildfire	Likely	Minor	Small	Less than 6 hours	Less than one week	21
Geologic Hazards						
Earthquake	Possible	Minor	Moderate	Less than 6 hours	Less than 6 hours	20
Landslide	Unlikely	Minor	Small	Less than 6 hours	Less than 6 hours	15
Expansive	Likely	Minor	Small	Less than 6 hours	Less than 6 hours	21
Wind-related Hazards						
Hurricane and Tropical Storm	Likely	Minor	Large	More than 24 hours	Less than 24 hours	23
Thunderstorm Wind / High Wind	Highly Likely	Critical	Moderate	Less than 6 hours	Less than 6 hours	32
Hailstorm	Likely	Limited	Moderate	Less than 6 hours	Less than 6 hours	26
Lighting	Highly Likely	Minor	Negligible	Less than 6 hours	Less than 6 hours	22
Tornado	Likely	Catastrophic	Small	Less than 6 hours	Less than 6 hours	30
Other Hazards						
Hazardous Materials Incident	Unlikely	Limited	Small	Less than 6 hours	Less than 24 hours	19
Pandemic	Unlikely					

D 2 16 Final Determinations on Hazard Risk

The conclusions drawn from the hazard profiling process for Clay County including the PRI results and input from the Regional Hazard Mitigation Council resulted in the classification of risk for each identified hazard according to three categories High Risk Moderate Risk and Low Risk **(Table D 27)** For purposes of these classifications risk is expressed in relative terms according to the estimated impact that a hazard will have on human life and property throughout all of Clay County A more quantitative analysis to estimate potential dollar losses for each hazard has been performed separately and is described in Section 6 *Vulnerability Assessment* and below in Section A 3 It should be noted that although some hazards are classified below as posing low risk their occurrence of varying or unprecedented magnitudes is still possible in some cases and their assigned classification will continue to be evaluated during future plan updates

TABLE D 27 CONCLUSIONS ON HAZARD RISK FOR CLAY COUNTY

HIGH RISK	Thunderstorm Wind / High Wind Tornado Flood Hailstorm Winter Storm and Freeze
MODERATE RISK	Drought / Heat Wave Hurricane and Tropical Storm Lightning
LOW RISK	Expansive Soils Earthquake Dam Failure Erosion Landslide Wildfire Pandemic Hazardous Materials Incident

D 3 CLAY COUNTY VULNERABILITY ASSESSMENT

This subsection identifies and quantifies the vulnerability of Clay County to the significant hazards previously identified This includes identifying and characterizing an inventory of assets in the county and assessing the potential impact and expected amount of damages caused to these assets by each identified hazard event More information on the methodology and data sources used to conduct this assessment can be found in Section 6 *Vulnerability Assessment*

D 3 1 Asset Inventory

Table D 28 lists the estimated number of improved properties and the total value of improvements for Clay County and its participating jurisdictions (study area of vulnerability assessment) This data was obtained from Hazus MH 2 1 since digital parcel data was not available in this county

TABLE D 28 IMPROVED PROPERTY IN CLAY COUNTY

Location	Number of Improved Properties	Total Assessed Value of Improvements
West Point	5,532	$1,262,664,000
Unincorporated Area	3,981	$523,678,000
CLAY COUNTY TOTAL	9,513	$1,786,342,000

*Improvement values for these communities were obtained from Hazus MH

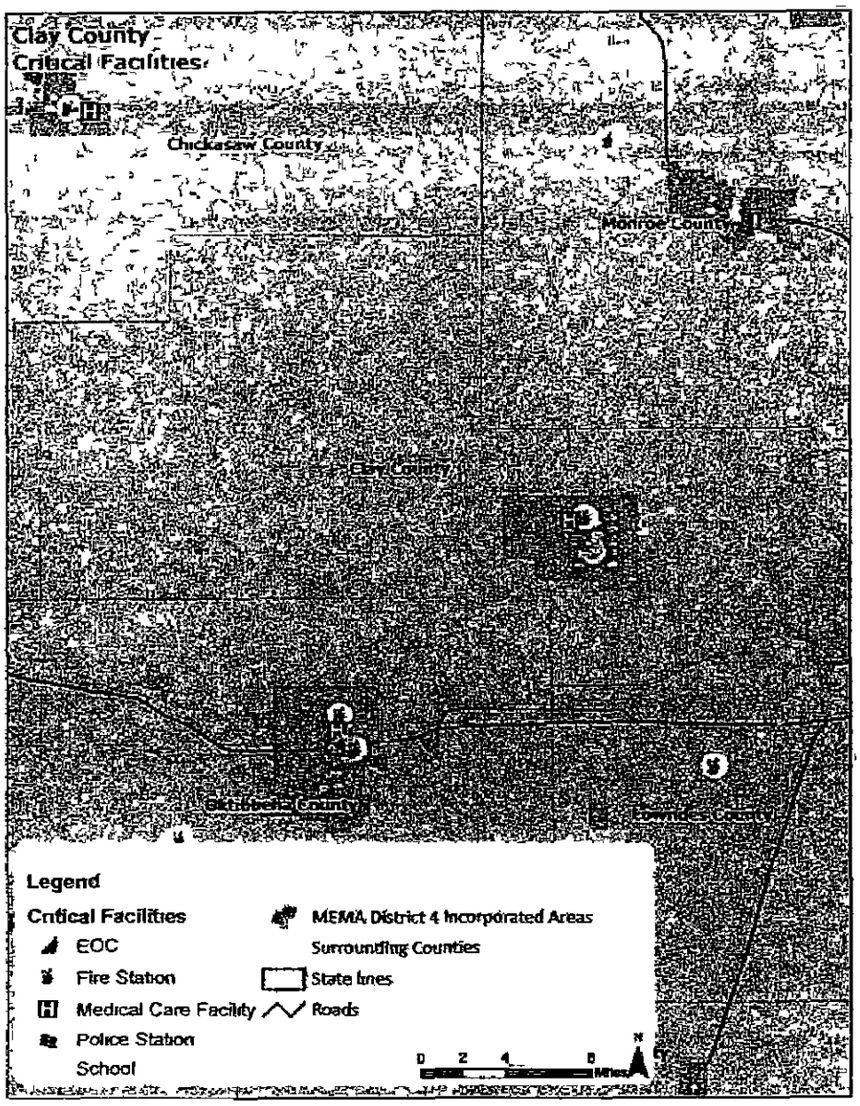
Table D 29 lists the fire stations police stations emergency operations centers (EOCs) medical care facilities and schools located in Clay County Hazus 2 1 was used to obtain the critical facilities for the county and this data was updated to reflect current conditions In addition, **Figure D 10** shows the locations of essential facilities in Clay County **Table D 41** near the end of this section shows a complete list of the critical facilities by name as well as the hazards that affect each facility As noted previously this list is not all inclusive and only includes information provided by the county

TABLE D 29 CRITICAL FACILITY INVENTORY IN CLAY COUNTY

Location	Fire Stations	Police Stations	Medical Care Facilities	EOC	Schools
West Point	2	2	1	1	9
Unincorporated Area	0	0	0	0	1
CLAY COUNTY TOTAL	2	2	1	1	10

Source Hazus MH

FIGURE D 10 CRITICAL FACILITY LOCATIONS IN CLAY COUNTY



Source Hazus MH 2 1

D 3 2 Social Vulnerability

In addition to identifying those assets potentially at risk to identified hazards it is important to identify and assess those particular segments of the resident population in Clay County that are potentially at risk to these hazards

Table D 30 lists the population by jurisdiction according to U S Census 2010 population estimates This data is presented at the county and municipal level The total population in Clay County according to Census data is 20 634 persons Additional population estimates are presented above in Section A 1

TABLE D 30 TOTAL POPULATION IN CLAY COUNTY

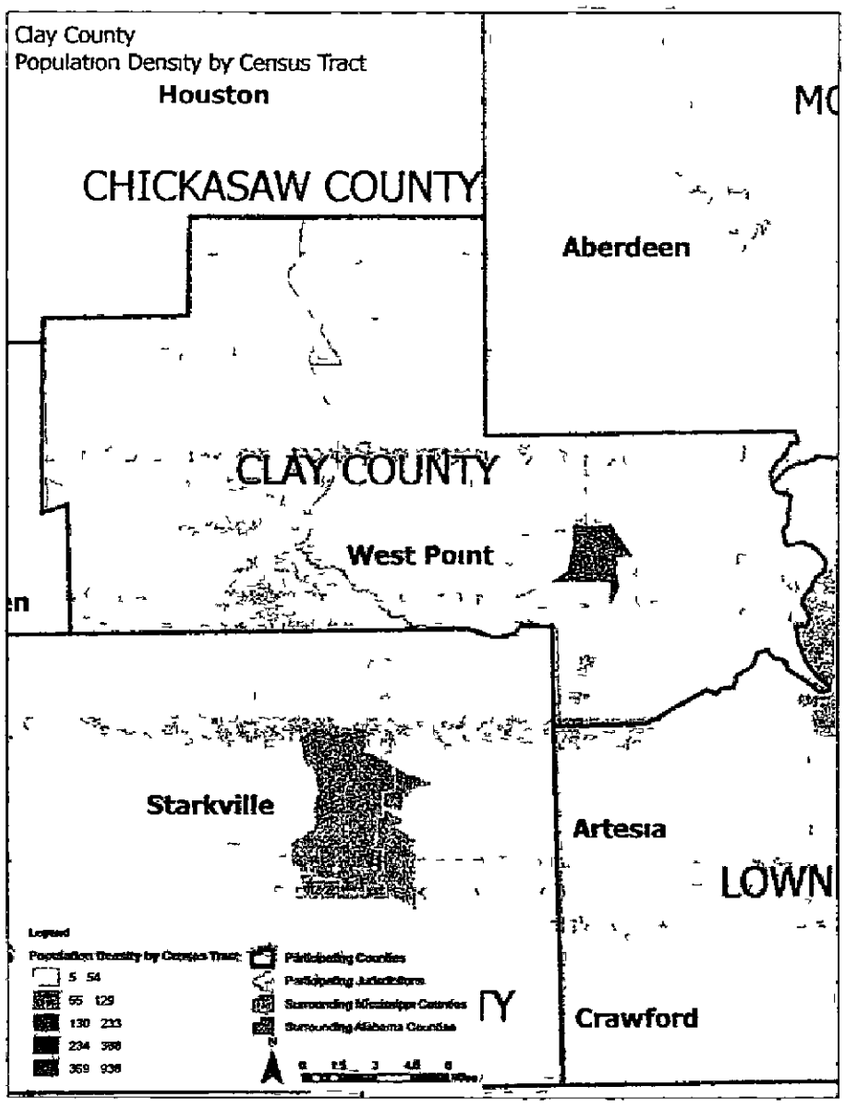
Location	Total 2010 Population
West Point	11 203
Unincorporated Area	9 431
CLAY COUNTY TOTAL	**20,634**

Source U S Census 2010

In addition, **Figure D 11** illustrates the population density by census tract as it was reported by the U S Census Bureau in 2010 [20]

[20] Population by census block was not available at the time this plan was completed

FIGURE D 11 POPULATION DENSITY IN CLAY COUNTY



Source U S Census Bureau 2010

D 3 3 Vulnerability Assessment Results

As noted in Section 6 *Vulnerability Assessment* only hazards with a specific geographic boundary available modeling tool or sufficient historical data allow for further analysis Those results specific to Clay County are presented here All other hazards are assumed to impact the entire planning region (drought hailstorm lightning pandemic, thunderstorm wind tornado and winter storm and freeze) or due to lack of data analysis would not lead to credible results (dam and levee failure erosion expansive soils and landslide) The total county exposure and thus risk was presented in Table D 29

The hazards to be further analyzed in this section include flood wildfire earthquake hurricane and tropical storm winds and hazardous materials incident

The annualized loss estimate for all hazards is presented at the end of this section in **Table D 41**

FLOOD

Historical evidence indicates that Clay County is susceptible to flood events A total of nine flood events have been reported by the National Climatic Data Center resulting in $1 2 million (2013 dollars) in damages On an annualized level these damages amounted to $103 259 for Clay County

Since digital parcel data was not available an analysis of improved property was not completed as it was determined that an analysis using the inventory from Hazus-MH 2 1 would have been inaccurate and the results would not have been useful

TABLE D 31 ESTIMATED EXPOSURE OF PARCELS TO THE FLOOD HAZARD

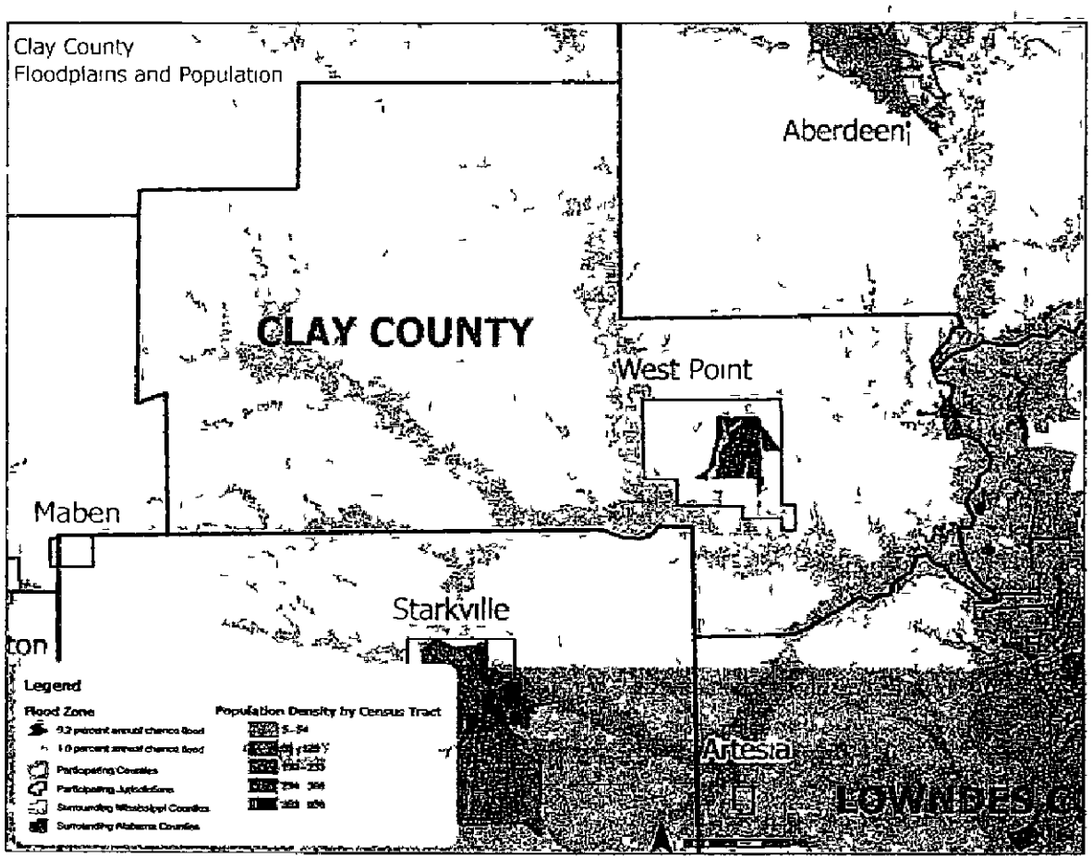
Level of Flood Event	1-percent ACF		0 2-percent ACF		Total percent of value in a flood plain
Location	Approx Number of Parcels	Approx Improved Value	Approx Number of Parcels	Approx Improved Value	
West Point	N/A	N/A	N/A	N/A	N/A
Unincorporated Area	N/A	N/A	N/A	N/A	N/A
CLAY COUNTY TOTAL					

Source FEMA DFIRM

Social Vulnerability

Since 2010 population was only available at the tract level it was difficult to determine a reliable figure on population at-risk to flood due to tract level population data **Figure D 12** is presented to gain a better understanding of at risk population

FIGURE D 12 POPULATION DENSITY NEAR FLOODPLAINS



Source FEMA DFIRM U S Census 2010

Critical Facilities

The critical facility analysis revealed that there are a no critical facilities located in the Clay County 1 0-percent annual chance floodplain and 0 2 percent annual chance floodplain based on FEMA DFIRM boundaries and GIS analysis A list of specific critical facilities and their associated risk can be found in **Table D 41** at the end of this section

In conclusion, a flood has the potential to impact many existing and future buildings and populations in Clay County though some areas are at a higher risk than others All types of structures in a floodplain are at risk though elevated structures will have a reduced risk As noted the floodplains used in this analysis include the 100-year and 500 year FEMA regulated floodplain boundaries It is certainly possible that more severe events could occur beyond these boundaries or urban (flash) flooding could impact additional structures Such site specific vulnerability determinations are outside the scope of this assessment but will be considered during future plan updates Furthermore areas subject to repetitive flooding should be analyzed for potential mitigation actions

WILDFIRE

Although historical evidence indicates that Clay County is susceptible to wildfire events there are few reports of damage Therefore it is difficult to calculate a reliable annualized loss figure Annualized loss is considered negligible though it should be noted that a single event could result in significant damages throughout the county

To estimate exposure to wildfire building data was obtained from Hazus MH 2 1 which includes information that has been aggregated at the Census block level and which has been deemed useful for analyzing wildfire vulnerability However it should be noted that the accuracy of Hazus data is somewhat lower than that of parcel data For the critical facility analysis areas of concern were intersected with critical facility locations

Figure D 13 shows the Level of Concern data Initially provided as raster data it was converted to a polygon to allow for analysis The LOC data is a range of 0 to 100 with higher values being most severe (as previously noted this is a relative risk) Three was the highest level recorded in the MEMA District 4 planning area Therefore areas with a value above 1 were chosen to be displayed as areas of risk The county contains some lands where the value falls into the at risk category Clay County has very little land labeled as at-risk much like most of the other counties in the MEMA District 4 Region Since all of this land area is on the lower tenth of the overall LOC scale there is likely considerably less risk in Clay County than in other areas of the country

Table D 31 shows the results of the analysis

FIGURE D 13 WILDFIRE RISK AREAS IN CLAY COUNTY

Source Southern Wildfire Risk Assessment Data

TABLE D 32 EXPOSURE OF IMPROVED PROPERTY TO WILDFIRE AREAS OF CONCERN

	Wildfire Risk	
Location	Approx. Number of Improved Properties	Approx. Improved Value
West Point*	0	$0
Unincorporated Area*	161	$22 139 000
CLAY COUNTY TOTAL	161	$22,139,000

*Improvement values for these communities were obtained from Hazus MH at the Census Block level

Source Southern Wildfire Risk Assessment and Hazus MH

Looking at jurisdictional level unincorporated areas of the county face the highest level of concern areas While the jurisdictions report a fairly low level of concern each should mindful that wildfire potential exists throughout the county and fire may quickly spread to those lower areas of concern

Social Vulnerability

Although not all areas have equal vulnerability there is some susceptibility across the entire county It is assumed that the total population is at risk to the wildfire hazard Determining the exact number of people in certain wildfire zones is difficult with existing data and could be misleading

Critical Facilities

The critical facility analysis revealed that there are no critical facilities located in wildfire areas of concern It should be noted however that several factors could impact the spread of a wildfire putting all facilities at risk A list of specific critical facilities and their associated risk can be found in **Table A 41** at the end of this section

In conclusion a wildfire event has the potential to impact many existing and future buildings critical facilities and populations in Clay County

EARTHQUAKE

As the Hazus-MH model suggests below and historical occurrences confirm any earthquake activity in the area is likely to inflict minor damage to the county Hazus MH 2 1 estimates a total exposure of approximately $1 8 billion which includes buildings inventory and contents throughout the county While this number is not an exact representation of assessed tax value it is helpful in assessing the results of the Hazus MH scenario

For the earthquake hazard vulnerability assessment a probabilistic scenario was created to estimate the average annualized loss[21] for the county The results of the analysis are generated at the Census Tract level within Hazus MH and then aggregated to the county level Since the scenario is annualized no building counts are provided Losses reported included losses due to structure failure building loss contents and inventory They do not include losses to business interruption lost income or relocation **Table D 32** summarizes the findings with results rounded to the nearest thousand

TABLE D 33 AVERAGE ANNUALIZED LOSS ESTIMATIONS FOR EARTHQUAKE HAZARD

Location	Total Annualized Loss	Exposure by County	Percent of Exposure
Clay County	$54 000	$1 786 293 000	0 00%

Source Hazus MH 2 1

Social Vulnerability

It can be assumed that all existing future populations are at risk to the earthquake hazard No fatalities or injuries were reported in the above Hazus-MH probabilistic scenario

Critical Facilities

The Hazus-MH probabilistic analysis indicated that no critical facilities would sustain measurable damage in an earthquake event However all critical facilities should be considered at risk to minor damage should an event occur Specific vulnerabilities for these assets will be greatly dependent on their individual design and the mitigation measures in place where appropriate Such site-specific vulnerability determinations are outside the scope of this assessment but will be considered during future plan updates

In conclusion an earthquake has the potential to impact all existing and future buildings facilities and populations in Clay County The Hazus MH scenario indicates that minimal damage is expected from an earthquake occurrence While Clay County may not experience a large earthquake (the greatest on record is a magnitude III MMI) localized damage is possible with an occurrence A list of specific critical facilities and their associated risk can be found in **Table D 40** at the end of this section

[1] Annualized Loss is defined by Hazus MH as the expected value of loss in any one year

HURRICANE AND TROPICAL STORM

Historical evidence indicates that Clay County has an elevated risk to the hurricane and tropical storm hazard There have been two disaster declarations due to hurricanes (Hurricanes Ivan and Dennis) Several tracks have come near or traversed through the county as shown and discussed in Section D 2 10

Hurricanes and tropical storms can cause damage through numerous additional hazards such as flooding erosion tornadoes and high winds thus it is difficult to estimate total potential losses from these cumulative effects The current Hazus MH hurricane model only analyzes hurricane winds and is not capable of modeling and estimating cumulative losses from all hazards associated with hurricanes, therefore only hurricane winds are analyzed in this section It can be assumed that all existing and future buildings and populations are at risk to the hurricane and tropical storm hazard Hazus MH 2 1 was used to determine average annualized losses[22] for the county as shown below in **Table D 33** Only losses to buildings inventory and contents are included in the results

TABLE D 34 ANNUALIZED LOSS ESTIMATIONS FOR HURRICANE WIND HAZARD

Location	Total Annualized Loss	Exposure	% of Exposure
Clay County	$61 000	$1 786 293 000	0 00%

Source Hazus MH 2 1

In addition Hazus MH 2 1 was used to recreate the 1916 Unnamed Hurricane and potential estimate losses in the county The scenario investigates potential losses based on the same track impacting the county today shown below in **Table D 34**

TABLE D 35 UNNAMED STORM OF 1916 SCENARIO

Location	Total Annualized Loss	Exposure by County	Percent of Exposure
Clay County	$0	$1 786 293 000	0 00%

Source Hazus MH 2 1

Social Vulnerability

Given equal susceptibility across the county it is assumed that the total population is at risk to the hurricane and tropical storm hazard

Critical Facilities

Given equal vulnerability across Clay County all critical facilities are considered to be at risk Some buildings may perform better than others in the face of such an event due to construction and age among other factors Determining individual building response is beyond the scope of this plan However this plan will consider mitigation action for especially vulnerable and/or critical facilities to mitigation against the effects of the hurricane hazard A list of specific critical facilities can be found in **Table D 41** at the end of this section

In conclusion a hurricane event has the potential to impact many existing and future buildings critical facilities and populations in Clay County

[22] Annualized Loss is defined by Hazus MH as the expected value of loss in any one year

HAZARDOUS MATERIALS INCIDENT

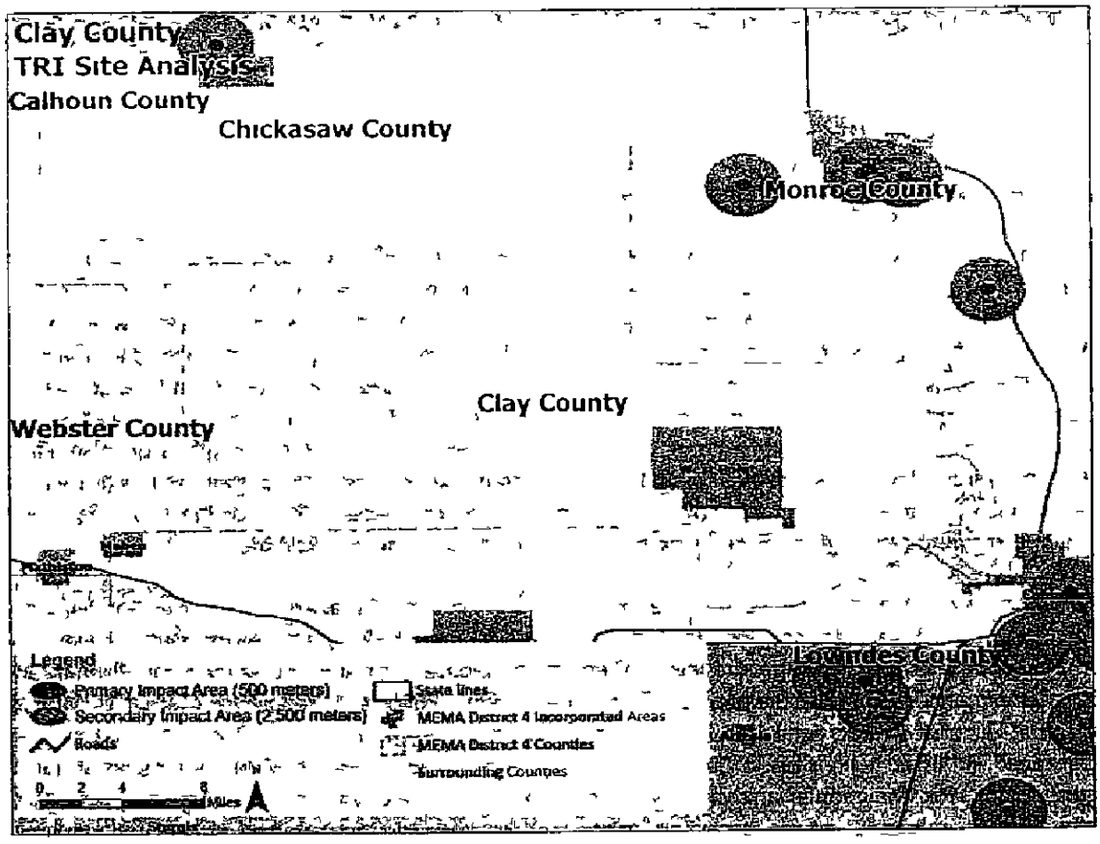
Although historical evidence and existing Toxic Release Inventory sites indicate that Clay County is susceptible to hazardous materials events there are few reports of damage Therefore it is difficult to calculate a reliable annualized loss figure It is assumed that while one major event could result in significant losses, annualizing structural losses over a long period of time would most likely yield a negligible annualized loss estimate for Clay County

Most hazardous materials incidents that occur are contained and suppressed before destroying any property or threatening lives However, they can have a significant negative impact Such events can cause multiple deaths, completely shut down facilities for 30 days or more, and cause more than 50 percent of affected properties to be destroyed or suffer major damage In a hazardous materials incident, solid, liquid and/or gaseous contaminants may be released from fixed or mobile containers Weather conditions will directly affect how the hazard develops Certain chemicals may travel through the air or water, affecting a much larger area than the point of the incidence itself Non compliance with fire and building codes, as well as failure to maintain existing fire and containment features, can substantially increase the damage from a hazardous materials release The duration of a hazardous materials incident can range from hours to days Warning time is minimal to none

In order to conduct the vulnerability assessment for this hazard GIS analysis was used for fixed and mobile areas In both scenarios, two sizes of buffers—500 and 2,500 meters—were used These areas are assumed to respect the different levels of effect immediate (primary) and secondary Primary and secondary impact sites were selected based on guidance from FEMA 426 Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings and engineering judgment For the fixed site analysis, geo-referenced TRI listed toxic sites in Clay County, along with buffers, were used for analysis as shown in **Figure D 14** For the mobile analysis, the major roads (Interstate highway U S highway and State highway) and railroads, where hazardous materials are primarily transported that could adversely impact people and buildings, were used for the GIS buffer analysis **Figure D 15** shows the areas used for mobile toxic release buffer analysis The results indicate the approximate number of improved properties and improved value as shown in **Table D 35** (fixed sites) and **Table D 36** (mobile sites) [23]

[23] Note that parcels included in the 2 500 meter analysis are also included in the 500 meter analysis

FIGURE D 14 TRI SITES WITH BUFFERS IN CLAY COUNTY



Source EPA

TABLE D 36 EXPOSURE OF IMPROVED PROPERTY TO HAZARDOUS MATERIALS (FIXED SITES)

Location	500-meter buffer		2,500-meter buffer	
	Approx Number of Improved Properties	Approx Improved Value	Approx Number of Improved Properties	Approx Improved Value
West Point	0	$0	0	$0
Unincorporated Area	0	$0	0	$0
CLAY COUNTY TOTAL	0	$0	0	$0

*Improvement values for these communities were obtained from Hazus MH at the Census Block level

Source TRI and Hazus MH

FIGURE D 15 MOBILE HAZMAT BUFFERS IN CLAY COUNTY

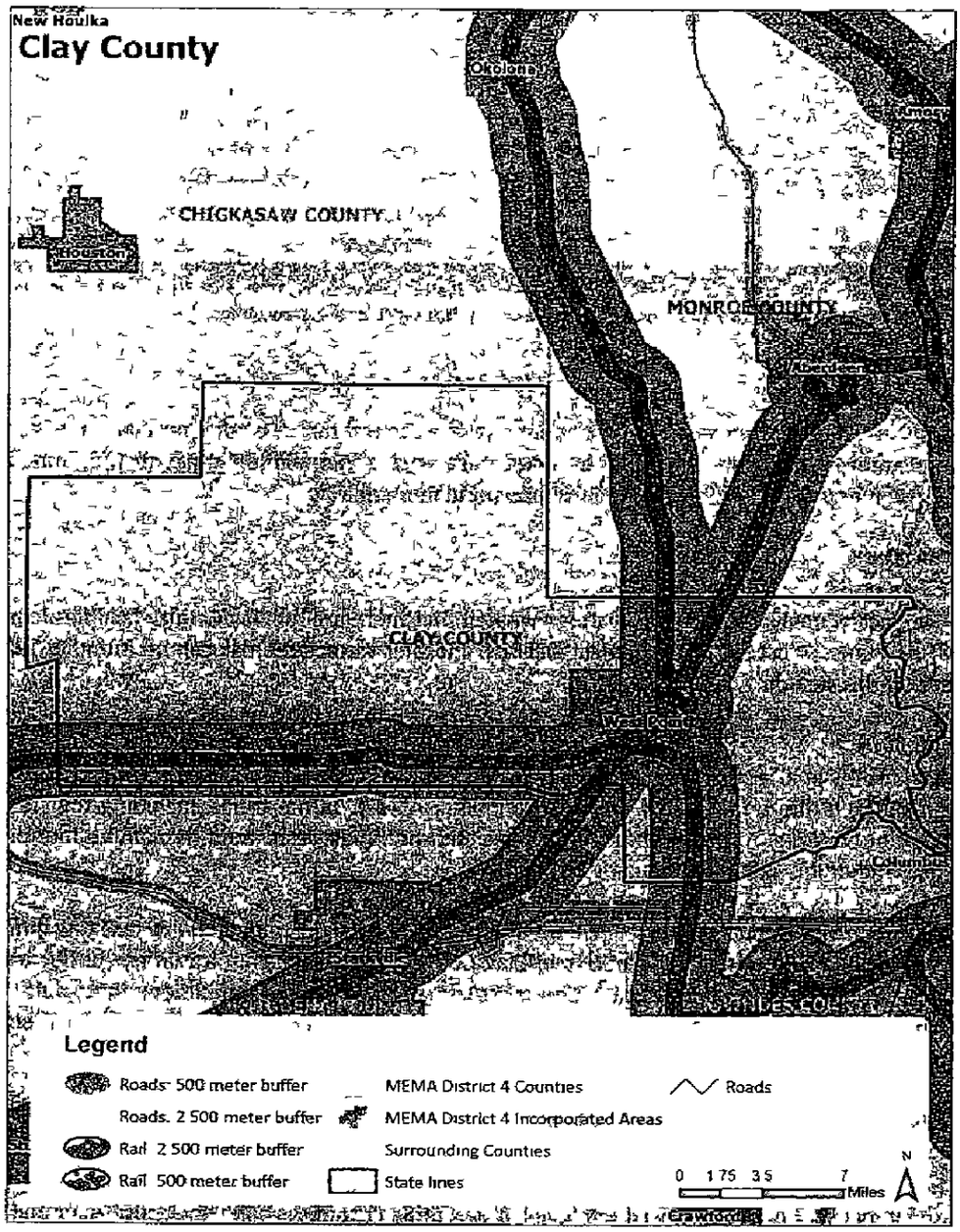


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TABLE D 37 EXPOSURE OF IMPROVED PROPERTY TO HAZARDOUS MATERIALS SPILL (MOBILE ANALYSIS – ROAD AND RAILROAD)

Location	500-meter buffer		2,500 meter buffer	
	Approx Number of Improved Properties	Approx Improved Value	Approx Number of Improved Properties	Approx Improved Value
West Point	2 572	$690 150 000	1 401	$391 345 000
Unincorporated Area	774	$107 695 000	588	$87 847 000
CLAY COUNTY TOTAL	3,346	$797,845,000	1,989	$479,192,000

*Improvement values for these communities were obtained from Hazus MH at the Census Block level
Source Hazus MH

Social Vulnerability

Given high susceptibility across the entire county, it is assumed that the total population is at risk to a hazardous materials incident It should be noted that areas of population concentration may be at an elevated risk due to a greater burden to evacuate population quickly

Critical Facilities

Fixed Site Analysis

The critical facility analysis for fixed TRI sites revealed that there are no Clay County facilities located in a HAZMAT risk zone A list of specific critical facilities and their associated risk can be found in **Table D 41** at the end of this section

Mobile Analysis

The critical facility analysis for transportation corridors in Clay County revealed that there are 14 critical facilities located in the primary and secondary mobile HAZMAT buffer areas including four facilities in the primary buffer area A list of specific critical facilities and their associated risk can be found in **Table D 41** at the end of this section

In conclusion a hazardous material incident has the potential to impact many existing and future buildings, critical facilities and populations in Clay County Those areas in a primary buffer are at the highest risk though all areas carry some vulnerability due to variations in conditions that could alter the impact area (i e direction and speed of wind volume of release etc) Further incidents from neighboring counties could also impact the county and participating jurisdictions

CONCLUSIONS ON HAZARD VULNERABILITY

Table D 37 presents a summary of annualized loss for each hazard in Clay County Due to the reporting of hazard damages primarily at the county level it was difficult to determine an accurate annualized loss estimate for each municipality Therefore an annualized loss was determined through the damage reported through historical occurrences at the county level These values should be used as an additional planning tool or measure risk for determining hazard mitigation strategies throughout the region

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TABLE D 38 ANNUALIZED LOSS FOR CLAY COUNTY

Event	Clay County
Flood-related Hazards	
Flood	$103 259
Erosion	Negligible
Dam Failure	Negligible
Winter Storm & Freeze	$56,313
Fire-related Hazards	
Drought / Heat Wave	Negligible
Wildfire	Negligible
Geologic Hazards	
Earthquake	$54 000
Landslide	Negligible
Expansive	Negligible
Wind-related Hazards	
Hurricane & Tropical Storm	$61 000
Thunderstorm Wind / High Wind	$117 323
Hail	$2 180
Lightning	Negligible
Tornado	$284,776
Other Hazards	
HAZMAT Incident	Negligible
Pandemic	Negligible

As noted previously all existing and future buildings and populations (including critical facilities) are vulnerable to atmospheric hazards including drought, hailstorm, hurricane and tropical storm, lightning thunderstorm wind, tornado and winter storm and freeze Some buildings may be more vulnerable to these hazards based on locations construction and building type **Table D 38** shows the critical facilities vulnerable to additional hazards analyzed in this section The table lists those assets that are determined to be exposed to each of the identified hazards (marked with an "**X**)

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TABLE D 39 AT-RISK CRITICAL FACILITIES IN CLAY COUNTY

FACILITY NAME	FACILITY TYPE	ATMOSPHERIC							GEOLOGIC			HYDROLOGIC					OTHER			
		Drought	Hailstorm	Hurricane and Tropical Storm	Lightning	Thunderstorm	Tornado	Winter Storm and Freeze	Earthquake	Landslide - Mod	Landslide - High	Dam and Levee Failure	Flood - 100 Yr	Flood - 500 Yr	Fixed HAZMAT 50mi	Fixed HAZMAT 2,500 forced	Mobile HAZMAT 500 Meters	Mobile HAZMAT 2,500 Meters	Wildfire	
CLAY COUNTY																				
West Clay Elem	School	X	X	X	X	X	X	X	X											
West Point City Emergency Mgmt	EOC	X	X	X	X	X	X	X	X										X	
West Point Fire Department	Fire Station	X	X	X	X	X	X	X	X									X	X	
West Point Fire Department #2	Fire Station	X	X	X	X	X	X	X	X										X	
North Mississippi Medical Center-WP	Medical Care Facility	X	X	X	X	X	X	X	X										X	
West Point Police Dept	Police Station	X	X	X	X	X	X	X	X										X	
West Point Police Chief	Police Station	X	X	X	X	X	X	X	X									X	X	
Oak Hill Academy	School	X	X	X	X	X	X	X	X									X	X	
South Side Elementary School	School	X	X	X	X	X	X	X	X											
Church Hill Elementary School	School	X	X	X	X	X	X	X	X										X	
West Side Alternative School	School	X	X	X	X	X	X	X	X										X	
East Side Elementary School	School	X	X	X	X	X	X	X	X										X	
Fifth Street School	School	X	X	X	X	X	X	X	X									X	X	

[24] As noted previously these facilities could be at risk to dam failure if located in an inundation area Data was not available to conduct such an analysis There was no local knowledge of these facilities being at risk to dam failure As additional data becomes available more in depth analysis will be conducted

FACILITY NAME	FACILITY TYPE	ATMOSPHERIC								GEOLOGIC		HYDROLOGIC			OTHER				
		Drought	Hailstorm	Hurricane and Tropical Storm	Lightning	Thunderstorm	Tornado	Winter Storm and Freeze	Earthquake	Landslide – Med	Landslide – High	Dam and Levee Failure[24]	Flood – 100 yr	Flood – 500 yr	Fixed HAZMAT 500m	Fixed HAZMAT 2500 meter	Mobile HZMT 500 METER	Mobile HZMT 2500 meter	Wildfire
West Point High School	School	X	X	X	X	X	X	X	X									X	
Central School	School	X	X	X	X	X	X	X	X									X	
Catherine Bryan Preschool	School	X	X	X	X	X	X	X	X									X	

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D 4 CLAY COUNTY CAPABILITY ASSESSMENT

This subsection discusses the capability of Clay County to implement hazard mitigation activities More information on the purpose and methodology used to conduct the assessment can be found in Section 7 *Capability Assessment*

D 4 1 Planning and Regulatory Capability

Table D 39 provides a summary of the relevant local plans ordinances and programs already in place or under development for Clay County A checkmark (✓) indicates that the given item is currently in place and being implemented An asterisk (*) indicates that the given item is currently being developed for future implementation Each of these local plans ordinances and programs should be considered available mechanisms for incorporating the requirements of the MEMA District 4 Regional Hazard Mitigation Plan

TABLE D 40 RELEVANT PLANS, ORDINANCES, AND PROGRAMS

Planning Tool/Regulatory Tool	Hazard Mitigation Plan	Comprehensive/Land Use Plan	Floodplain Management Plan	Open Space Management Plan (Parks & Rec/Greenway Plan	Stormwater Management Plan/Ordinance	Natural Resource Protection Plan	Flood Response Plan	Emergency Operations Plan	Continuity of Operations Plan	Evacuation Plan	Disaster Recovery Plan	Capital Improvements Plan	Economic Development Plan	Historic Preservation Plan	Flood Damage Prevention Ordinance	Zoning Ordinance	Subdivision Ordinance	Unified Development Ordinance	Post Disaster Redevelopment Ordinance	Building Code	Fire Code	National Flood Insurance Program (NFIP)	NFIP Community Rating System
CLAY COUNTY	✓	✓						✓					✓		✓	✓	✓					✓	
West Point	✓	✓			✓			✓					✓		✓	✓	✓	✓		✓	✓	✓	

A more detailed discussion on the county's planning and regulatory capabilities follows

EMERGENCY MANAGEMENT

Hazard Mitigation Plan
Clay County has previously adopted a hazard mitigation plan The City of West Point was also included in this plan

Emergency Operations Plan
Clay County maintains an emergency operations plan through its Emergency Management Agency The City of West Point is also covered by this plan

GENERAL PLANNING

Comprehensive Land Use Plan
Clay County adopted a county comprehensive plan in 1973 The City of West Point also adopted a comprehensive plan which is included as a chapter in the city development code in 2000

Zoning Ordinance
Clay County adopted a zoning ordinance in 1972 The City of West Point also adopted a zoning ordinance which is included in the city development code in 2000

Subdivision Ordinance
Clay County adopted subdivision regulations in 1976 The City of West Point also adopted subdivision regulations which are included in the city development code in 2000

Building Codes, Permitting and Inspections
Clay County has not adopted a building code However the City of West Point has adopted a building

FLOODPLAIN MANAGEMENT

Table D 40 provides NFIP policy and cla m information for each participating jurisdiction in Clay County

TABLE D 41 NFIP POLICY AND CLAIM INFORMATION

Jurisdiction	Date Joined NFIP	Current Effective Map Date	NFIP Policies in Force	Insurance in Force	Closed Claims	Total Payments to Date
CLAY COUNTY†	7/16/90	5/3/11	107	$16 216 600	24	$174 198
West Point	1/5/78	5/3/11	153	$18 592 700	57	$624 288

†Includes unincorporated areas of county only
Source NFIP Community Status information as of 3/31/13 NFIP claims and policy information as of 5/15/13

Flood Damage Prevention Ordinance
All communities participating in the NFIP are required to adopt a local flood damage prevention ordinance Clay County and the City of West Point both participate in the NFIP and have adopted flood damage prevention ordinances

Stormwater Management Plan
Clay County has not adopted a stormwater management plan However the City of West Point includes standards for stormwater retention in the city development code

D 4 2 Administrative and Technical Capability

Table D 41 provides a summary of the capability assessment results for Clay County with regard to relevant staff and personnel resources A checkmark (✓) indicates the presence of a staff member(s) in that jurisdiction with the specified knowledge or skill

TABLE D 42 RELEVANT STAFF / PERSONNEL RESOURCES

Staff/Personnel Resource	Planners or engineers with knowledge of land development and management practices	Engineers or professionals trained in construction practices related to buildings and/or infrastructure	Planners or engineers with the understanding of natural hazards	Floodplain Manager	Emergency Manager	Grant writers	Staff with education or expertise to assess the community's vulnerability to hazards	Staff members on the planning committee	Personnel skilled in GIS and/or Hazus	Resource development staff or grant writers
CLAY COUNTY		✓		✓	✓		✓	✓		
West Point		✓	✓	✓	✓		✓	✓		

Credit for having a floodplain manager was given to those jurisdictions that have a flood damage prevention ordinance and therefore an appointed floodplain administrator, regardless of whether the appointee was dedicated solely to floodplain management Credit was given for having a scientist familiar with the hazards of the community if a jurisdiction has a Cooperative Extension Service or Soil and Water Conservation Department Credit was also given for having staff with education or expertise to assess the community's vulnerability to hazards if a staff member from the jurisdiction was a participant on the existing hazard mitigation plan's planning committee -

D 4 3 Fiscal Capability

Table D 42 provides a summary of the results for Clay County with regard to relevant fiscal resources A checkmark (✓) indicates that the given fiscal resource is locally available for hazard mitigation purposes (including match funds for state and federal mitigation grant funds) according to the previous county hazard mitigation plan

TABLE D 43 RELEVANT FISCAL RESOURCES

Jurisdiction / Resource	Capital Improvements Planning	Community Development Block Grant	Fees for Water, Sewer, Gas or Electric Service	Impact Fees for New Development	Incur Debt through General Obligation Bonds	Incur Debt through Special Tax Bonds	Other Federal Grant Programs	Other State Funds	Public-Private Partnerships
CLAY COUNTY	✓								✓
West Point	✓	✓							✓

D 4 4 Political Capability

During the months immediately following a disaster local public opinion in Clay County is more likely to shift in support of hazard mitigation efforts

D 4 5 Conclusions on Local Capability

Table D 436 shows the results of the capability assessment using the designed scoring methodology described in Section 7 *Capability Assessment* The capability score is based solely on the information found in existing hazard mitigation plans and readily available on the jurisdictions government websites According to the assessment the average local capability score for the county and its jurisdictions is 28 0 which falls into the moderate capability ranking

TABLE D 44 CAPABILITY ASSESSMENT RESULTS

Jurisdiction	Overall Capability Score	Overall Capability Rating
CLAY COUNTY	26	Moderate
West Point	30	Moderate

D 5 CLAY COUNTY MITIGATION STRATEGY

This subsection provides the blueprint for Clay County to follow in order to become less vulnerable to its identified hazards It is based on general consensus of the Hazard Mitigation Council and the findings and conclusions of the capability assessment and risk assessment Additional information can be found in Section 8 *Mitigation Strategy* and Section 9 *Mitigation Action Plan*

D 5 1 Mitigation Goals

Clay County developed seven mitigation goals in coordination with the other participating MEMA District 4 Region jurisdictions The regional mitigation goals are presented in **Table D 44**

TABLE D 45 MEMA DISTRICT 4 REGIONAL MITIGATION GOALS

	Goal
Goal #1	Protect the health safety and welfare of residents and visitors
Goal #2	Protect existing and future buildings critical facilities and infrastructure
Goal #3	Prevent the destruction of natural historical and cultural resources
Goal #4	Reduce economic losses including response and recovery costs and disruption of economic activity
Goal #5	Understand the hazards that threaten the region and the techniques to minimize vulnerability to those hazards
Goal #6	Foster cooperation among the public and private sectors to promote effective hazard mitigation planning and create disaster resistant communities
Goal #7	Increase public awareness of hazard mitigation and hazard risk

D 5 2 Mitigation Action Plan

The mitigation actions proposed by Clay County and the City of West Point are listed in the following individual Mitigation Action Plans

Action #	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	Implementation Status
PP 3	Determine where the most important critical facilities are at greatest risk This information will be used for future mitigation projects and may assist community planners with prioritizing structural maintenance of existing structures/infrastructure facilities, and provide necessary measures for future structure/ developments	FL EQ	High	N/A	N/A	County EMA	Ongoing	Implemented
				Emergency Services				
ES 1	Covered by Clay County Comprehensive Emergency Management Plan	FL	High	N/A	N/A	County Supervisors	Ongoing	Implemented
ES 2	Apply for grant funds to build or retrofit shelters in needed locations publicize information on designated shelters	T	High	FEMA, MEMA General Funds	25% of grants	County EMA	Ongoing	Implemented
ES 3	Evaluate current storm warning systems and apply for funding to upgrade or replace outdoor warning sirens	T	High	FEMA MEMA, General Funds	25% of grants	County EMA	Ongoing	Implemented
ES 4	Train storm spotters	T	High	FEMA, MEMA General Funds	25% of grants	County EMA	Ongoing	Implemented
ES 5	Purchase generators for critical facilities to provide uninterrupted service for the residents in absence of power during hazards	All	High	FEMA MEMA	N/A	County EMA	Ongoing	Completed

699

Action #	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	2013 Action Implementation Status
			Public Education and Awareness					
PEA 1	Adopt and implement a public outreach strategy designed to enhance and expand efforts to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks	All	High	General Funds, MEMA	N/A	County EMA	Ongoing	Implemented
PEA 2	Public education materials regarding water conservation and heat exhaustion will be made available to the local newspaper radio stations and television stations during periods of drought or extreme heat	DR	High	N/A	N/A	County EMA	Ongoing	Implemented
PEA 3	Encourage public to monitor winter weather advisories provided by local media, radio and television stations	S/I	High	NA	N/A	County EMA	Ongoing	Implemented
PEA 4	Provide public information through local newspapers regarding winter weather and ice precautions	S/I	High	NA	N/A	County EMA	Ongoing	Implemented
PEA 5	Provide public information regarding extreme heat safety measures pertaining to dehydration heat exhaustion and heat strokes	ET	High	N/A	N/A	County EMA	Ongoing	Implemented

0220

Action #	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	2013 Action Item Implementation Status
PEA 6	Provide public information regarding extreme cold safety measures pertaining to hypothermia and frostbite	ET	High	N/A	N/A	County EMA	Ongoing	Implemented

FL = Flood; DR = Drought; ES = Expansive Soils; HU = Hurricane; T = Tornado; WF = Wildfire; S/I = Snow/Ice; ET = Extreme Temperatures; EQ = Earthquake; County EMA = Clay County Emergency Management Agency

City of West Point Mitigation Action Plan

Action	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	2013 Action Implementation Status
Prevention								
P 1	Participate in the National Flood Insurance Program	FL	High	N/A	N/A	County Supervisors	Ongoing	Implemented
P 2	Participate in Hazard Mitigation Committee activities	FL	High	N/A	N/A	County Supervisors	Ongoing	Implemented
P 3	Participate in pre disaster hazard mitigation training and disaster drills	HU	High	General Funds County EMA	$1,500	County EMA	Ongoing	Implemented
P 4	Clay County has fire contracts with eight volunteer fire departments Current mitigation of fire hazards includes regular thinning and control burning	WF	High	State Rebate, County Tax	$45 000	County EMA	Ongoing	Implemented
Property Protection								
PP 1	Encourage people building any structure in Clay County to have soil samples tested before building on site If Yazoo Clay is found in the test results place good soil on building site	ES	High	N/A	N/A	County Supervisors	Ongoing	Implemented
PP 2	Keep tree limbs trimmed above houses and power lines	S/I	High	NA	N/A	County EMA	Ongoing	Implemented

Action #	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	2013 Action Implementation Status
PP 3	Determine where the most important critical facilities are at greatest risk This information will be used for future mitigation projects and may assist community planners with prioritizing structural maintenance of existing structures/infrastructure facilities, and provide necessary measures for future structure/ developments	FL EQ	High	N/A	N/A	County EMA	Ongoing	Implemented
				Emergency Services				
ES 1	Covered by Clay County Comprehensive Emergency Management Plan	FL	High	N/A	N/A	County Supervisors	Ongoing	Implemented
ES 2	Apply for grant funds to build or retrofit shelters in needed locations, publicize information on designated shelters	T	High	FEMA, MEMA General Funds	25% of grants	County EMA	Ongoing	Implemented
ES 3	Evaluate current storm warning systems, and apply for funding to upgrade or replace outdoor warning sirens	T	High	FEMA, MEMA, General Funds	25% of grants	County EMA	Ongoing	Implemented
ES 4	Train storm spotters	T	High	FEMA, MEMA, General Funds	25% of grants	County EMA	Ongoing	Implemented
ES 5	Purchase generators for critical facilities to provide uninterrupted service for the residents in absence of power during hazards	All	High	FEMA MEMA	N/A	County EMA	Ongoing	Completed

Action	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	2013 Action Implementation Status
			Public Education and Awareness					
PEA 1	Adopt and implement a public outreach strategy designed to enhance and expand efforts to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks	All	High	General Funds MEMA	N/A	County EMA	Ongoing	Implemented
PEA 2	Public education materials regarding water conservation and heat exhaustion will be made available to the local newspaper radio stations and television stations during periods of drought or extreme heat	DR	High	N/A	N/A	County EMA	Ongoing	Implemented
PEA 3	Encourage public to monitor winter weather advisories provided by local media radio and television stations	S/I	High	NA	N/A	County EMA	Ongoing	Implemented
PEA 4	Provide public information through local newspapers regarding winter weather and ice precautions	S/I	High	NA	N/A	County EMA	Ongoing	Implemented
PEA 5	Provide public information regarding extreme heat safety measures pertaining to dehydration heat exhaustion and heat strokes	ET	High	N/A	N/A	County EMA	Ongoing	Implemented

7-4

Action #	Description	Hazard(s) Addressed	Relative Priority	Funding Sources	Estimated Cost	Responsible Party	Target Completion Date	Implementation Status
PEA 6	Provide public information regarding extreme cold safety measures pertaining to hypothermia and frostbite	ET	High	N/A	N/A	County EMA	Ongoing	Implemented

FL = Flood; DR = Drought; ES = Expansive Soils; HU = Hurricane; T = Tornado; WF = Wildfire; S/I = Snow/Ice; ET = Extreme Temperatures; EQ = Earthquake

County EMA = Clay County Emergency Management Agency

NO _____

IN THE MATTER OF AUTHORIZING AND APPROVING PAYMENT ON THE ELEVATED WATER STORAGE TANK PROJECT

There came on this day for consideration the matter of authorizing and approving payment on the Elevated Water Storage Tank Project

It appears to this Board as attached hereto as Exhibit A is a request to authorize payment in the amount of $399,232 63 on the joint City/County Elevated Water Storage Tank Project from the $11M Industrial Bond Issue 2013 Fund, and,

It appears to this Board the County Engineer has certified the said work is complete as being billed for in the attached Exhibit

After motion by Shelton Deanes and Luke Lummus this Board doth vote unanimously to approve and authorize payment in the amount of $399,232 63 from the $11M Industrial Bond Issue 2013 Fund as attached hereto as Exhibit A

SO ORDERED this the 5th day of June, 2014

Vice President

Memorandum

To Clay County Board of Supervisors

From Phylis Benson, Golden Triangle Planning & Development District

Date 06/05/2014

Re 1,000,000 Gallon Elevated Tank, Prairie Belt Powersite

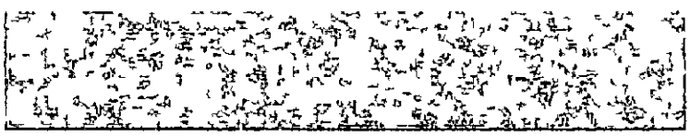
The City of West Point, at the May 13, 2014 Meeting of the Mayor and Board of Selectmen, will approve the following invoices pertaining to the Prairie Belt Power Site Elevated Storage Water Tank.

4-D Construction	Invoice # PP #5	Invoice Amount $ 10,760 94
Landmark Structures	Invoice # PP #6	Invoice Amount $533,515.25
Calvert-Spradling Engineers	Invoice # 052914T	Invoice Amount. $ 24,674 40

This project is funded in part by the Appalachian Regional Commission (ARC) under Contract Number 7716 between the City of West Point and the Tennessee Valley Authority (TVA) $169,717 96 (29 83%) will be paid by TVA The City of West Point requests that the balance, **$399,232 63** (70 17%) be paid by local funds provided by the Clay County Bonds as outlined in the April 29, 2013 Memorandum of Understanding

Vendor	TVA (ARC #7716)	Clay County Bond	West Point Cap Loan	TOTAL
4-D Construction	$ 3,209 99	**$ 7,550 95**	-0-	$ 10,760 94
Landmark Structures	$159 147 60	**$374,367 65**	-0-	$533 515 25
Calvert-Spradling Engineers	$ 7 360 37	**$ 17,314 03**	-0-	$ 24,674 40
TOTAL	$169,717 96	**$399,232 63**	-0-	$568 950 59

Should you have any questions or need additional information, please contact this office at (662) 320-2007



Calvert-Spradling
ENGINEERS, INC.

301 HWY 45N, STE 5
P O DRAWER 1078
WEST POINT, MS 39773
662 / 494-7101

INVOICE TO

City of West Point
P O Box 1117
West Point MS 39773

May 29, 2014
Invoice number 052914T

Engineering Services CSE Project # 213065
Part 1 1,000,000 Gallon Elevated Tank-Landmark Structures
Part 2 Booster Pump Station-4 D Const Co
Part 3 Electrical & Controls- To be Bid
Prairie Belt Powersite

Engineering	Phase Amount	Phase Percent	Percent Complete	Amount
Design/Bid	$172,224 00	80%	100	$172,224 00
Construction	32,292 00	15%	65	20,989 80
As-Built	10,764 00	5%	0	0 00
Total Engineering	$215,280 00			$193,213 80
Resident Inspection	91,080 00		65	59,202 00
		Amount Due		$ 252,415 80
		Less Previous Payments		227,741 40
		AMOUNT DUE		$ 24,674 40*

*Local 70 17% $17,314 03
ARC 29 83 7,360 37
$ 24,674 40

Approved

Stanley J Spradling, P E

0708

Contractor's Application for Payment No. 6

		Application Period	From 04/26/14 To 05/25/14	Application Date	05/25/14
To (Owner)	City of West Point	From (Contractor)	Landmark Structures I L P	Via (Engineer)	Calvert-Spradling Engineers
Project/Contract	West Point, MS - 1419/Triathlon Water Storage Part 1 - Elevated Water Storage Tank				
Owner's Contract No		Contractor's Project No	1419/CW	Engineer's Project No	213065

APPLICATION FOR PAYMENT

Change Order Summary

Approved Change Orders		
Number	Additions	Deductions
1		-258 000 00
2		13,670 00
TOTALS	$0 00	-$244,330 00
NET CHANGE BY CHANGE ORDERS		-$244,330 00

1	ORIGINAL CONTRACT PRICE	$ 2 841,000 00
2	Net change by Change Orders	$ 244 330 00
3	CURRENT CONTRACT PRICE (Line 1 +/ 2)	$ 2 596,670 00
4	TOTAL COMPLETED AND STORED TO DATE	$ 1,881,420 00
5	RETAINAGE	
	a 5 % x 1,881 420 00 Work Completed	$ 94,071 00
	b % x 0 00 Stored Material	$ 0 00
	c Total Retainage (Line 5a + Line 5b)	$ 94,071 00
6	AMOUNT ELIGIBLE TO DATE (Line 4 Line 5c)	$ 1 787,349 00
7	LESS PREVIOUS PAYMENTS (Line 6 from prior Application)	$ 1 253 833 75
8	AMOUNT DUE THIS APPLICATION	$ 533 515 25*
9	BALANCE TO FINISH , PLUS RETAINAGE (Line 3 Less Line 6)	$ 809 321 00

*Local 70.17% $374,367.65
ARC 29.83% 159,147.60

CONTRACTOR'S CERTIFICATION

The Undersigned Contractor certifies that (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment (2) title of all Work materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens security interest or encumbrances) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective

By	Date
Project Manager	05/25/14

Payment of $ 533,515 25
(Line 8 or other - attach explanation of other amount)

is recommended by: _____ 5/29/14
(Engineer) (Date)

Payment of $ _____
(Line 8 or other attach explanation of other amount)

is approved by _____ 6-5-14
(Owner) (Date)

Approved by _____ _____
(Funding Agency (if applicable)) (Date)

7.9

6 **PROGRESS BILLING**

Owner	City of West Point	**Period From**	04/26/14
Engineer	Calvert-Spradling Engineers	**Period To**	05/25/14
Project	West Point MS - 1419/Triathlon Water Storage Part 1 - Elevated Water Storage Tank	**Landmark #**	1419/CW

	Item	Total	Complete To Date		Complete Previous	Complete This Period
			Percent	Amount		
1	**Mobilization**	$ 100 000 00	60%	60 000 00	60,000 00	
2	**Site Work w/ Erosion Control**	$ 10 000 00	95%	9 500 00	9,500 00	
3	**Temporary Access Road**	$ 105 000 00	100%	105 000 00	105 000 00	
4	**Foundation**	$ 295 000 00	100%	295 000 00	295 000 00	
5	**Reinforced Concrete Support Wall**					
	Pedestal Lifts 1 2 and Tower / Scaffold	$ 180 000 00	100%	180 000 00	180 000 00	
	Remaining Pedestal Lifts	$ 360 300 00	100%	360 300 00	360,300 00	
	Dome Floor	$ 59 700 00	100%	59 700 00	59 700 00	
6	**Steel Tank**					
	Ring Beam	$ 93 900 00	100%	93,900 00	84 510 00	9 390 00
	Lower Cone	$ 332 600 00	100%	332 600 00	133 040 00	199 560 00
	Vertical Wall	$ 203 300 00	100%	203 300 00		203 300 00
	Access Tube & Platform	$ 175 700 00	85%	149,345 00		149 345 00
	Floor Plate	$ 96 600 00				
	Steel Tank Hoist	$ 106 700 00				
	Roof	$ 119 200 00				
7	**Elevated Concrete Slab for 2nd floor**	*$ 45 000 00*	100%	45 000 00	45 000 00	
8	**Piping, Valves and Flow Meter**					
	Base Piping	$ 22 400 00				
	Risers	$ 34 500 00	95%	32 775 00	32 775 00	
	SS Mechanical & Valves	$ 43 100 00				
9	**Painting**					
	Pre Hoist Painting	$ 74 800 00				
	Post Hoist Painting	$ 60 200 00				
10	**Electrical and Controls**	$ 50 000 00				
11	**Accessories and Miscellaneous**	$ 10 000 00				
12	**Allowance for Early Completion October 1, 2014**	$ 50 000 00				
13	**Non-Scope Related Reduction Off Set**	*$ 213 000 00*	100%	213 000 00	213 000 00	
Current Contract Amount		**$ 2,841,000 00**		**$2,139,420 00**	**$1,577,825.00**	**$561,595.00**
Change Orders						
1	Alt No 2 Delete 2nd Floor & Non Scope Deduction	*$ (258 000 00)*	100%	-258 000 00	-258 000 00	
2	Logo Upgrade & Upgrade Cone and Roof Coating	*$ 13,670 00*				
Total Change Orders		**$ (244 330.00)**	**$ 100 00**	**-258,000 00**	**-258 000 00**	
Revised Contract Amount		**$ 2 596 670 00**		**$ 1 881,420 00**		**$561,595 00**

Gross Amount Due	$1 881 420 00	$1 319 825 00	$561 595 00
Less Retainage (5%)	94 071 00	65 991 25	28 079 75
Net Amount	$1 787 349 00	$1 253,833 75	$533 515 25
Less Previous Unpaid Billings	318 273 75		
Less Previous Paid Billings	935 560 00		
	$533 515 25		

Weather Days Requested This Period	**Current Billing**	**$533 515 25**

0710

Contractor's Application for Payment No 5

	Application Period: 1/26/2014 05/27/2014	Application Date: 5/27/2014
To (Owner): City of West Point	From (Contractor): 4 D Construction Inc	Via (Engineer): Calvert Spradling Engineers, Inc
Project: TRIATHLON WATER STORAGE	Contract: PART 2 BOOSTER PUMP STATION	
Owner's Contract No:	Contractor's Project No:	Engineer's Project No: CSE #213065

Application For Payment

Change Order Summary

Approved Change Orders

Number	Additions	Deductions
1	$165 500 00	
TOTALS	$165 500 00	
NET CHANGE BY CHANGE ORDERS	$165 500 00	

1	ORIGINAL CONTRACT PRICE	$ $235 996 25
2	Net change by Change Orders	$ $165 500 00
3	Current Contract Price (Line 1 ± 2)	$ $401,496 25
4	TOTAL COMPLETED AND STORED TO DATE (Column F on Progress Estimate)	$ $264 467 80
5.	RETAINAGE	
	a 5 % X $261 172 80 Work Completed	$13 058 64
	b 5 % X $3 295 00 Stored Material	$ $164 75
	c Total Retainage (Line 5a + Line 5b)	$ $13 223 39
6	AMOUNT ELIGIBLE TO DATE (Line 4 Line 5c)	$ $251 244 41
7	LESS PREVIOUS PAYMENTS (Line 6 from prior Application)	$ $240 483 47
8	AMOUNT DUE THIS APPLICATION	$ $10 760 94 *
9	BALANCE TO FINISH PLUS RETAINAGE (Column G on Progress Estimate + Line 5 above)	$ $150 251 87

*LOCAL 70 17% $7,550.95
ARC 29.83% 3,209.99

Contractor's Certification

The undersigned Contractor certifies that to the best of its knowledge (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens security interest or encumbrances) and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective

By Sandra Denny Date 5/27/2014

Payment of $ 10,760.94
(Line 8 or other - attach explanation of the other amount)

Recommended by _____ (Engineer) 5/28/14 (Date)

Payment of $ _____
(Line 8 or other - attach explanation of the other amount)

is approved by _____ (Owner) 6-5-14 (Date)

Approved by _____ (Funding Agency (if applicable)) _____ (Date)

711

Endorsed by the Construction Specifications Institute

Progress Estimate

Contractor's Application

For (Contract)	Application Number
TRIATHLON WATER STORAGE PART 2 BOOSTER PUMP STATION	5
Application Period	**Application Date**
4 [illegible] 014 05/27/2014	5/27/2014

A		B	Work Completed		E	F		G
Item			C	D				
Specification Section No	Description	Scheduled Value	From Previous Application (C+D)	This Period	Materials Presently Stored (not in C or D)	Total Completed and Stored to Date (C + D + E)	% (F) / B	Balance to Finish (B - F)
1	MOBILIZATION	$10,000.00	$5,000.00			$5,000.00	50.0%	$5,000.00
2	EROSION CONTROL AND SEEDING	$4,025.00						$4,025.00
3	TURNKEY INSTALL TWO(2) VERTICAL CAN PUMPS	$89,585.00	$8,817.00			$8,817.00	92.0%	$80,768.00
4	PIPING VALVES & FLOW METER	$94,865.00	$5,620.50	$34,655.30		$87,275.80	92.0%	$7,589.20
5a	ELECTRICAL	$19,185.00						$19,185.00
	b CONTROLS	$11,836.25						$11,836.25
6	MISCELLANEOUS	$6,500.00	$1,250.00	$2,600.00		$5,850.00	90.0%	$650.00
7	ADD CONCRETE STATION BLDG & ACCESSORIES	$78,500.00	$66,715.00	$4,535.00	$3,295.00	$74,575.00	95.0%	$3,925.00
8	DECREASE FOR MALONEY DOORS	($2,500.00)						($2,500.00)
9a	ELECTRICAL	$17,900.00	$8,950.00			$8,950.00	50.0%	$8,950.00
	b CONTROLS	$71,600.00						$71,600.00
	Totals	$401,496.25	$210,382.80	$41,790.30	$3,295.00	$264,467.80		$136,028.45

712

Stored Material Summary

Contractor's Application

For (contract)					Application Number		
Trunnion Water Storage Part 2 Booster Pump Station					5		
Application Period					Application Date		
04/26/14 05/27/14					5/27/2014		

A	B	C	D		E		F		G
			Stored Previously		Stored this Month		Incorporated in Work		
Invoice No	Shop Drawing Transmittal No	Materials Description	Date (Month/Year)	Amount ($)	Amount ($)	Subtotal	Date (Month/Year)	Amount ($)	Materials Remaining in Storage ($) (D + E - F)
7989		2 Peerless Pumps		$64 900 00				$64 900 00	
14403		Greenheck Exhaust Fan		$1 000 00		$1 000 00			$1 000 00
1534247		Concrete Blocks		$1 104 19			3/2014	$1 104 19	
441417		Consolidated Pipe		$11 080 00				$11 080 00	
441394		Consolidated Pipe		$6 181 00				$6 181 00	
441400		Consolidated Pipe		$5 554 00				$5 554 00	
441413		Consolidated Pipe		$7 618 00				$7 618 00	
441596		Consolidated Pipe		$900 00				$900 00	
441788		Consolidated Pipe		$2,655 00				$2 655 00	
441110		Consolidated Pipe		$5 750 00				$5 750 00	
J5556		Maloney Glass and Overhead Doors Inc.		$2 295 00		$2 295 00			$2 295 00
		Totals		$112 037 19		$3,295.00		$108,742 19	$3 295 00

713

NO _____

IN THE MATTER OF AUTHORIZING TO PAY THE MS UNEMPLOYMENT SECURITY SERVICES CLAIM

There came on this day for consideration the matter of authorizing to pay the MS Unemployment Security Services Claim

It appears to this Board as attached hereto as Exhibit A, a claim in the amount of $4,056 33 has been received from the MS Department of Employment Security for the 03/31/2014 quarter end unemployment benefits and it appears to this board the said claim is in order and should be paid

After motion by Lynn Horton and second by R B Davis this Board doth vote unanimously to authorize the said claim to be paid by charging each department in the General Fund or the appropriate Special Fund its portion of the said claim, transferring the amount to fund #107, Emergency Employment Security Fund, and the said claim being paid out of fund #107, Emergency Employment Security Fund in the amount of $4,056 33 as attached hereto as Exhibit A

SO ORDERED this the 5th day of June, 2014

Vice President

714

EXR-5R | Mississippi Department of Employment Security | M | D | E | S |

REIMBURSABLE BILLING STATEMENT

Date Mailed 05/05/2014

EMPLOYER INFORMATION

Employer Name CLAY COUNTY OFFICE OF BOARD OF SUPERVISO MDES Employer Account Number 92 00091-0-00

BENEFIT CHARGES for FIRST QUARTER of 2014

The following benefit payments are charged to you for the First Quarter of 2014 under your election to reimburse the fund for benefits paid This amount is to be paid by 06/19/2014 Interest on past due balances will accrue at the rate of one percent per month beginning forty-six (46) days after the date mailed

Employer Name CLAY COUNTY OFFICE OF BOARD OF SUPERVISO		MDES Employer Account Number 92-00091-0-00			
Name	**SSN**	**Claim End Date**	**Amount Charged ($)**	**Prior Quarter Adjustment ($)**	**Program/ Entitlement**
CHRISTOPHER C HEADD S/b	228-43 1467	09/14/2014	645 60	0 00	REG
REBECCA MILLER S/D	426 13-4046	11/01/2004	0 00	-11 25	REG
EVELYN F WILLIAMS DC 112	428-11 9247	06/15/2014	220 44	0 00	REG
TONY WILKINS D1	428 25 3096	09/21/2014	1 666 00	0 00	REG
JOE W SMITH D4	428 27 3878	01/04/2015	1 540 00	0 00	REG
AVA A GARDNER Chan.	428 59 3946	02/20/2011	0 00	-4 46	REG
		TOTAL	**4 072 04**	**-15 71**	
				NET CHARGES	**$4,056 33**

To pay this debt online
Visit WWW MDES MS GOV
Select Employers
Select Online Services for Employers
Select Unemployment Tax Services
Login
Select Online Payment

Payment Voucher

RETURN VOUCHER WITH REMITTANCE
REMIT TO MDES
P O Box 22781
Jackson MS 39225 2781

TOTAL PAYMENT DUE FOR
QTR ENDING 03/31/2014 AS OF 05/05/2014 $4 056 33

FEIN # 646000252

Employer Name CLAY COUNTY OFFICE OF BOARD OF SUPERVISORS

92 00091 0 00 000 114 7

MDES Empl yer Account Number | Tax Rate | QTR/YR | Cneck Digit

I certify that no part of the tax was or is to be deducted from the worker's wages

Telephone Number | Signature of individual making return or responsible thereof | Title | Date

NO _____

IN THE MATTER OF AUTHORIZING PAYMENT OF SHERMAN IVY'S REFUND FROM THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM FOR YEAR 2013

There came on this day for consideration the matter of authorizing payment of Sherman Ivy's refund from the Public Employees' Retirement System for year 2013

It appears to this Board as attached hereto as Exhibit A is the notice of refund/overpayment for year 2013 on the Constables Net Fee Income and that PERS is refunding to the County $2,147 70 which represents the overpayment/refund due back to Sherman Ivy

After motion by Shelton Deanes and second by Lynn Horton this Board doth vote unanimously to authorize to pay the said refund of overpayment for year 2013 on the Constable net fee income to Sherman Ivy in the amount of $2,147 70

SO ORDERED this the 5th day of June, 2014

Vice President

PERS
of MISSISSIPPI

Providing Benefits for Life

May 30, 2014

CERTIFIED MAIL

Clay County Board of Supervisors
Attn Payroll Department
P O Box 815
West Point, MS 39773-0815

RE Honorable Sherman Ivy
2013 Constable Retirement Contributions

Dear Employer

Enclosed is a refund check issued to Clay County Board of Supervisors in the amount of **$2,147 70, check #6203 This refund represents an overpayment of Sherman Ivy's retirement contributions on his Constable Net Fee Income for calendar year 2013**

Please refund the applicable amount to Mr Ivy accordingly If additional information is required, please notify us in writing

Sincerely,

Cassie Gregory

Cassie Gregory
Account Specialist I
Employer Reporting

Encls

pc Honorable Sherman Ivy

717

PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF MISSISSIPPI

SOC SEC NUMBER	RECIPIENT NAME	DATE	NO
***-** 252	CLAY CO BD OF SUPR	05/29/2014	6203

GROSS BENEFIT			DEDUCTIONS		
DESCRIPTION	CURRENT	YEAR TO DATE	DESCRIPTION	CURRENT	YEAR TO DATE
NON TAX EMPR	$2 147 70	$2 147 70			
GROSS TOTALS	$2 147 70	$2 147 70	DEDUCTION TOTALS	$0 00	$0 00
DEDUCTIONS	$0 00	$0 00			
NET AMOUNT	$2 147 70				

FOLD FOLD

PUBLIC EMPLOYEES RETIREMENT SYSTEM / 429 MISSISSIPPI STREET / JACKSON MISSISSIPPI 39201 1005

FOLD FOLD

▼ REMOVE DOCUMENT ALONG THIS PERFORATION ▼

DOCUMENT CONTAINS BLUE PANTOGRAPH MICROPRINTING BACKING THERMOCHROMIC INK & A WATERMARK. HOLD AT AN ANGLE TO VIEW. VOID IF NOT PRESENT

PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF MISSISSIPPI NO 6203

429 MISSISSIPPI STREET / JACKSON, MISSISSIPPI 39201-1005

RETIREMENT SYSTEM / PLAN	SOC SEC NUMBER	DATE	NET AMOUNT
PUBLIC EMPLOYEES RETIREMENT SYSTEM	***-** 252	05/29/2014	$2 147 70

TWO THOUSAND ONE HUNDRED FORTY-SEVEN DOLLARS AND SEVENTY CENTS

PAY TO THE ORDER OF
CLAY CO BD OF SUPR
CHANCERY CLERK
PO BOX 815
WEST POINT MS 39773-0815

87-307
0641

718

REGIONS BANK

0345680

EXECUTIVE DIRECTOR

THIS CHECK VOID AFTER 180 DAYS

⑈00006203⑈ ⑆064103079⑆ 1000084083⑈

NO _____

IN THE MATTER OF TRANSFERRING FUNDS

There came on this day for consideration the matter of transferring funds

It appears to this Board fund no 219, DTL Building Notes 2012 Fund paid the annual note payment and funds were budgeted to be transferred from fund no 110, Tom Soya Grain Fund

After motion by Luke Lummus and second by Shelton Deanes this Board doth vote unanimously to authorize to transfer funds from fund no 110, Tom Soya Grain Fund, to fund no 219, DTL Building Notes 2012 Fund, in the amount of $14,502 19 in order for the said fund to no be overdrawn

SO ORDERED this the 5th day of June, 2014

President

NO _____

IN THE MATTER OF TRANSFERRING FUNDS

There came on this day for consideration the matter of transferring funds

It appears to this Board fund no 216, Courthouse Roof Note 2010 Fund paid the annual note payment and funds were budgeted to be transferred from fund no 110, Tom Soya Grain Fund

After motion by Luke Lummus and second by Shelton Deanes this Board doth vote unanimously to authorize to transfer funds from fund no 110, Tom Soya Grain Fund, to fund no 216, Courthouse Roof Note 2010 Fund, in the amount of $16,965 50 in order for the said fund to no be overdrawn

SO ORDERED this the 5th day of June, 2014

President

NO _____

IN THE MATTER OF TRANSFERRING FUNDS

There came on this day for consideration the matter of transferring funds

It appears to this Board fund no 250, District 5 B & I 2013 Issuance Fund paid the semi-annual note payment and funds were budgeted to be transferred from fund no 360, District 5 Construction 2013 Fund

After motion by Luke Lummus and second by Shelton Deanes this Board doth vote unanimously to authorize to transfer funds from fund no 360, District 5 Construction 2013 Fund, to fund no 250, District 5 B & I 2013 Issuance Fund, in the amount of $27,306 63 in order for the said fund to no be overdrawn

SO ORDERED this the 5th day of June, 2014

Floyd Mann

President

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NO _____

IN THE MATTER OF GOING INTO CLOSED SESSION

There came on this day for consideration the matter of going into closed session

After motion by Shelton Deanes and second by R B Davis this Board doth vote unanimously to go into closed session

SO ORDERED this the 5th day of June, 2014

Vice President

NO _____

IN THE MATTER OF GOING FROM CLOSED SESSION INTO EXECUTIVE SESSION AS ALLOWED UNDER SECTION 25-41-7 OF THE MISSISSIPPI CODE

There came on this day for consideration the matter of going from closed session into Executive Session as allowed under Section 25-41-7 of the Mississippi Code

After motion by Shelton Deanes and second by R B Davis this Board doth vote unanimously to go from closed session into Executive Session as allowed under Section 25-41-7 of the Mississippi Code to discuss a potential litigation matter

SO ORDERED this the 5th day of June, 2014

Vice President

NO _____

IN THE MATTER OF COMING OUT OF EXECUTIVE SESSION

There came on this day for consideration the matter of coming out of Executive Session

After motion by Lynn Horton and second by Shelton Deanes this Board doth vote unanimously to come out of Executive Session

SO ORDERED this the 5th day of June, 2014

Vice President