

Hazard Mitigation Plan

Franklin County, Illinois

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Table of Contents

Section 1 – Public Planning Process

- 1.1 Narrative Description
- 1.2 Planning Team Information
- 1.3 Public Involvement in Planning Process
- 1.4 Neighboring Community Involvement
- 1.5 Review of Technical and Fiscal Resources
- 1.6 Review of Existing Plans

Section 2 – Jurisdiction Participation Information

- 2.1 Adoption by Local Governing Body
- 2.2 Jurisdiction Participation

Section 3 – Jurisdiction Information

- 3.1 Physical Setting (Topography)
- 3.2 Climate
- 3.3 Demographics
- 3.4 Economy
- 3.5 Industry
- 3.6 Land Use and Development Trends
- 3.7 Major Lakes, Rivers, and Watersheds

Section 4 – Risk Assessment

- 4.1 Hazard Identification/Profile
 - 4.1.1 Existing Plans
 - 4.1.2 Planning Team

4.1.3 National Hazard Records

4.1.4 Hazard Ranking Methodology

4.1.5 Calculated Risk Priority Index

4.1.6 GIS and HAZUS-MH

4.2 Vulnerability Assessment

4.2.1 Asset Inventory

4.2.1.1 Processes and Sources for Identifying Assets

4.2.1.2 Essential Facilities List

4.2.1.3 Facility Replacement Costs

4.3 Future Development

4.4 Hazard Profiles

4.4.1 Tornado Hazard

4.4.2 Flood Hazard

4.4.3 Earthquake Hazard

4.4.4 Thunderstorm Hazard

4.4.5 Winter Storm Hazard

4.4.6 Hazardous Materials Storage and Transport Hazard

4.4.7 Ground Failure Hazard

Section 5 – Mitigation Strategy

5.1 Community Capability Assessment

5.1.1 National Flood Insurance Program (NFIP)

5.1.2 Stormwater Management Stream Maintenance Ordinance

5.1.3 Zoning Management Ordinance

5.1.4 Erosion Management Program/Policy

5.1.5 Fire Insurance Rating Programs/Policy

5.1.6 Land Use Plan

5.1.7 Building Codes

5.2 Mitigation Goals

5.3 Mitigation Actions/Projects

5.3.1 Completed or Current Mitigation Actions/Projects

5.4 Implementation Strategy and Analysis of Mitigation Projects

5.5 Multi-Jurisdictional Mitigation Strategy

Section 6 – Plan Maintenance

6.1 Monitoring, Evaluating, and Updating the Plan

6.2 Implementation through Existing Programs

6.3 Continued Public Involvement

GLOSSARY OF TERMS

APPENDICES

Appendix A	Minutes of the Multi-Hazard Mitigation Planning Team Meetings
Appendix B	Articles published by Local Newspaper
Appendix C	Adopting Resolution
Appendix D	Historical Hazards from NCDC
Appendix E	Hazard Map
Appendix F	Complete List of Critical Facilities
Appendix G	Map of Critical Facilities
Appendix H	Recorded NOAA Flood Data: USGS Stream Gauge Data

Section 1 - Public Planning Process

1.1 Narrative Description

Hazard Mitigation is defined as any sustained action to reduce or eliminate long-term risk to human life and property from hazards. The Federal Emergency Management Agency (FEMA) has made reducing hazards one of its primary goals; hazard mitigation planning and the subsequent implementation of resulting projects, measures, and policies is a primary mechanism in achieving FEMA's goal.

The Multi-Hazard Mitigation Plan (MHMP) is a requirement of the Federal Disaster Mitigation Act of 2000 (DMA 2000). The development of a local government plan is a requirement in order to maintain eligibility for certain federal disaster assistance and hazard mitigation funding programs. In order for the National Flood Insurance Program (NFIP) communities to be eligible for future mitigation funds, they must adopt an MHMP.

The Greater Egypt Regional Planning Commission was established in 1961 to "provide a plan for the general purpose of guiding and accomplishing a coordinated, adjusted, and harmonious development of the Franklin, Jackson, Perry, and Williamson County region, and of public improvement and utilities therein for the purpose of best promoting health, safety, morals, order, convenience, prosperity, efficiency and economy in the process of development and the general welfare of said region." In 1967, Jefferson County was added to the Greater Egypt Region. The Commission was re-established as Greater Egypt Regional Planning & Development Commission (GERPDC). The Commission, Franklin County Emergency Management Agency, SIU-C Geology Department, The Polis Center of IUPUI, and Franklin County have joined efforts in the creation of this mitigation plan, realizing that the recognition of and the protection from hazards that impact the county and its residents contribute to future community and economic development.

In recognition of the importance of planning in mitigation activities, FEMA has created HAZUS-MH (**H**azards **U**SA **M**ulti-**H**azard) a powerful geographic information system (GIS)-based disaster risk assessment tool. This tool enables communities of all sizes to predict the estimated losses from floods, hurricanes, earthquakes, and other related phenomena and to measure the impact of various mitigation practices that might help reduce those losses. The Illinois Emergency Management Agency (IEMA) has determined that HAZUS-MH should play a critical role in the risk assessments in Illinois. Southern Illinois University at Carbondale (SIU) and The Polis Center at Indiana University Purdue University Indianapolis (IUPUI) are assisting Franklin County planning staff with performing the hazard risk assessment.

1.2 Planning Team Information

The Franklin County Multi-Hazard Mitigation Planning Team is headed by Ryan M. Buckingham, who is the primary point of contact. Members of the planning team include individuals from jurisdictions within the county and state representatives. Table 1-1 identifies the planning team individuals and the organizations they represent.

Table 1-1: Multi-Hazard Mitigation Planning Team Members

Name	Title	Organization	Jurisdiction
Gary Kraft	Mayor	City of Benton	Benton
Gary Bartolotti	Mayor	City of Christopher	Christopher
Ronald Somers	Village Trustee	Village of Ewing	Ewing
Lena Bennett	Park Ranger	US Corp. of Engineers	Federal
Billie-Jo Cockrum	Disaster Preparedness Coordinator	Franklin Hospital	Franklin County
Gayla Sink	Administrative Assistant	Franklin County Board	Franklin County
Jamie McGrew	Manager	People's National Bank	Franklin County
Zeth Montgomery	Staff	Franklin County EMA	Franklin County
Kathie Flowers	Public Information Officer	Franklin County EMA	Franklin County
Mandy Greger	GIS Specialist	Franklin County Assessor's Office	Franklin County
Mark Roderich	Park Ranger	USACE	Franklin County
Ronda Koch	Emergency Prep.	Franklin-Williamson Bi-County Health Dept.	Franklin County
Ryan M. Buckingham	Director	Franklin County EMA	Franklin County
Samantha Ramicone	Administrative Assistant	Franklin County EMA	Franklin County
William Beaty	Staff	Franklin County EMA	Franklin County
William Dill	Executive Director	FREDCO	Franklin County
Dennis Harland	President	Village of North City	North City
Ron Little	Fireman	Coello Fire Dept.	North City
Pete Witkewiz	President Elect	Village of Orient	Orient
Burt Lancaster	President	Village of Royalton	Royalton
Cletus McBride	Chief	Sesser Fire Protection District	Sesser
Las Darnell	Fireman	Thompsonville C.E.F.P.D.	Thompsonville
Martin Buchanan	President	Village of Valier	Valier
Marion Presley	Mayor	City of West Frankfort	West Frankfort
Wes Taylor	Chief	West Frankfort Fire Dept.	West Frankfort

The Disaster Mitigation Act (DMA) planning regulations and guidance stress that planning team members must be active participants. The Franklin County MHMP committee members were actively involved on the following components:

- Attending the MHMP meetings
- Providing available Geographic Information System (GIS) data and historical hazard information
- Reviewing and providing comments on the draft plans
- Coordinating and participating in the public input process
- Coordinating the formal adoption of the plan by the county

An MHMP introductory meeting was held at SIU-C on March 19, 2008. Representatives of Franklin, Jackson, Jefferson, Perry, and Williamson Counties attended the meeting. John Buechler, MHMP Project Manager from The Polis Center, and Nicholas Pinter, SIU-C Geology, explained the motive behind the MHMP program and answered questions from the participants. Nicholas Pinter, Andy Flor, and Harvey Henson from SIU provided an introduction to hazards, and John Buechler and Dave Coats from The Polis Center provided an overview of HAZUS-MH. John Buechler described the timeline and the procedures to take place throughout the

planning project. Shortly after the meeting, in response to many concerns of the security and limited use of the counties' GIS data, a Memorandum of Understanding (MOU) was created and signed by each county chairman.

The county board chairmen met with representatives from GERPDC, SIU-C, and The Polis Center on March 19, 2008 to discuss the planning process and prospective planning team members. The county Multi-Hazard Mitigation Planning Team met on August 14, 2008, October 10, 2008, December 18, 2008, January 23, 2009, and April 9, 2009. These meetings were held at the Franklin Hospital located in Benton, Illinois. Each meeting was approximately two hours in length. The meeting minutes are included in Appendix A. During these meetings, the planning team successfully identified critical facilities, reviewed hazard data and maps, identified and assessed the effectiveness of existing mitigation measures, established mitigation projects, and assisted with preparation of the public participation information.

1.3 Public Involvement in Planning Process

The planning process commenced on January 29, 2008 when Southern Illinois University-Carbondale held a news conference to advise the general public that FEMA had approved funding of proposed planning activities for natural disaster preparedness. It was explained that the university would collaborate with members of The Polis Center as well as the five regional planning commissions. The news conference was attended by representatives of the local papers, radio, and television.

Franklin County conducted presentations for the public to give an overview of the planning process, inform them of the benefits of completing the plan, and discuss natural hazards affecting Franklin County. A public meeting was held on December 18, 2008 at Franklin Hospital. Appendix A contains the minutes from that public meeting. Appendix B contains articles published by the local newspaper throughout the public input process.

1.4 Neighboring Community Involvement

The Franklin County planning team invited participation from various representatives of neighboring counties, local cities, and town governments. The initial planning meeting at SIU-C on March 19, 2008 included representatives from the adjacent GERPDC counties of Franklin, Jackson, Jefferson, Perry, and Williamson. In the meeting, the county board chairmen and their EMA directors discussed creating county planning teams, scheduling meetings throughout the planning process, and ways to ensure public involvement in the plan. The county board chairmen also agreed to allow university research staff to have access to county GIS programs and data from the supervisor of the assessment.

Franklin County is bounded by Jefferson, Williamson, Jackson, and Perry Counties. Williamson County, located to the south of Franklin County, has working relationships and cooperation with the County through regional partnerships. The regional planning commission staff provides monthly status of each county's mitigation planning program to its commission, which is comprised of county and municipal representatives. Details of how neighboring stakeholders were involved are summarized in Table 1-2.

Table 1-2: Neighboring Community Participation

Person Participating	Neighboring Jurisdiction	Organization	Participation Description
Alan Gower	Williamson	County EMA	Briefed on the plan and provided comments
Allan Ninness	Saline County	Saline County EMA	Briefed on the plan and provided comments
Brent Gentry	Williamson	County	Briefed on the plan and provided comments
Bruce Fasol	Region	Clear Channel Radio	Briefed on the plan and provided comments
Chris Pulley	Illinois	IEMA	Briefed on the plan and provided comments
Dennis Litton	Jefferson	County EMA	Briefed on the plan and provided comments
Derek Misener	Jackson	County EMA	Briefed on the plan and provided comments
Gary Forby	Illinois	Illinois State Senator	Briefed on the plan and provided comments
James Epplin	Perry	County	Briefed on the plan and provided comments
Jerry Hiller	Illinois	Illinois Dept. of Natural Resources	Briefed on the plan and provided comments
John Evens	Jackson	County	Briefed on the plan and provided comments
Michael Richmond	Perry	County EMA	Briefed on the plan and provided comments
Rick Shryock	Illinois	IEMA	Briefed on the plan and provided comments
Steve Land	Williamson County	Williamson County EMA	Briefed on the plan and provided comments
Ted Buck	Jefferson	County	Briefed on the plan and provided comments
Wesley Flannell	Saline County	Saline County EMA	Briefed on the plan and provided comments

1.5 Review of Technical and Fiscal Resources

The MHMP planning team has identified representatives from key agencies to assist in the planning process. Technical data, reports, and studies were obtained from these agencies. The organizations and their contributions are summarized in Table 1-3.

Table 1-3: Key Agency Resources Provided

Agency Name	Resources Provided
U.S. Census (American Fact Finder)	County Profile Information such as Population and Physical Characteristics
Department of Commerce and Economic Opportunity	Community Profiles
Illinois Department of Employment Security	Industrial Employment by Sector
National Climatic Data Center	Climate Data
USDA/US Forest Service	Physical Characteristics
Illinois Emergency Management Agency	2007 Illinois Natural Hazard Mitigation Plan
Greater Egypt Regional Planning & Development Commission	The Comprehensive Plan for the Greater Egypt Region; A Comprehensive Community Plan West Frankfort, Illinois; The Comprehensive Plan for Orient, Illinois; The Comprehensive Plan for Valier, Illinois; The Comprehensive Plan for Zeigler, Illinois; The Comprehensive Plan for West City, Illinois; The Comprehensive Plan for Sesser, Illinois; The Comprehensive Plan for Ewing, Illinois; The Comprehensive Plan for Benton, Illinois; The Comprehensive Plan for Christopher, Illinois; Big Muddy River Basin Interim Water Quality Management Plan and Illinois County Estimates: Corn, Soybeans, and Wheat
Illinois Environmental Protection Agency	Illinois 2008 Section 303(d) Listed Waters and watershed maps
United States Geological Survey	Physiographic/Hill Shade Map, Digital Elevation Model
Illinois State Geological Survey	Coal Mining Maps; Karst Areas; Geologic Data; Soils and Liquefaction Maps; Digital copy of FRIM map
Center for Earthquake Research, University of Memphis	Earthquake Data

Agency Name	Resources Provided
Franklin County Assessor's Office	Parcel Data, Assessed Values of Property
Franklin County E911	GIS Data
Franklin County Emergency Management Agency	GPS Coordinates and Critical Facilities Data

1.6 Review of Existing Plans

Franklin County and its associated local communities utilize a variety of planning documents to direct community development. These documents include land use plans, master plans, emergency response plans, municipal ordinances, and building codes. The MHMP planning process incorporated the existing natural hazard mitigation elements from these previous planning efforts. Table 1-4 lists the plans, studies, reports, and ordinances used in the development of the plan.

Table 1-4: Planning Documents Used for MHMP Planning Process

Author(s)	Year	Title	Description	Where Used
State of Illinois Environmental Protection Agency	1973	Big Muddy River Basin Interim Water Quality Management Plan (Draft)	This study examines the Big Muddy River Basin. The analysis covers a description of the basin, demographics, economics, water supplies, water use, water quality, pollution sources, sewerage facilities, permits, surveillance, enforcement, operator certification, and environmental impact.	Jurisdiction Information and Topography
National Agricultural Statistics Service	2006 – 2007	Illinois County Estimates: Corn, Soybeans, and Wheat	This release contains official estimates of acreage, yield and production of corn, soybeans and wheat for counties in Illinois.	Land Use and Development Trends
Greater Egypt Regional Planning & Development Commission	1964	The Comprehensive Plan for the Greater Egypt Region	It offers guidelines for counties, cities and villages in their quest for improved social and economical opportunities for their citizens.	Topography and Land Use and Development Trends
Illinois Emergency Management Agency	2007	Illinois Natural Hazard Mitigation Plan	The Illinois Natural Hazard Mitigation Plan (INHMP) establishes a process for identifying and mitigating the effects of natural hazards in the State of Illinois as required under the Disaster Mitigation Act of 2000.	Topography
National Agricultural Statistics Service	2006 – 2007	Illinois County Estimates: Corn, Soybeans, and Wheat	This release contains official estimates of acreage, yield and production of corn, soybeans and wheat for counties in Illinois.	Land use and development trends
Greater Egypt Regional Planning & Development Commission	3/1979	The Comprehensive Plan for the City of Benton	This study provides information on the population, economic base, land use and housing, public facilities, central business district and transportation and circulation aspects of the city.	Zoning Ordinance and Land Use Plan

Author(s)	Year	Title	Description	Where Used
Greater Egypt Regional Planning & Development Commission	7/1/1964	The Comprehensive Plan for the City of Christopher	This study provides information on the population, economic base, land use and housing, public facilities, central business district and transportation and circulation aspects of the city.	Zoning Ordinance and Land Use Plan
Greater Egypt Regional Planning & Development Commission	7/1/1964	The Comprehensive Plan for the Village of Ewing	This study provides information on the population, economic base, land use and housing, public facilities, central business district and transportation and circulation aspects of the city.	Zoning Ordinance and Land Use Plan
Greater Egypt Regional Planning & Development Commission	8/15/1968	The Comprehensive Plan for the City of Orient	This study provides information on the population, economic base, land use and housing, public facilities, central business district and transportation and circulation aspects of the city.	Zoning Ordinance and Land Use Plan
Greater Egypt Regional Planning & Development Commission	7/1/1964	The Comprehensive Plan for the Village of Royalton	This study provides information on the population, economic base, land use and housing, public facilities, central business district and transportation and circulation aspects of the city.	Zoning Ordinance and Land Use Plan
Greater Egypt Regional Planning & Development Commission	7/1/1964	The Comprehensive Plan for the City of Sesser	This study provides information on the population, economic base, land use and housing, public facilities, central business district and transportation and circulation aspects of the city.	Zoning Ordinance and Land Use Plan
Greater Egypt Regional Planning & Development Commission	5/1/1968	The Comprehensive Plan for the Village of Valier	This study provides information on the population, economic base, land use and housing, public facilities, central business district and transportation and circulation aspects of the city.	Zoning Ordinance and Land Use Plan
Greater Egypt Regional Planning & Development Commission	7/1/1964	The Comprehensive Plan for the Village of West City	This study provides information on the population, economic base, land use and housing, public facilities, central business district and transportation and circulation aspects of the city.	Zoning Ordinance and Land Use Plan
Greater Egypt Regional Planning & Development Commission	7/1/1964	The Comprehensive Plan for the City of Zeigler	This study provides information on the population, economic base, land use and housing, public facilities, central business district and transportation and circulation aspects of the city.	Zoning Ordinance and Land Use Plan
Layton, Layton and Rohrbach General Planning and Resource Consultants	1/1961	A Comprehensive Plan for the City of West Frankfort, Illinois	This study provides information on the population, economic base, land use and housing, public facilities, central business district and transportation and circulation aspects of the city.	Zoning Ordinance and Land Use Plan

Section 2 - Jurisdiction Participation Information

The jurisdictions included in this multi-jurisdictional plan are listed in Table 2-1.

Table 2-1: Jurisdictions within the Planning Area

Jurisdiction Name
Franklin County
City of Benton
Village of Buckner
City of Christopher
Village of Ewing
Village of Freeman Spur
Village of Hanaford (Logan)
Village of Macedonia
City of North City (Coello)
City of Orient
Village of Royalton
City of Sesser
Village of Thompsonville
Village of Valier
Village of West City
City of West Frankfort
City of Zeigler

2.1 Adoption by local governing body

The draft plan was made available on April 9, 2009 to the planning team and other agencies such as county and municipal officials for review. Comments were then accepted. The Franklin County Hazard Mitigation Planning team presented and recommended the plan to Franklin County Board, who adopted the Franklin County Hazard Mitigation Plan on July 21, 2009. Resolution adoptions are included in Appendix C of this plan.

2.2 Jurisdiction Participation

It is required that each jurisdiction participates in the planning process. Table 2-2 lists each jurisdiction and how each participated in the construction of this plan.

Table 2-2 Jurisdiction Participation

Jurisdiction Name	Planning Team Member	Position	Organization	Planning Meetings						Supplemental Meeting			Total Number of Meeting Attended		
				Meeting 1 8/14/2008	Meeting 2 10/10/2008	Meeting 3 12/18/2008	Meeting 4 1/23/2009	Meeting 5 4/9/2009	Number of Meetings Attended	Meeting 1 9/17/2008	Meeting 2 12/11/2008	Meeting 3 3/26/2009			
Franklin County	Billie-Jo Cockrum	Disaster Preparedness Coordinator	Franklin Hospital	X											1
	Brian Dorris		FREDCO											X	1
	Gayla Sink	Administrative Assistant	Franklin County Board	X			X								2
	Harold Jones		Franklin-Williamson County Human Services									X			1
	Harvey Davis	CEO	Franklin Hospital									X			1
	Hollie Taylor		Franklin-Williamson Human Services									X			1
	Jake Curry	Assistant	Franklin County EMA						X						1
	Jamie McGrew	Manger	People's National Bank			X									1
	Kathie Flowers	Public Information Office	Franklin County EMA	X											1
	Linda Clark	Board Member	Franklin County Board									X			2
	Lisa Sorenson		Franklin-Williamson Bi-County Health Department									X			1
	Mandy Greger	GIS Specialist	Franklin County Assessors Office	X		X									2
	Mandy Little	Assistant	Franklin County EMA						X						1
	Mark Roderich	Park Ranger	U.S. Army Corps				X								1
	Mary Leffler	Comer	Franklin County												0
	Paul Burbank	Assistant	Franklin County EMA											X	0
	Ronda Koch	Emergence Preparedness	Franklin-Williamson Bi-County Health Department			X		X	X				X		4
	Ryan M. Buckingham	EMA Director	Franklin County EMA	X	X	X	X	X	X				X		7
	Samantha Ramicone	Administrative Assistant	Franklin County EMA				X								1
	Steve Mitchell		FREDCO											X	1

Jurisdiction Name	Planning Team Member	Position	Organization	Planning Meetings							Number of Meetings Attended	Supplemental Meeting			Total Number of Meeting Attended	
				Meeting 1 8/14/2008	Meeting 2 10/10/2008	Meeting 3 12/18/2008	Meeting 4 1/23/2009	Meeting 5 4/9/2009	Meeting 1 9/17/2008	Meeting 2 12/11/2008		Meeting 3 3/26/2009				
Franklin County	Whitney Mehaffy		Franklin-Williamson Bi-County Health Department										X			1
	William Beatty	Staff	Franklin County EMA		X											
	William Dill	Executive Director	FREDCO	X	X	X	X	X							X	7
	Zeth Montgomery	Staff	Franklin County EMA				X									1
	Gary Kraft	Mayor	Benton			X	X	X	X						X	5
Village of Buckner																0
City of Christopher	Gary Bartolotti	Mayor	City of Christopher		X	X	X	X	X						X	6
	Louie Pechemino	Alderman	City of Christopher							X						1
	Don Miklos	Alderman	City of Christopher							X						1
Village of Ewing	Ronald Somers	Village Trustee	Ewing			X									1	
Village of Freeman Spur																0
Village of Hanaford (Logan)																0
Village of Macedonia																0
City of North City (Coello)	Dennis Harland	President	North City					X						X		2
	Ron Little	Fire Fighter	North City					X								1
City of Orient	Pete Witkewicz	President	Orient					X								1
Village of Royallon	Burt Lancaster	President	Royalton				X									2
City of Sesser	Cletus McBride	Chief	Sesser Fire Protection District		X									X		1
Village of Thompsonville	Las Damael	Fire Fighter	Thompsonville C.E.F.P.D					X								1
Village of Valier	Martin Buchanan	President	Village of Valier		X	X	X	X	X					X	X	4
Village of West City																0
City of West Frankfort	Marion Presley	Mayor	West Frankfort			X		X						X		2
	Wes Taylor	Chief	West Frankfort Fire Department			X	X	X	X					X		3
City of Zeigler	Dennis Mitchel		Zeigler											X		1

At each planning meeting, Greater Egypt Regional Planning & Development Commission Staff explained the importance of the multi-hazard mitigation plan for the county and for the participation from all communities. Despite the best efforts of the Greater Egypt Regional Planning & Development Commission to solicit participation from all incorporated communities in Franklin County, the villages of Buckner, Freeman Spur, Hanaford, Macedonia and West City did not participate in any of the meetings for the Franklin County plan.

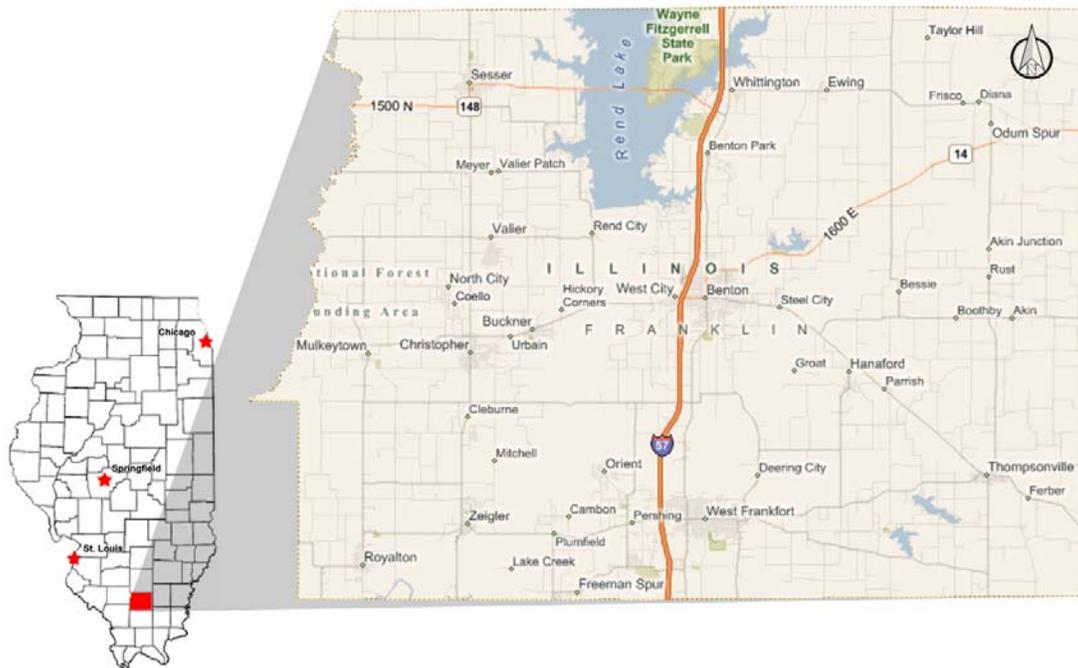
All members of the MHMP planning committee were actively involved in attending the MHMP meetings, providing available Geographic Information System (GIS) data and historical hazard information, reviewing and providing comments on the draft plans, coordinating and participating in the public input process, and coordinating the county's formal adoption of the plan. Each meeting culminated with an open forum to invite questions and input from the planning team members. Appendix A provides further description of the meetings, including dates.

Section 3 - Jurisdiction Information

Franklin County organized and claimed its boundaries from Gallatin and White Counties in 1818. In 1839, Williamson County's acquisition of Franklin County's southern territory reformed the county into its current political boundaries. Franklin County was named after a philosopher, statesman, diplomatist, author, printer, member of the Continental Congress, Ambassador to France, and (before the Revolution) Deputy Postmaster General of the British Colonies in America—Benjamin Franklin. The original county seat, from 1818–1826, was located three miles east of West Frankfort at the house of Moses Garret. From 1826–1839, the county seat was moved to West Frankfort. It was finally relocated to Benton in 1839 and remains there as the current county seat.

Franklin County is located in the center of the southern tip of Illinois. It is bounded on the north by Jefferson County, on the south by Williamson County, on the east by Hamilton and Saline counties, and on the west by Perry and Jackson Counties. Its relation to major urban areas is as follows: 100 miles east-southeast of St. Louis, Missouri; 169 miles south-southeast of Springfield, Illinois; 301 miles south-southwest of Chicago, Illinois. Figure 3-1 shows the location of Franklin County.

Figure 3-1: Map of Franklin County



Interstate 57 bisects Franklin County from north to south. The interstate stretches from Chicago through Franklin County to Sikeston, Missouri.

Franklin County is an average growing county in southern Illinois. The major sources of economic activity include manufacturing, public administration, and retail trade. A few of the top private employers in the county include CrownLine, Bombardier, and FedEx. New development in Franklin County is occurring in both Benton and West Frankfort industrial parks.

Centrally located, Franklin County offers a host of amenities such as shopping centers, hotels, restaurants, and entertainment. Wayne Fitzgerald State Park is located at Rend Lake. The northern portion of Rend Lake is shared with Jefferson County. Rend Lake is the largest area of public land in Franklin County, drawing significant numbers of tourists who contribute to the local economy.

Rend Lake is managed by the U.S. Army Corps of Engineers, Illinois Department of Natural Resources and the Rend Lake Conservancy District, which provide vital services to lake visitors and the community. The lake offers fishing, hunting, and water recreation facilities and activities. Other communities within the county offer similar amenities, such as restaurants, entertainment, and shopping on a rural scale.

Sources: State of Illinois; Origin and Evolution of Illinois Counties; 1982

Adams, James N. (compiler), Keller, William E., Ed; Illinois Place Names, Springfield: Illinois State Historical Society; 1989; pp. 609,

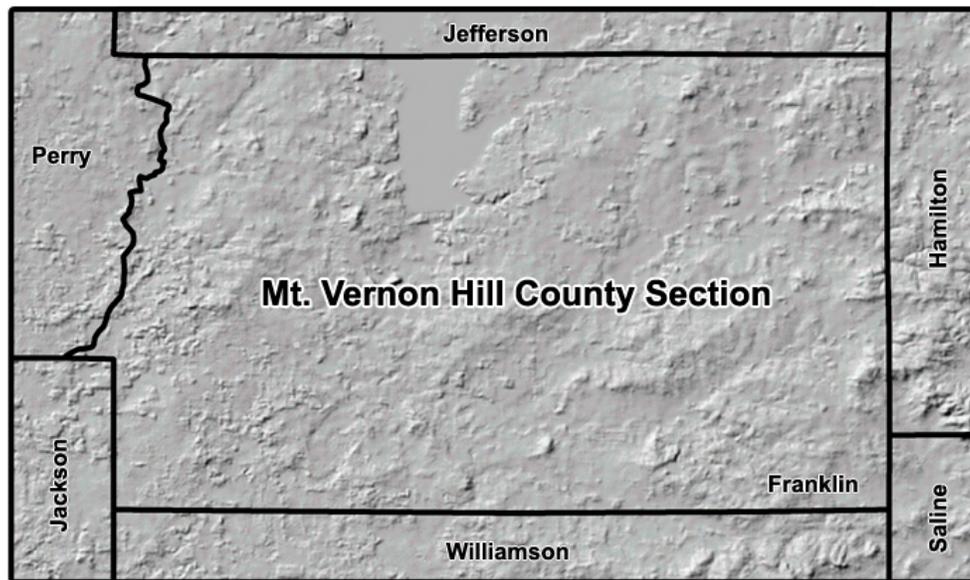
Goodspeed Publishing Co.; History of Gallatin, Saline, Hamilton, Franklin and Williamson Counties, Illinois; 1967

H. M. Aiken; Franklin County History, Centennial Edition; 1918

3.1 Topography

Franklin County is located in the Mount Vernon Hill Country physiographic sub-division of the Till Plains. The Mount Vernon Hill Country is characterized by low rolling hills and broad alluvial valleys along the major streams. The relief in this region is not pronounced. Upland prairies are flat to moderately hilly, and the valleys are shallow. The land surface is primarily controlled by bedrock, which has been only slightly modified by glacial drift deposits. While the southern boundary of the Mount Vernon Hill Country lies within a few miles of the limits of glaciations, moraine ridges are essentially absent in the area.

The highest elevation(s) (~578 feet above sea level) in Franklin County are found in the central northern part of the county near Ewing. The lowest elevation(s) (~370 feet above sea level) are found in the southwest portion of the county near Zeigler. Figure 3-2 depicts the physiographic division within Franklin County and its characteristics.

Figure 3-2: Physiographic Divisions of Franklin County**Physiographic/Hill Shade Map**

Source: USGS

- Sources: United States Department of the Interior Geological Survey, Topographic Maps, 1961-1996
- Greater Egypt Regional Planning & Development Commission, The Comprehensive Plan for the Greater Egypt Region, 1964
- USDA and US Forest Service, Description of "Ecological Subregions: Sections of the Conterminous United States," http://www.na.fs.fed.us/sustainability/ecomap/provinces/sec_223/s223.shtm, 7-8-08
- 2007 Tiger Line Shape Files, US Census Geography Division, 2007, US Census Bureau, 28 May 2008, <http://www.census.gov/geo/www/tiger/>

3.2 Climate

Franklin County climate is typical of Southern Illinois and generally characterized by hot dry summers and cool wet winters. The variables of temperatures, precipitation, and snowfall can vary greatly from one year to the next. In summer, the average low is 65.3° F and average high is 88.5° F; however, daily maximum temperatures often exceed 100° F for the period of time (several weeks) between June and September.

During the fall and into the spring, freezing temperatures can occur any time between October and April. The average low and high temperatures in January are 13.3° F and 40.4° F, respectively. Average annual precipitation is 43.19 inches (NCDC data from 1971 to 2000). While the winters are generally cool, i.e. temperatures are above freezing most days, extended periods (days to a couple of weeks) of sub-freezing high temperatures often occur and are sometimes accompanied by significant amounts of ice and snow.

3.3 Demographics

According to the U.S. Census of 2007, Franklin County has a population of 39,491. From 2000–2007, Franklin County experienced a population increase of 1.2%. The largest town in Franklin County is West Frankfort, which has a population of approximately 8,202. The breakdown of population by incorporated areas is included in Table 3-1.

Table 3-1: Population by Community

Community	2007 Population	% of County
City of Benton	6,934	17.50%
Village of Buckner	489	1.20%
City of Christopher	2,823	7.10%
Village of Ewing	320	0.80%
Village of Freeman Spur	127	0.30%
Village of Hanaford (Logan)	222	0.60%
Village of Macedonia	50	0.10%
City of North City (Ceollo)	637	1.60%
City of Orient	314	0.80%
Village of Royalton	1,160	2.90%
City of Sesser	2,124	5.40%
Village of Thompsonville	588	1.50%
Village of Valier	666	1.70%
Village of West City	750	1.90%
City of West Frankfort	8,202	21.00%
City of Zeigler	1,667	4.20%
Rural Population	13,055	33.00%

Source: American Fact Finder, 2008 and Illinois MapStats, 2008

3.4 Economy

Illinois MapStats and Illinois Department of Employment Security report for 2007 that 80% of the workforce in Franklin County was employed in the private sector. The breakdown is included in Table 3-2. Public Administration represents the largest sector, employing approximately 20.4% of the workforce and generating approximately 25.4% of the earnings. The US Census 2007 annual per capita income (inflation adjusted) in Franklin County was \$17,272 compared to an Illinois average of \$27,511.

Table 3-2: Industrial Employment by Sector

Industrial Sector	% of County Workforce (2007)
Agriculture, Forestry, Fishing, Hunting, and Mining	0.2%
Construction	3.1%
Manufacturing	14.2%
Wholesale Trade	2.2%
Retail Trade	15.4%
Transportation, Warehousing and Utilities	2.3%
Information	2.8%
Finance, Insurance, Real Estate, and Rental/Leasing	3.2%
Professional and Business Services	9.0%
Educational, Health, and Social Services	11.9%
Arts, Entertainment, Recreation, Accommodation and Food Services	10.8%
Other Services (except Public Administration)	3.2%
Public Administration	20.4%

Source: Illinois Department of Employment Security 2007 and Illinois MapStats, 2008

3.5 Industry

Franklin County's major employers and number of employees are listed in Table 3-3. The largest employer is CrownLine, which has 578 employees. Bombardier of America is the second largest, with 380 employees. Public Administration is the largest employment sector in the county.

Table 3-3: Major Employers

Manufacturing				
Company Name	Location	Established	Employees	Type of Business
Bombardier of America	Benton	1995	380	Pleasure Boats
CrownLine Boats	West Frankfort	1991	578	Boat Fabrication
Retail Trade				
Wal-Mart	West City	1979	165	Dept. Store

Transportation, Warehousing and Utilities				
FedEx	West Frankfort	2008	50	Regional Distribution
Educational, Health, and Social Services				
Franklin Hospital	Benton	1955	130	Hospital
Benton Community Consolidated School District #47	Benton	N/A	123	School District
Benton Consolidated High School District #103	Benton	N/A	85	School District
Christopher Unit #99	Christopher	N/A	125	School District
Sesser-Valier Community Unit S.D. #196	Sesser	N/A	95	School District
Frankfort Community Unit School District #168	West Frankfort	N/A	198	School District
Zeigler-Royalton CU School District #188	Zeigler	N/A	100	School District
Cardinal EMS	Benton	2009	90	Ambulance Service
Public Administration				
Franklin County	Benton	1818	150	Government
State of Illinois	Benton	N/A	116	Government

Source: Department of Commerce and Economic Opportunity, Community Profiles 2007; and Direct Contact

3.6 Land Uses and Development Trends

Pre-European settlement, Franklin County was densely forested with few areas of prairie. Since settlement, agriculture, coal mining, and urbanization have dramatically altered the county's land cover. Today, agriculture is the predominant land cover in the county. This fact did not result because of great agricultural capabilities of the land as a major agricultural producer; neither did it occur because of maximum economic development potential resting in agricultural pursuits. Rather it is a result of the existence of large volumes of land which cannot rationally be occupied by major urban uses within the foreseeable future. As a result many agricultural uses have only limited agricultural potential. The eastern portions of the county are the primary areas of agriculture use. Additional scattered areas are located within the urban core in segments which need not be utilized for urban expansion. These agricultural areas become the overflow areas of future growth. Corn is the primary crop, followed by soybeans, winter wheat, hay, and oats.

In recent years, residential developments tend to focus in the West Frankfort and Benton areas. Residential land use has had few significant developments within the county at this time. The largest communities within the county are the cities of West Frankfort (8,202) and Benton (6,934).

Commercial land use has historically been, and continues to be, concentrated within the business districts of the incorporated municipalities of the county. However, the most recent commercial growth has occurred in and around the city of West Frankfort. CVS is relocating and constructing a new building in West Frankfort. Walgreens is rumored to locate cross the street. Franklin County as a whole is experiencing minor commercial development at this time.

Industrial land use has been strategically planned and concentrated within Benton Industrial Park, Benton Airport Industrial Park, and Franklin County Industrial Park. Benton is the predominant location for most of the industries in the county. The major industries in the county are Crownline and Bombardier of America. On July 18, 2008, a new FedEx facility opened in West Frankfort.

Coal mining was an important industry in the Southern Illinois Region between the 1930s and 1980s. From 1990 through today, the importance of coal mining to the region and Franklin County has significantly lessened due to more stringent air quality regulations. Regardless, Southern Illinois's coal mining history, particularly strip mining, has left an indelible mark on Franklin County. In areas that were strip mined, particularly prior to Surface Mine Reclamation Action of 1977, the land has been left unsuitable for agriculture or significant commercial or residential development. These areas often contain large piles of mine spoil and deep pits filled with water that alter surface water drainage. Fortunately, strip mining in Franklin County is relatively nonexistent.

Public land use in Franklin County includes schools, parks, playgrounds, public utilities, and transportation facilities. Rend Lake Conservancy District is the most significant public land use shared between Franklin and Jefferson Counties. Other major areas include the Benton Municipal Airport, Wayne Fitzgerald State Park, Franklin Community Park, John A. Logan West Frankfort Extension Center, and Benton Community Park District.

Source: National Agricultural Statistics Service, Illinois County Estimates: Corn, Soybeans, and Wheat, 2006-2007

Greater Egypt Regional Planning & Development Commission, The Comprehensive Plan for the Greater Egypt Region, 1964

United States Department of the Interior Geological Survey, Topographic Maps, 1961-1996

3.7 Major Lakes, Rivers, and Watersheds

Franklin County lies on the dividing ridge between the Ohio and Mississippi Rivers. The county crosses two eight-digit Hydrologic Unit Code (HUC) Watersheds: Big Muddy River Watershed and Saline River/Bay Creek Watershed. There are nine significant lakes in Franklin County: Sesser, Hamilton, New Christopher, New West Frankfort, Old West Frankfort, Benton, Moses, Rend and Zeigler.

The Big Muddy River Watershed enters into the county from the north and northeast. The majority of the county lies within this watershed, generally sloping toward the southwest, and is drained by the Big Muddy River, the water of which flows into the Mississippi River.

The Saline River/Bay Creek Watershed covers a small portion on the southeast corner of the county and lies to the east of the Big Muddy River Watershed with a general slope toward the southeast; it is drained by the Saline River, which flows into the Ohio River.

Section 4 - Risk Assessment

The goal of mitigation is to reduce the future impacts of a hazard including loss of life, property damage, disruption to local and regional economies, and the expenditure of public and private funds for recovery. Sound mitigation must be based on sound risk assessment. Risk assessment involves quantifying the potential loss resulting from a disaster by assessing the vulnerability of buildings, infrastructure, and people. This assessment identifies the characteristics and potential consequences of a disaster, how much of the community could be affected by a disaster, and the impact on community assets. A risk assessment consists of three components: hazard identification, vulnerability analysis, and risk analysis.

4.1 Hazard Identification/Profile

4.1.1 Existing Plans

The plans identified in Table 1-3 did not contain a risk analysis. These local planning documents were reviewed to identify historical hazards and help identify risk. To facilitate the planning process, the flood analysis used the following plans: FIRM maps, U.S. Geological Survey digital elevation model, and the One-hundred and Five-hundred Year Flood zones for Unincorporated Areas in Illinois GIS data layer from the Illinois Geological Survey.

4.1.2 Planning Team

During Meeting #2, which occurred on October 10, 2008, the planning team developed and ranked a list of hazards that affect the county. The team reviewed historical hazards information and participated in a risk analysis using a projector and Excel spreadsheet; then discussed each hazard and developed a consensus of the risk for each.

The team identified tornadoes, earthquakes, and flood as the three most significant natural hazards affecting Franklin County. The plan also identified Franklin County's principal technological hazard as the transportation of hazardous materials.

4.1.3 National Hazard Records

In addition to these identified hazards, the MHMP planning committee reviewed the list of natural hazards prepared by FEMA. To assist the planning team, historical storm event data was compiled from the National Climatic Data Center (NCDC; <http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll>). This NCDC data included 313 reported events in Franklin County between December 2, 1950 and April 2, 2008. A summary table of events related to each hazard type is included in the hazard profile sections that follow. A list of the events, including additional sources that identify specific occurrences, are included as Appendix D. In addition to NCDC data, Storm Prediction Center (SPC) data associated with tornadoes, strong winds, and hail were plotted using SPC recorded latitude and longitude. These events are plotted and included as Appendix E. The list of NCDC hazards is included in Table 4-1.

Table 4-1: Climatic Data Center Historical Hazards

Hazard
Tornadoes
Severe Thunderstorms
Drought/Extreme Heat
Winter Storms
Flood/Flash flood

4.1.4 Hazard Ranking Methodology

Based on planning team input, national datasets, and existing plans, Table 4-2 lists the hazards Franklin County will address in this multi-hazard mitigation plan. In addition, these hazards ranked the highest based on the Risk Priority Index discussed in section 4.1.5.

Table 4-2: Planning Team Hazard List

Hazard
Tornado
Earthquake
Transportation of Hazardous Material Release
Flooding
Thunderstorms/ High Winds/Hail/ Lightning
Winter Storms
Dam/Levee Failure
Ground Failure

4.1.5 Calculating the Risk Priority Index

The first step in determining the Risk Priority Index (RPI) was to have the planning team members generate a list of hazards which have befallen or could potentially befall their community. Next, the planning team members were asked to assign a likelihood rating based on the criteria and methods described in the following table. Table 4-3 displays the probability of the future occurrence ranking. This ranking was based upon previous history and the definition of hazard. Using the definitions given, the likelihood of future events is "Quantified" which results in the classification within one of the four "Ranges" of likelihood.

Table 4-3: Future Occurrence Ranking

Probability	Characteristics
4 - <i>Highly Likely</i>	Event is probable within the calendar year. Event has up to 1 in 1 year chance of occurring. (1/1=100%) History of events is greater than 33% likely per year.
3 - <i>Likely</i>	Event is probable within the next three years. Event has up to 1 in 3 years chance of occurring. (1/3=33%) History of events is greater than 20% but less than or equal to 33% likely per year.
2 - <i>Possible</i>	Event is probable within the next five years. Event has up to 1 in 5 years chance of occurring. (1/5=20%) History of events is greater than 10% but less than or equal to 20% likely per year.
1 - <i>Unlikely</i>	Event is possible within the next ten years. Event has up to 1 in 10 years chance of occurring. (1/10=10%) History of events is less than or equal to 10% likely per year.

Next, planning team members were asked to consider the potential magnitude/severity of the hazard according to the severity associated with past events of the hazard. Table 4-4 gives four classifications of magnitude/severity.

Table 4-4: Hazard Magnitude

Magnitude/Severity	Characteristics
8 - <i>Catastrophic</i>	Multiple deaths. Complete shutdown of facilities for 30 or more days. More than 50% of property is severely damaged.
4 - <i>Critical</i>	Injuries and/or illnesses result in permanent disability. Complete shutdown of critical facilities for at least 14 days. More than 25% of property is severely damaged.
2 - <i>Limited</i>	Injuries and/or illnesses do not result in permanent disability. Complete shutdown of critical facilities for more than seven days. More than 10% of property is severely damaged.
1 - <i>Negligible</i>	Injuries and/or illnesses are treatable with first aid. Minor quality of life lost. Shutdown of critical facilities and services for 24 hours or less. Less than 10% of property is severely damaged.

Finally, the RPI was calculated by multiplying the probability by the magnitude/severity of the hazard. Using these values, the planning team member where then asked to rank the hazards. Table 4-5 identifies the RPI and ranking for each hazard facing Franklin County.

Table 4-5: Franklin County Hazards (RPI)

Hazard	Probability	Magnitude/Severity	Risk Priority Index	Rank
Tornado	4+ - Highly Likely	4 - Critical	16	1
Earthquake	2 - Possible	8 - Catastrophic	16	2
Transportation of Hazardous Material Release	3 - Likely	4 - Critical	12	3
Flooding	3 - Likely	4 - Critical	12	4
Thunderstorms/ High Winds/Hail/ Lightning	4+ - Highly Likely	2 - Limited	8	5
Winter Storms	2 - Possible	2 - Limited	4	6
Dam/Levee Failure	2 - Possible	2 - Limited	4	7
Ground Failure	2- Possible	2- Limited	4	8

4.1.6 Jurisdictional Hazard Ranking

Because the jurisdictions in Franklin County differ in their susceptibilities to certain hazards—for example, West Frankfort, located along Ewing Creek is more likely to experience significant flooding than Sesser which is located a substantial distance away from any large stream or river which could potentially cause significant flooding—the hazards identified by the planning team were ranked by SIUC for each individual jurisdiction using the methodology outlined in Section 4.1.5. The SIUC rankings were based on input from the planning team members, available historical data, and the hazard modeling results described within this hazard mitigation plan.

During the five-year review of the plan this table will be updated by the planning team to ensure these jurisdictional rankings accurately reflect each community's assessment of these hazards. Table 4-6 lists the jurisdictions and their respective hazard rankings (Ranking 1 being the highest concern).

Table 4-6: Hazard Rankings by Jurisdiction

Jurisdiction	Hazard							
	Tornado	HAZMAT	Earthquake	Thunderstorms	Flooding	Winter Storms	Dam / Levee Failure	Ground Subsidence
Benton	1	2	3	5	4	6	8	7
Buckner	1	3	2	5	4	6	7	8
Christopher	1	2	3	3	6	5	8	7
Ewing	1	5	3	2	6	4	NA	NA
Freeman Spur	1	5	2	4	3	6	8	7
Hanaford	1	5	3	2	6	4	NA	7
Macedonia	1	5	4	3	2	6	NA	NA
Orient	1	5	2	4	3	6	7	8
North City (Coello)	1	2	3	3	6	5	8	7
Royalton	1	5	2	4	3	6	NA	7
Sesser	1	4	3	2	6	5	NA	7
Thompsonville	1	4	2	3	5	6	NA	NA
Valier	1	2	3	4	6	5	8	7
West City	1	2	3	5	4	6	7	8
West Frankfort	1	2	3	5	4	6	NA	7
Zeigler	1	3	2	5	4	6	8	7

Rankings: 1 being the highest concern to higher number which is a lesser concern.
NA = Not applicable

4.1.7 GIS and HAZUS-MH

The third step in this assessment is the risk analysis, which quantifies the risk to the population, infrastructure, and economy of the community. Where possible, the hazards were quantified using GIS analyses and HAZUS-MH. This process reflects a level two approach to analyzing hazards as defined for HAZUS-MH. The approach includes substitution of selected default data with local data. Level two analysis significantly improves the accuracy of the model predictions.

HAZUS-MH generates a combination of site-specific and aggregated loss estimates depending upon the analysis options that are selected and upon the input that is provided by the user. Aggregate inventory loss estimates, which include building stock analysis, are based upon the assumption that building stock is evenly distributed across census blocks/tracts. Therefore, it is possible that overestimates of damage will occur in some areas while underestimates will occur in other areas. With this in mind, total losses tend to be more reliable over larger geographic areas than for individual census blocks/tracts. It is important to note that HAZUS-MH is not intended to be a substitute for detailed engineering studies. Rather, it is intended to serve as a planning aid for communities interested in assessing their risk to flood-, earthquake-, and hurricane-related hazards. This documentation does not provide full details on the processes and

procedures completed in the development of this project. It is only intended to highlight the major steps that were followed during the project.

Site-specific analysis is based upon loss estimations for individual structures. For flooding, analysis of site-specific structures takes into account the depth of water in relation to the structure. HAZUS-MH also takes into account the actual dollar exposure to the structure for the costs of building reconstruction, content, and inventory. However, damages are based upon the assumption that each structure falls into a structural class, and that structures in each class will respond in similar fashion to a specific depth of flooding. Site-specific analysis is also based upon a point location rather than a polygon; therefore the model does not account for the percentage of a building that is inundated. These assumptions suggest that the loss estimates for site-specific structures as well as for aggregate structural losses need to be viewed as approximations of losses that are subject to considerable variability rather than as exact engineering estimates of losses to individual structures.

The following events were analyzed. The parameters for these scenarios were created using GIS, HAZUS-MH, and historical information to predict which communities would be at risk.

Using HAZUS-MH

1. 100-year overbank flooding
2. Earthquake

Using GIS

1. Tornado
2. Hazardous Material Release

4.2 Vulnerability Assessment

4.2.1 Asset Inventory

4.2.1.1 Processes and Sources for Identifying Assets

The HAZUS-MH data is based on best available national data sources. The initial step involved updating the default HAZUS-MH data using State of Illinois data sources. At Meeting #1, the planning team members were provided with a plot and report of all HAZUS-MH critical facilities. The planning team took GIS data provided by SIU-Polis, verified the datasets using local knowledge, and allowed SIU-Polis to use their local GIS data for additional verification. SIU-Polis GIS analysts made these updates and corrections to the HAZUS-MH data tables prior to performing the risk assessment. These changes to the HAZUS-MH inventory allow a level two analysis. This update process improved the accuracy of the model predictions.

The default HAZUS-MH data has been updated as follows:

- The HAZUS-MH defaults, critical facilities, and essential facilities have been updated based on most recent available data sources. Critical and essential point facilities have been reviewed, revised, and approved by local subject matter experts at each county.

- The essential facility updates (schools, medical care facilities, fire stations, police stations, and EOCs) have been applied to the HAZUS-MH model data. HAZUS-MH reports of essential facility losses reflect updated data.
- Parcels with assessment improvements (buildings) values were used to estimate the number of buildings in the flood-prone areas.
- The analysis is restricted to the county boundaries. Events that occur near the county boundary do not contain damage assessments from the adjacent county.

4.2.1.2 Essential Facilities List

Table 4-7 identifies the essential facilities that were added or updated for the analysis. A complete list of the critical facilities is included as Appendix F. A map of all the critical facilities is included as Appendix G.

Table 4-7: Essential Facilities List

Facility	Number of Facilities
Care Facilities	16
Emergency Centers	2
Fire Stations	15
Police Stations	14
Schools	21

4.2.1.3 Facility Replacement Costs

Default HAZUS-MH building stock data were used for the HAZUS-MH analyses. Facility replacement costs and total building exposure are identified in Table 4-8. Table 4-7 also includes the estimated numbers of buildings within each occupancy class.

Table 4-8: Building Exposure (default HAZUS-MH) for Franklin County

General Occupancy	Estimated Total Buildings	Total Building Exposure (X 1000)
Agricultural	126	\$16,928
Commercial	895	\$335,334
Education	31	\$40,144
Government	46	\$18,194
Industrial	225	\$104,987
Exempt	123	\$84,663
Residential	21,738	\$1,873,618
Total	23,184	\$2,473,868

Franklin County provided parcel boundaries with assessed values. The Assessor's data did not contain building replacement cost information and other building characteristics, and thus could not be used for the census block aggregated HAZUS-MH analysis. The parcel data was used to estimate the actual number of buildings within the flood-prone areas. The parcel data identified parcels with building improvements, which were then converted into centroid point locations. The parcels with improvements are summarized by occupancy class in Table 4-9.

Table 4-9: Parcels with Improvements by Occupancy Class for Franklin County

Occupancy Class	Count
Residential	13,997
Commercial	1,167
Industrial	26
Agriculture	2,289
Exempt	155
Total	17,634

4.3 Future Development

Franklin County is subject to a variety of natural disasters. County government, in partnership with State government, must make a commitment to prepare for those types of disasters. Likewise, the Franklin County manufacturing base leaves the county vulnerable to major hazardous materials events and other technological threats. However, as the county-elected and appointed officials become better informed on the subject of community hazards, they will be better able to set and direct policies that will enable emergency management and county response agencies to effectively plan, train, and exercise. The end result will be a stronger community and a better place in which to work, live, and grow.

4.4 Hazard Profiles

4.4.1 Tornado Hazard

Hazard Definition for Tornado Hazard

Tornadoes pose a great risk to the State of Illinois and its citizens. Tornadoes historically have occurred during any month of the year. The unpredictability of tornadoes makes them one of Illinois' most dangerous hazards. Their extreme winds are violently destructive when they touch down in the region's developed and populated areas. Current estimates place the maximum velocity at about 300 mph, but higher and lower values can occur. A wind velocity of 200 mph will result in a wind pressure of 102.4 pounds per square foot of surface area, a load that exceeds the tolerance limits of most buildings. Considering these factors, it is easy to understand why tornadoes can be so devastating for the communities they hit.

Tornadoes are defined as violently-rotating columns of air extending from thunderstorms to the ground. Funnel clouds are rotating columns of air not in contact with the ground. However, the violently-rotating column of air can reach the ground very quickly and become a tornado. If the funnel cloud picks up and blows around debris, it has reached the ground and is a tornado.

Tornadoes are classified according to the Fujita tornado intensity scale. The tornado scale ranges from low intensity F0, with effective wind speeds of 40 to 70 mph, to F5 tornadoes with effective wind speeds of over 260 mph. The Fujita intensity scale is included in Table 4-10.

Table 4-10: Fujita Tornado Rating

Fujita Number	Estimated Wind Speed	Path Width	Path Length	Description of Destruction
0 (Gale)	40–72 mph	6–17 yards	0.3–0.9 miles	Light damage, some damage to chimneys, branches broken, sign boards damaged, shallow-rooted trees blown over.
1 (Moderate)	73–112 mph	18–55 yards	1.0–3.1 miles	Moderate damage, roof surfaces peeled off, mobile homes pushed off foundations, attached garages damaged.
2 (Significant)	113–157 mph	56–175 yards	3.2–9.9 miles	Considerable damage, entire roofs torn from frame houses, mobile homes demolished, boxcars pushed over, large trees snapped or uprooted.
3 (Severe)	158–206 mph	176–566 yards	10–31 miles	Severe damage, walls torn from well-constructed houses, trains overturned, most trees in forests uprooted, heavy cars thrown about.
4 (Devastating)	207–260 mph	0.3–0.9 miles	32–99 miles	Complete damage, well-constructed houses leveled, structures with weak foundations blown off for some distance, large missiles generated.
5 (Incredible)	261–318 mph	1.0–3.1 miles	100–315 miles	Foundations swept clean, automobiles become missiles and thrown for 100 yards or more, steel-reinforced concrete structures badly damaged.

Previous Occurrences for Tornado Hazard

There have been several occurrences of tornadoes within Franklin County during recent decades. The NCDC database reported eight tornadoes / funnel clouds in Franklin County since 1957. These storms have been attributed with one death, 31 injuries, and \$5.7 million in property damage in Franklin and adjacent counties.

On May 25, 2004, a brief tornado touched down, but no damage was reported. A tornadic thunderstorm that included a long-lived rotating wall cloud moved east across Franklin County, spawning the tornado. All of the resulting tree damage was associated with straight-line winds.

Franklin County tornadoes recorded in the NCDC database are identified in Table 4-11. Additional details for NCDC events are included in Appendix D.

Table 4-11: Franklin County Tornadoes*

Location or County	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Franklin	12/18/1957	Tornado	F4	0	10	2.5M	0
Franklin	2/9/1960	Tornado	F2	0	0	250K	0
Franklin	4/27/1971	Tornado	F3	1	20	2.5M	0
Franklin	1/7/1989	Tornado	F0	0	0	0K	0
West Frankfort	4/27/1994	Tornado	F1	0	1	500K	0
Mulkeytown	4/19/1996	Tornado	F1	0	0	20K	0
Royalton	11/10/2002	Tornado	F0	0	0	1K	0
Thompsonville	5/25/2004	Tornado	F0	0	0	0	0

Source: NCDC

* NCDC records are estimates of damage compiled by the National Weather Service from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses related to a given weather event.

Geographic Location for Tornado Hazard

The entire county has the same risk for occurrence of tornadoes. They can occur at any location within the county.

Hazard Extent for Tornado Hazard

The historical tornadoes listed previously generally move from west to east across the county—although many other tracks are possible—from more southerly to northerly. The extent of the hazard varies both in terms of the extent of the path and the wind speed.

Calculated Risk Priority Index for Tornado Hazard

Based on historical information, the probability of future tornadoes in Franklin County is highly likely. Tornadoes with varying magnitudes are expected to happen. According to the RPI, tornadoes ranked as the number one hazard.

RPI = Probability x Magnitude/Severity.

Probability	x	Magnitude /Severity	=	RPI
4	x	4	=	16

Vulnerability Analysis for Tornado Hazard

Tornadoes can occur within any area of the county; therefore, the entire county population and all buildings are vulnerable to tornadoes. To accommodate this risk, this plan will consider all buildings located within the county as vulnerable. The existing buildings and infrastructure in Franklin County are discussed in types and numbers in Table 4-8.

Critical Facilities

All critical facilities are vulnerable to tornadoes. A critical facility will encounter many of the same impacts as any other building within the jurisdiction. These impacts will vary based on the magnitude of the tornado, but can include structural failure, debris (trees or limbs) causing damage, roofs blown off or windows broken by hail or high winds, and loss of facility functionality (e.g. a damaged police station will no longer be able to serve the community). Table 4-7 lists the types and numbers of all of the essential facilities in the area. Critical facility information, including replacement costs, is included in Appendix F. A map of the critical facilities is included in Appendix G.

Building Inventory

A table of the building exposure for the entire county is listed in Table 4-8. The buildings within the county can all expect the same impacts, similar to those discussed for critical facilities. These impacts include structural failure, debris (trees or limbs) causing damage, roofs blown off or windows broken by hail or high winds, and loss of building function (e.g. a damaged home will no longer be habitable causing residents to seek shelter).

Infrastructure

During a tornado the types of infrastructure that could be impacted include roadways, utility lines/pipes, railroads, and bridges. Since the county's entire infrastructure is equally vulnerable, it is important to emphasize that any number of these items could become damaged during a tornado. The impacts to these items include broken, failed or impassable roadways, broken or failed utility lines (e.g. loss of power or gas to community), and railway failure from broken or impassable railways. Bridges could fail or become impassable causing risk to traffic.

An example scenario is described as follows to illustrate the anticipated impacts of tornadoes in the county in terms of numbers and types of buildings and infrastructure.

GIS overlay modeling was used to determine the potential impacts of an F-4 tornado. The analysis used a hypothetical path for a tornado which moved in a south easterly direction through Christopher and West Frankfort and remained on the ground for an estimated 20 miles. The

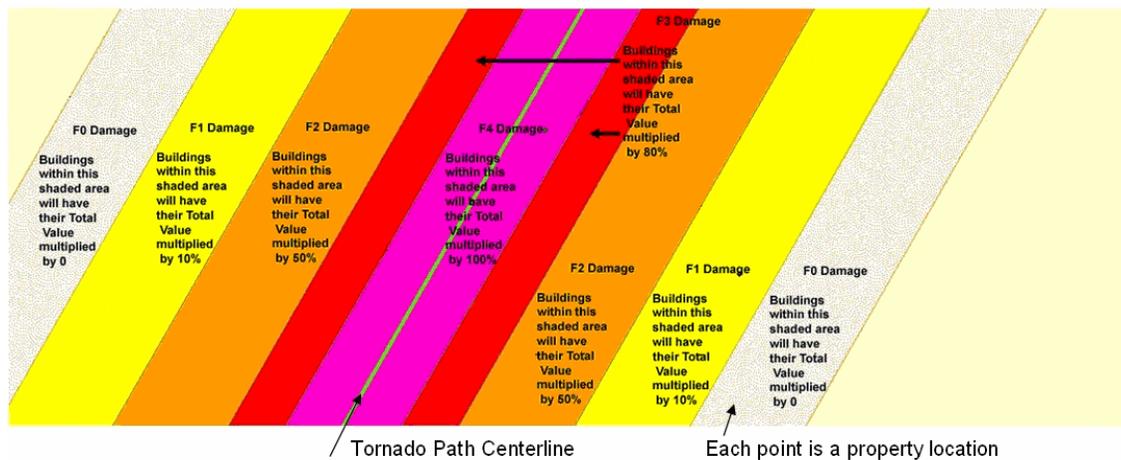
selected widths were modeled after a recreation of the Fujita-Scale guidelines based on conceptual wind speeds, path widths, and path lengths. There is no guarantee that every tornado will fit exactly into one of these six categories. Table 4-12 depicts tornado damage curves as well as path widths.

Table 4-12: Tornado Path Widths and Damage Curves

Fujita Scale	Path Width (feet)	Maximum Expected Damage
F-5	3000	100%
F-4	2400	100%
F-3	1800	80%
F-2	1200	50%
F-1	600	10%
F-0	300	0%

Within any given tornado path there are degrees of damage. The most intense damage occurs within the center of the damage path with a decreasing amount of damage away from the center of the path. This natural process was modeled in GIS by adding damage zones around the tornado path. Figure 4-1 and Table 4-13 describe the zone analysis.

Figure 4-1: GIS Analysis Using Tornado Buffers



Once the hypothetical route is digitized on the map, several buffers are created to model the damage functions within each zone.

An F4 tornado has four damage zones. Total devastation is estimated within 150 feet of the tornado path (the darker-colored Zone 1). The outer buffer is 900 feet from the tornado path (the lightest colored Zone 4), within which 10% of the buildings will be damaged.

Table 4-13: Tornado Zones and Damage Curves

Fujita Scale	Zone	Buffer (feet)	Damage Curve
F-4	4	600-900	10%
F-4	3	300-600	50%
F-4	2	150-300	80%
F-4	1	0-150	100%

The selected hypothetical tornado path is depicted in Figure 4-2, and the damage curve buffers with damaged buildings are shown in Figures 4-3 and 4-4.

Figure 4-2: Hypothetical F-4 Tornado Path in Franklin County

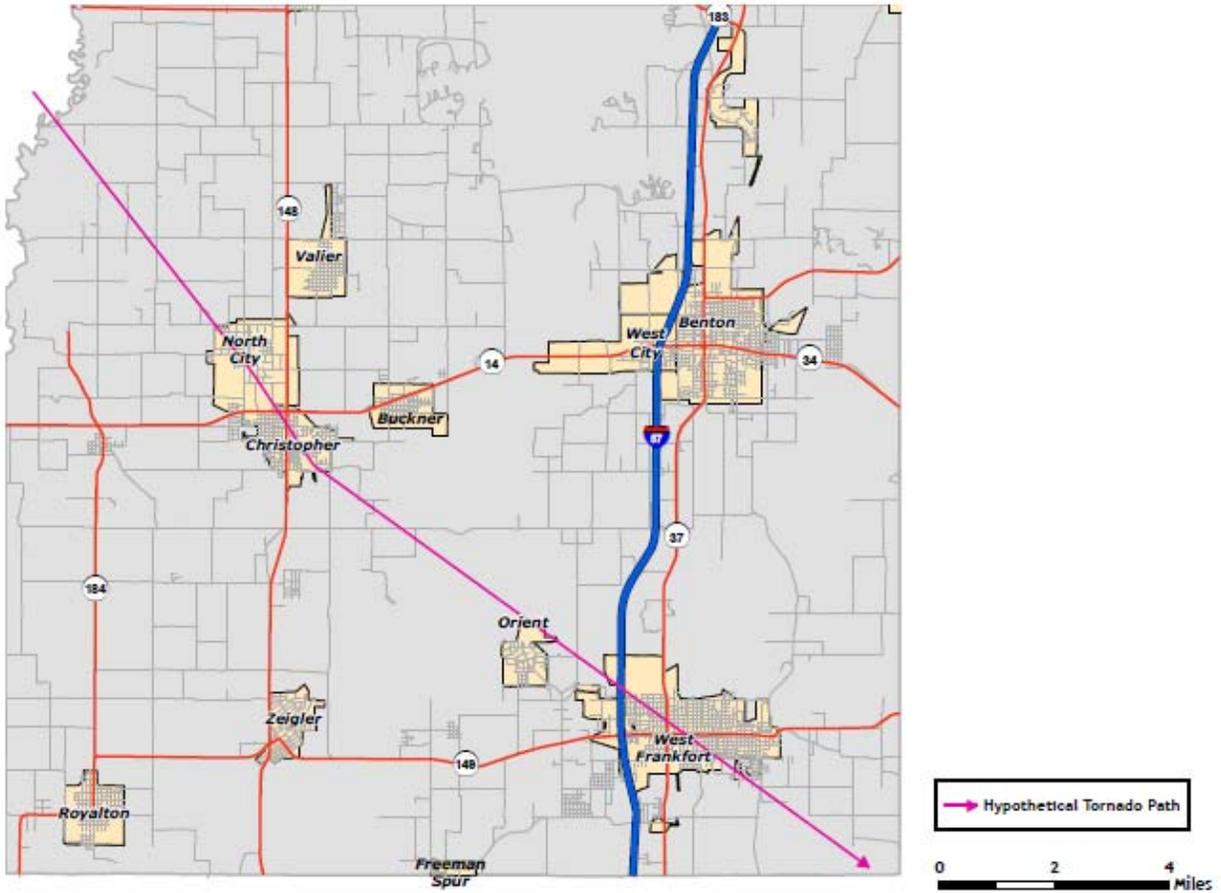


Figure 4-3: Modeled F-4 Tornado Damage Buffers in West Frankfort

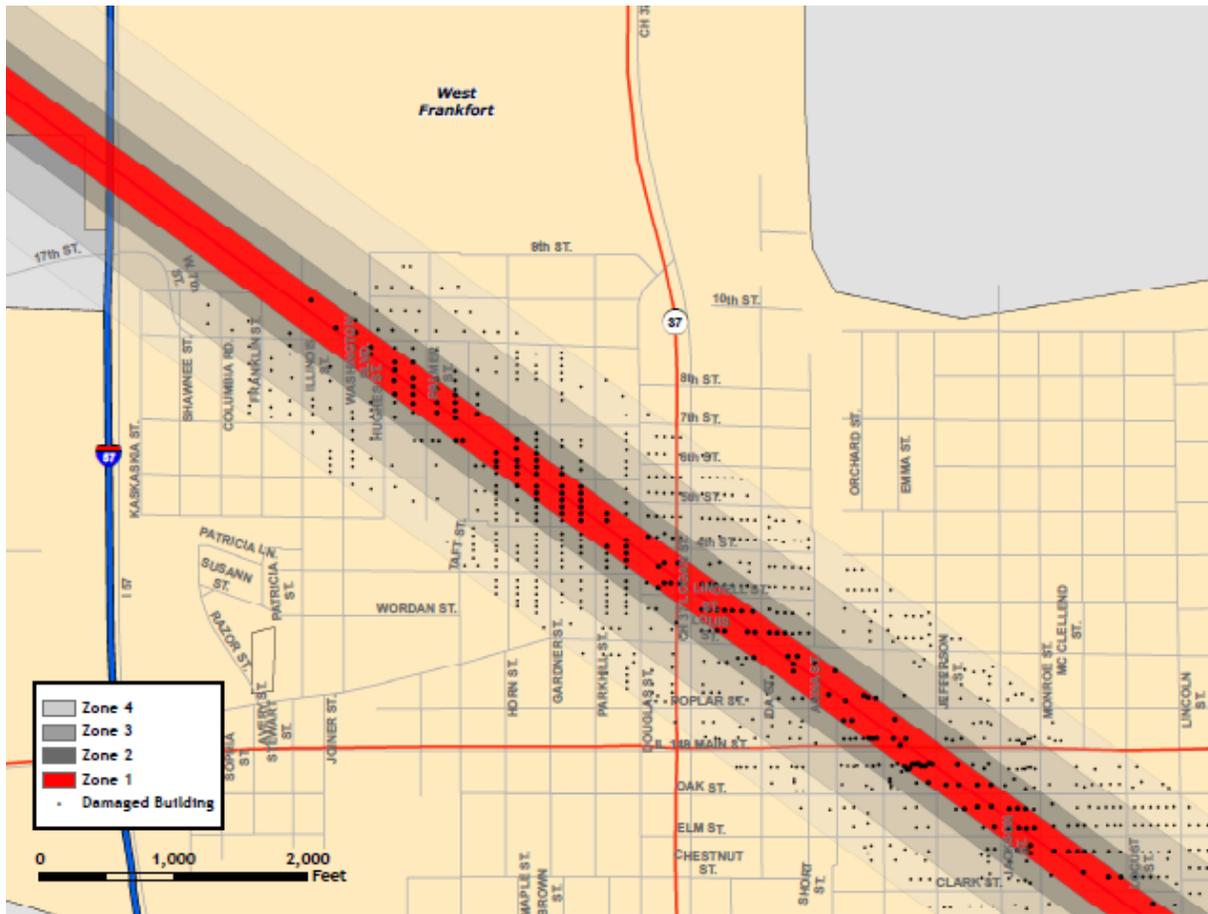
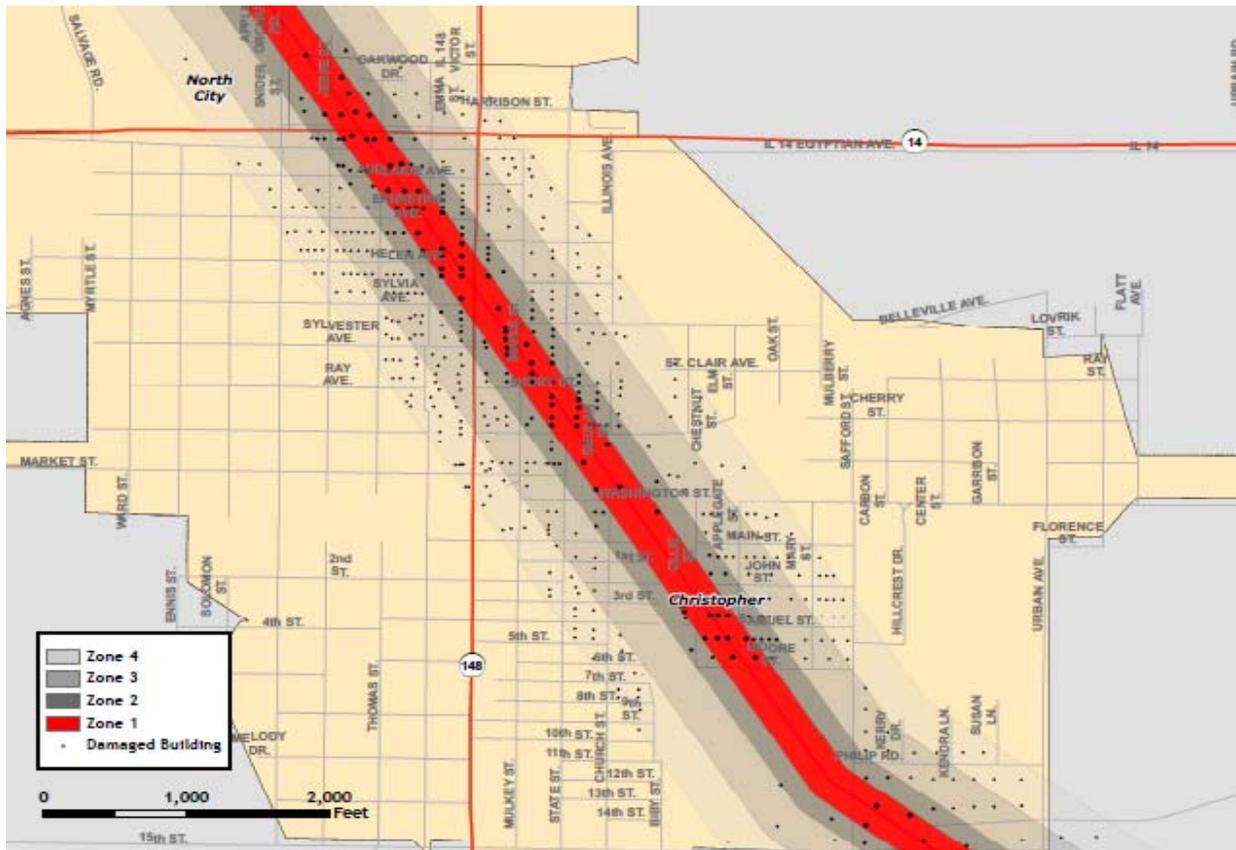


Figure 4-4: Modeled F4 Tornado Damage Buffers in Christopher



The results of the analysis are depicted in Tables 4-14 and 4-15. The GIS analysis estimates that 1,669 buildings will be damaged. The estimated building losses were \$35.2 million. The building losses are an estimate of assessed values multiplied by the percentages of damage. The overlay was performed against parcels provided by Franklin County that were joined with Assessor records showing property improvement.

The Assessor records often do not distinguish parcels by occupancy class if the parcels are not taxable. For purposes of analysis, the total number of buildings and the assessed values for government, religious/non-profit, and education should be lumped together as exempt.

Table 4-14: Estimated Numbers of Buildings Damaged by Occupancy Type

Occupancy	Zone 1	Zone 2	Zone 3	Zone 4
Residential	238	255	443	467
Commercial	37	33	57	75
Industrial	0	0	0	0
Agriculture	5	6	13	12
Exempt	4	3	14	7
Total	284	297	527	561

Table 4-15: Estimated Building Losses by Occupancy Type

Occupancy	Zone 1	Zone 2	Zone 3	Zone 4
Residential	\$8,922,945	\$7,390,488	\$8,452,275	\$1,696,131
Commercial	\$2,241,690	\$1,645,560	\$2,400,810	\$489,494
Industrial	\$0	\$0	\$0	\$0
Agriculture	\$267,915	\$230,892	\$370,005	\$84,950
Exempt	\$191,850	\$159,684	\$677,235	\$8,801
Total	\$11,624,400	\$9,426,624	\$11,900,325	\$2,279,375

Essential Facilities Damage

There are four essential facilities located within 900 feet of the hypothetical tornado path. The model predicts that one police department, two fire departments, and one school would experience damage. The affected facilities are identified in Table 4-16, and their geographic locations are shown in Figures 4-5 and 4-6.

Table 4-16: Estimated Essential Facilities Affected

Name
West Frankfort Police Department
West Frankfort Fire Department
Coello Fire Department
Frankfort High School

Figure 4-5: Essential Facilities within Tornado Path (West Frankfort)

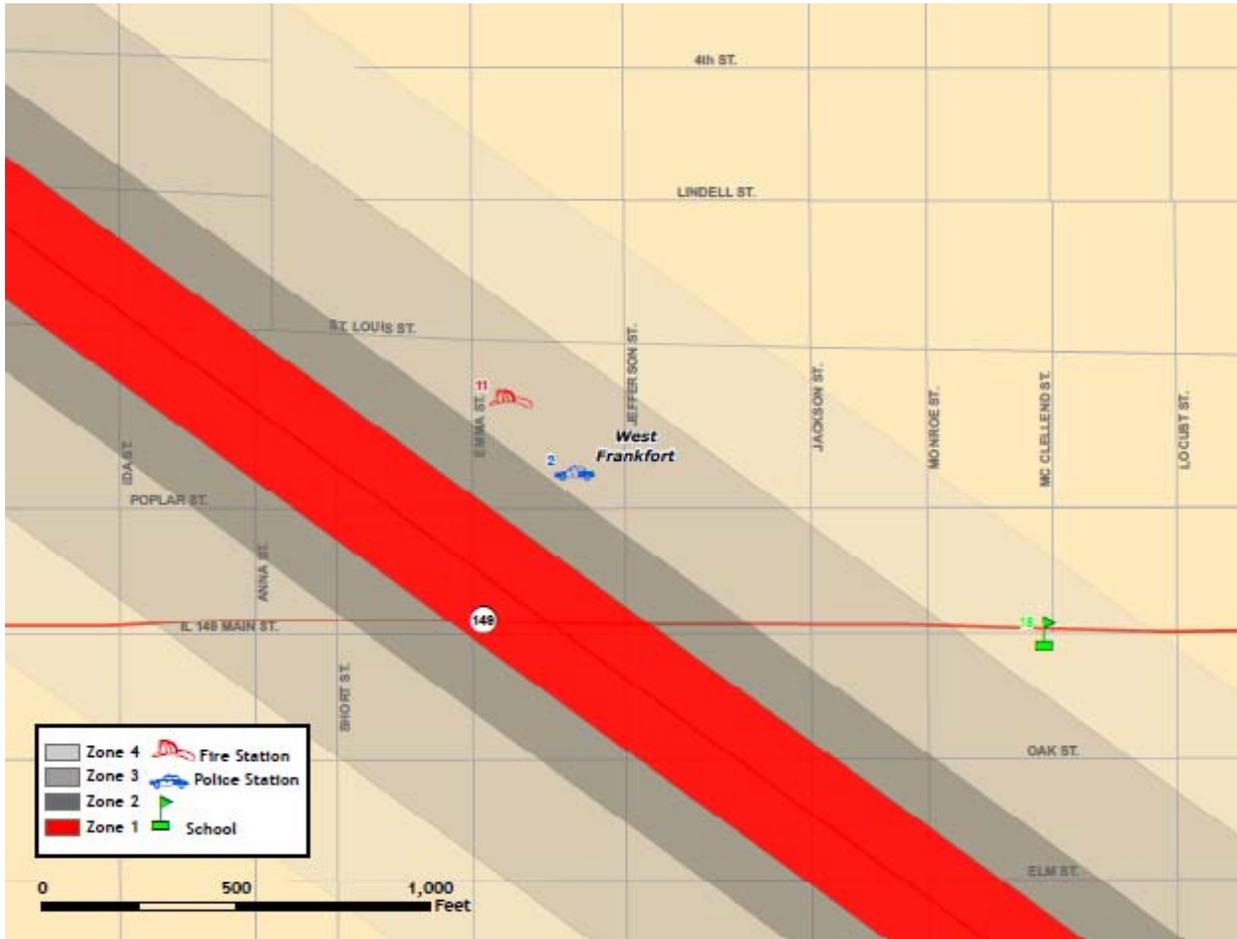
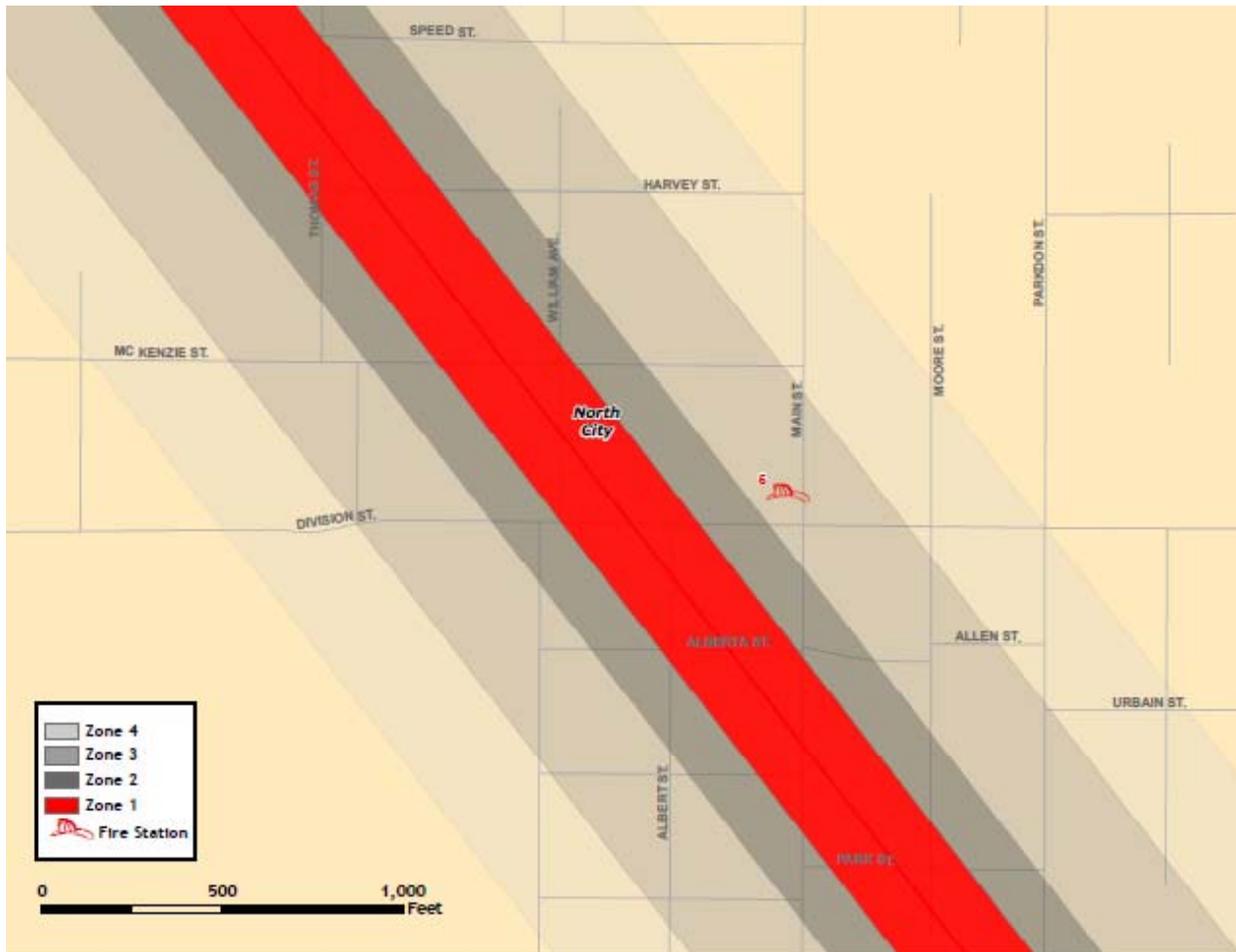


Figure 4-6: Essential Facilities within Tornado Path (Coello)

Vulnerability to Future Assets/Infrastructure for Tornado Hazard

The entire population and buildings have been identified as at risk because tornadoes can occur anywhere within the State of Illinois, at any time of the day, and during any month of the year. Furthermore, any future development in terms of new construction within the county will be at risk. The building exposure for Franklin County is included in Table 4-8.

All critical facilities in the county and its communities are at risk. Critical facility information, including replacement costs, is included in Appendix F. A map of the critical facilities is included in Appendix G.

Analysis of Community Development Trends

Preparing for severe storms will be enhanced if officials sponsor a wide range of programs and initiatives to address the overall safety of county residents. New structures should be built with sturdier construction, and existing structures should be hardened to lessen the potential impacts of severe weather. Community sirens to warn of approaching storms are also vital to ensuring the safety of Franklin County residents.

4.4.2 Flood Hazard

Hazard Definition for Flooding

Flooding is a significant natural hazard throughout the United States. The type, magnitude, and severity of flooding are functions of the amount and distribution of precipitation over a given area, the rate at which precipitation infiltrates into the ground, the geometry and hydrology of the catchment, and flow dynamics and conditions in and along the river channel. Floods can be classified as one of two types: upstream floods or downstream floods. Both types of floods are common in Illinois. Upstream floods, also called flash floods, occur in the upper parts of drainage basins and are generally characterized by periods of intense rainfall over a short duration. These floods arise with very little warning and often result in locally intense damage, and sometimes loss of life, due to the high energy of the flowing water. Flood waters can snap trees, topple buildings, and easily move large boulders or other structures. Six inches of rushing water can upend a person; another eighteen inches might carry off a car. Generally, upstream floods cause damage over relatively localized areas, but they can be quite severe in the local areas where they occur. Urban flooding is a type of upstream flood. Urban flooding involves the overflow of storm drain systems and can be the result of inadequate drainage combined with heavy rainfall or rapid snowmelt. Upstream or flash floods can occur at anytime of the year in Illinois, but they are most common in the spring and summer months.

Downstream floods, sometimes called riverine floods, refer to floods on large rivers at locations with large upstream catchments. Downstream floods are typically associated with precipitation events that are of relatively long duration and occur over large areas. Flooding on small tributary streams may be limited, but the contribution of increased runoff may result in a large flood downstream. The lag time between precipitation and time of the flood peak is much longer for downstream floods than for upstream floods, generally providing ample warning for people to move to safe locations and, to some extent, secure some property against damage. Riverine flooding on the large rivers of Illinois generally occurs during either the spring or summer.

Hazard Definition for Dam and Levee Failure

Dams are structures that retain or detain water behind a large barrier. When full or partially full, the difference in elevation between the water above the dam and below creates large amounts of potential energy, creating the potential for failure. The same potential exists for levees when they serve their purpose, which is to confine flood waters within the channel area of a river and exclude that water from land or communities land-ward of the levee. Dams and levees can fail due to either: 1) water heights or flows above the capacity for which the structure was designed; or 2) deficiencies in the structure such that it cannot hold back the potential energy of the water. If a dam or levee fails, issues of primary concern include loss of human life/injury, downstream property damage, lifeline disruption (of concern would be transportation routes and utility lines required to maintain or protect life), and environmental damage.

Many communities view both dams and levees as permanent and infinitely safe structures. This sense of security may well be false, leading to significantly increased risks. Both downstream of dams and on floodplains protected by levees, security leads to new construction, added infrastructure, and increased population over time. Levees in particular are built to hold back

flood waters only up to some maximum level, often the 100-year (1% annual probability) flood event. When that maximum is exceeded by more than the design safety margin, then the levee will be overtopped or otherwise fail, inundating communities in the land previously protected by that levee. It has been suggested that climate change, land-use shifts, and some forms of river engineering may be increasing the magnitude of large floods and the frequency of levee-failure situations.

In addition to failure that results from extreme floods above the design capacity, levees and dams can fail due to structural deficiencies. Both dams and levees require constant monitoring and regular maintenance to assure their integrity. Many structures across the U.S. have been underfunded or otherwise neglected, leading to an eventual day of reckoning in the form either of realization that the structure is unsafe or, sometimes, an actual failure. The threat of dam or levee failure may require substantial commitment of time, personnel, and resources. Since dams and levees deteriorate with age, minor issues become larger compounding problems, and the risk of failure increases.

Previous Occurrences for Riverine and Flash Flooding

The NCDC database reported 50 flood events in Franklin County since 1993. These events have been attributed with one injury and nearly \$11.5 million in property damage in Franklin and adjacent counties. The most recent occurred on February 8, 2008 with minor flooding of the Big Muddy River. At Plumfield, the river crested at 20.19 feet—flood stage there is 20 feet—and low-lying fields and woodlands were flooded. Numerous thunderstorms on February 5 were caused by low pressure moving northeast across southeast Missouri and southern Illinois. The heavy precipitation resulted in minor flooding on the Big Muddy River.

Significant Franklin County floods recorded by the NCDC are shown in Table 4-17. A list of flood events and additional sources that provide information about the significant flood events are included in Appendix D. Historical flood crests and discharges at hydrologic monitoring stations are summarized in Appendix H.

Table 4-17: Franklin County Previous Occurrences of Flooding*

Location or County	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Franklin	11/14/1993	Flash Flood	N/A	0	0	5K	0
Franklin	5/15/1995	River Flood	N/A	0	1	0	0
Franklin	6/1/1995	River Flood	N/A	0	0	0	0
Franklin	4/22/1996	Flood	N/A	0	0	35K	30K
West Frankfort	4/28/1996	Flash Flood	N/A	0	0	3.0M	50K
Franklin	5/1/1996	Flood	N/A	0	0	100K	0
Sesser	5/5/1996	Flash Flood	N/A	0	0	0	0
West Frankfort	5/10/1996	Flash Flood	N/A	0	0	8.0M	0
Franklin	6/1/1996	Flood	N/A	0	0	0	0

Location or County	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
West Frankfort	7/19/1996	Urban/sml Stream Fld	N/A	0	0	0	0
Benton	8/26/1996	Urban/sml Stream Fld	N/A	0	0	0	0
Franklin	1/21/1997	Flood	N/A	0	0	0	0
Franklin	3/1/1997	Flood	N/A	0	0	20K	0
Akin	6/6/1997	Flash Flood	N/A	0	0	0	0
Franklin	4/1/1998	Flood	N/A	0	0	0	0
Franklin	4/15/1998	Flash Flood	N/A	0	0	10K	0
West Frankfort	6/29/1998	Flash Flood	N/A	0	0	100K	0
Franklin	1/21/1999	Flash Flood	N/A	0	0	100K	0
Franklin	1/21/1999	Flood	N/A	0	0	0	0
Franklin	2/1/1999	Flood	N/A	0	0	6K	0
Franklin	4/4/1999	Flood	N/A	0	0	0	0
Zeigler	6/16/2000	Flash Flood	N/A	0	0	0	0
Franklin	6/17/2000	Flood	N/A	0	0	10K	0
West Frankfort	9/18/2001	Urban/sml Stream Fld	N/A	0	0	0	0
Franklin	12/16/2001	Flood	N/A	0	0	0	0
Franklin	2/1/2002	Flood	N/A	0	0	0	0
Franklin	3/10/2002	Flood	N/A	0	0	0	0
Franklin	4/1/2002	Flood	N/A	0	0	0	0
Franklin	4/14/2002	Flood	N/A	0	0	0	0
Franklin	5/1/2002	Flood	N/A	0	0	18K	0
Franklin	6/27/2002	Flash Flood	N/A	0	0	75K	0
Franklin	2/22/2003	Flood	N/A	0	0	0	0
Franklin	5/5/2003	Flood	N/A	0	0	0	0
Franklin	5/6/2003	Flash Flood	N/A	0	0	0	0
Franklin	6/12/2003	Flood	N/A	0	0	0	0
Benton	5/25/2004	Flash Flood	N/A	0	0	0	0
West Frankfort	5/26/2004	Flash Flood	N/A	0	0	0	0
Franklin	5/28/2004	Flood	N/A	0	0	0	0
Franklin	6/1/2004	Flood	N/A	0	0	0	0
Franklin	8/28/2004	Flash Flood	N/A	0	0	0	0
Benton	10/18/2004	Flash Flood	N/A	0	0	0	10K

Location or County	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Franklin	1/7/2005	Flood	N/A	0	0	0	0
West Frankfort	3/9/2006	Flash Flood	N/A	0	0	0	0
Plumfield	3/10/2006	Flood	N/A	0	0	0	0
Benton	3/12/2006	Flash Flood	N/A	0	0	0	0
Plumfield	1/15/2007	Flood	N/A	0	0	0	0
Plumfield	2/27/2007	Flood	N/A	0	0	0	0
Plumfield	3/1/2007	Flood	N/A	0	0	0	0
Benton	5/10/2007	Flash Flood	N/A	0	0	0	0
Plumfield	2/8/2008	Flood	N/A	0	0	0	0

Source: NCDC

* NCDC records are estimates of damage compiled by the National Weather Service from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses related to a given weather event.

Previous Occurrences for Dam and Levee Dam Failure

According to Franklin County historical records, there are no records or local knowledge of any dam or certified levee failure in the county.

Repetitive Loss Properties

FEMA defines a repetitive loss structure as a structure covered by a contract of flood insurance issued under the National Flood Insurance Program (NFIP), which has suffered flood loss damage on two or more occasions during a 10-year period that ends on the date of the second loss, in which the cost to repair the flood damage is 25% of the market value of the structure at the time of each flood loss.

Illinois Emergency Management was contacted to determine the location of repetitive loss structures. Franklin County has two repetitive loss structures within the county. The total amount paid for building replacement and building contents for damages to these repetitive loss structures was \$23,333.28. Table 4-18 describes the loss structures in terms of occupancy and jurisdiction.

Table 4-18: Franklin County Repetitive Loss Structures

Jurisdiction	Occupancy Type	Number of Structures	Number of Losses	Total Paid
West Frankfort	Single-Family	1	3	\$8,848.52
West Frankfort	Other Residential	1	3	\$14,484.76
Totals		2	6	\$22,333.28

Geographic Location for Flooding

Most riverine flood in Illinois occurs during either the spring or summer and is the result of excessive rainfall and/or the combination of rainfall and snowmelt. Flash flooding in Illinois can occur during anytime of the year, but tends to be less frequent and more localized between mid-summer and early winter.

The primary sources of river flooding in Franklin County are the Big Muddy River and its major tributaries: the Green River, Ewing Creek, and Andy Creek. The Big Muddy River can potentially flood portions West City, Buckner, Orient, and Freeman Spur. Flooding of Ewing Creek and its tributaries can potential impact northern portions West Frankfort and a very small portion of Thompsonville. Andy Creek can potential flood portions of Christopher and Buckner. Flooding along these streams can block important transportation such as State Routes 14, 34, 148, and 149. The areas of riverine flooding are depicted on the map in Appendix E.

Flash flooding in Franklin County typically occurs or is best documented in urban/developed areas. For example, on June 27, 2002 a slow-moving complex of thunderstorms with torrential rain caused major problems over much of Franklin County, especially at Benton and West City. Firefighters rescued an elderly woman who needed assistance getting out of rising floodwater in her cellar. The water was about 18 inches deep when she was rescued. In another incident in Franklin County, sheriff deputies aided a woman whose car was swept off Highway 37. The car was swept into a flooded ditch, and ropes were used to get the woman to safety. Flooded streets, yards, and basements were common in Benton and West City. Some of the streets were closed, and several motorists became stranded while trying to drive through flooded areas.

A digital file of the FIRM maps was used to identify specific stream reaches for analysis. The areas of riverine flooding are depicted on the map in Appendix E.

In Meeting #4, held on January 23, 2009, the planning team members listed a voluntary buyout option as a mitigation strategy to alleviate damage to structures within the county's flood plain. They identified potential hazard areas in which this program may prove valuable. The results are listed in Table 4-19.

Table 4-19: Potential Voluntary Buyout Properties

Jurisdiction	Number of Structures	Road	Stream/River Floodplain
Franklin County	3	Freeman Road	Tributary to Big Muddy
Franklin County	1	Cherry Street	Tributary to Big Muddy
Franklin County	1	Lawrence Road	Tributary to Big Muddy
Franklin County	1	State Route 14	Tributary to Big Muddy
Royalton	1	6 th Street South	Tributary to Prairie Creek
Royalton	1	Main ST	Tributary to Prairie Creek
West Frankfort	2	7 th Street	Middle Fork, Big Muddy River
West Frankfort	7	Parkhill Street	Middle Fork, Big Muddy River
West Frankfort	3	Douglas ST	Middle Fork, Big Muddy River
West Frankfort	3	Logan ST	Middle Fork, Big Muddy River

Jurisdiction	Number of Structures	Road	Stream/River Floodplain
West Frankfort	4	N. Gardner ST	Middle Fork, Big Muddy River
West Frankfort	6	West Road	Tributary to Big Muddy
West Frankfort	1	Pershing Road	Tributary to Big Muddy

Geographic Location for Dam and Levee Failure

The National Inventory of Dams identified 38 dams in Franklin County. The map in Appendix E illustrates the location of Franklin County dams. Table 4-20 summarizes the National Inventory of Dams information.

Table 4-20: National Inventory of Dams

Name	River	Hazard	EAP
NEW CITY LAKE DAM	STEVENS CREEK, TRIB EWING CR	H	Y
ZEIGLER CITY LAKE DAM	TRIB BIG MUDDY RIVER	S	N
VALIER LAKE DAM	ANDY CREEK	H	N
FREEMAN UNITED/ /LAKE DAM	TRIB MIDDLEE FORK BIG MUDDY RI	S	N
OLD CITY LAKE DAM	TILLEY CREEK	S	Y
CAMBON LAKE DAM	TRIB BIG MUDDY RIVER	S	N
SESSER RESERVOIR DAM	TRIB SANDUSKY CREEK	L	N
CRISTOPHER OLD RESERVOIR DAM	TRIB ANDY CREEK	S	N
BEAVER LAKE DAM	TRIB BIG MUDDY RIVER	S	N
BUCKNER RESERVOIR DAM	OFF STREAM	L	N
LAKE HAMILTON DAM	MARCUM BRANCH	S	N
LAKE MOSES DAM	TRIB DRUMMOND BRANCH	S	N
CHRISTOPHER NEW RESERVOIR DAM	TRIB ANDY CREEK	L	N
LAKE BENTON DAM	MARCUM BRANCH	S	N
OLD BEN/MINE 21/SLURRY CELL 2 DAM	TRIB JACKIE BRANCH	L	N
OLD BEN/MINE 21/SLURRY CELL 3 DAM	TRIB JACKIE BRANCH	L	Y
OLD BEN/MINE 24/SEDIMENT AND SLURRY DAM	TRIB BIG MUDDY RIVER	L	N
OLD BEN/MINE 24/NORTH POND DAM	TRIB SUGAR CREEK	L	N
OLD BEN/MINE 21/RESERVOIR DAM	JACKIE BRANCH	S	N
OLD BEN/MINE 21/SLURRY CELL 4 DAM	TRIB JACKIE BRANCH	S	Y
OLD BEN/MINE 26/SLURRY CELL 4 DAM	SANDUSKY CREEK	L	N
OLD BEN/24/FRESHWATER LAKE DAM	TRIB BIG MUDDY RIVER	L	N
OLD BEN/MINE 24/SLURRY CELL 2 DAM	TRIB BIG MUDDY RIVER	L	N
OLD BEN/MINE 26/SLURRY CELL 3 DAM	TRIB REND LAKE	S	Y
OLD BEN/JOHN ROSS PLANT/SLURRY CELL 2	TRIB TILLEY CREEK	H	Y
OLD BEN COAL CO/JOHN ROSS/SEDIMENT POND	TRIB TILLEY CREEK	L	Y
REND LAKE DAM	BIG MUDDY RIVER	H	Y
MINE NO.21		S	N
MINE NO.21		S	N
MINE NO.21		S	N
MINE NO.24		L	N
MINE NO.24		L	N

Name	River	Hazard	EAP
MINE NO.24		S	N
MINE NO.24		S	N
MINE NO.25		S	N
MINE NO.26		S	N
MINE NO.26		S	N
CONSOL/REND LAKE MINE/SEDIME	TRIB SILVER CREEK	L	N

A review of the Illinois Department of Natural Resources (IDNR) files identified no state or federal levees in Franklin County.

Hazard Extent for Flooding

The HAZUS-MH flood model is designed to use a flood depth grid and flood boundary polygon from the FIRM data. HAZUS-MH was used to model the Base Flood Elevation (BFE). The BFE is defined as the area that has a 1% chance of flooding in any given year. Planning team input and a review of historical information provided additional information on specific flood events.

Hazard Extent for Dam and Levee Failure

Dams assigned the low (L) hazard potential classification are those where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property. Dams assigned the significant (S) hazard classification are those dams where failure or mis-operation results in no probable loss of human life but can cause economic loss, environment damage, disruption of lifeline facilities, or impact other concerns. Dams classified as significant hazard potential dams are often located in predominantly rural or agricultural areas, but could be located in populated areas with a significant amount of infrastructure. Dams assigned the high (H) hazard potential classification are those dams where failure or mis-operation has the highest risk to cause loss of human life and significant damage to buildings and infrastructure.

According to the IDNR and the National Inventory of Dams, four dams are classified as a high hazard dams. Eight dams have an Emergency Action Plan (EAP). An EAP is not required by the State of Illinois but is recommended by the Illinois Department of Natural Resources.

Accurate mapping of the risks of flooding behind levees depends on knowing the condition and level of protection the levees actually provide. FEMA and the U.S. Army Corps of Engineers are working together to make sure that flood hazard maps better reflect the flood protection capabilities of levees and that the maps accurately represent the flood risks posed to areas situated behind them. Levee owners—usually states, communities, or private individuals or organizations such as local levee districts—are responsible for ensuring that the levees they own are maintained to their original design level and condition. In order to be considered creditable flood protection structures on FEMA's flood maps, levee owners must provide documentation to prove that the levee meets design, operation, and maintenance standards for protection against the 1% annual probability (100-year) flood.

Calculated Risk Priority Index for Flooding

Based on historical information and the HAZUS-MH flooding analysis results, the probability of flooding in Franklin County is likely. According to the Risk Priority Index (RPI), flooding ranked as the number four hazard.

RPI = Probability x Magnitude/Severity.

Probability	x	Magnitude /Severity	=	RPI
3	x	4	=	12

Calculated Risk Priority Index for Dam and Levee Failure

Based on operation and maintenance requirements and local knowledge of the dams in Franklin County, the probability of failure is possible. However, if a high hazard dam were to fail, the magnitude and severity of the damage could be great. The warning time and duration of the dam failure event would be very short. According to the RPI, dam and levee failure ranked as the number seven hazard.

RPI = Probability x Magnitude/Severity.

Probability	x	Magnitude /Severity	=	RPI
2	x	2	=	4

Vulnerability Analysis for Flooding (HAZUS-MH Analysis Using 100-Year Flood Boundary and Default Building Inventory)

HAZUS-MH generated the flood depth grid for a 100-year return period and made calculations by clipping the USGS 30-m DEM to the flood boundary. Next, HAZUS-MH estimated the damages for Franklin County by utilizing default aggregate building inventory census data.

Building Inventory

A table of the building replacement costs (types and numbers of buildings) for the facilities identified in the flood boundary flood areas are listed in Table 4-21. These buildings can expect impacts similar to those discussed for the critical facilities. These include structural failure, extensive water damage to the facility, and loss of facility functionality (i.e. residential buildings may no longer be able to provide shelter to their inhabitants).

Table 4-21: Franklin County HAZUS-MH Analysis Total Economic Loss (100-Year Flood)

General Occupancy	Total Damaged Buildings	Building Loss (X 1000)	Total Economic Loss (X 1000)
Agricultural	0	\$192	\$819
Commercial	0	\$2,023	\$7,837
Education	0	\$70	\$497
Government	0	\$33	\$266
Industrial	0	\$1,258	\$4,746
Religious/Non-Profit	0	\$201	\$1,459
Residential	42	\$11,563	\$17,681
Total	42	\$15,340	\$33,305

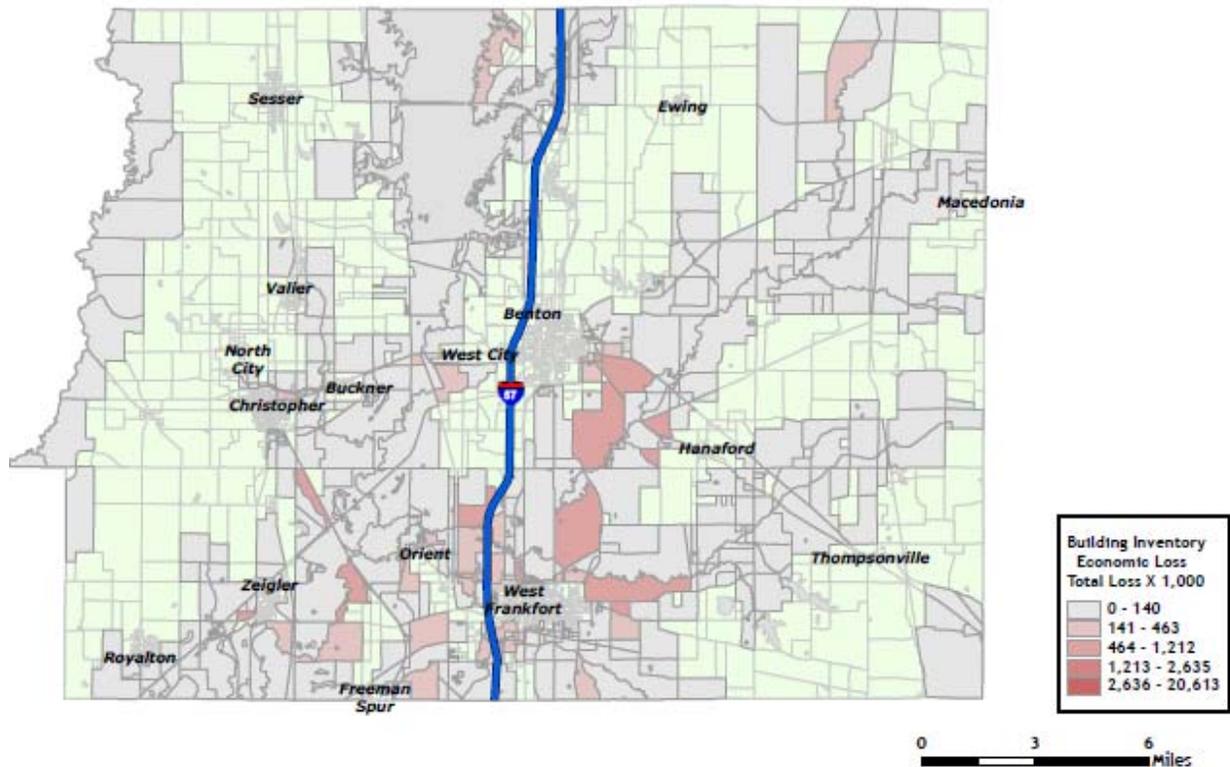
The reported building counts should be interpreted as degrees of loss rather than exact numbers of buildings exposed to flooding. These numbers were derived from aggregate building inventories, which were assumed to be dispersed evenly across census blocks. HAZUS-MH requires that a predetermined amount of square footage of a typical building sustains damage in order to produce a damaged building count. If only a minimal amount of building damage is predicted, it is possible to see no damaged building counts, even while seeing economic losses.

Figure 4-7 depicts the flood boundary from the HAZUS-MH analysis. HAZUS-MH estimates the 100-year flood would damage 42 buildings, totaling \$15.3 million in building losses and \$33.3 million in economic losses.

Figure 4-7: Franklin County HAZUS-MH Analysis (100-Year Flood)

HAZUS-MH estimates two census blocks affected by the modeled flood event, with losses exceeding \$1 million. The distribution of losses is shown in Figure 4-8.

HAZUS-MH aggregate loss analysis is evenly distributed across a census block. Census blocks of concern should be reviewed in more detail to determine the actual percentage of facilities that fall within the flood hazard areas. The aggregate losses reported in this study may be overstated.

Figure 4-8: Franklin County Total Economic Loss (100-Year Flood)

Essential Facilities

An essential facility will encounter many of the same impacts as other buildings within the flood boundary. These impacts can include structural failure, extensive water damage to the facility and loss of facility functionality (e.g. a damaged police station will no longer be able to serve the community). A complete list of all the critical facilities, including replacement costs, is included in Appendix F. A map of the critical facilities is included in Appendix G.

The HAZUS-MH analysis identified no essential facilities that would be subject to flooding.

GIS Analysis Using 100-Year Flood Boundary and County Parcels

HAZUS-MH generated the flood depth grid for a 100-year return period and made calculations by clipping the USGS 30-m DEM to the flood boundary. Next, HAZUS-MH utilized a user-defined analysis of Franklin County with site-specific parcel data provided by the county.

HAZUS-MH estimates the 100-year flood would damage 332 buildings. The total estimated numbers of damaged buildings are given in Table 4-22. Figure 4-9 depicts the Franklin County parcel points that fall within the 100-year floodplain. Figures 4-10 and 4-11 highlight damaged buildings within the flood boundary floodplain areas in West Frankfort and Benton.

Table 4-22: Franklin County Potential Flood-Prone Buildings

General Occupancy	Total Damaged Buildings
Residential	146
Commercial	15
Industrial	1
Agricultural	169
Exempt	1
Total	332

Figure 4-9: Franklin County Buildings in Floodplain (100-Year Flood)

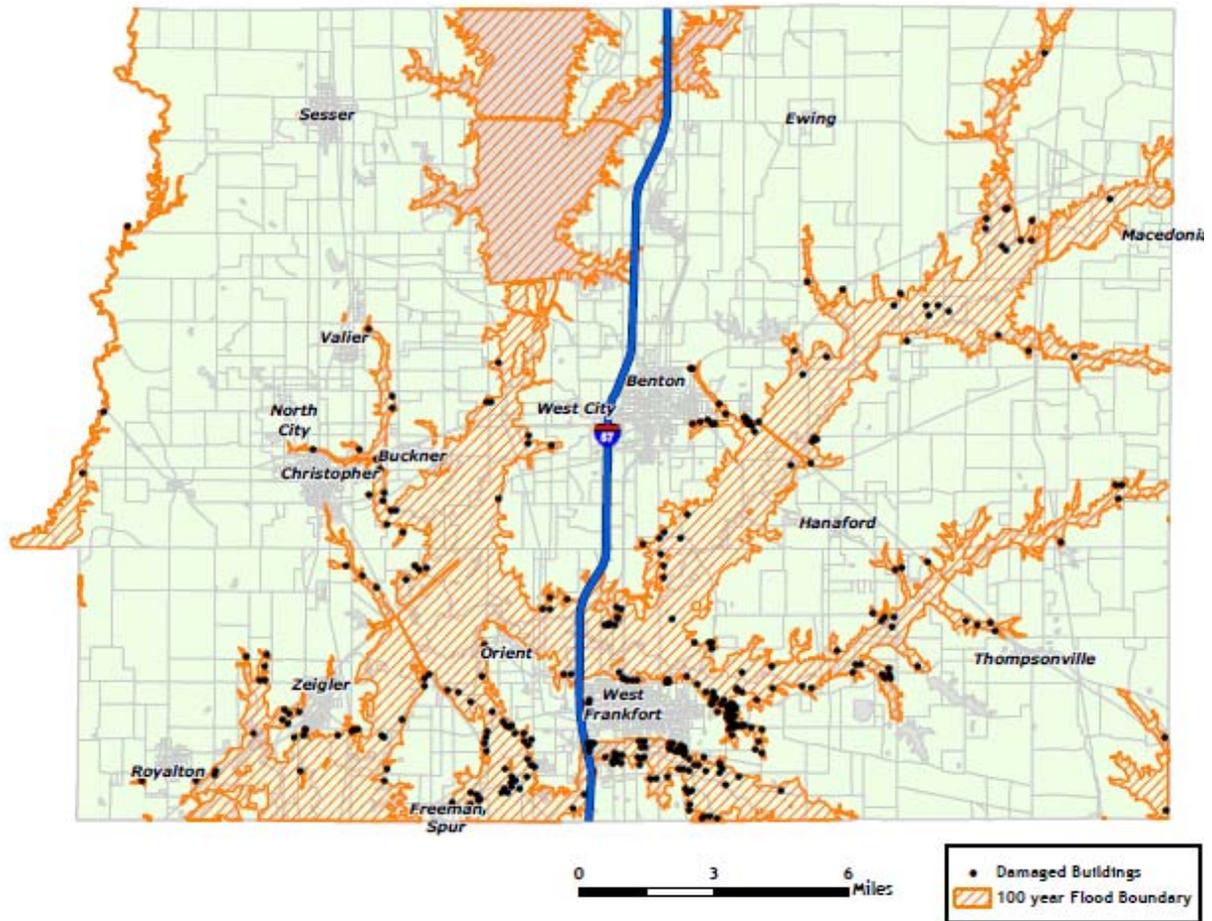


Figure 4-10: Franklin County Urban Areas (West Frankfort) Flood-Prone Areas (100-Year Flood)

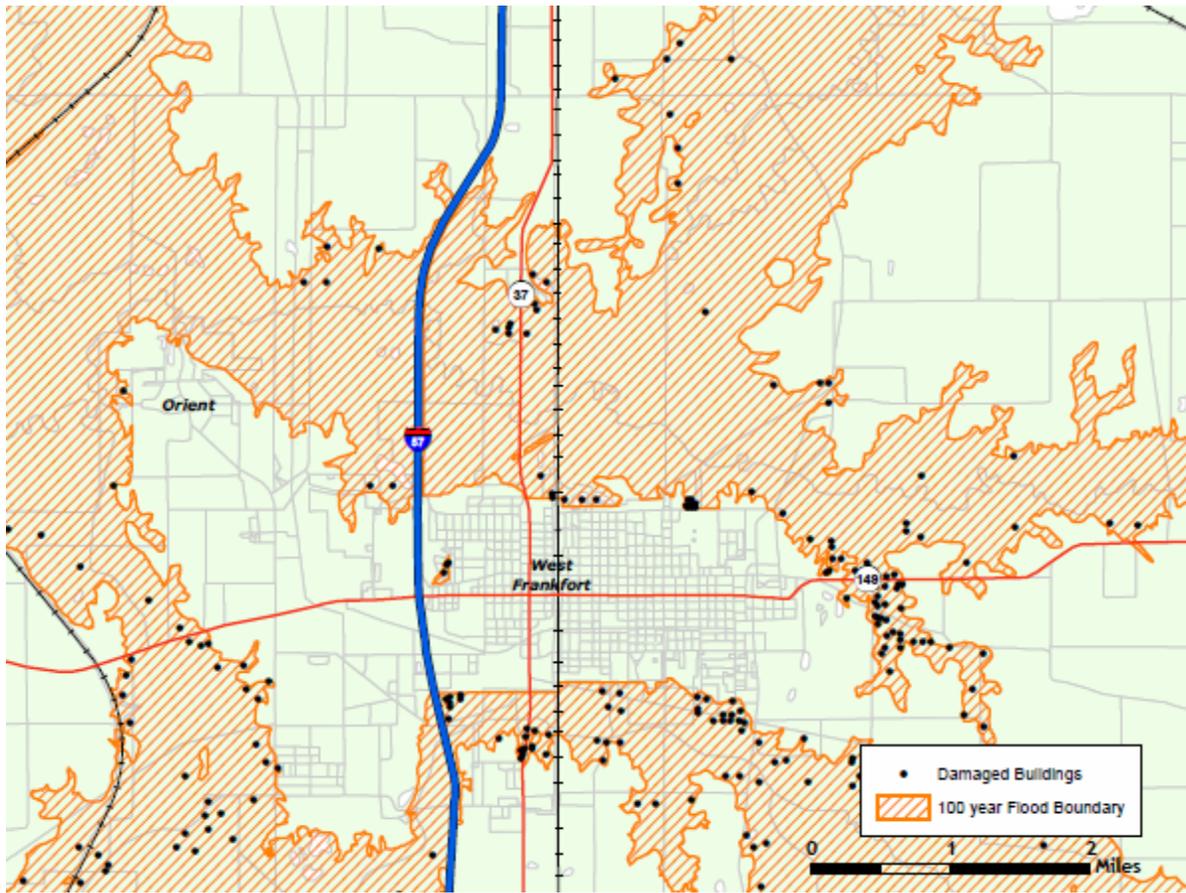


Figure 4-11: Franklin County Urban Areas (Benton) Flood-Prone Areas (100-Year Flood)

Infrastructure

The types of infrastructure that could be impacted by a flood include roadways, utility lines/pipes, railroads, and bridges. Since an extensive inventory of the infrastructure is not available for this plan, it is important to emphasize that any number of these items could become damaged in the event of a flood. The impacts to these items include broken, failed, or impassable roadways; broken or failed utility lines (e.g. loss of power or gas to community); or railway failure from broken or impassable railways. Bridges could fail or become impassable, causing a traffic risk.

Vulnerability Analysis for Flash Flooding

Flash flooding could affect any low lying or poorly drained area within this jurisdiction; therefore, a significant portion of the county's population and buildings are vulnerable to a flash flood. These structures can expect the same impacts as discussed in a riverine flood.

Critical facility information, including replacement costs, is included in Appendix F. A map of the critical facilities is included in Appendix G.

Vulnerability Analysis for Dam and Levee Failure

An EAP is required to assess the effect of dam failure on these communities. In order to be considered creditable flood protection structures on FEMA's flood maps, levee owners must provide documentation to prove the levee meets design, operation and maintenance standards for protection against the 1% annual probability flood.

Vulnerability to Future Assets/Infrastructure for Flooding

Flash flooding may affect nearly any location within the county; therefore all buildings and infrastructure are vulnerable to flash flooding. Currently, the municipality zoning boards review new development for compliance with local zoning ordinances. The Franklin County Engineer administers the floodplain for the county.

Vulnerability to Future Assets/Infrastructure for Dam and Levee Failure

Municipal Planning Commissions reviews new development for compliance with local zoning ordinances.

Analysis of Community Development Trends

Areas with recent development within the county may be more vulnerable to drainage issues. Storm drains and sewer systems are usually most susceptible, which can cause the back-up of water, sewage, and debris into homes and basements, causing structural and mechanical damage as well as creating public health hazards and unsanitary conditions. Controlling floodplain development is the key to reducing flood-related damages.

4.4.3 Earthquake Hazard

Hazard Definition for Earthquake Hazard

An earthquake is a sudden, rapid shaking of the Earth caused by the breaking and shifting of rock beneath the Earth's surface. For hundreds of millions of years, plate tectonics has shaped the Earth as the huge plates that form the Earth's surface move slowly over, under, and past each other. At their boundaries, the plates typically are locked together and unable to release the accumulating energy. When this energy grows strong enough, the plate boundary breaks free and causes the ground to shake. Most earthquakes occur at the boundaries where the plates meet; however, some earthquakes occur in the middle of plates, as is the case for seismic zones in the Midwestern United States. The most seismically active area in the Midwest U.S. is the New Madrid Seismic Zone. Scientists have learned that the New Madrid fault system may not be the only fault system in the Central U.S. capable of producing damaging earthquakes. The Wabash Valley fault system in Illinois and Indiana manifests evidence of large earthquakes in its geologic history, and there may be other, as yet unidentified, faults that could produce strong earthquakes.

Ground shaking from strong earthquakes can collapse buildings and bridges; disrupt gas, electric, and phone service; and sometimes trigger landslides, avalanches, flash floods, fires, and destructive ocean waves (tsunamis). Buildings with foundations resting on unconsolidated materials and other unstable soil, and trailers and homes not tied to their foundations are at risk because they can be shaken off their mountings during an earthquake. When an earthquake occurs in a populated area, it may cause deaths, injuries, and extensive property damage. Magnitude measures the energy released at the source of the earthquake. Magnitude is determined from measurements on seismographs, and a single earthquake will have a single magnitude to quantify its strength. Earthquake intensity measures the strength of shaking produced by the earthquake at a certain location. Intensity is determined from effects on people, human structures, and the natural environment, and a single earthquake will have a wide range of intensity values at different locations around the epicenter. Table 4-23 is a description of earthquake intensity using an abbreviated Modified Mercalli Intensity scale, and Table 4-24 lists earthquake magnitudes and their corresponding intensities.

(Source: http://earthquake.usgs.gov/learning/topics/mag_vs_int.php)

Table 4-23: Abbreviated Modified Mercalli Intensity Scale

Mercalli Intensity	Description
I	Not felt except by a very few under especially favorable conditions.
II	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.

Mercalli Intensity	Description
VI	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
XI	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
XII	Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Table 4-24: Earthquake Magnitude vs. Modified Mercalli Intensity Scale

Earthquake Magnitude	Typical Maximum Modified Mercalli Intensity
1.0 - 3.0	I
3.0 - 3.9	II - III
4.0 - 4.9	IV - V
5.0 - 5.9	VI - VII
6.0 - 6.9	VII - IX
7.0 and higher	VIII or higher

Historical Earthquakes that have Affected Franklin County

Numerous instrumentally measured earthquakes have occurred in Illinois. In the past few decades, with many precise seismographs positioned across Illinois, measured earthquakes have varied in magnitude from very low microseismic events of $M=1-3$ to larger events up to $M=5.4$. Microseismic events are usually only detectable by seismographs and rarely felt by anyone. The most recent earthquake in Illinois—as of the date of this report—occurred on June 1, 2008 at 8:56:12 local time about 35 km (25 miles) southeast of Olney, IL and measured 1.6 in magnitude.

The consensus of opinion among seismologists working in the Midwest is that a magnitude 5.0 to 5.5 event could occur virtually anywhere at any time throughout the region. Earthquakes occur in Illinois all the time, although damaging quakes are very infrequent. Illinois earthquakes causing minor damage occur on average every 20 years, although the actual timing is extremely variable. Most recently, a magnitude 5.2 earthquake shook southeastern Illinois on April 18, 2008, causing minor damage in the Mt Carmel, IL area. Earthquakes resulting in more serious damage have occurred about every 70 to 90 years.

First on the list of historical earthquakes that have affected Illinois and first on the list on continuing earthquake threats at present and into the future is seismic activity on the New Madrid Seismic Zone of south-eastern Missouri. On December 16, 1811 and January 23 and February 7 of 1812, three earthquakes struck the central U.S. with magnitudes estimated to be 7.5-8.0. These earthquakes caused violent ground cracking and volcano-like eruptions of sediment (*sand blows*) over an area of $>10,500 \text{ km}^2$, and uplift of a 50 km by 23 km zone (the Lake County uplift). The shaking rang church bells in Boston, collapsed scaffolding on the

Capitol in Washington, D.C., and was felt over a total area of over 10 million km² (the largest felt area of any historical earthquake). Of all the historical earthquakes that have struck the U.S., an 1811-style event would do the most damage if it recurred today.

The New Madrid earthquakes are especially noteworthy because the seismic zone is in the center of the North American Plate. Such intraplate earthquakes are felt, and do damage, over much broader areas than comparable earthquakes at plate boundaries. The precise driving force responsible for activity on the New Madrid seismic zone is not known, but most scientists infer that it is compression transmitted across the North American Plate. That compression is focused on New Madrid because it is the site of a Paleozoic structure—the Reelfoot Rift—which is a zone of weakness in the crust.

The United States Geological Survey (USGS) and the Center for Earthquake Research and Information (CERI) at the University of Memphis estimate the probability of a repeat of the 1811–1812 type earthquakes (magnitude 7.5–8.0) is 7%–10% over the next 50 years (*USGS Fact Sheet 2006-3125*.) Frequent large earthquakes on the New Madrid seismic zone are geologically puzzling because the region shows relatively little deformation. Three explanations have been proposed: 1) recent seismological and geodetic activity is still a short-term response to the 1811–12 earthquakes; 2) activity is irregular or cyclic; or 3) activity began only in the recent geologic past. There is some dispute over how often earthquakes like the 1811–12 sequence occur. Many researchers estimate a recurrence interval of between 550 and 1100 years; other researchers suggest that either the magnitude of the 1811–12 earthquakes have been over-stated, or else the actual frequency of these events is less. It is fair to say, however, that even if the 1811–12 shocks were just magnitude ~7 events, they nonetheless caused widespread damage and would do the same if another such earthquake or earthquake sequence were to strike today.

[Above: New Madrid earthquakes and seismic zone modified from N. Pinter, 1993, Exercises in Active Tectonic history adapted from *Earthquake Information Bulletin*, 4(3), May-June 1972. <http://earthquake.usgs.gov/regional/states/illinois/history.php>]

The earliest reported earthquake in Illinois was in **1795**. This event was felt at Kaskaskia, IL for a minute and a half and was also felt in Kentucky. At Kaskaskia, subterranean noises were heard. Due to the sparse frontier population, an accurate location is not possible, and the shock may have actually originated outside the state.

An intensity VI-VII earthquake occurred on **April 12, 1883**, awakening several people in Cairo, IL. One old frame house was significantly damaged, resulting in slight injury to the inhabitants. This is the only record of injury in the state due to earthquakes.

On **October 31 1895** a large M6.8 occurred at Charleston, Missouri, just south of Cairo. Strong shaking caused eruptions of sand and water at many places along a line roughly 30 km (20 mi) long. Damage occurred in six states, but most severely at Charleston, with cracked walls, windows shattered, broken plaster, and chimneys fallen. Shaking was felt in 23 states from Washington, D.C. to Kansas and from southernmost Canada to New Orleans, LA.

A Missouri earthquake on **November 4, 1905**, cracked walls in Cairo. Aftershocks were felt over an area of 100,000 square miles in nine states. In Illinois, it cracked the wall of the new education building in Cairo and a wall at Carbondale, IL.

Among the largest earthquakes occurring in Illinois was the **May 26, 1909** shock, which knocked over many chimneys at Aurora. It was felt over 500,000 square miles and strongly felt in Iowa and Wisconsin. Buildings swayed in Chicago where there was fear that the walls would collapse. Just under two months later, a second Intensity VII earthquake occurred on **July 18, 1909**, damaged chimneys in Petersburg, IL, Hannibal, MO, and Davenport, IA. Over twenty windows were broken, bricks loosened and plaster cracked in the Petersburg area. This event was felt over 40,000 square miles.

On **November 7, 1958**, a shock along the Indiana border resulted in damage at Bartelso, Dale and Maunie, IL. Plaster cracked and fell, and a basement wall and floor were cracked.

On **August 14, 1965**, a sharp but local shock occurred at Tamms, IL, a town of about 600 people. The magnitude 5 quake damaged chimneys, cracked walls, knocked groceries from the shelves, and muddied the water supply. Thunderous earth noises were heard. This earthquake was only felt within a 10 mile radius of Tamms, in communities such as Elco, Unity, Olive Branch, and Olmstead, IL. Six aftershocks were felt.

An earthquake of Intensity VII occurred on **November 9, 1968**. This magnitude 5.3 shock was felt over an area of 580,000 square miles in 23 states. There were reports of people in tall buildings in Ontario and Boston feeling the shock. Damage consisted of bricks being knocked from chimneys, broken windows, toppled television antennae, and cracked plaster. There were scattered reports of cracked foundations, fallen parapets, and overturned tombstones. Chimney damage was limited to buildings 30 to 50 years old. Many people were frightened. Church bells rang at Broughton and several other towns. Loud rumbling earthquake noise was reported in many communities.

Dozens of other shocks originating in Missouri, Arkansas, Kansas, Nebraska, Tennessee, Indiana, Ohio, Michigan, Kentucky, and Canada have been felt in Illinois without causing damage. There have been three earthquakes slightly greater than magnitude 5.0 and Intensity level VII which occurred in 1968, 1987 and 2008 and that were widely felt throughout southern Illinois and the midcontinent.

Above text adapted from <http://earthquake.usgs.gov/regional/states/illinois/history.php> and from *Seismicity of the United States, 1568-1989 (Revised)*, C.W. Stover and J.L. Coffman, U.S. Geological Survey Professional Paper 1527, United States Government Printing Office, Washington: 1993.

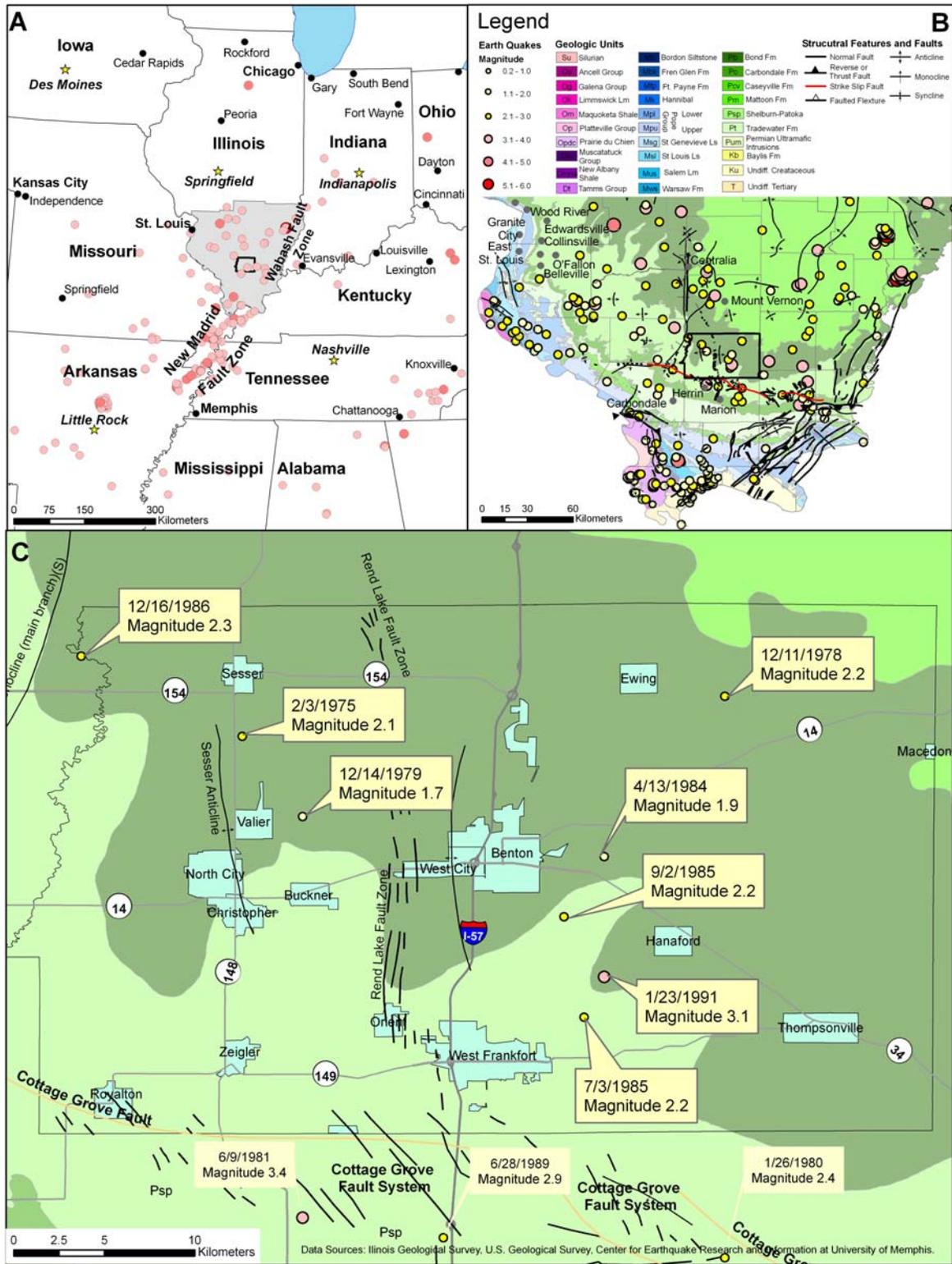
Geographic Location for Earthquake Hazard

Franklin County occupies a region susceptible to earthquakes. Regionally, the two most significant zones of seismic activity are the New Madrid Seismic Zone and the Wabash Valley Fault System. The epicenters of eight small earthquakes (M1.7–3.1) have been recorded in Franklin County. This local seismic activity has been focused along the Rend Lake Fault System. The Cottage Grove Fault System is located just south of the Franklin County Line. A few

earthquakes in Franklin County are coincident with this fault system (Figure 4-13). The Cottage Grove Fault System is a right-lateral, strike-slip fault that extends 113 km across southern Illinois. The seismogenic potential of these structures is unknown, and the geologic mechanism related to the minor earthquakes is poorly understood. Return periods for large earthquakes within the New Madrid System are estimated to be ~500–1000 years; moderate quakes between magnitude 5.5 and 6.0 can recur within approximately 150 years or less. The Wabash Valley Fault System extends nearly the entire length of southern Illinois and has the potential to generate an earthquake of sufficient strength to cause damage between St. Louis, MO and Indianapolis, IN. The USGS and the Center for Earthquake Research and Information estimate the probability of a repeat of the 1811–1812 type earthquakes (magnitude 7.5–8.0) at 7%–10% and the probability of a magnitude 6.0 or larger at 25%–40% within the next 50 years.

Figure 4-13 depicts the following: A) Location of notable earthquakes in Illinois region with inset of Franklin County; B) Generalized geologic bedrock map with earthquake epicenters, geologic structures, and inset of Franklin County; C) Geologic and earthquake epicenter map of Franklin County.

Figure 4-13: Franklin County Earthquakes



Hazard Extent for Earthquake Hazard

The extent of the earthquake is countywide.

Calculated Risk Priority Index for Earthquake Hazard

Based on historical information as well as current USGS and SIU research and studies, future earthquakes in Franklin County are likely. According to the RPI, earthquake is ranked as the number two hazard.

RPI = Probability x Magnitude/Severity.

Probability	x	Magnitude /Severity	=	RPI
2	x	8	=	16

Vulnerability Analysis for Earthquake Hazard

This hazard could impact the entire jurisdiction equally; therefore, the entire county's population and all buildings are vulnerable to an earthquake and can expect the same impacts within the affected area. To accommodate this risk this plan will consider all buildings located within the county as vulnerable.

Critical Facilities

All critical facilities are vulnerable to earthquakes. A critical facility would encounter many of the same impacts as any other building within the county. These impacts include structural failure and loss of facility functionality (e.g. damaged police station will no longer be able to serve the community). A complete list of all of the critical facilities, including replacement costs, is included in Appendix F. A map of the critical facilities is included in Appendix G.

Building Inventory

Table 4-8 shows building exposure for the entire county. The buildings within the county can all expect the same impacts, similar to those discussed for critical facilities. These impacts include structural failure and loss of building function, which could result in indirect impacts (e.g. damaged homes will no longer be habitable, causing residence to seek shelter).

Infrastructure

During an earthquake, the types of infrastructure that could be impacted include roadways, utility lines/pipes, railroads, and bridges. Since a full inventory of infrastructure is not available for this plan, it is important to emphasize that any number of these items could become damaged in the event of an earthquake. The impacts to these items include broken, failed, or impassable roadways, broken or failed utility lines (e.g. loss of power or gas to community), and railway failure from broken or impassable railways. Bridges could fail or become impassable causing

risk to traffic. Typical scenarios are described to gauge the anticipated impacts of earthquakes in the county in terms of number and types of buildings and infrastructure.

The SIU-Polis team reviewed existing geological information and recommendations for earthquake scenarios. Three earthquake scenarios—two based on USGS modeled scenarios and one based on deterministic scenarios were developed to provide a reasonable basis for earthquake planning in Franklin County. The two USGS analyses were a M7.7 event on the New Madrid fault zone and M7.1 earthquake on the Wabash Valley Seismic Zone. Shake maps provided by FEMA were used in HAZUS-MH to estimate losses for Franklin County based on these events. The final scenario was a Moment Magnitude of 5.5 with the epicenter located in Franklin County. Note that a deterministic scenario, in this context, refers to hazard or risk models based on specific scenarios without explicit consideration of the probability of their occurrences. This scenario was selected based upon a rupture on the Cottage Grove Fault System, a local fault that presents a realistic earthquake scenario for planning purposes.

Modeling a deterministic scenario requires user input for a variety of parameters. One of the most critical sources of information that is required for accurate assessment of earthquake risk is soils data. FEMA provided a NEHRP (National Earthquake Hazards Reduction Program) soil classification map for Illinois. NEHRP soil classifications portray the degree of shear-wave amplification that can occur during ground shaking.

FEMA provided a liquefaction map for Illinois. Low-lying areas in floodplains with a water table within five feet of the surface are particularly susceptible to liquefaction. These areas contain Class F soil types. For this analysis, a depth to water table of five meters was used.

An earthquake depth of 10.0 kilometers was selected based on input from Geophysicist Harvey Henson (SIU). HAZUS-MH also requires the user to define an attenuation function unless ground motion maps are supplied. Because Franklin County has experienced smaller earthquakes, the decision was made to use the Toro et al. (1997) attenuation function.

The building losses are subdivided into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake

Earthquake Analysis

Results for 7.7 Magnitude Earthquake New Madrid Scenario

The results of the 7.7 New Madrid Earthquake are depicted in Table 4-25, Table 4-26, and Figure 4-12. HAZUS estimates that approximately 901 buildings will be at least moderately damaged. This is more than 5% of the total number of buildings in the region. It is estimated that no buildings will be damaged beyond repair.

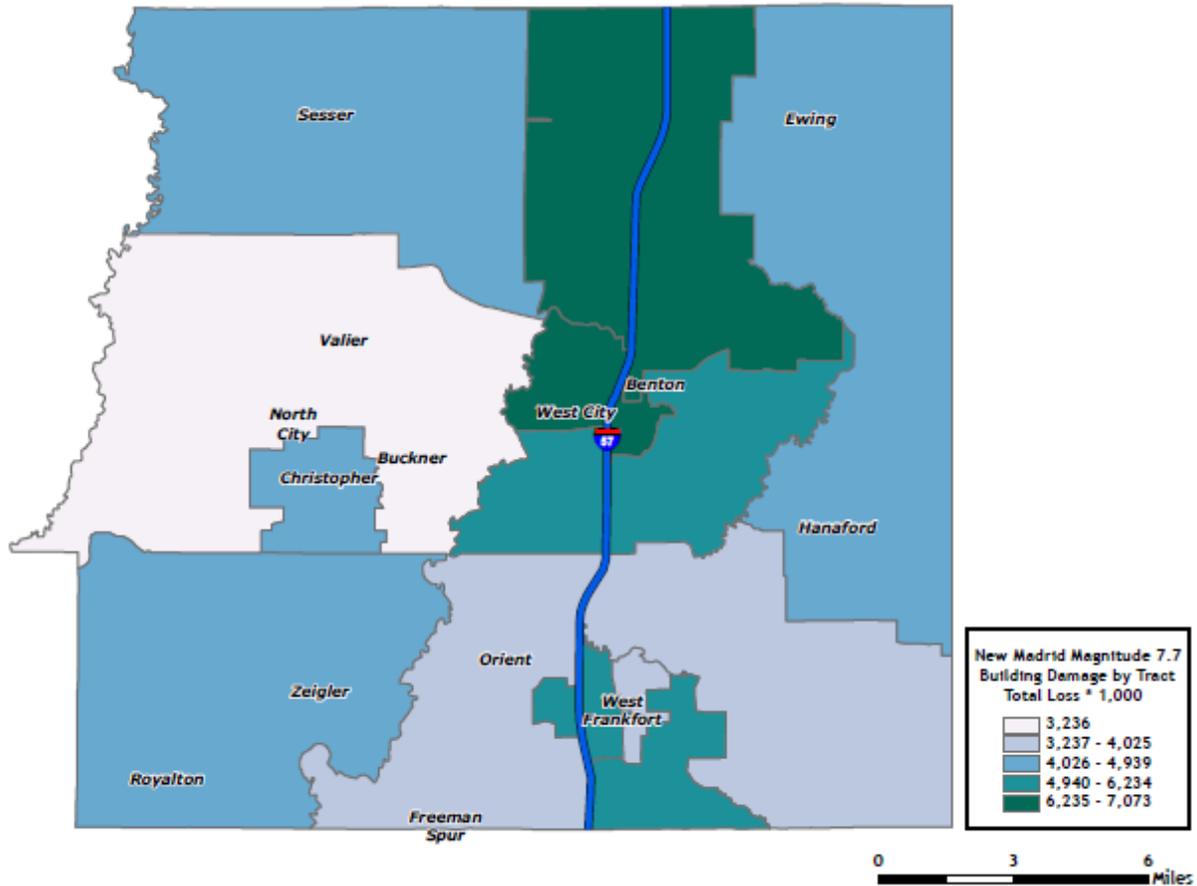
The total building-related losses totaled \$61.5 million; 9% of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies, which comprised more than 58% of the total loss.

Table 4-25: New Madrid Scenario-Damages Counts by Building Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	8	0.06	4	0.12	2	0.20	0	0.38	0	0.20
Commercial	131	0.97	56	1.89	22	2.58	2	4.83	0	2.90
Education	9	0.07	4	0.12	1	0.15	0	0.18	0	0.22
Government	15	0.11	6	0.19	2	0.24	0	0.26	0	0.26
Industrial	34	0.25	16	0.53	9	0.99	1	2.01	0	0.75
Other Residential	1,167	8.61	798	27.11	449	51.71	11	33.80	0	3.29
Religion	25	0.18	9	0.29	3	0.39	0	0.64	0	0.57
Single Family	12,159	89.75	2,054	69.75	380	43.75	19	57.90	0	91.81
Total	13,548		2,945		868		33		0	

Table 4-26: New Madrid Scenario-Building Economic losses in Millions of Dollars

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.00	0.04	1.73	0.13	0.18	2.08
	Capital-Related	0.00	0.02	1.41	0.08	0.04	1.55
	Rental	0.41	0.27	0.88	0.05	0.06	1.67
	Relocation	0.04	0.01	0.05	0.00	0.02	0.13
	Subtotal	0.45	0.35	4.08	0.25	0.30	5.43
Capital Stock Losses							
	Structural	2.32	0.93	1.31	0.45	0.62	5.63
	Non_Structural	15.04	4.37	5.67	2.17	2.55	30.70
	Content	9.76	1.54	4.20	1.84	2.02	19.17
	Inventory	0.00	0.00	0.12	0.42	0.04	0.58
	Subtotal	28.02	6.84	11.30	4.69	5.23	56.07
	Total	28.47	7.19	15.37	4.94	5.53	61.50

Figure 4-12: New Madrid Scenario-Building Economic Losses in Thousands of Dollars

New Madrid Scenario—Essential Facility Losses

Before the earthquake, the county had 1,114 care beds available for use. On the day of the earthquake, the model estimates that only 138 care beds (12%) are available for use by patients already in medical care facilities and those injured by the earthquake. After one week, 66% of the beds will be back in service. By day 30, 90% will be operational.

Results for 7.1 Magnitude Earthquake Wabash Valley Scenario

The results of the 7.1 Wabash Valley earthquake are depicted in Table 4-27, Table 4-28, and Figure 4-13. HAZUS estimates that approximately nine buildings will be at least moderately damaged. This is less than 1% of the total number of buildings in the region. It is estimated that no buildings will be damaged beyond repair.

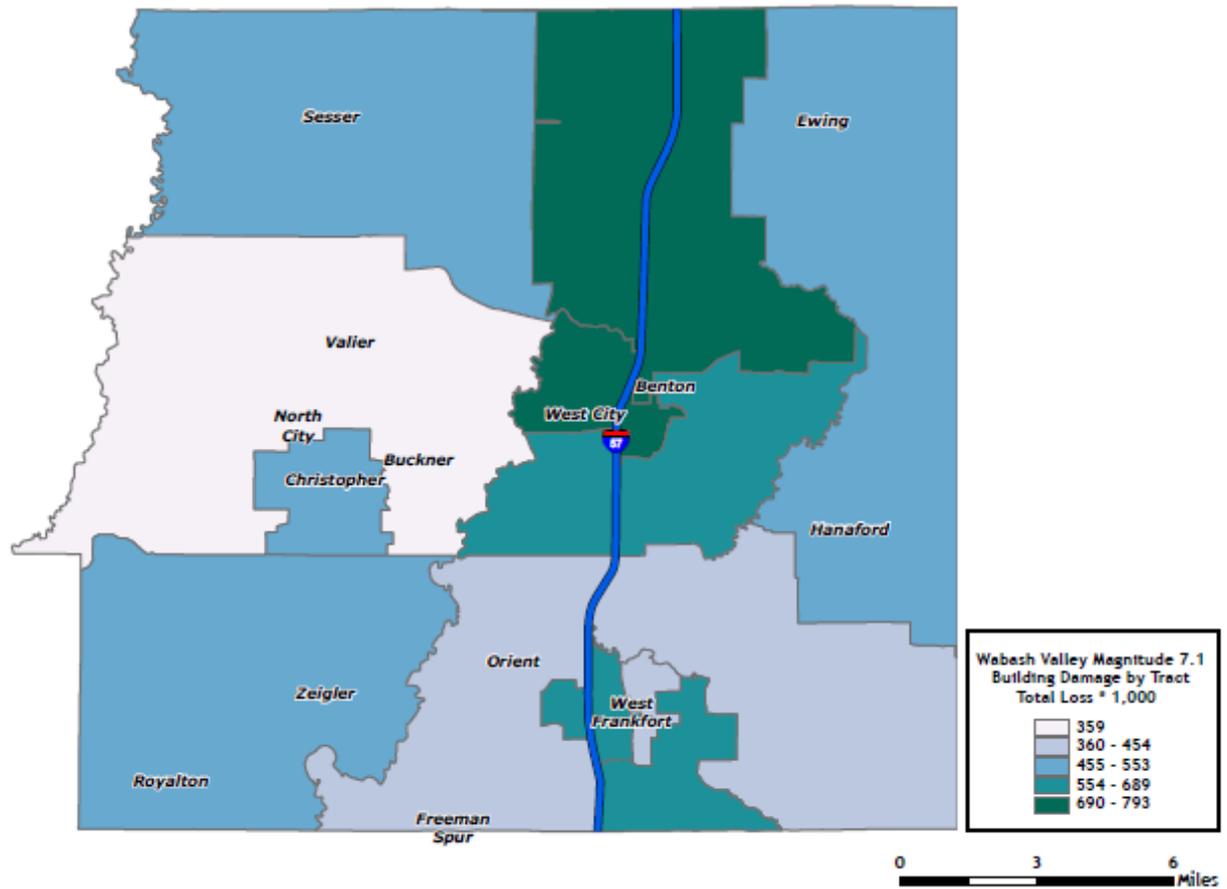
The total building related losses totaled \$6.92 million; 1% of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies, which made up more than 59% of the total loss.

Table 4-27: Wabash Valley Scenario-Damage Counts by Building Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	13	0.07	0	0.10	0	0.13	0	0.00	0	0.00
Commercial	209	1.21	2	1.38	0	1.61	0	0.00	0	0.00
Education	14	0.08	0	0.13	0	0.15	0	0.00	0	0.00
Government	23	0.13	0	0.17	0	0.20	0	0.00	0	0.00
Industrial	59	0.34	0	0.29	0	0.38	0	0.00	0	0.00
Other Residential	2,363	13.71	58	40.99	3	38.16	0	0.00	0	0.00
Religion	37	0.21	0	0.30	0	0.36	0	0.00	0	0.00
Single Family	14,526	84.24	80	56.63	5	59.00	0	0.00	0	0.00
Total	17,243		142		9		0		0	

Table 4-28: Wabash Valley Scenario-Building Economic losses in Millions of Dollars

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.00	0.00	0.01	0.00	0.00	0.02
	Capital-Related	0.00	0.00	0.01	0.00	0.00	0.01
	Rental	0.01	0.01	0.01	0.00	0.00	0.02
	Relocation	0.00	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.01	0.01	0.03	0.00	0.01	0.06
Capital Stock Losses							
	Structural	0.06	0.02	0.02	0.00	0.01	0.11
	Non_Structural	1.87	0.52	0.78	0.33	0.35	3.86
	Content	1.35	0.24	0.66	0.25	0.31	2.81
	Inventory	0.00	0.00	0.02	0.06	0.01	0.09
	Subtotal	3.28	0.78	1.47	0.65	0.68	6.86
	Total	3.29	0.79	1.51	0.65	0.69	6.92

Figure 4-13: Wabash Valley Scenario-Building Economic Losses in Thousands of Dollars

Wabash Valley Scenario—Essential Facility Losses

Before the earthquake, the county had 1,114 care beds available for use. On the day of the earthquake, the model estimates that only 641 care beds (58%) are available for use by patients already in medical care facilities and those injured by the earthquake. After one week, 97% of the beds will be back in service. By day 30, 100% will be operational.

Results for 5.5 Magnitude Earthquake in Franklin County

The results of the initial analysis, the 5.5 magnitude earthquake with an epicenter associated with the Rend Lake Fault Zone and located north of Orient, east of Buckner, and southwest of West City, are depicted in Tables 4-29 and 4-30 and Figure 4-14. HAZUS-MH estimates that approximately 3,378 buildings will be at least moderately damaged. This is more than 19% of the total number of buildings in the region. It is estimated that 118 buildings will be damaged beyond repair.

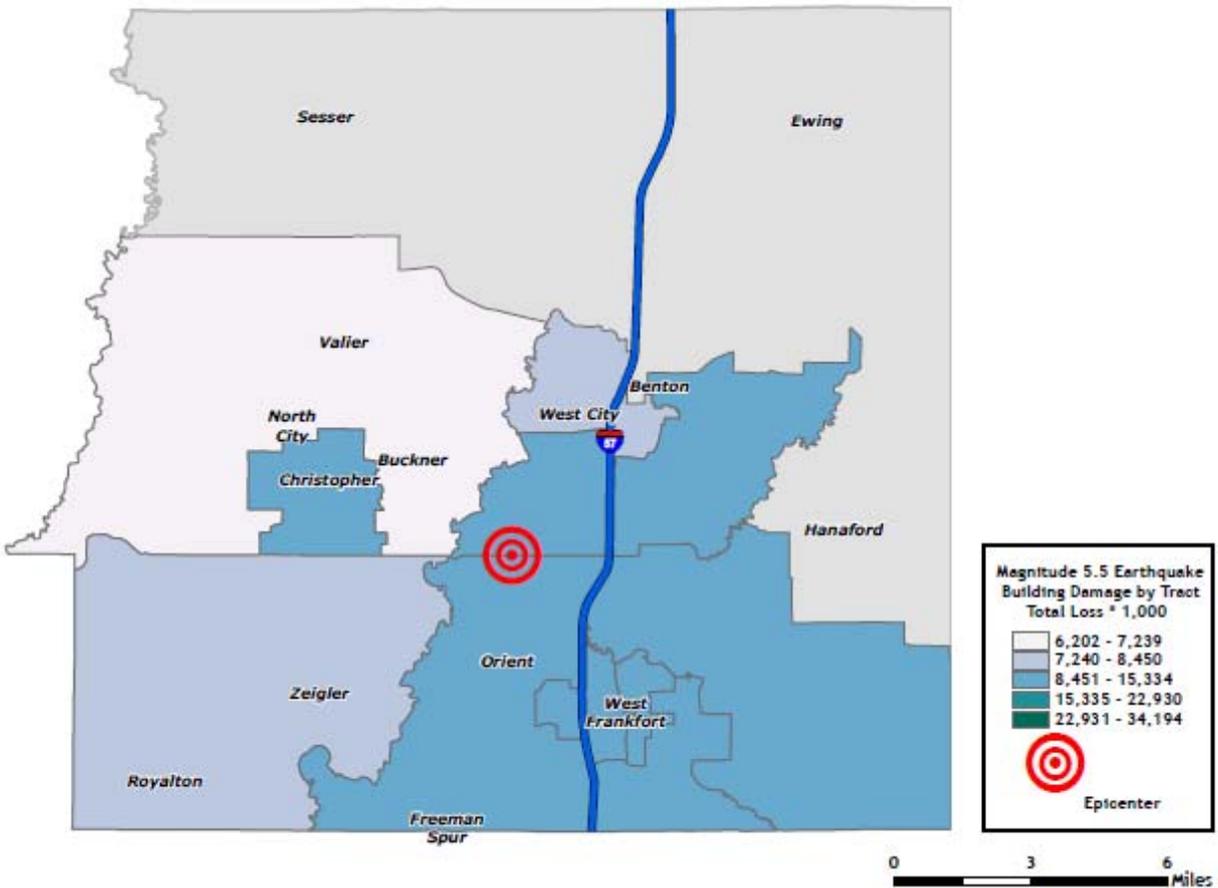
The total building related losses totaled \$219.6 million; 9% of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies, which comprised more than 66% of the total loss.

Table 4-29: Franklin County 5.5M Scenario-Damage Counts by Building Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	7	0.07	3	0.06	2	0.09	1	0.15	0	0.13
Commercial	111	1.20	47	0.99	38	1.42	13	2.13	2	2.06
Education	7	0.08	3	0.06	3	0.10	1	0.14	0	0.19
Government	13	0.14	5	0.10	4	0.15	1	0.20	0	0.25
Industrial	31	0.34	12	0.25	12	0.43	4	0.70	1	0.44
Other Residential	1,193	12.84	597	12.62	531	20.02	96	15.80	9	7.30
Religion	18	0.20	9	0.18	7	0.26	2	0.41	1	0.46
Single Family	7,908	85.14	4,053	85.74	2,057	77.52	488	80.48	106	89.17
Total	9,288		4,727		2,653		607		119	

Table 4-30: Franklin County 5.5M Scenario-Building Economic Losses in Millions of Dollars

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.00	0.49	5.17	0.30	0.55	6.51
	Capital-Related	0.00	0.21	4.09	0.18	0.15	4.64
	Rental	3.31	1.55	2.31	0.10	0.26	7.53
	Relocation	0.39	0.05	0.15	0.00	0.08	0.67
	Subtotal	3.70	2.30	11.71	0.58	1.05	19.35
Capital Stock Losses							
	Structural	16.12	2.61	4.19	1.17	2.39	26.48
	Non_Structural	70.72	14.17	16.02	5.73	8.18	114.80
	Content	30.51	4.74	11.61	4.68	5.78	57.31
	Inventory	0.00	0.00	0.34	1.21	0.09	1.64
	Subtotal	117.34	21.52	32.16	12.78	16.44	200.24
	Total	121.04	23.82	43.88	13.37	17.49	219.59

Figure 4-14: Franklin County 5.5M Scenario-Building Economic Losses in Thousands of Dollars

Franklin County 5.5M Scenario—Essential Facility Losses

Before the earthquake, the region had 1,114 care beds available for use. On the day of the earthquake, the model estimates that only 89 care beds (8%) are available for use by patients already in medical care facilities and those injured by the earthquake. After one week, 46% of the beds will be back in service. By day 30, 76% will be operational.

Vulnerability to Future Assets/Infrastructure for Earthquake Hazard

New construction, especially critical facilities, will accommodate earthquake mitigation design standards.

Analysis of Community Development Trends

Community development will occur outside of the low-lying areas in floodplains with a water table within five feet of grade which are susceptible to liquefaction.

4.4.4 Thunderstorm Hazard

Hazard Definition for Thunderstorm Hazard

Severe thunderstorms are defined as thunderstorms with one or more of the following characteristics: strong winds, large damaging hail, and frequent lightning. Severe thunderstorms most frequently occur in Illinois in the spring and summer months and in the late afternoon or evening, but can occur any month of the year at any time of day. A severe thunderstorm's impacts can be localized or can be widespread in nature. A thunderstorm is classified as severe when it meets one or more of the following criteria:

- Hail of diameter 0.75 inches or higher
- Frequent and dangerous lightning
- Wind speeds equal to or greater than 58 mph

Hail

Hail can be a product of a strong thunderstorm. Hail usually falls near the center of a storm; however strong winds occurring at high altitudes in the thunderstorm can blow the hailstones away from the storm center, resulting in a broader distribution. Hailstones range from pea-sized to baseball-sized, but hailstones larger than softballs have been reported on rare occasions.

Lightning

Lightning is a discharge of electricity from a thunderstorm. Lightning is often perceived as a minor hazard, but in reality lightning causes damage to many structures and kills or severely injures numerous people in the United States each year.

Severe Winds (Straight-Line Winds)

Straight-line winds from thunderstorms are a fairly common occurrence across Illinois. Straight-line winds can cause damage to homes, businesses, power lines, and agricultural areas and may require temporary sheltering of individuals who are without power for extended periods of time.

Previous Occurrences for Thunderstorm Hazard

The NCDC database reported 52 hailstorms in Franklin County since 1955. Hailstorms occur nearly every year in the late spring and early summer months.

The most recent significant occurrence was in June of 2004 when 2.00-inch hail fell in the region. Numerous thunderstorms developed over southern Illinois during the late afternoon, producing hail from dime- to quarter-sized. A few storms produced even larger hail the size of golf balls. The severe storms were most concentrated across Saline and Gallatin Counties, where storms repeatedly moved from west to east across the same areas, resulting in some flash flooding. A storm that moved east across Saline and Gallatin Counties displayed rotational characteristics, including a long-lived wall cloud and a brief funnel cloud.

Franklin County hailstorms are listed in Table 4-31; additional details for NCDC events are included in Appendix D.

Table 4-31: Franklin County Hailstorms*

Location or County	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Franklin	3/5/1955	Hail	3.00 in.	0	0	0	0
Franklin	5/26/1962	Hail	0.75 in.	0	0	0	0
Franklin	7/15/1962	Hail	1.75 in.	0	0	0	0
Franklin	7/3/1964	Hail	1.50 in.	0	0	0	0
Franklin	7/31/1967	Hail	0.75 in.	0	0	0	0
Franklin	4/30/1975	Hail	1.00 in.	0	0	0	0
Franklin	3/10/1986	Hail	1.75 in.	0	0	0	0
Franklin	5/14/1986	Hail	0.75 in.	0	0	0	0
Franklin	1/7/1989	Hail	1.75 in.	0	0	0	0
Franklin	6/2/1990	Hail	1.75 in.	0	0	0	0
Franklin	6/2/1990	Hail	2.50 in.	0	0	0	0
Franklin	6/7/1990	Hail	1.75 in.	0	0	0	0
Franklin	8/14/1991	Hail	1.00 in.	0	0	0	0
Franklin	6/24/1992	Hail	1.00 in.	0	0	0	0
Franklin	6/24/1992	Hail	1.75 in.	0	0	0	0
Franklin	9/3/1992	Hail	0.75 in.	0	0	0	0
Royalton	6/6/1997	Hail	0.75 in.	0	0	0	0
Christopher	4/13/1998	Hail	0.75 in.	0	0	0	0
West Frankfort	5/31/1998	Hail	0.75 in.	0	0	0	0
Zeigler	5/31/1998	Hail	1.75 in.	0	0	25K	0
West Frankfort	6/9/1998	Hail	1.75 in.	0	0	0	0
Benton	6/22/1998	Hail	1.00 in.	0	0	0	0
West Frankfort	1/21/1999	Hail	0.75 in.	0	0	0	0
Sesser	2/27/1999	Hail	1.00 in.	0	0	0	0
West Frankfort	7/3/2001	Hail	1.75 in.	0	0	0	0
Thompsonville	4/19/2002	Hail	1.00 in.	0	0	0	0
Akin	4/21/2002	Hail	0.75 in.	0	0	0	0
Rend Lake South	4/21/2002	Hail	1.75 in.	0	0	100K	0
Whittington	6/27/2002	Hail	0.88 in.	0	0	2K	0
Royalton	11/10/2002	Hail	1.75 in.	0	0	0	0
Mulkeytown	4/24/2003	Hail	1.25 in.	0	0	0	0
Zeigler	5/26/2004	Hail	0.75 in.	0	0	0	0
Sesser	5/27/2004	Hail	1.00 in.	0	0	0	0
Mulkeytown	5/30/2004	Hail	0.75 in.	0	0	0	0
Zeigler	6/1/2004	Hail	0.75 in.	0	0	0	0
West Frankfort	6/1/2004	Hail	2.00 in.	0	0	0	0
West Frankfort	4/12/2005	Hail	0.75 in.	0	0	0	0
West Frankfort	5/13/2005	Hail	0.75 in.	0	0	0	0
Benton	4/2/2006	Hail	0.75 in.	0	0	0	0
Mulkeytown	4/7/2006	Hail	0.88 in.	0	0	0	0
Sesser	4/7/2006	Hail	1.50 in.	0	0	0	0
Sesser	4/7/2006	Hail	1.75 in.	0	0	0	0
Whittington	5/3/2006	Hail	0.75 in.	0	0	0	0
Sesser	5/3/2006	Hail	1.75 in.	0	0	0	0
Valier	7/29/2006	Hail	0.75 in.	0	0	0	0
Zeigler	8/10/2006	Hail	1.00 in.	0	0	0	0

Location or County	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Sesser	11/10/2006	Hail	0.75 in.	0	0	0	0
Sesser	4/3/2007	Hail	0.75 in.	0	0	0	0
Christopher	4/3/2007	Hail	0.88 in.	0	0	0	0
Christopher	5/10/2007	Hail	1.00 in.	0	0	0	0
Sesser	10/18/2007	Hail	1.75 in.	0	0	0	0
Sesser	1/29/2008	Hail	0.88 in.	0	0	0	0

Source: NCDC

* NCDC records are estimates of damage compiled by the National Weather Service from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses related to a given weather event.

The NCDC database reported one occurrence of a significant lightning strike in Franklin County since 1955. On September 22, 1993, Lightning sparked a spectacular oil storage tank fire. Six oil storage tanks exploded and flames shot 200 feet in the air.

Franklin County lightning strikes are listed in Table 4-32; additional details for NCDC events are included in Appendix D. Lightning occurs in Franklin County every year. The following list only represents events that were recorded by the NCDC.

Table 4-32: Franklin County Lightning Strikes*

Location or County	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Zeigler	9/22/1993	Lightning	N/A	0	0	0	0

Source: NCDC

* NCDC records are estimates of damage compiled by the National Weather Service from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses related to a given weather event.

The NCDC database identified 107 wind storms reported since 1962. These storms have been attributed with five injuries and over \$1.6 million dollars in property damage in Franklin and adjacent counties. On multiple occasions in the past 50 years trees have been uprooted by severe winds in Franklin County. Many of the displaced trees landed on homes and automobiles. In addition, several of these extreme wind events resulted in damage to multiple buildings unable to withstand the force produced by the wind speeds.

For example, on February 17, 2008, Franklin County experienced strong south winds gusted to 50 mph. The peak wind gust was 52 mph at Carbondale, 51 mph at Marion, 53 mph at Mt. Carmel, 47 mph at Cairo and Metropolis, 46 mph at Carmi and Mt. Vernon, and 45 mph at Harrisburg. The strong winds occurred in advance of a strong cold front that moved across southern Illinois during the late afternoon. The strong winds brought down some tree limbs that

were laden with ice from the February 11 ice storm, causing a setback in efforts to restore power following the ice storm.

As shown in Table 4-33, wind storms have historically occurred year-round with the greatest frequency and damage in April through August.

Table 4-33: Franklin County Wind Storms*

Location or County	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Franklin	4/30/1962	Tstorm Winds	0 kts.	0	0	0	0
Franklin	5/10/1962	Tstorm Winds	0 kts.	0	0	0	0
Franklin	8/16/1962	Tstorm Winds	0 kts.	0	0	0	0
Franklin	7/3/1964	Tstorm Winds	53 kts.	0	0	0	0
Franklin	3/25/1973	Tstorm Winds	0 kts.	0	0	0	0
Franklin	6/4/1973	Tstorm Winds	0 kts.	0	0	0	0
Franklin	9/28/1974	Tstorm Winds	0 kts.	0	0	0	0
Franklin	4/18/1975	Tstorm Winds	0 kts.	0	0	0	0
Franklin	11/30/1975	Tstorm Winds	0 kts.	0	0	0	0
Franklin	1/13/1976	Tstorm Winds	0 kts.	0	0	0	0
Franklin	7/31/1976	Tstorm Winds	0 kts.	0	0	0	0
Franklin	9/2/1980	Tstorm Winds	0 kts.	0	0	0	0
Franklin	4/13/1981	Tstorm Winds	0 kts.	0	0	0	0
Franklin	3/15/1984	Tstorm Winds	52 kts.	0	0	0	0
Franklin	4/29/1984	Tstorm Winds	52 kts.	0	0	0	0
Franklin	4/29/1984	Tstorm Winds	60 kts.	0	0	0	0
Franklin	7/26/1984	Tstorm Winds	0 kts.	0	0	0	0
Franklin	7/12/1986	Tstorm Winds	0 kts.	0	0	0	0
Franklin	7/23/1987	Tstorm Winds	0 kts.	0	0	0	0
Franklin	5/9/1990	Tstorm Winds	74 kts.	0	0	0	0
Franklin	7/2/1991	Tstorm Winds	0 kts.	0	0	0	0
Franklin	7/14/1992	Tstorm Winds	0 kts.	0	0	0	0
Whittington	4/15/1994	Tstorm Winds	N/A	0	1	50K	0
Thompsonville	4/15/1994	Tstorm Winds	N/A	0	0	50K	0
Benton	5/17/1995	Tstorm Winds	N/A	0	0	0	0
Near Zeigler	6/7/1995	Tstorm Winds	N/A	0	0	0	0
Benton	6/7/1995	Tstorm Winds	N/A	0	0	15K	0
West Frankfort	6/8/1995	Tstorm Winds	N/A	0	0	0	0
Franklin	6/20/1995	Tstorm Winds	N/A	0	0	10K	0
Thompsonville	6/21/1995	Tstorm Winds	N/A	0	0	0	0
Franklin	11/11/1995	High Winds	0 kts.	0	0	0	0
Franklin	3/19/1996	High Wind	50 kts.	0	0	5K	0
Zeigler	4/19/1996	Tstorm Winds	0 kts.	0	0	100K	0
West Frankfort	6/19/1996	Tstorm Winds	52 kts.	0	0	8K	0
Zeigler	9/23/1996	Tstorm Winds	50 kts.	0	0	7K	0
Franklin	10/22/1996	High Wind	0 kts.	0	0	28K	0
Royalton	10/22/1996	Tstorm Winds	0 kts.	0	0	10K	0
Franklin	4/30/1997	High Wind	52 kts.	0	0	20K	0
West Frankfort	6/13/1997	Tstorm Winds	50 kts.	0	0	30K	0
Benton	7/14/1997	Tstorm Winds	50 kts.	0	0	3K	0
West Frankfort	9/8/1997	Tstorm Winds	52 kts.	0	0	3K	0
Benton	3/28/1998	Tstorm Winds	52 kts.	0	0	0	0
Royalton	4/15/1998	Tstorm Winds	65 kts.	0	0	80K	0
Sesser	5/23/1998	Tstorm Winds	55 kts.	0	0	30K	0
Zeigler	6/9/1998	Tstorm Winds	55 kts.	0	0	40K	0
Royalton	6/20/1998	Tstorm Winds	50 kts.	0	0	10K	0
Benton	6/22/1998	Tstorm Winds	50 kts.	0	0	0	0
Franklin	11/10/1998	High Wind	50 kts.	0	0	20K	0
Sesser	1/17/1999	Tstorm Winds	0 kts.	0	0	30K	0
Benton	1/21/1999	Tstorm Winds	0 kts.	0	0	50K	0
Franklin	2/7/1999	Strong Winds	N/A	0	0	23K	0
Whittington	5/17/1999	Tstorm Winds	52 kts.	0	0	3K	0
Benton	6/4/1999	Tstorm Winds	52 kts.	0	0	10K	0

Location or County	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
West Frankfort	1/3/2000	Tstorm Winds	52 kts.	0	0	0	0
Franklin	4/20/2000	Wind	N/A	0	0	0	0
West Frankfort	7/18/2000	Tstorm Winds	0 kts.	0	0	10K	0
Benton	8/3/2000	Tstorm Winds	0 kts.	0	0	20K	0
Zeigler	8/7/2000	Tstorm Winds	52 kts.	0	0	15K	0
Sesser	2/24/2001	Tstorm Winds	0 kts.	0	0	10K	0
West Frankfort	7/3/2001	Tstorm Winds	50 kts.	0	0	25K	0
Rend Lake South	7/18/2001	Tstorm Winds	50 kts.	0	0	0	0
Benton	7/18/2001	Tstorm Winds	50 kts.	0	0	10K	0
Rend Lake South	8/18/2001	Tstorm Winds	50 kts.	0	0	0	0
Sesser	8/18/2001	Tstorm Winds	0 kts.	0	0	3K	0
Royalton	8/18/2001	Tstorm Winds	50 kts.	0	0	0	0
Sesser	9/8/2001	Tstorm Winds	50 kts.	0	0	1K	0
Benton	10/24/2001	Tstorm Winds	70 kts.	0	1	75K	0
Royalton	10/24/2001	Tstorm Winds	0 kts.	0	1	50K	0
Franklin	3/9/2002	Wind	N/A	0	0	3K	0
Sesser	4/27/2002	Tstorm Winds	74 kts.	0	0	250K	0
Royalton	4/27/2002	Tstorm Winds	52 kts.	0	0	0	0
Whittington	6/24/2002	Tstorm Winds	50 kts.	0	0	0	0
Sesser	6/10/2003	Tstorm Winds	50 kts.	0	0	0	0
Sesser	6/11/2003	Tstorm Winds	65 kts.	0	0	0	0
Franklin	8/2/2003	Heavy Rain	N/A	0	0	0	0
Benton	5/25/2004	Tstorm Winds	52 kts.	0	0	3K	0
Franklin	5/27/2004	Tstorm Winds	65 kts.	0	2	70K	0
Buckner	5/30/2004	Tstorm Winds	52 kts.	0	0	0	0
Benton	7/6/2004	Tstorm Winds	50 kts.	0	0	0	0
Ewing	8/24/2004	Tstorm Winds	50 kts.	0	0	4K	0
Franklin	1/5/2005	Heavy Rain	N/A	0	0	0	0
West Frankfort	4/22/2005	Tstorm Winds	52 kts.	0	0	5K	0
Sesser	4/22/2005	Tstorm Winds	56 kts.	0	0	2K	0
Rend City	5/13/2005	Tstorm Winds	50 kts.	0	0	0	0
Christopher	6/8/2005	Tstorm Winds	50 kts.	0	0	0	0
Thompsonville	11/15/2005	Tstorm Winds	52 kts.	0	0	3K	0
Franklin	1/8/2006	Strong Wind	N/A	0	0	19K	0
Franklin	1/19/2006	Strong Wind	N/A	0	0	19K	0
Franklin	2/16/2006	Strong Wind	N/A	0	0	14K	0
Franklin	4/2/2006	Tstorm Winds	61 kts.	0	0	150K	0
Whittington	5/3/2006	Tstorm Winds	52 kts.	0	0	0	0
Christopher	7/12/2006	Heavy Rain	N/A	0	0	0	0
Franklin	7/21/2006	Tstorm Winds	56 kts.	0	0	25K	0
Sesser	7/29/2006	Tstorm Winds	52 kts.	0	0	20K	0
Zeigler	8/10/2006	Tstorm Winds	56 kts.	0	0	100K	0
West Frankfort	8/10/2006	Tstorm Winds	61 kts.	0	0	4K	0
West Frankfort	1/15/2007	Heavy Rain	N/A	0	0	0	0
Sesser	2/24/2007	Heavy Rain	N/A	0	0	0	0
Benton	4/3/2007	Heavy Rain	N/A	0	0	0	0
Hanaford	6/8/2007	Tstorm Wind	N/A	0	0	20K	0
Valier	10/18/2007	Tstorm Wind	N/A	0	0	8K	0
West Frankfort	10/18/2007	Tstorm Wind	N/A	0	0	50K	0
Whittington	10/18/2007	Tstorm Wind	N/A	0	0	0	0
Benton	1/29/2008	Tstorm Wind	N/A	0	0	15K	0
Sesser	2/5/2008	Tstorm Wind	N/A	0	0	0	0
Ewing	2/5/2008	Tstorm Wind	N/A	0	0	5K	0
Franklin	2/17/2008	Strong Wind	N/A	0	0	1K	0

Source: NCDC

* NCDC records are estimates of damage compiled by the National Weather Service from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses related to a given weather event.

Geographic Location for Thunderstorm Hazard

The entire county has the same risk for occurrence of thunderstorms. They can occur at any location within the county.

Hazard Extent for Thunderstorm Hazard

The extent of the historical thunderstorms listed previously varies in terms of the extent of the storm, the wind speed, and the size of hailstones. Thunderstorms can occur at any location within the county.

Calculated Risk Priority Index for Thunderstorm Hazard

Based on historical information, the probability of future high wind damage is highly likely. High winds with widely varying magnitudes are expected to happen. According to the RPI, thunderstorms and high wind damage ranked as the number five hazard.

RPI = Probability x Magnitude/Severity.

Probability	x	Magnitude /Severity	=	RPI
4	x	2	=	8

Vulnerability Analysis for Thunderstorm Hazard

Severe thunderstorms are an evenly distributed threat across the entire jurisdiction; therefore, the entire county's population and all buildings are susceptible to severe thunderstorms and can expect the same impacts. This plan will therefore consider all buildings located within the county as vulnerable. The existing buildings and infrastructure in Franklin County are discussed in types and numbers in Table 4-8.

Critical Facilities

All critical facilities are vulnerable to severe thunderstorms. A critical facility will encounter many of the same impacts as any other building within the jurisdiction. These impacts include structural failure, debris (trees or limbs) causing damage, roofs blown off or windows broken by hail or high winds, fires caused by lightning, and loss of function of the facility (e.g. a damaged police station will no longer be able to serve the community). Table 4-7 lists the types and numbers of all essential facilities in the area. Critical facility information, including replacement costs, is included in Appendix F. A map of the critical facilities is included in Appendix G.

Building Inventory

A table of the building exposure in terms of types and numbers of buildings for the entire county is provided in Table 4-8. The buildings within the county can all expect the same impacts, similar to those discussed for critical facilities. These impacts include structural failure, debris (trees or limbs) causing damage, roofs blown off or windows broken by hail or high winds, fires

caused by lightning, and loss of building functionality (e.g. a damaged home will no longer be habitable causing residence to seek shelter).

Infrastructure

During a severe thunderstorm, the types of infrastructure that could be impacted include roadways, utility lines/pipes, railroads, and bridges. Since the county's entire infrastructure is equally vulnerable, it is important to emphasize that any number of these items could become damaged during a severe thunderstorm. The impacts to these items include broken, failed or impassable roadways; broken or failed utility lines (e.g. loss of power or gas to community); or railway failure from broken or impassable railways. Bridges could fail or become impassable causing risk to traffic.

Vulnerability to Future Assets/Infrastructure for Thunderstorm Hazard

All future development within the county and all communities will remain vulnerable to these events.

Analysis of Community Development Trends

Preparing for severe storms will be enhanced if officials sponsor a wide range of programs and initiatives to address the overall safety of county residents. New structures need to be built with more sturdy construction, and those structures already in place need to be hardened to lessen the potential impacts of severe weather. Community warning sirens to provide warning of approaching storms are also vital to preventing the loss of property and ensuring the safety of Franklin County residents.

4.4.5 Winter Storm Hazard

Hazard Definition for Winter Storm Hazard

Severe winter weather consists of various forms of precipitation and strong weather conditions. This may include one or more of the following conditions: freezing rain, sleet, heavy snow, blizzards, icy roadways, extreme low temperatures, and strong winds. These conditions can cause human health risks such as frostbite, hypothermia, and death.

Ice (glazing) and Sleet Storms

Ice or sleet, even in small quantities, can result in hazardous driving conditions and can cause property damage. Sleet involves frozen raindrops that bounce when they hit the ground or other objects. Sleet does not stick to trees and wires. Ice storms, on the other hand, involve liquid rain that falls through subfreezing air and/or onto sub-freezing surfaces, freezing on contact with those surfaces. The ice coats trees, buildings, overhead wires, and roadways, sometimes causing extensive damage.

The most damaging winter storms in southern Illinois have been ice storms. Ice storms occur when moisture-laden gulf air converges with the northern jet stream causing strong winds and heavy precipitation. This precipitation takes the form of freezing rain coating power and communication lines and trees with heavy ice. The winds will then cause the overburdened limbs and cables to snap; leaving large sectors of the population without power, heat, or communication. In the past few decades, including the winter of 2007–2008, numerous ice storm events have occurred in southern Illinois.

Snow Storms

Significant snow storms are characterized by the rapid accumulation of snow, often accompanied by high winds, cold temperatures, and low visibility. A blizzard is categorized as a snow storm with winds of 35 miles per hour or greater and/or visibility of less than ¼ mile for three or more hours. Blizzards are the most dramatic and perilous of all winter storm events. Most snow within a blizzard is in the form of fine, powdery particles, which are wind-blown in such great quantities that visibility is reduced to only a few feet. Blizzards have the potential to result in property damage.

Illinois has repeatedly been struck by blizzards, although they are less common in the southern part of the state. Blizzard conditions can cause power outages, loss of communication, and make transportation impossible. The blowing of snow can reduce visibility to less than ¼ mile, resulting in disorientation that can make even travel by foot dangerous.

Severe Cold

Severe cold is characterized by the ambient air temperature that may drop to 0°F or below. These extreme temperatures can increase the likelihood of frostbite and hyperthermia. High winds during severe cold events can enhance the air temperature's effects. Fast winds during cold

weather events can lower the Wind Chill Factor (how cold the air feels on your skin), which can lower the time it takes for frostbite and hypothermia to affect a person's body.

Previous Occurrences for Winter Storm Hazard

The NCDC database identified 62 winter storm and extreme cold events for Franklin County since 1994. These winter storms have been attributed with three deaths, one injury, and \$750,000 in property damage. A recent example of a severe winter storm occurred in February 2008 when a low pressure developed over the southern plains, spreading widespread heavy precipitation across southern Illinois. At the same time, high pressure over the upper Ohio Valley produced a cold easterly wind flow. The result was a crippling ice storm that caused extensive damage across southern Illinois, along and south of a line from Carbondale and Marion to Harrisburg and Carmi. Many of those same areas received three to six inches of sleet and snow. The most destructive icing occurred in an east to west band across Union, Johnson, Massac, and Pope Counties.

The state designated most counties in southern Illinois as disaster areas. Numerous trees and power lines were brought down, knocking out power to many thousands of homes. Power outages lasted up to a week.

The NCDC winter storms for Franklin County are listed in Table 4-34. Additional details for NCDC events are included in Appendix D.

Table 4-34: Winter Storm Events*

Location or County	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Southern Illinois	1/16/1994	Winter Storm	N/A	0	0	0	0
Southern Illinois	3/8/1994	Heavy Snow	N/A	0	0	500K	0
Franklin	9/24/1995	Frost	N/A	0	0	0	0
Franklin	12/8/1995	Snow	N/A	0	0	0	0
Franklin	12/9/1995	Cold Wave	N/A	0	0	0	0
Franklin	1/2/1996	Winter Storm	N/A	0	0	0	0
Franklin	1/6/1996	Winter Storm	N/A	0	0	0	0
Franklin	2/2/1996	Extreme Cold	N/A	0	0	0	0
Franklin	12/16/1996	Winter Storm	N/A	0	0	0	0
Franklin	1/8/1997	Winter Storm	N/A	0	0	0	0
Franklin	1/10/1997	Extreme Windchill	N/A	1	0	0	0
Franklin	1/15/1997	Ice Storm	N/A	0	0	0	0
Franklin	4/10/1997	Heavy Snow	N/A	0	0	0	0
Franklin	4/18/1997	Frost	N/A	0	0	0	0
Franklin	12/8/1997	Snow	N/A	0	0	0	0
Franklin	12/30/1997	Snow	N/A	0	0	0	0
Franklin	1/17/1998	Freezing Drizzle	N/A	0	0	0	0
Franklin	1/22/1998	Snow	N/A	0	0	0	0
Sesser	6/29/1998	Funnel Cloud	N/A	0	0	0	0
Franklin	12/21/1998	Freezing Rain	N/A	0	0	0	0
Franklin	1/1/1999	Ice Storm	N/A	0	0	150K	0
Franklin	1/8/1999	Ice Storm	N/A	0	0	0	0
Franklin	3/14/1999	Heavy Snow	N/A	0	0	0	0
Franklin	1/22/2000	Snow	N/A	0	0	0	0
Franklin	4/9/2000	Frost	N/A	0	0	0	0
Franklin	10/9/2000	Frost	N/A	0	0	0	0

Location or County	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Franklin	12/12/2000	Extreme Cold	N/A	0	0	0	0
Franklin	12/13/2000	Winter Storm	N/A	0	0	0	0
Franklin	12/15/2000	Freezing Rain	N/A	0	0	0	0
Franklin	1/1/2001	Extreme Cold	N/A	0	0	0	0
Franklin	1/26/2001	Freezing Rain	N/A	0	0	0	0
Franklin	4/18/2001	Frost	N/A	0	0	0	0
Franklin	2/25/2002	Snow	N/A	0	0	0	0
Rend Lake South	4/21/2002	Funnel Cloud	N/A	0	0	0	0
Franklin	12/4/2002	Winter Storm	N/A	0	0	0	0
Franklin	12/23/2002	Winter Storm	N/A	0	0	0	0
Franklin	1/22/2003	Winter Weather/mix	N/A	0	0	0	0
Franklin	1/23/2003	Extreme Cold/wind Chill	N/A	0	0	0	0
Franklin	2/16/2003	Winter Storm	N/A	0	0	0	0
Franklin	2/23/2003	Heavy Snow	N/A	0	0	0	0
Franklin	10/3/2003	Frost/ freeze	N/A	0	0	0	0
Franklin	1/25/2004	Ice Storm	N/A	0	0	0	0
Franklin	1/27/2004	Winter Weather/mix	N/A	0	0	0	0
Franklin	1/29/2004	Winter Weather/mix	N/A	0	0	0	0
Franklin	2/5/2004	Heavy Snow	N/A	0	0	0	0
Franklin	12/22/2004	Winter Storm	N/A	1	1	100K	0
Franklin	12/23/2004	Extreme Cold/wind Chill	N/A	1	0	0	0
Franklin	5/4/2005	Frost/ freeze	N/A	0	0	0	0
Franklin	10/28/2005	Frost/ freeze	N/A	0	0	0	0
Franklin	12/8/2005	Winter Weather/mix	N/A	0	0	0	0
Franklin	1/13/2006	Winter Weather/mix	N/A	0	0	0	0
Franklin	2/8/2006	Winter Weather/mix	N/A	0	0	0	0
Franklin	2/18/2006	Winter Weather/mix	N/A	0	0	0	0
Franklin	1/20/2007	Winter Weather	N/A	0	0	0	0
Franklin	2/1/2007	Winter Weather	N/A	0	0	0	0
Franklin	2/13/2007	Winter Weather	N/A	0	0	0	0
Ewing	10/18/2007	Funnel Cloud	N/A	0	0	0	0
Franklin	12/6/2007	Winter Weather	N/A	0	0	0	0
Franklin	12/15/2007	Winter Weather	N/A	0	0	0	0
Franklin	2/1/2008	Winter Storm	N/A	0	0	0	0
Franklin	2/1/2008	Winter Weather	N/A	0	0	0	0
Franklin	2/11/2008	Winter Storm	N/A	0	0	0	0

Source: NCDC

* NCDC records are estimates of damage compiled by the National Weather Service from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses related to a given weather event.

Geographic Location for Winter Storm Hazard

Severe winter storms are regional in nature. Most of the NCDC data is calculated regionally or in some cases statewide.

Hazard Extent for Winter Storm Hazard

The extent of the historical winter storms listed previously varies in terms of storm extent, temperature, and ice or snowfall. Severe winter storms affect the entire jurisdiction equally.

Calculated Risk Priority Index for Winter Storm Hazard

Based on historical information, the probability of future winter storms is likely. Winter storms of varying magnitudes are expected to happen. According to the RPI, winter storms ranked as the number six highest hazard.

RPI = Probability x Magnitude/Severity.

Probability	x	Magnitude /Severity	=	RPI
2	x	2	=	4

Vulnerability Analysis for Winter Storm Hazard

Winter storm impacts are evenly distributed across the jurisdiction; therefore the entire county is vulnerable to winter storms and can expect the same impacts within the affected area. The building exposure for Franklin County, as determined from the building inventory, is included in Table 4-8.

Critical Facilities

All critical facilities are vulnerable to a winter storm. A critical facility will encounter many of the same impacts as any other buildings within the jurisdiction. These impacts include loss of gas or electricity from broken or damaged utility lines, roads and railways damaged or impassable, broken water pipes, and roof collapse from heavy snow. Table 4-7 lists the types and numbers of the essential facilities in the area. Critical facility information, including replacement costs, is included in Appendix F. A map of the critical facilities is included in Appendix G.

Building Inventory

Table 4-8 lists the building exposure in terms of types and numbers of buildings for the entire county. The impacts to the building stock within the county are similar to the damages expected to the critical facilities, including loss of gas or electricity from broken or damaged utility lines, roads and railways damaged or impassable, broken water pipes, and roof collapse from heavy snow.

Infrastructure

During a winter storm, the types of infrastructure that could be impacted include roadways, utility lines/pipes, railroads and bridges. Since the county's entire infrastructure is equally vulnerable, it is important to emphasize that any number of these items could become damaged during a winter storm. Potential impacts include broken gas and/or electricity lines, or damaged utility lines, damaged or impassable roads and railways, and broken water pipes.

Vulnerability to Future Assets/Infrastructure for Winter Storm Hazard

Any new development within the county will remain vulnerable to these events.

Analysis of Community Development Trends

Because the winter storm events are regional in nature, future development will be impacted across the county.

4.4.6 Hazardous Materials Storage and Transport Hazard

Hazard Definition for Hazardous Materials Storage and Transport Hazard

Explosions result from the ignition of volatile materials such as petroleum products, natural gas and other flammable gases, hazardous materials/chemicals and dust, and explosive devices. An explosion can potentially cause death, injury, and property damage. In addition, a fire routinely follows an explosion, which may cause further damage and inhibit emergency response. Emergency response may require fire, safety/law enforcement, search and rescue, and hazardous materials units.

Previous Occurrences for Hazardous Materials Storage and Transport Hazard

Franklin County has not experienced a significant or large-scale hazardous material incident at a fixed site or transportation route that has resulted in multiple deaths or serious injuries.

Geographic Location for Hazardous Materials Storage and Transport Hazard

The hazardous material hazards are countywide and are primarily associated with the transport of materials via highway or rail.

Hazard Extent for Hazardous Materials Storage and Transport Hazard

The extent of the hazardous material hazard varies both in terms of the quantity of material being transported as well as the specific content of the container.

Calculated Risk Priority Index for Hazardous Materials Storage and Transport Hazard

The possibility of a hazardous materials accident is likely, based on input from the planning team. According to the RPI, Hazardous Materials Storage and Transport ranked as the third greatest hazard.

RPI = Probability x Magnitude/Severity.

Probability	x	Magnitude /Severity	=	RPI
3	x	4	=	12

Vulnerability Analysis for Hazardous Materials Storage and Transport Hazard

Hazardous material impacts are evenly distributed across the jurisdiction; therefore the entire county is vulnerable to a release associated with hazardous materials storage or transport and can expect the same impacts within the affected area. The building exposure for Franklin County, as determined from building inventory, is included in Table 4-8. This plan will therefore consider all buildings located within the county as vulnerable.

Critical Facilities

All critical facilities and communities within the county are at risk. A critical facility, if vulnerable, will encounter many of the same impacts as other buildings within the jurisdiction. These impacts include structural failure due to fire or explosion and loss of function of the facility (e.g. a damaged police station will no longer be able to serve the community). Table 4-7 lists the types and numbers of all essential facilities in the area. Critical facility information, including replacement costs, is included in Appendix F. A map of the critical facilities is included in Appendix G.

Building Inventory

Table 4-8 lists the building exposure in terms of type and number of buildings for the entire county. The buildings within the county can all expect the same impacts, similar to those discussed for critical facilities. These impacts include structural failure due to fire or explosion or debris and loss of function of the building (e.g. a damaged home will no longer be habitable causing residence to seek shelter).

Infrastructure

During a hazardous materials release, the types of infrastructure that could be impacted include roadways, utility lines/pipes, railroads, and bridges. Since a full inventory of infrastructure is not available for this plan, it is important to emphasize that any number of these items could become damaged in the event of a hazardous material release. The impacts to these items include broken, failed, or impassable roadways; broken or failed utility lines (e.g. loss of power or gas to community); and railway failure from broken or impassable railways. Bridges could fail or become impassable causing risk to traffic.

The U.S. EPA's ALOHA (Areal Locations of Hazardous Atmospheres) model was utilized to assess the area of impact for a chlorine release at the Union Pacific railroad crossing on State Highway 34 in Benton, Illinois.

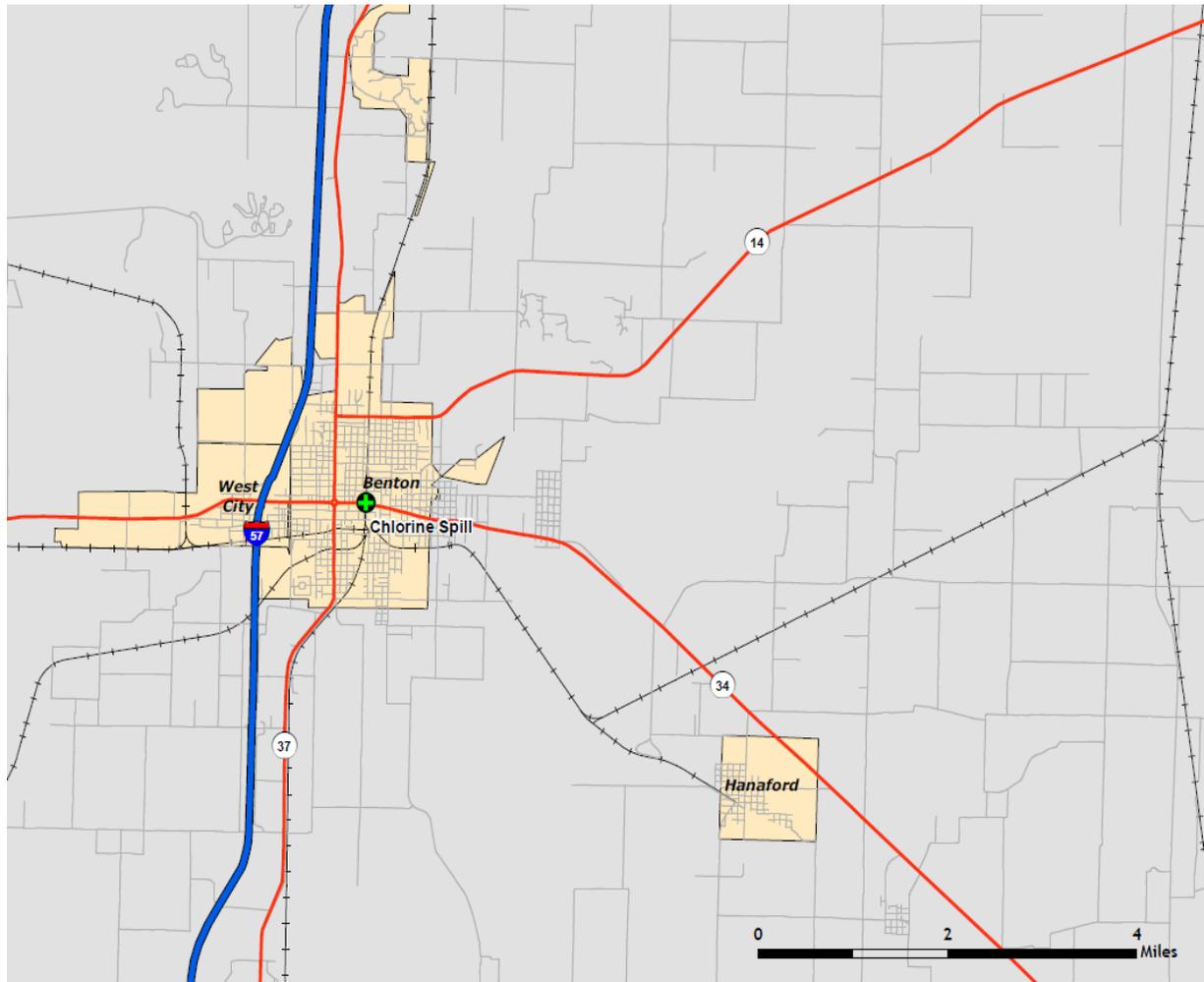
Chlorine is a greenish yellow gas with a pungent suffocating odor. The gas liquefies at -35°C and room pressure or will liquefy from pressure applied at room temperature. Contact with unconfined liquid chlorine can cause frostbite from evaporative cooling. Chlorine does not burn, but, like oxygen, supports combustion. The toxic gas can have adverse health effects from either long-term inhalation of low concentrations of vapors or short-term inhalation of high concentrations. Chlorine vapors are much heavier than air and tend to settle in low areas. Chlorine is commonly used to purify water, bleach wood pulp, and make other chemicals.

Source: CAMEO

ALOHA is a computer program designed especially for use by people responding to chemical accidents, as well as for emergency planning and training. Chlorine is a common chemical used in industrial operations and can be found in either liquid or gas form. Rail and truck tankers commonly haul chlorine to and from facilities.

For this scenario, moderate atmospheric and climatic conditions with a slight breeze from the west were assumed. The target area was chosen due to its proximity to residential and commercial property. The geographic area covered in this analysis is depicted in Figure 4-15.

Figure 4-15: Location of Chemical Release



Analysis

The ALOHA atmospheric modeling parameters, depicted in Figure 4-16, were based upon a west wind speed of five mph. The temperature was 68°F with 75% humidity and partly cloudy skies.

The source of the chemical spill is a horizontal, cylindrical-shaped tank containing 30,000 gallons of chlorine. The diameter of the tank was set to 12 feet and the length set to 35.5 feet. At the time of its release, it was estimated that the tank was 100% full. The chlorine in this tank is in its liquid state.

This release was based on a leak from a 2.5-inch-diameter hole, 12 inches above the bottom of the tank.

Figure 4-16: ALOHA Plume Modeling Parameters**SITE DATA:**

Location: BENTON, ILLINOIS
Building Air Exchanges Per Hour: 0.34 (sheltered single storied)
Time: November 17, 2008 1103 hours CST (user specified)

CHEMICAL DATA:

Chemical Name: CHLORINE Molecular Weight: 70.91 g/mol
AEGL-1(60 min): 0.5 ppm AEGL-2(60 min): 2 ppm AEGL-3(60 min): 20 ppm
IDLH: 10 ppm
Ambient Boiling Point: -29.8° F
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

Wind: 5 knots from W at 10 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 68° F Stability Class: C
No Inversion Height Relative Humidity: 75%

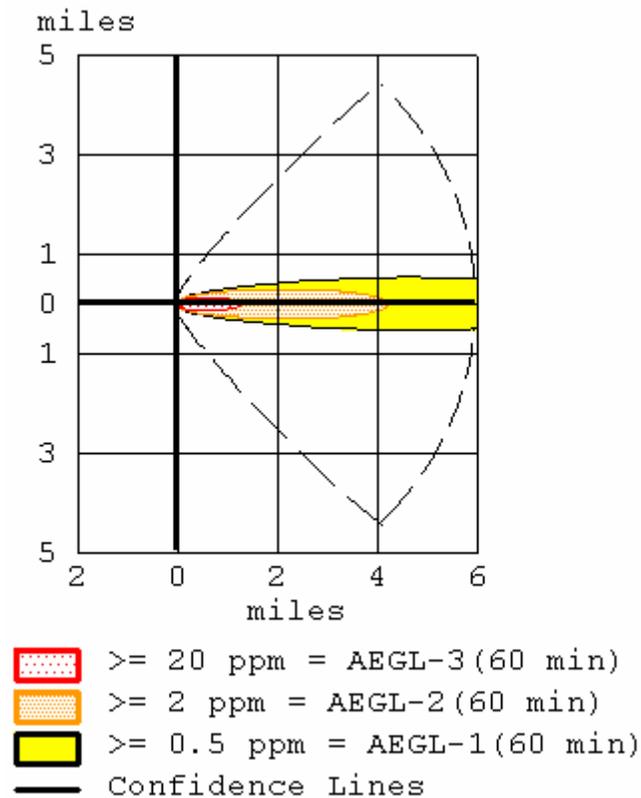
SOURCE STRENGTH:

Leak from hole in horizontal cylindrical tank
Non-flammable chemical is escaping from tank
Tank Diameter: 12 feet Tank Length: 35.5 feet
Tank Volume: 30000 gallons
Tank contains liquid Internal Temperature: 68° F
Chemical Mass in Tank: 176 tons Tank is 100% full
Circular Opening Diameter: 2.5 inches
Opening is 12 inches from tank bottom
Release Duration: 41 minutes
Max Average Sustained Release Rate: 10,500 pounds/min
(averaged over a minute or more)
Total Amount Released: 342,613 pounds
Note: The chemical escaped as a mixture of gas and aerosol (two phase flow)

Acute Exposure Guideline Levels (AEGLs) are intended to describe the health effects on humans due to once-in-a-lifetime or rare exposure to airborne chemicals. The National Advisory Committee for AEGLs is developing these guidelines to help both national and local authorities, as well as private companies, deal with emergencies involving spills or other catastrophic exposures.

- AEGL 1: Above this airborne concentration of a substance, it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.
- AEGL 2: Above this airborne concentration of a substance, it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.
- AEGL 3: Above this airborne concentration of a substance, it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death.

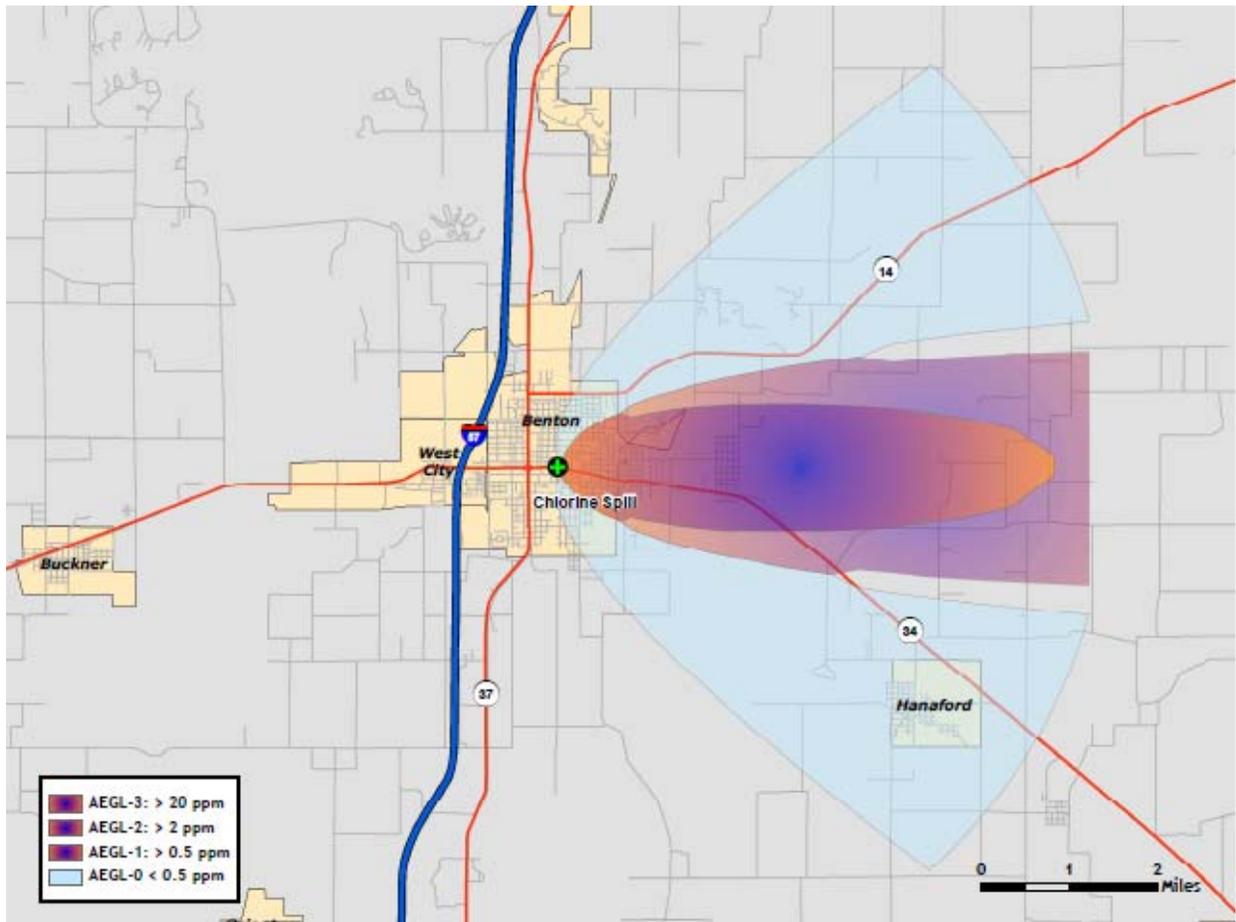
According to the ALOHA parameters, approximately 10,500 pounds of material would be released per minute. The image in Figures 4-17 depicts the plume footprint generated by ALOHA.

Figure 4-17: Plume Footprint Generated by ALOHA

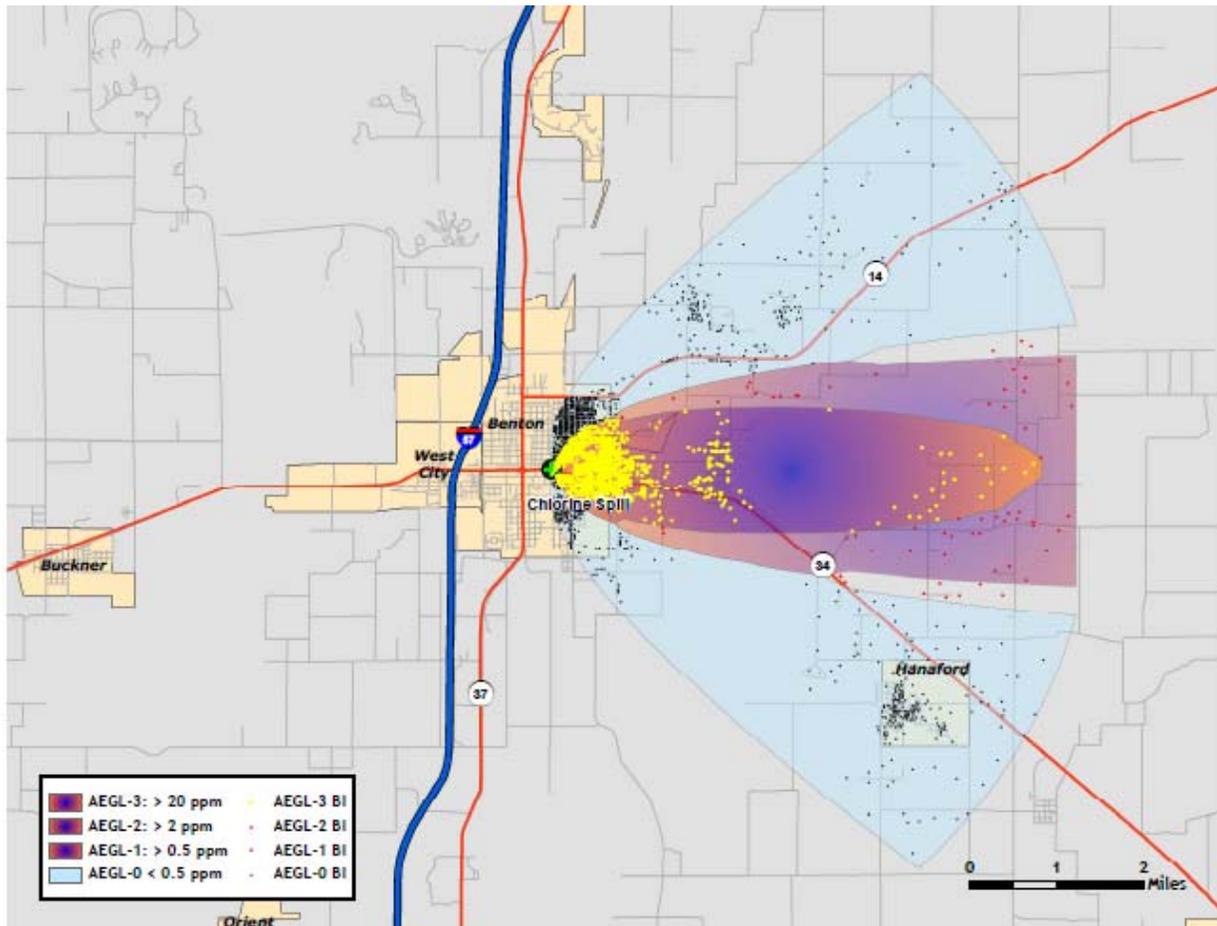
As the substance moves away from the source, the level of substance concentration decreases. Each color-coded area depicts a level of concentration measured in parts per million. For the purpose of clarification, this report will designate each level of concentration as a specific zone. The zones are as follows:

- **Zone 1** (AEGL-3): The red buffer (≥ 20 ppm) extends no more than 4.8 miles from the point of release after one hour.
- **Zone 2** (AEGL-2): The orange buffer (≥ 2 ppm) extends no more than six miles from the point of release after one hour.
- **Zone 3** (AEGL-1): The yellow buffer (≥ 0.5 ppm) extends more than six miles from the point of release after one hour.
- **Zone 4** (Confidence Lines): The dashed lines depict the level of confidence in which the exposure zones will be contained. The ALOHA model is 95% confident that the release will stay within this boundary.

The image in Figure 4-18 depicts the plume footprint generated by ALOHA overlaid in ArcGIS.

Figure 4-18: ALOHA Plume Footprint Overlaid in ArcGIS

The Franklin County Building Inventory point layer was added to ArcMap and overlaid with the plume footprint. The Building Inventory point layer was then intersected with each of the four footprint areas to classify each Building Inventory point based upon the plume footprint in which it is located. Figure 4-19 depicts the Franklin County Building Inventory points after the “intersect” process.

Figure 4-19: Franklin County Building Inventory Points Classified By Plume Footprint

Results

By summing the Building Inventory Points within all AEGL zones (Zone 1: 20 ppm, Zone 2: 2 ppm, Zone 3: 0.5 ppm, and Zone 4: < 0.5 ppm), the GIS overlay analysis predicts that as many as 1,983 buildings could be exposed at a replacement cost of \$94.4 million. If this event were to occur, approximately 4,225 people would be affected.

Building Inventory Damage

The results of the analysis against the Building Inventory points are depicted in Tables 4-35 through 4-38. Table 4-35 summarizes the results of the chemical spill by combining all AEGL zones.

Table 4-35: Estimated Exposure (all ppm)

Occupancy	Population	Building Counts	Exposure
Residential	4,225	1,690	\$69,356,220
Commercial	0	74	\$14,766,540
Industrial	0	0	\$0
Agriculture	0	197	\$9,731,445
Exempt	0	21	\$574,485
Total	4,225	1,983	\$94,428,690

Tables 4-36 through 4-38 summarize the results of the chemical spill for each zone separately.

Table 4-36: Estimated Exposure Zone 1 (20 ppm)

Occupancy	Population	Building Counts	Exposure
Residential	2,070	828	\$30,787,005
Commercial	0	38	\$3,107,370
Industrial	0	0	\$0
Agriculture	0	38	\$1,853,640
Exempt	0	12	\$348,855
Total	2,070	916	\$36,096,870

Table 4-37: Estimated Exposure Zone 2 (2 ppm)

Occupancy	Population	Building Counts	Exposure
Residential	65	26	\$1,454,640
Commercial	0	1	\$184,050
Industrial	0	0	\$0
Agriculture	0	27	\$1,214,295
Exempt	0	0	\$0
Total	65	54	\$2,852,985

Table 4-38: Estimated Exposure Zone 3 (0.5 ppm)

Occupancy	Population	Building Counts	Exposure
Residential	13	5	\$130,785
Commercial	0	0	\$0
Industrial	0	0	\$0
Agriculture	0	6	\$239,760
Exempt	0	0	\$0
Total	13	11	\$370,545

Zone 4 depicts the level of confidence in which the exposure zones will be contained. The ALOHA model is 95% confident that the release will stay within this boundary. Table 4-39 summarizes the results of the chemical spill for Zone 4.

Table 4-39: Estimated Exposure Zone 4 (< 0.5 ppm)

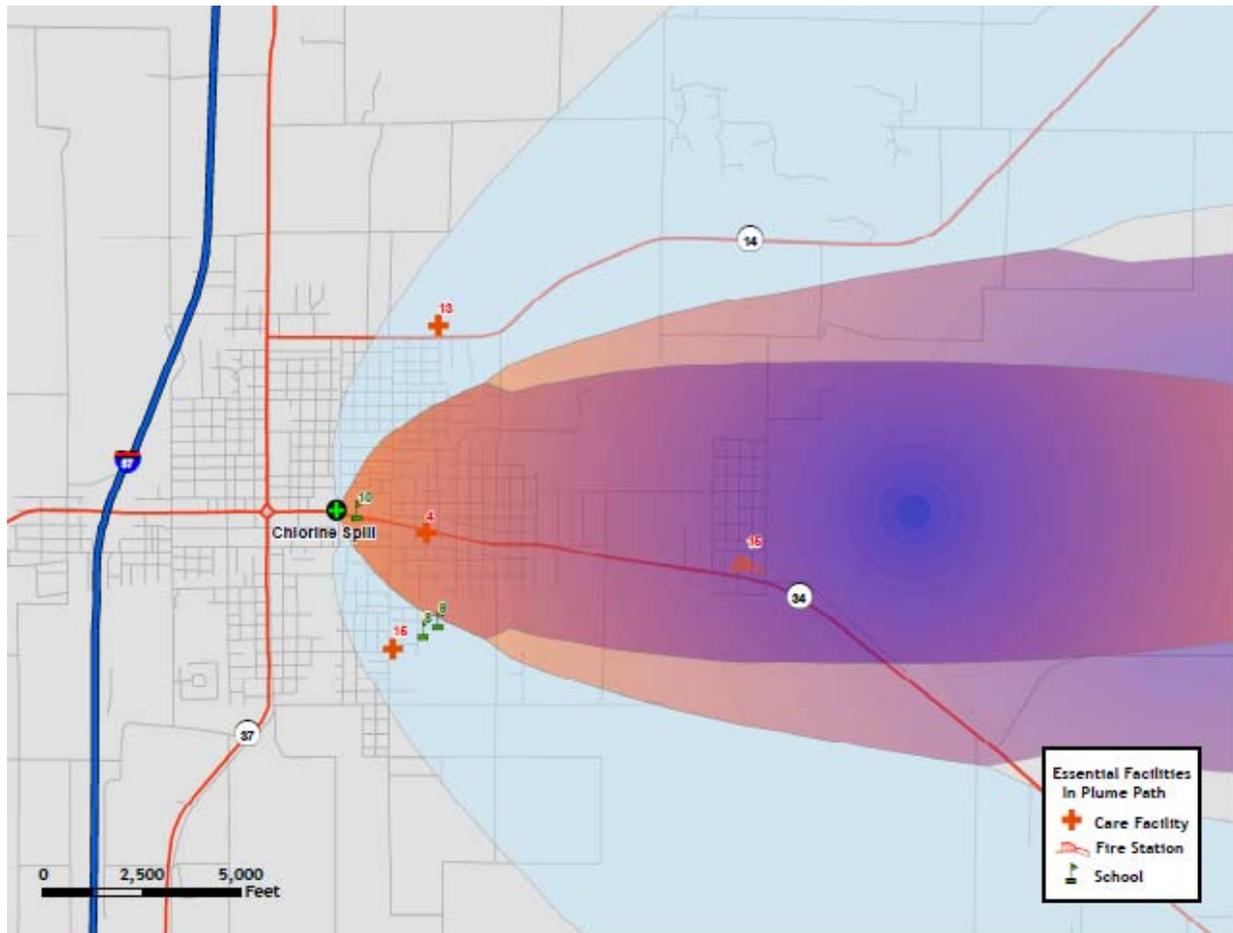
Occupancy	Population	Building Counts	Exposure
Residential	2,078	831	\$36,983,790
Commercial	0	35	\$11,475,120
Industrial	0	0	\$0
Agriculture	0	126	\$6,423,750
Exempt	0	9	\$225,630
Total	2,078	1,001	\$55,108,290

Essential Facilities Damage

There are seven essential facilities within the limits of the chemical spill plume. Most are located within the confines of Zone 4. The affected facilities are identified in Table 4-40. Their geographic locations are depicted in Figure 4-20.

Table 4-40: Essential Facilities within Plume Footprint

Name
Highlander House
Heritage Woods Of Benton
Severin Intermediate
Ewing - Northern Fire Station #3
Benton Elementary School
Benton Middle School
Benton Consolidated High School

Figure 4-20: Essential Facilities within Plume Footprint

Vulnerability to Future Assets/Infrastructure for Hazardous Materials Storage and Transport Hazard

Much new development in Franklin County is in close proximity to transportation corridors, such as along Illinois Route 34, Illinois Route 37 and Interstate 57. These areas are particularly vulnerable to chemical releases because of transportation of hazardous materials.

Analysis of Community Development Trends

Because of the concentration of new development in proximity to the transportation network, future development is likely to be vulnerable. The major transportation routes and the industries located in Franklin County pose a threat of dangerous chemicals and hazardous materials release.

4.4.7 Ground Failure Hazard

Subsidence

Subsidence in Illinois is a sinking of the land surface, usually associated with either underground mining or collapse of soil into crevices in underlying soluble bedrock. Areas at risk for subsidence can be determined from detailed mapping of geologic conditions or detailed mine maps. Data sources were compiled from the Illinois Geologic Survey and Illinois Department of Natural Resources to assess the risk of subsidence in Franklin County. This section provides an overview of the subsidence hazards in Illinois in general and a discussion of the potential subsidence risk for Franklin County.

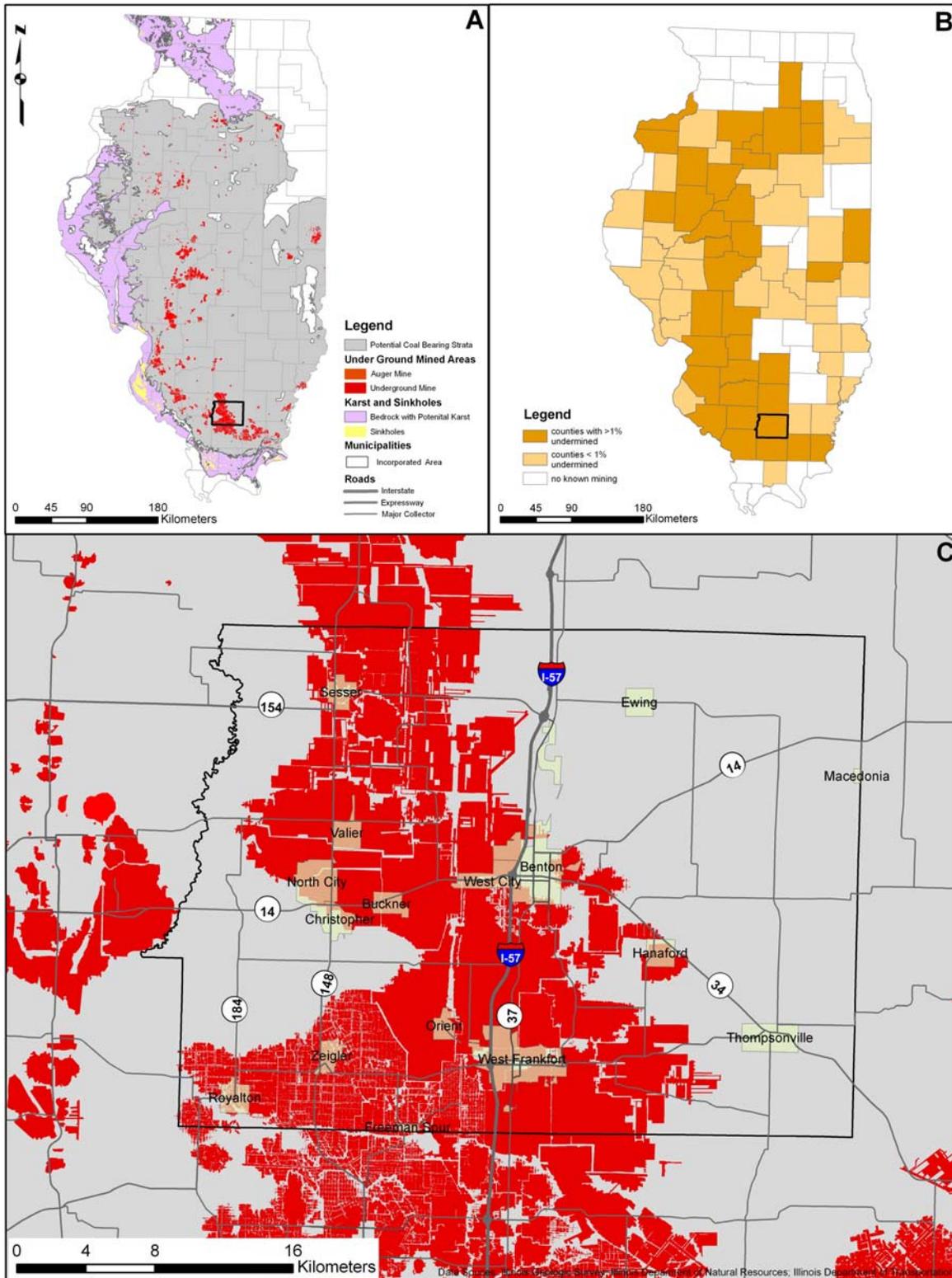
Underground Mining and Subsidence

Underground mines have been used extensively in Illinois to extract coal, lead, zinc, fluorites, shale, clay stones, limestone, and dolomite. When mining first began in Illinois, land over mined areas was sparsely populated. If the ground subsided, homes or other structures were seldom damaged. As towns and cities expanded over mined-out areas, subsidence damage to structures became increasingly more common. The most common underground mines in Illinois are coal mines. A recent study in Illinois has found that approximately 333,100 housing units were located over or adjacent to 839,000 acres mined for coal (Bauer, 2008).

Illinois has abundant coal resources. All or parts of 86 of 102 counties in the state have coal-bearing strata. As of 2007, approximately 1,050,400 acres (2.8% of the state) were mined. Of that total, 836,655 acres are underground mines (Bauer, 2008). Illinois ranks first among all U.S. states for reserves of bituminous coal (Illinois Coal Association, 1992).

Figure 4-21 depicts the following: A) the statewide distribution of bedrock with karst potential, coal bearing strata, sink holes, and underground mines; B) the counties which are 0, < 1%, and >1% undermined; and C) the countywide distribution of bedrock with karst potential, coal bearing strata, sink holes, and underground mines.

Figure 4-21: Maps of Statewide and Countywide Areas with Subsidence Hazard Potential



Mining Methods

There are two fundamental underground mining methods used in Illinois: high-extraction methods, such as long-wall and low-extraction room, and pillar mining. High-extraction methods remove almost all of the coal in localized areas. For modern mining practices, subsidence associated with high-extraction methods is planned and regulated by state and federal authorities. The subsurface subsides above the mine within several days or weeks after the coal has been removed. Subsidence of the overburden above the mined-out area can continue up to seven years after subsurface removal, depending on the local geologic conditions (Bauer, 2008). The initial ground movements associated with this mining, which tend to be the largest, diminish rapidly after a few months. After subsidence has decreased to a level that no longer causes damage to structures, the land may be suitable for development. The maximum amount of subsidence is proportional to the amount of material extract and the depth between the mining and the surface. In general, over the centerline of the mine panel, subsidence can be 60% to 70% of the extract material (e.g., 10 ft of material extracted would cause a maximum subsidence of six to seven feet; Bauer, 2006).

For low-extraction techniques such as room-and-pillar mining, miners create openings (rooms) as they work. Enough of the coal layer is left behind in the pillars to support the ground surface. In Illinois, this system of mining extracts 40% to 55% of the coal resources in modern mines and up to 75% in some older mines. Based on current state regulations, room-and-pillar mines in operation after 1983 that do not include planned subsidence must show that they have a stable design. Although these permitting requirements have improved overall mine stability, there are no guarantees that subsidence will not occur above a room-and-pillar mine in the future. In general, if coal or other mined resources has been removed from an area, subsidence of the overlying material is always a possibility (Bauer, 2006).

Types of Mine Subsidence

In Illinois, subsidence of the land surface related to underground mining undertakes two forms: pit subsidence or trough (sag) subsidence. Pit subsidence structures are generally six to eight feet deep and range from two to 40 feet in diameter. Pit subsidence mostly occurs over shallow mines that are <100 feet deep where the overlying bedrock is <50 feet thick and composed of weak rock materials, such as shale. The pit is produced when the mine roof collapses and the roof fall void works its way to the surface. These structures form rapidly. If the bedrock is only a few feet thick and the surface materials are unconsolidated (loose), these materials may fall into adjacent mine voids, producing a surface hole deeper than the height of the collapse mine void. Pit subsidence can cause damage to a structure if it develops under the corner of a building, under a support post of a foundation, or in another critical location. Subsidence pits should be filled to ensure that people or animals do not fall into these structures (Bauer, 2006).

Trough subsidence forms a gentle depression over a broad area. Some trough subsidence may be as large as a whole mine panel (i.e. several hundred feet long and a few hundred feet wide). Several acres of land may be affected by a single trough event or feature. As previously discussed, the maximum vertical settlement is 60% to 70% of the height of material removed (e.g., two to six feet). Significant troughs may develop suddenly, within a few hours or days, or gradually over a period of years. Troughs originate over places in mines where pillars have

collapsed, producing downward movement at the ground surface. These failures can develop over mines of any depth. Trough subsidence produces an orderly pattern of tensile features (tension cracks) surrounding a central area of possible compression features. The type and extent of damage to surface structures relates to their orientation and position within a trough. In the tension zone, the downward-bending movements that develop in the ground may damage buildings, roads, sewer and water pipes, and other utilities. The downward bending of the ground surface causes the soil to crack, forming the tension cracks that pull structures apart. In the relatively smaller compression zone, roads may buckle and foundation walls may be pushed inward. Buildings damaged by compressional forces typically need their foundations rebuilt and may also need to be leveled due to differential settling (Bauer, 2006).

Mine Subsidence Insurance

The Mine Subsidence Insurance, as of 1979, created subsidence insurance as part of an Illinois homeowner's policy. Homeowners in any of the Illinois counties undermined by approximately 1% or more automatically have mine subsidence insurance as a part of their policy, unless coverage is waived in writing. Mine subsidence insurance is especially important for homes located near or over mines that operated before the 1977 Surface Mine Control and Reclamation Act. The companies that operated these mines may no longer be in business (Bauer, 2006).

Mine Subsidence in Franklin County

Nearly two-thirds of Franklin County is underlain by rock units which potentially contain coal. Analysis of the GIS data layer of active and abandoned coal mines in Illinois obtained from the Illinois Department of Natural Resources (ILDNR) revealed that 159 mi² out of Franklin County's total 432 mi² (~ 37%) have been undermined. The undermined areas general are found around throughout the entire center portion of the County (Figurer 4-25c). Comparison of the GIS layer of building parcels attained from Franklin County Assessor's Office with ILDNR GIS layer of active and abandoned underground-coal mines was performed. This analysis revealed that 5,153 out of the 17,634 or ~29% of the buildings in the county were above undermined areas.

Subsidence Related to Karst Features

Subsidence can also occur on land located over soluble bedrock. The land over such bedrock often has topography characteristics of past subsidence events. This topography is termed "karst." Karst terrain has unique landforms and hydrology found only in these areas. Bedrock in karst areas are typically limestone, dolomite, or gypsum. In Illinois, limestone and dolomite (carbonate rocks) are the principle karst rock types; 9% of Illinois has carbonate rock types close enough to the ground surface to have a well-developed karst terrain. The area in Illinois in which the karst terrain is most developed is the southern and southwestern part of the state (Panno, et al., 1997).

Sinkhole Formation

The karst feature most associated with subsidence is the sinkhole. A sinkhole is an area of ground with no natural external surface drainage—when it rains, all of the water stays inside the

sinkhole and typically drains into the subsurface. Sinkholes can vary from a few feet to hundreds of acres, and from less than one to more than 100 feet deep. Typically, sinkholes form slowly, so that little change is seen during a lifetime, but they also can form suddenly when a collapse occurs. Such a collapse can have a dramatic effect if it occurs in a populated setting.

Sinkholes form where rainwater moves through the soil and encounters soluble bedrock. The bedrock begins to dissolve along horizontal and vertical cracks and joints in the rock. Eventually, these cracks become large enough to start transporting small soil particles. As these small particles of soil are carried off, the surface of the soil above the conduit slump down gradually, and a small depression forms on the ground surface. This depression acts like a funnel and gathers more water, which makes the conduit still larger and washes more soil into it.

Sinkhole Collapse

Sudden collapse of a sinkhole occurs when the soil close to the ground surface does not initially slump down, but instead forms a bridge. Beneath that surface cover, a void forms where the soil continues to wash into the conduit. These voids are essentially shallow caves. Over time, the void enlarges enough that the weight of the overlying bridge can no longer be supported. The surface layer then suddenly collapses into the void, forming a sinkhole.

The process of forming a conduit and a soil bridge usually takes years to decades to form. However this natural process can be aggravated and expedited by human activities. Since the process of forming a sinkhole depends on water to carry soil particle down into the karst bedrock, anything that increases the amount of water flowing into the subsurface can accelerate sinkhole formation process. Parking lots, streets, altered drainage from construction, and roof drainage are a few of the things that can increase runoff.

Collapses are more frequent after intense rainstorms. However, drought and altering of the water table can also contribute to sinkhole collapse. Areas where the water table fluctuates or has suddenly been lowered are more susceptible to sinkhole collapse. It is also possible for construction activity to induce the collapse of near-surface voids or caves. In areas of karst bedrock, it is imperative that a proper geotechnical assessment be completed prior to construction of any significant structures. Solutions to foundation problems in karst terrain generally are expensive (White, 1988).

Sinkhole Subsidence or Collapse Potential for Franklin County

Nearly all of Franklin County is underlain by insoluble bedrock, and therefore subsidence from this mechanism should not be a concern.

Hazard Extent for Subsidence

The extent of subsidence hazard in Franklin County is a function of where current development is located relative to 1) areas of past and present underground mining, and 2) areas of soluble bedrock.

Calculated Risk Priority Index for Ground Failure

Based on historical information, future ground failure in the affected regions of Franklin County is possible. According to the RPI, ground failure ranked as the number eight highest hazard in the county.

RPI = Probability x Magnitude/Severity.

Probability	x	Magnitude /Severity	=	RPI
2	x	2	=	4

Vulnerability Analysis for Ground Failure

The existing buildings and infrastructure of Franklin County are discussed in types and numbers in Table 4-10.

Critical Facilities

Any critical facility built above highly soluble bedrock could be vulnerable to land subsidence. A critical facility will encounter the same impacts as any other building within the affected area. These impacts include damages ranging from cosmetic to structural. Buildings may sustain minor cracks in walls due to a small amount of settling, while in more severe cases, the failure of building foundations can cause cracking of critical structural elements. Table 4-9 lists the essential facilities in the area. Critical facility information, including replacement costs, is included in Appendix F. A map of the critical facilities is included in Appendix G.

Building Inventory

Table 4-10 lists the building exposure in terms of types and numbers of buildings for the entire county. The buildings within this area can anticipate impacts similar to those discussed for critical facilities, ranging from cosmetic to structural. Buildings may sustain minor cracks in walls due to a small amount of settling, while in more severe cases, the failure of building foundations causes cracking of critical structural elements.

Infrastructure

Land subsidence areas within Franklin County could impact the roadways, utility lines/pipes, railroads, and bridges. The risk to these structures is primarily associated with land collapsing directly beneath them in a way that undermines their structural integrity. The impacts to these items include broken, failed, or impassable roadways; broken or failed utility lines (e.g. loss of power or gas to community); and railway failure from broken or impassable railways. In addition bridges could fail or become impassable causing risk to traffic.

Vulnerability to Future Assets/Infrastructure for Ground Failure

New buildings and infrastructure placed on undermined land or on highly soluble bedrock will be vulnerable to ground failure.

Analysis of Community Development Trends

Abandoned underground mine subsidence may affect several locations within the county; therefore buildings and infrastructure are vulnerable to subsidence. Continued development will occur in many of these areas. Currently, Franklin County reviews new development for compliance with the local zoning ordinance. Newly planned construction should be reviewed with the historical mining maps to minimize potential subsidence structural damage.

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Section 5 - Mitigation Strategy

The goal of mitigation is to reduce a hazard's future impacts including property damage, disruption to local and regional economies, and the amount of public and private funds spent to assist with recovery. The goal of mitigation is to build disaster-resistant communities. Mitigation actions and projects should be based on a well-constructed risk assessment; Franklin County's is provided in Section 4 of this plan. Mitigation should be an ongoing process that adapts over time to accommodate the community's needs.

5.1 Community Capability Assessment

The capability assessment identifies current activities used to mitigate hazards. The capability assessment identifies the policies, regulations, procedures, programs, and projects that contribute to the lessening of disaster damages. The assessment also provides an evaluation of these capabilities to determine whether the activities can be improved in order to more effectively reduce the impact of future hazards. The following sections identify existing plans and mitigation capabilities within all of the communities listed in Section 2 of this plan.

5.1.1 National Flood Insurance Program (NFIP)

Franklin County and the communities of Benton, Christopher, Freeman Spur, Sesser, Valier, West City, West Frankfort, and Zeigler are members of the NFIP. HAZUS-MH estimates that approximately 146 households were located in the Franklin County Special Flood Hazard Area; as of June 18, 2007, the Federal Emergency Management Agency NFIP Insurance Report for Illinois stated that 104 households paid flood insurance, insuring \$5,956,600 in property value. The total premiums collected amounted to \$35,989, which on average was \$346 annually. From 1978 to 2007, 44 claims were filed totaling \$232,586. The average claim was \$5,286.

The county and incorporated areas do not participate in the National Flood Insurance Program's (NFIP) Community Rating System (CRS). The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community meeting the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance. Table 5-1 identifies each community and the date each participant joined the NFIP.

Table 5-1: Additional Information on Communities Participating in the NFIP

Community	Participation Date	FIRM Date	CRS Date	CRS Rating	Flood Plain Zoning Ordinance Adopted Last
Franklin County	10/25/1996	8/29/1980	N/A	N/A	3/20/2007
City of Benton	12/14/1979	12/14/1979	N/A	N/A	6/1991
City of Christopher	8/19/1987	8/19/1987	N/A	N/A	7/13/1987
Village of Freeman Spur	8/4/2008	8/4/2008	N/A	N/A	N/A
City of Sesser	N/A	NSFHA	N/A	N/A	N/A
Village of Valier	7/2/1987	7/2/1987	N/A	N/A	5/27/1987

Community	Participation Date	FIRM Date	CRS Date	CRS Rating	Flood Plain Zoning Ordinance Adopted Last
Village of West City	3/2/1987	7/1/2007	N/A	N/A	3/2/1987
City of West Frankfort	5/16/1983	5/16/1983	N/A	N/A	2004
City of Zeigler	8/5/1985	8/5/1985	N/A	N/A	2/25/1977

NSFHA - Non-Special Flood Hazard Area

In Franklin County only three out of the sixteen incorporated communities participate in the NFIP. These five incorporated communities (Ewing, Hanaford, Macedonia, North City, and Sesser) have no identified flood hazard boundaries; therefore, the communities do not participate in the NFIP. The communities of Buckner, Freeman Spur, Orient, Royalton and Thompsonville do have identified flood boundaries but have previously chosen not to participate in the program. The County will continue to educate these jurisdictions on the benefits of the program.

5.1.2 Stormwater Management Stream Maintenance Ordinance

The City of Benton has a stormwater management plan as an element of the Subdivision Ordinance, Chapter 34-6-1. This Code applies to all development within the limits of the City. Residential developments having a total area of less than five acres, and commercial or industrial developments having a total area of less than two acres, may be given a waiver by the City in accordance with section 34-4-4 of this Code, subject to specific conditions described in section 34-6-4. The storage capacity and discharge rate is based on the calculated volume and peak flow of the stormwater runoff, respectively. The calculations for sites having an area of 100 acres or less are made using either the Illinois Manual for Soil Erosion and Sedimentation Control Method or the Rational Method. If the site is larger than 100 acres, the Engineer uses either the Illinois Manual for Soil Erosion and Sedimentation Control Method or another method that is subject to review and approval. All new developments must provide a stormwater system that ensures that the rate of flow does not exceed the rate of flow of stormwater run-off before development in a 25-year storm, unless given a waiver by the City.

The City of West Frankfort has a stormwater management plan as an element of the Subdivision Ordinance, Section 16.20.060. The subdivider must provide adequate surface and subsurface drainageways, to the extent of which is required. An analysis based upon calculations, prepared by a registered professional engineer, will determine the design requirements. The analysis is based upon the rational method of computing storm run-off, using the one-hour rainfall to be expected at a five-year frequency. Other variable and factors to be used in the analysis shall be discussed with and approved by the City Engineer. A stormwater sewer system, which must be separate and independent of the sanitary sewer system with surface inlets, will be provided by the subdivider in all cases. Whenever curbs and gutters are not provided in a street, the subdivider will provide grass side ditches to facilitate the collection of stormwater run-off. When swales and open drainageways are to be used, adequate easements for such will be provided.

5.1.3 Zoning Management Ordinance

Table 5-2 identifies the dates each city and village that has adopted land use planning and zoning ordinances within the county. The cities of Benton, Christopher, and West Frankfort, as well as the villages of North City (Coello), West City, and Valier have zoning administrators.

Table 5-2: Description of Zoning Plans/Ordinances

Community	Comp Plan	Zoning Ord	Subd Control Ord	Erosion Control	Storm Water Mgmt	Burning Ord.	Seismic Ord.	Bldg. Stndrds.
Franklin County	3/30/1965	N/A	4/22/2008	N/A	N/A	N/A	N/A	N/A
City of Benton	3/1979	9/27/1965	5/8/1972	N/A	5/8/1972	10/24/1988	N/A	1/20/1969
Village of Buckner	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
City of Christopher	7/1/1964	12/19/1966	N/A	N/A	N/A	10/12/1992	N/A	5/20/1963
Village of Ewing	7/1/1964	N/A	N/A	N/A	N/A	5/2/2001	N/A	N/A
Village of Freeman Spur	N/A	N/A	N/A	N/A	N/A	2005	N/A	2005
Village of Hanaford (Logan)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Village of Macedonia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Village of North City (Coello)	N/A	1986	N/A	N/A	N/A	1986	N/A	1986
City of Orient	8/15/1968	N/A	N/A	N/A	N/A	3/2/1998	N/A	N/A
Village of Royaltown	7/1/1964	N/A	N/A	N/A	N/A	N/A	N/A	3/5/2007
City of Sesser	7/1/1964	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Village of Thompsonville	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Village of Valier	5/1/1968	10/1/1973	N/A	N/A	N/A	8/14/1993	N/A	N/A
Village of West City	7/1/1964	10/7/1970	N/A	N/A	N/A	11/5/1990	N/A	2003
City of West Frankfort	1/1961	1962	1992	N/A	1992	1972	N/A	1992
City of Zeigler	7/1/1964	12/4/1972	12/4/1972	N/A	N/A	11/10/1986	N/A	12/4/1972

5.1.4 Erosion Management Program/ Policy

Franklin County utilizes the Illinois Administrative Code Title 35 and the Illinois Environmental Protection Act, administered by the Illinois Environmental Protection Agency, which requires the submission of a Stormwater Pollution Prevention Plan (SWPPP) for projects involving more than one acre of land disturbance.

5.1.5 Fire Insurance Rating Programs/ Policy

Table 5-3 lists the fire departments in Franklin County, as well as the ISO rating and the number of members in each department.

Table 5-3: Listing of Fire Departments, Ratings, and Number of Firefighters

Fire Department	Fire Insurance Rating	Number of Firefighters
Akin – Cave Eastern FDP Station 1	ISO 7	N/A
Benton Fire Department	ISO 4	23
Buckner Fire Department	ISO 7	30
Christopher Fire Department	ISO 6	24
Coello Fire Department	ISO 7	20
Ewing – Northern FDP Station 1	ISO 7	11
Ewing – Northern FDP Station 2	ISO 7	11
Ewing – Northern FDP Station 3	ISO 7	10
Royalton Fire Department	ISO 6	15
Sesser FPD Station 1	ISO 4/8	26
Thompsonville – Cave Eastern FPD Station 2	ISO 7	23
Valier Fire Department	ISO 6/9	18
West City Fire Department	ISO 5/8	13
West Frankfort Fire Department	ISO 4	20
Whittington – Sesser FPD Station 3	ISO 4/8	1
Zeigler Fire Department	ISO 5	20

5.1.6 Land Use Plan

Table 5-2 identifies the area Comprehensive Plans within Franklin County.

5.1.7 Building Codes

Table 5-2 identifies the building standards adopted within the county. Benton, Christopher, North City (Coello), West Frankfort, and Royalton have all adopted the National Building Code. West City has adopted the International Building Code. Many of the building codes for manufactured homes require tie-downs to minimize wind effects. There are no building codes specific to seismic control.

5.2 Mitigation goals

The Franklin County Emergency Management Agency, Southern Illinois University-Carbondale Geology Department, The Polis Center of IUPUI, and the Greater Egypt Regional Planning &

Development Commission assisted the Franklin County Multi-Hazard Mitigation Planning Team in the formulation of mitigation strategies and projects for Franklin County. The goals and objectives set forth were derived through participation and discussion of the views and concerns of the Franklin County Multi-Hazard Mitigation Team members and related public input. The MHMP will focus on these goals, with a great deal of public input, to ensure that the priorities of the communities are represented.

The goals represent long-term, broad visions of the overall vision the county would like to achieve for mitigation. The objectives are strategies and steps which will assist the communities to attain the listed goals. Table 5-5 lists mitigation actions, which are defined projects that will help to complete the defined goals and objectives.

Goal 1: Lessen the impacts of hazards to new and existing infrastructure

(a) Objective: Retrofit critical facilities with structural design practices and equipment that will withstand natural disasters and offer weather-proofing.

(b) Objective: Equip public facilities and communities to guard against damage caused by hazards.

(c) Objective: Minimize the amount of infrastructure exposed to hazards.

(d) Objective: Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county.

(e) Objective: Improve emergency sheltering in Franklin County.

Goal 2: Create new or revise existing plans/maps related to hazards affecting Franklin County

(a) Objective: Support compliance with the NFIP for each jurisdiction in Franklin County.

(b) Objective: Review and update existing community plans and ordinances to support hazard mitigation.

(c) Objective: Conduct new studies/research to profile hazards and follow up with mitigation strategies.

Goal 3: Develop long-term strategies to educate the public on the hazards affecting Franklin County

(a) Objective: Raise public awareness on hazard mitigation.

(b) Objective: Improve education of emergency personnel and public officials.

5.3 Mitigation Actions/Projects

Upon completion of the risk assessment and development of the goals and objectives, the Planning Committee was provided with a list of the six mitigation measure categories from the *FEMA State and Local Mitigation Planning How to Guides*. The measures are listed as follows.

- **Prevention:** Government, administrative, or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection:** Actions that involve the modification of existing buildings or structures to protect them from a hazard or removal from the hazard area. Examples include acquisition, elevation, structural retrofits, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness:** Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.
- **Natural Resource Protection:** Actions that, in addition to minimizing hazard losses, preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services:** Actions that protect people and property during and immediately after a disaster or hazard event. Services include warning systems, emergency response services, and protection of critical facilities.
- **Structural Projects:** Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, levees, floodwalls, seawalls, retaining walls, and safe rooms.

After Meeting #3, held December 18, 2008, MHMP members were presented with the task of individually listing potential mitigation activities using the FEMA evaluation criteria. The MHMP members brought their mitigation ideas to Meeting #4, which was held January 23, 2009. The evaluation criteria (STAPLE+E) involved the following categories and questions.

Social:

- Will the proposed action adversely affect one segment of the population?
- Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?

Technical:

- How effective is the action in avoiding or reducing future losses?
- Will it create more problems than it solves?
- Does it solve the problem or only a symptom?
- Does the mitigation strategy address continued compliance with the NFIP?

Administrative:

- Does the jurisdiction have the capability (staff, technical experts, and/or funding) to implement the action, or can it be readily obtained?
- Can the community provide the necessary maintenance?
- Can it be accomplished in a timely manner?

Political:

- Is there political support to implement and maintain this action?
- Is there a local champion willing to help see the action to completion?
- Is there enough public support to ensure the success of the action?
- How can the mitigation objectives be accomplished at the lowest cost to the public?

Legal:

- Does the community have the authority to implement the proposed action?
- Are the proper laws, ordinances, and resolution in place to implement the action?
- Are there any potential legal consequences?
- Is there any potential community liability?
- Is the action likely to be challenged by those who may be negatively affected?
- Does the mitigation strategy address continued compliance with the NFIP?

Economic:

- Are there currently sources of funds that can be used to implement the action?
- What benefits will the action provide?
- Does the cost seem reasonable for the size of the problem and likely benefits?
- What burden will be placed on the tax base or local economy to implement this action?
- Does the action contribute to other community economic goals such as capital improvements or economic development?
- What proposed actions should be considered but be “tabled” for implementation until outside sources of funding are available?

Environmental:

- How will this action affect the environment (land, water, endangered species)?
- Will this action comply with local, state, and federal environmental laws and regulations?
- Is the action consistent with community environmental goals?

The development of the MHMP is the first step in a multi-step process to implement projects and policies to mitigate hazards in the county and its communities.

5.3.1 Completed or Current Mitigation Actions/Projects

Since this is the first mitigation plan developed for Franklin County, there are no deleted or deferred mitigation items. The following tables will refer to completed, ongoing, or future mitigation actions. Table 5-4 presents the completed and ongoing mitigation actions and projects in the county.

Table 5-4: Completed/Ongoing Mitigation Actions

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Jurisdictions Covered	Comments
Install weather radios in schools	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county</p>	Tornado, Thunderstorms	Akin, Benton, Christopher, Royalton, Sesser, Thompsonville, Valier, West Frankfort, Zeigler School Districts	Franklin County EMA oversaw this project. It was completed by February, 2009.
Install outdoor weather warning system sirens	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county</p>	Tornado, Thunderstorms	Benton, Christopher	The Cities of Benton and Christopher oversaw this project. Benton completed this project in 2003. Christopher will complete this project in 2009.
Install flood pumps and flood gates	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Equip public facilities and communities to guard against damage caused by hazards</p>	Flood	West Frankfort	The City of West Frankfort oversaw this project. It was ongoing as of April, 2009.
Assign U.S. Army Corps of Engineers to monitor the dam at Rend Lake	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Equip public facilities and communities to guard against damage caused by hazards</p>	Flood	Franklin County	Franklin County and the U.S. Army Corps of Engineers oversee this project. Monitoring has been on going since the construction of the dam in 1965.
Conduct seismic monitoring of Rend Lake Dam	<p>Goal: Create new or revise existing plans/maps related to hazards affecting Franklin County</p> <p>Objective: Conduct new studies/research to profile hazards and follow up with mitigation strategies</p>	Earthquake, Ground Failure	Franklin County	Franklin County and USGS oversee this project. Monitoring has been on going since the construction of the dam in 1965.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Jurisdictions Covered	Comments
Initiated community preparedness campaign	<p>Goal: Develop long-term strategies to educate the public on the hazards affecting Franklin County</p> <p>Objective: Improve education of emergency personnel and public officials</p>	All	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Franklin County EMA and Franklin County first responders participate in this project. It was ongoing as of February, 2009.
Initiated a regional TRT, MABAS and HAZMAT team	<p>Goal: Ensure proper equipment and personnel are in place at time of emergency</p> <p>Objective: Improve education of emergency personnel and public officials</p>	HAZMAT	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Franklin County and in cooperation with surrounding counties have assembled a regional HAZMAT response team in Southern Illinois. This team actively responding to HAZMAT incidents as of February, 2009.

5.4 Implementation Strategy and Analysis of Mitigation Projects

Implementation of the mitigation plan is critical to the overall success of the mitigation planning process. The first step is to decide based upon many factors, which action will be undertaken initially. In order to pursue the top priority first, an analysis and prioritization of the actions is important. Some actions may occur before the top priority due to financial, engineering, environmental, permission, and/or site control issues. Public awareness and input of these mitigation actions can increase knowledge to capitalize on funding opportunities and monitoring the progress of an action.

In Meeting #4, the planning team prioritized mitigation actions based on a number of factors. A rating of High, Medium, or Low was assessed for each mitigation item and is listed next to each item in Table 5-6. The factors were the STAPLE+E (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) criteria listed in Table 5-5.

Table 5-5: STAPLE+E planning factors

S – Social	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the community's social and cultural values.
T – Technical	Mitigation actions are technically most effective if they provide a long-term reduction of losses and have minimal secondary adverse impacts.
A – Administrative	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
P – Political	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.
L – Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.

E – Economic	Budget constraints can significantly deter the implementation of mitigation actions. Hence, it is important to evaluate whether an action is cost-effective, as determined by a cost benefit review, and possible to fund.
E – Environmental	Sustainable mitigation actions that do not have an adverse effect on the environment, comply with federal, state, and local environmental regulations, and are consistent with the community's environmental goals, have mitigation benefits while being environmentally sound.

For each mitigation action related to infrastructure, new and existing infrastructure was considered. Additionally, the mitigation strategies address continued compliance with the NFIP. While an official cost benefit review was not conducted for any of the mitigation actions, the estimated costs were discussed. The overall benefits were considered when prioritizing mitigation items from High to Low. An official cost benefit review will be conducted prior to the implementation of any mitigation actions. Table 5-6 presents mitigation projects developed by the planning committee.

Table 5-6: Mitigation Strategies

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Jurisdictions Covered	Priority	Comments
Develop public outreach programs to instruct public on what to do during potential hazards	Goal: Develop long-term strategies to educate the public on the hazards affecting Franklin County Objective: Raise public awareness on hazard mitigation	All	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	High	The County EMA, schools, Red Cross, and other organizations have implemented various forms of this strategy. Local resources have been used to target and inform the resident population. Additional funding will be sought from the Pre-Disaster Mitigation program.
Organize a volunteer corps to assist the communities with education, planning, and emergency response	Goal: Develop long-term strategies to educate the public on the hazards affecting Franklin County Objective: Raise public awareness on hazard mitigation	All	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	High	The County EMA, schools, Red Cross, and other organizations will participate in this project. Local resources will be used to target and inform the resident population. Additional funding will be sought from the Pre-Disaster Mitigation program.
Construct a new Emergency Operations Center	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by hazards	All	Franklin County	High	The County EMA will oversee the implementation of this project. Funding has not been secured as of 2009, but the pre-disaster mitigation program and community development grants are a possible funding source. Implementation, if funding is available, is forecasted to be initiated within approximately one year.
Establish shelters, including warming and cooling centers, in county and city parks and at Rend Lake campground and recreation area	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in Franklin County	Tornado, Thunderstorm, Flood, Winter Storm	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	High	The County EMA will oversee the implementation of this project. Local resources will be used to evaluate the cost benefit of the shelters and define specific locations. Funding has not been secured as of 2009. Implementation is forecasted to be initiated within approximately one year.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Jurisdictions Covered	Priority	Comments
Purchase back-up generators for critical facilities	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Equip public facilities and communities to guard against damage caused by hazards</p>	Tornado, Thunderstorm, Flood, Earthquake, Winter Storm, Ground Failure	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	High	The County EMA will oversee the implementation of this project. Local resources and additional grants will be used to procure the generators. If funding is available, is forecasted to be complete within approximately one year.
Designate approved HAZMAT transportation routes and provide appropriate signage	<p>Goal: Create new or revise existing plans/maps related to hazards affecting Franklin County</p> <p>Objective: Conduct new studies/research to profile hazards and follow up with mitigation strategies</p>	HAZMAT	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Medium	The County EMA will oversee the implementation of this project. Funding has not been secured, but additional funding will be sought from local resources. Implementation is forecasted to be complete within approximately three years.
Purchase equipment and conduct training for chemical detection	<p>Goal: Develop long-term strategies to educate the public on the hazards affecting Franklin County</p> <p>Objective: Improve education of emergency personnel and public officials</p>	HAZMAT	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Medium	The County EMA will oversee the implementation of this project. Funding has not been secured, but additional funding will be sought from Department of Homeland Security and local resources. Implementation is forecasted to be complete within approximately three years.
Implement a plan for voluntary buyouts for structures in Benton and Franklin County	<p>Goal: Create new or revise existing plans/maps related to hazards affecting Franklin County</p> <p>Objective: Support compliance with the NFIP</p>	Flood	Franklin County, Benton	Medium	The County EMA will oversee the implementation of this project. Local resources will be used to evaluate the applicable areas. Table 4-19 presents potential buyout properties. Funding has not been secured, but additional funding will be sought from the Pre-Disaster Mitigation program. Implementation is forecasted to be initiated within approximately three years.
Install a high discharge/flood warning system for Rend Lake and down stream communities	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Equip public facilities and communities to guard against damage caused by hazards</p>	Flood	Franklin County	Medium	The County EMA will work with the US Corp of Engineers to help oversee the implementation of this project. Local resources and additional grants will be used to procure the system. If funding is available, is forecasted to be complete within approximately three years.
Purchase weather radios for nursing homes, childcare facilities, and large employers	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county</p>	All	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Medium	The County EMA will oversee the implementation of this project. Local resources will be used to evaluate the cost benefits of the radios. Funding has not been secured as of 2009. If funding is available, is forecasted to be complete within approximately three years.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Jurisdictions Covered	Priority	Comments
Stockpile emergency rations for shelters	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Improve emergency sheltering in Franklin County</p>	All	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Medium	The County EMA will oversee the implementation of this project. Local resources will be used to organize and distribute the rations. Funding has not been secured, but local organizations and businesses are an option. Implementation is forecasted to be complete within approximately three years.
Harden critical facilities	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Retrofit critical facilities with structural design practices and equipment that will withstand natural disasters and offer weather-proofing</p>	Tornado, Thunderstorm, Flood, Earthquake, Ground Failure, Winter Storm	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Medium	The County EMA will oversee the implementation of this project. Funding has not been secured as of 2009, but the pre-disaster mitigation program and community development grants are a possible funding source. Implementation, if funding is available, is forecasted to be initiated within approximately three years.
Conduct new training programs for First Responders	<p>Goal: Develop long-term strategies to educate the public on the hazards affecting Franklin County</p> <p>Objective: Improve education of emergency personnel and public officials</p>	HAZMAT, Earthquake	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Medium	The County EMA will oversee the implementation of this project. Local resources will be used to evaluate the capabilities of the Hazmat Response Team. Funding has not been secured as of 2009. Implementation, if funding is available, is forecasted to be complete within approximately three years.
Upgrade outdoor warning siren systems and expand the sirens into populated areas, including the Rend Lake camping area	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county</p>	Tornado, Thunderstorm	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Medium	The County EMA will work with the Army Corp. of Engineers to oversee the implementation of this project. Local resources and additional grants will be used to procure the systems. If funding is available, is forecasted to be complete within approximately three years.
Amend ordinances to improve stormwater management	<p>Goal: Create new or revise existing plans/maps related to hazards affecting Franklin County</p> <p>Objective: Review and update existing community plans and ordinances to support hazard mitigation</p>	Flood	Benton, West Frankfort, Royalton	Medium	The Cities of Benton and West Franklin and the Village of Royalton will oversee the implementation of this project. Local resources will be used to review the current ordinances. Funding has not been secured. Implementation is forecasted to be complete within approximately three years.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Jurisdictions Covered	Priority	Comments
Implement stream maintenance to improve floodplain management	<p>Goal: Create new or revise existing plans/maps related to hazards affecting Franklin County</p> <p>Objective: Support compliance with the NFIP for each jurisdiction in Franklin County</p>	Flood	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Medium	The County EMA and DNR will oversee the implementation of this project. Funding has not been secured as of 2009. Community development grants are a possible funding source. Implementation, if funding is available, is forecasted to be complete within approximately three years.
Publish and distribute information on the NFIP to the public	<p>Goal: Create new or revise existing plans/maps related to hazards affecting Franklin County</p> <p>Objective: Support compliance with the NFIP for each jurisdiction in Franklin County</p>	Flood	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Medium	The County EMA, schools, and other organizations will participate in this project. Local resources will be used to target and inform the resident population. Additional funding will be sought from the Pre-Disaster Mitigation program.
Purchase permanent signage or flood gates for Dearing Road, Yellow Banks Road, Number 9 Blacktop, Park Street, Old Johnson City Road	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Minimize the amount of infrastructure exposed to hazards</p>	Flood	Franklin County, Benton	Medium	The County EMA will oversee the implementation of this project. Local resources and IDOT will be used to evaluate the areas for signage. Funding has not been secured, but IDOT and IDNR are possible sources. Implementation is forecasted to be complete within approximately three years.
Establish Reverse 911	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county</p>	All	Franklin County	Low	The County EMA will oversee the implementation of this project. Funding has not been secured, but additional funding will be sought from the Homeland Security program funds. Implementation is forecasted to be complete within approximately five years.
Establish SNAP (Special Needs Assessment Panel) to determine special emergency needs within the county	<p>Goal: Develop long-term strategies to educate the public on the hazards affecting Franklin County</p> <p>Objective: Improve education of emergency personnel and public officials</p>	All	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Low	The County EMA will oversee the implementation of this project. Local organizations will be used as resources and for possible funding. Implementation, if available, is forecasted to be complete within approximately five years.
Flood Proofing Waste Water Treatment Facility	<p>Goal: build levee or other structural protective measure to prevent flood damage to waste water treatment plant.</p> <p>Objective: Prevent flood damage to waste water treatment plant.</p>	Flood	West Frankfort	Low	West Frankfort will oversee the construction of the levee or other structural protective measures for their waste water treatment plant. Funding has not been secured, but additional funding will be sought from local, state and federal resources. Implementation is contingent on funding.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Jurisdictions Covered	Priority	Comments
Evaluate spillway erosion around Old West Franklin and Franklin Lakes and repair as necessary	<p>Goal: Create new or revise existing plans/maps related to hazards affecting Franklin County</p> <p>Objective: Support compliance with the NFIP for each jurisdiction in Franklin County</p>	Flood, Ground Failure	West Frankfort	Low	The County EMA will oversee the implementation of this project. Funding has not been secured, but additional funding will be sought from local resources. Implementation is forecasted to be complete within approximately five years.
Install automatic shutoff valves that respond to movement in the earth and buildings	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Retrofit critical facilities with structural design practices and equipment that will withstand natural disasters and offer weather-proofing</p>	Earthquake	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Low	The County EMA, municipalities, and utility companies will oversee the implementation of this project. Local and corporate resources will be used to identify and install inertial valves. Funding has not been secured as of 2009, but the pre-disaster mitigation program is a possible funding source. Implementation, if funding is available, is forecasted to be complete within approximately five years.
Conduct a structural engineering investigation of critical facilities for seismic hazards	<p>Goal: Create new or revise existing plans/maps related to hazards affecting Franklin County</p> <p>Objective: Conduct new studies/research to profile hazards and follow up with mitigation strategies</p>	Earthquake	Franklin County	Low	The County EMA and USGS will oversee the implementation of this project. Local resources will be used to evaluate the depth of the study. Funding has not been secured. Implementation, if funding is available, is forecasted to be complete within approximately five years.
Establish governmental interagency watershed planning	<p>Goal: Create new or revise existing plans/maps related to hazards affecting Franklin County</p> <p>Objective: Conduct new studies/research to profile hazards and follow up with mitigation strategies</p>	Flood	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Low	The County and County EMA will oversee the implementation of this project. Local resources will be used to evaluate the severity of the study. Funding has not been secured, but additional funding will be sought from community development grants. Implementation is forecasted to be initiated within approximately five years.
Conduct a transportation flow study of hazardous materials	<p>Goal: Create new or revise existing plans/maps related to hazards affecting Franklin County</p> <p>Objective: Conduct new studies/research to profile hazards and follow up with mitigation strategies</p>	HAZMAT	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Low	The County EMA will oversee the implementation of this project. Funding has not been secured, but additional funding will be sought from IDOT and local resources. Implementation is forecasted to be complete within approximately five years.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Jurisdictions Covered	Priority	Comments
Construct mobile communications towers and determine alternative communications systems, e.g. satellite phone	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county</p>	All	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Low	The County EMA will oversee the implementation of this project. Funding has not been secured as of 2009, but the pre-disaster mitigation program and community development grants are a possible funding source. Implementation, if funding is available, is forecasted to be initiated within approximately five years.
Establish a Mobile Field Command Center	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county</p>	All	Franklin County	Low	The County EMA will oversee the implementation of this project. Funding has not been secured as of 2009, but the pre-disaster mitigation program and community development grants are a possible funding source. Implementation, if funding is available, is forecasted to be initiated within approximately five years.
Conduct additional plume modeling for Franklin County	<p>Goal: Create new or revise existing plans/maps related to hazards affecting Franklin County</p> <p>Objective: Review and update existing community plans and ordinances to support hazard mitigation</p>	HAZMAT	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Low	The County EMA will oversee the implementation of this project. Funding has not been secured. Implementation, if funding is available, is forecasted to be complete within approximately five years.
Identify and map potential snow routes in Franklin County	<p>Goal: Create new or revise existing plans/maps related to hazards affecting Franklin County</p> <p>Objective: Conduct new studies/research to profile hazards and follow up with mitigation strategies</p>	Winter Storm	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Low	The County EMA will oversee the implementation of this project. Funding has not been secured, but additional funding will be sought from local resources. Implementation is forecasted to be complete within approximately five years.
Encourage tree trimming and underground utility lines as applicable	<p>Goal: Lessen the impacts of hazards to new and existing infrastructure</p> <p>Objective: Minimize the amount of infrastructure exposed to hazards</p>	Winter Storm, Tornado, Thunderstorm	Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler	Low	The County EMA and local utility companies will oversee the implementation of this project. Funding has not been secured, but additional funding will be sought from local resources. Implementation is forecasted to be complete within approximately five years.

The Franklin County Emergency Management Agency will be the local champions for the mitigation actions. The county board and the city and town councils will be an integral part of the implementation process. Federal and state assistance will be necessary for a number of the identified actions. Greater Egypt Regional Planning & Development Commission is qualified to provide technical grant writing services to assist the county in seeking resources to achieve the recommended mitigation action.

5.5 Multi-Jurisdictional Mitigation Strategy

As a part of the multi-hazard mitigation planning requirements, at least two identifiable mitigation action items have been addressed for each hazard listed in the risk assessment and for each jurisdiction covered under this plan.

Each of the 17 jurisdictions, including Franklin County, were invited to participate in brainstorming sessions in which goals, objectives, and strategies were discussed and prioritized. Each participant in these sessions was armed with possible mitigation goals and strategies provided by FEMA, as well as information about mitigation projects discussed in neighboring communities and counties. All potential strategies and goals that arose through this process are included in this plan. The county planning team used FEMA's evaluation criteria to gauge the priority of all items. A final draft of the disaster mitigation plan was presented to all members to allow for final edits and approval of the priorities.

Section 6 - Plan Maintenance

6.1 Monitoring, Evaluating, and Updating the Plan

Throughout the five-year planning cycle, the Franklin County Emergency Management Director will reconvene the MHMP planning committee to monitor, evaluate, and update the plan on an annual basis. Additionally, a meeting will be held during January 2014 to address the five-year update of this plan. Members of the planning committee are readily available to engage in email correspondence between annual meetings. If the need for a special meeting arises, due to new developments or a declared disaster, the team will meet as necessary to update mitigation strategies. Depending on grant opportunities and fiscal resources, mitigation projects may be implemented independently by individual communities or through local partnerships.

The committee will review the county goals and objectives to determine their relevance to changing situations in the county. In addition, state and federal policies will be reviewed to ensure they are addressing current and expected conditions. The committee will also review the risk assessment portion of the plan to determine if this information should be updated or modified. The parties responsible for the various implementation actions will report on the status of their projects and will include which implementation processes worked well, any difficulties encountered, how coordination efforts are proceeding, and which strategies should be revised.

Updates or modifications to the MHMP during the five-year planning process will require a public notice and a meeting prior to submitting revisions to the individual jurisdictions for approval. The plan will be updated via written changes, submissions as the committee deems appropriate and necessary, and as approved by the county commissioners.

The GIS data used to prepare the plan was obtained from existing county GIS data as well as data collected as part of the planning process. This updated HAZUS-MH GIS data has been returned to the county for use and maintenance in the county's system. As newer data becomes available, this updated data will be used for future risk assessments and vulnerability analyses.

6.2 Implementation through Existing Programs

The results of this plan will be incorporated into ongoing planning efforts. Many of the mitigation projects identified as part of this planning process are ongoing. If necessary, the County and its incorporated jurisdictions will update the planning documents, zoning plans, and ordinances listed in Tables 1-4 and 5-1 as necessary and as part of regularly scheduled updates. Each community will be responsible for updating its own plans and ordinances.

6.3 Continued Public Involvement

Continued public involvement is critical to the successful implementation of the MHMP. Comments from the public on the MHMP will be received by the Franklin County Emergency Management Director and forwarded to the MHMP planning committee for discussion. Education efforts for hazard mitigation will be on-going through the local television stations, brochures, and yearly public meetings. Once adopted, a copy of this plan will be posted in the local public library and on the county website.

Glossary of Terms

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

A

AEGL – Acute Exposure Guideline Levels
ALOHA – Areal Locations of Hazardous Atmospheres

B

BFE – Base Flood Elevation

C

CAMEO – Computer-Aided Management of Emergency Operations
CEMA – County Emergency Management Agency
CEMP – Comprehensive Emergency Management Plan
CERI – Center for Earthquake Research and Information
CRS – Community Rating System

D

DEM – Digital Elevation Model
DFIRM – Digital Flood Insurance Rate Map
DMA – Disaster Mitigation Act

E

EAP – Emergency Action Plan
ERPG – Emergency Response Planning Guidelines
EMA – Emergency Management Agency
EPA – Environmental Protection Agency

F

FEMA – Federal Emergency Management Agency
FIRM – Flood Insurance Rate Maps
FIS – Flood Information Study

G

GIS – Geographic Information System

H

HAZUS-MH – **H**azards **USA** **M**ulti-**H**azard
HUC – Hydrologic Unit Code

I

IDNR – Illinois Department of Natural Resources
IEMA – Illinois Emergency Management Agency

M

MHMP – Multi-Hazard Mitigation Plan

N

NCDC – National Climatic Data Center
NEHRP – National Earthquake Hazards Reduction Program
NFIP – National Flood Insurance Program
NOAA – National Oceanic and Atmospheric Administration

P

PPM – Parts Per Million

R

RPI – Risk Priority Index

S

SPC – Storm Prediction Center
SWPPP – Stormwater Pollution Prevention Plan

U

USGS – United States Geological Survey

Appendix A – Minutes of the Multi-Hazard Mitigation Planning Team Meetings

Franklin County Board

Randall Crocker
Chairman

202 West Main Street
BENTON, IL. 62812
PHONE 618-439-3743
FAX 618-439-3741

Danny Melvin
Vice Chairman

Gayla Sink
Administrative Assistant

August 15, 2008

Mr. Ryan Buckingham, Director
Franklin County Emergency
Management Agency
202 West Main
Benton, IL 62812

Dear Mr. Buckingham:

This letter certifies that the Franklin County Board met previously with the Polis Group, SIU-C Geology Department and the Greater Egypt Regional Planning and Development Commission staff regarding the Pre Disaster Mitigation plan development and identified members of the Franklin County Planning Team. The Planning Team membership may be expanded to include a wider range of stakeholders. It is understood that the planning team may add additional participants during the planning process.

The County Board certifies that the initial Planning Team and other participants added during the planning process are recognized as the Franklin County Planning Team. The EMA Director, Ryan Buckingham, chairs the planning team, and is assisted in facilitating the program by the Polis Group, Indianapolis, Indiana; SIU-C Geology Department; and the Greater Egypt Regional Planning and Development Commission.

Sincerely,



Randall Crocker, Chairman
Franklin County Board

IEMA Pre-Disaster Mitigation Plan

Planning Program Oversight Meeting:

County Board Chairmen, Emergency Management Agencies, Greater Egypt Regional Planning & Development Commission, SIUC Geology Department, and IUPIU-Polis

Meeting Date: Wednesday, March 19, 2008

Meeting Time: 1 hour 30 minutes

Place: SIUC Student Center, Kaskaskia Room

Attendance:

Dave Coats	POLIS
John Buechler	POLIS
Nicholas Pinter	SIUC Geology
Andy Flor	SIUC Geology
Harvey Henson	SIUC Geology
Ike Kirkikis	Greater Egypt Regional Planning & Development Commission
Robert Clodi	Greater Egypt Regional Planning & Development Commission
James Epplin	Perry County Board Chairman
John Evans	Jackson County Board Chairman
Brent Gentry	Williamson County Board Chairman
Randall Crocker	Franklin County Board Chairman
Ted Buck	Jefferson County Board Chairman
Alan Gower	Williamson County EMA
Dennis Litton	Jefferson County EMA
Michael Richmond	Perry County EMA
Derek Misener	Jackson County EMA.

The meeting is called to order

Dave Coats (associate director) **and John Buechler** (project manager) from IUPUI, Polis Center explained the Pre-Disaster Mitigation Planning Project. It was explained that FEMA, based on federal legislation passed in 2000, required that all incorporated communities must have a Pre-Disaster Mitigation Plan in place to be eligible for FEMA mitigation funding. They also explained that a 25% match was needed to receive funding. John Buechler stated that the value of the GIS data and sweat equity that will be put into developing this plan would satisfy the match. He also expresses the importance of tracking and documenting the time spent on the project by each volunteer working on the project.

Dave Coats and John Buechler explained the process for developing the plan and that it will require a total of six meetings in each of the counties. They went into great detail about each of the meeting and the issues that would be addressed. They also estimated that the complete process of developing the plan would take about one year. Lastly, they introduced a website that the planning team will use to organize meeting, post documents, and to access minutes throughout the planning process.

Nicholas Pinter (SIUC Geology) introduced the SIUC team and explained the role they will play in planning process. SIUC will be providing all the technical mapping throughout the planning process.

Ike Kirkikis (Director, GERPDC) asked Andy Flor (SIUC Geology) about the agreement that will need to be made about the restricted use of the GIS data needed for the project. Andy Flor, Nicholas Pinter, Dave Coats, and John Buechler all confirmed that a Memorandum of Understanding would be created and sent to each county for review and acceptance. All the County Board Chairmen expressed their concerns with the discretion of the use of the GIS data.

Rob Clodi (Planner, GERPDC) asked how the planning team would be selected. Dave Coats responded and said that a list of affiliations is provided for ideal team member candidacy. He explained that the Emergency Management Agency is typically selected as the chair of the planning team. Lastly, he mentioned that the planning team must be officially recognized by the County Board. Nicholas Pinter added that as soon as a planning team is assembled the first meeting can be scheduled.

After a few questions that clarified the planning process, Dave Coats and John Buechler presented a Multi-Hazard Mitigation Planning of Posey County, Indiana for review.

Meeting was adjourned.

IEMA Pre-Disaster Mitigation Plan

Assembly of the Franklin County Planning Team Meeting 1:

Chairman: Ryan Buckingham, Franklin County Emergency Management Agency
Plan Directors: Greater Egypt Regional Planning & Development Commission, SIUC Geology Department, and IUPUI-Polis

Meeting Date: Thursday, August 14, 2008

Meeting Time: 1 1/2 hours

Place: Franklin County Hospital

Planning Team/Attendance:

Jonathan Remo	SIUC Geology
Nicholas Pinter	SIUC Geology
Robert Clodi	Greater Egypt Regional Planning & Development Commission
Ike Kirkikis	Greater Egypt Region Planning & Development Commission
William Dill	Franklin County Economic Development Corporation
Ryan Buckingham	Franklin County Emergency Management Agency
Mandy Greger	Franklin County Assessor's Office
Billie-Jo Cockrum	Franklin County Hospital
Kathie Flowers	Franklin County Emergency Management Agency
Gayla Sink	Franklin County Board Administrative Assistant
Allan Ninness	Saline County Emergency Management Agency (Guest)
Wesley Flannell	Saline County Emergency Management Agency (Guest)

Introduction to the Pre-Disaster Mitigation Planning Process

The meeting is called to order

Narrative: A presentation of the Pre-Disaster Mitigation Planning Process was given by Nicholas Pinter.

Nicholas Pinter explained that this project is in response to the Disaster Mitigation Act of 2000. The project is funded by a grant awarded by FEMA. A twenty-five percent match will be required from the county to fund this project. The county match will be met by sweat equity and GIS data acquired from County Assessor's Office. The sweat equity will be an accumulation of time spent at the meetings, on research assignments, surveys, along with time spent reviewing and producing the planning document.

Nicholas Pinter introduced the Pre-Disaster Mitigation Website to the planning team. A username and password was given to the planning team, which will grant them access to the web site. The website is used to schedule meetings, post contact information and download material pertaining to the planning process.

Nicholas Pinter divided the planning project into six meeting. At the 1st meeting, the planning team will review critical facility maps. The planning team will be asked to research and verify the location of all critical facilities within the county. Jonathan stated that public participation is very important throughout the planning process. He explained that all of the meetings are open to the public but there will be a particular effort made to invite the public to the 3rd meeting. At that meeting, the SIUC Geology Department will present historic accounts of natural disasters that have affected this area. At the 2nd meeting the discussion will focus on natural disasters that are relevant to this area. These hazards will be given a probability rating and ranked by their occurrence and potential level of risk. Polis and SIUC Geology will research these hazards and present them to the planning team. The 3rd meeting is publicized in order to encourage public participation. Polis and SIUC Geology will produce a risk assessment in draft form; each planning team member will get a copy. Also they will present strategies and projects that FEMA and other counties have undertaken for the planning team to review. The 4th meeting consists of a brain storming session focused on disasters that were analyzed in the risk assessment report. The Planning Team will list strategies and projects that could be implemented to mitigate the potential hazards that threaten the county. FEMA requires that for every identified hazard a strategy to mitigate the loss and damage must be in place. The strategies may range from educational awareness to hardening a building or building a levee. After the 4th meeting the plan will be in its final draft form. At the 5th meeting the planning team will need to review the plan prior to sending it to IEMA. IEMA will review the plan and will make recommendation to it as they see fit, then it is submitted to FEMA for review and approval. Once the plan has been submitted to FEMA, local governments are eligible to apply for grants to mitigate these established hazards. After FEMA approves the plan, it is sent back to the Planning Team. At the 6th meeting the Planning Team will present the Pre-Disaster Mitigation Plan to the County Board for adoption. Incorporated communities must either adopt the county plan or prepare its own plan, in order to access mitigation assistance from FEMA. The communities are encouraged to participate and contribute to development of the plan. Once the County Board has adopted the plan, each incorporated community will have the opportunity to adopt the plan as well.

Narrative: Nicholas Pinter introduces Jonathan Remo.

Jonathan Remo presented three maps that identified critical facilities in the county. He asked the planning team to review these maps to identify any corrections that need to be made to the maps. He assigned research homework arranged by categories to individual planning team members to locate missing or incorrect critical facilities.

Narrative: A few clarifications were made about the planning process and the participation needed to complete the plan.

Meeting was adjourned

**Franklin County Mayor's Meeting
Attended In Connection With The Multi-Hazard Mitigation Plan:**

September 17th, 2008, 6:30 p.m. at Christopher City Hall, Christopher, IL

Attendees:

Robert Clodi	Greater Egypt Regional Planning and Development Commission
Ike Kirkikis	Greater Egypt Regional Planning and Development Commission
Marion Presley	City of West Frankfort
Linda Clark	Franklin County Board
Louie Pechenino	City of Christopher
Jim Kirkpatrick	Representative John Bradley's Office
Don Miklos	City of Christopher
Gary Kraft	City of Benton
Martin Buchanan	Village of Valier
Gary Bartolotti	City of Christopher
Dennis Harland	Village of North City (Coello)
Gary Forby	Senator
Harvey Davis	Franklin Hospital
William Dill	FREDCO
Mona Sandefur	Benton Evening News

The meeting was called to order.

Ike Kirkikis began by introduced the Franklin County Multi-Hazard Mitigation Plan. He explained that plan is mandated by the Federal Disaster Mitigation Act of 2000. The benefit of producing a plan is to obtain eligibility for certain FEMA grant programs. Examples were given to demonstrate the types of projects that could get funded from these programs. A brief overview of the plan's content was described to the attendees. Ike clarify that FEMA required each municipality to participate to become eligible for grant funding.

Ike informed the attendees that there were two stipulations on adopting the plan. First, the plan has a five year shelf life after the County adopts the plan. Second, the municipalities have one year window to adopt the plan after the County has adopted it.

The next meeting was announced for Wednesday, October 10, 2008 at 2:00 p.m. The meeting will be held at the Franklin Hospital. The focus of the meeting will be to identify and prioritize hazards that are specific to Franklin County.

Ike thanked them for their time.

Meeting was adjourned.

IEMA Pre-Disaster Mitigation Plan

Assembly of the Franklin County Planning Team Meeting 2:

Chairman: Ryan Buckingham, Franklin County Emergency Management Agency
Plan Directors: Greater Egypt Regional Planning & Development Commission, SIUC Geology Department, and IUPIU-Polis

Meeting Date: Wednesday, October 10, 2008, at 2:00 pm

Meeting Time: 1.5 hrs

Place: Franklin Hospital

Planning Team/Attendance:

William Dill	FREDCO
Martin Buchanan	Mayor of Valier
Cletus Mc Bride	Sesser Fire Protection District
Lena Bennett	Corps of Engineers
Burt Lancaster	Mayor of Royalton
Gary Bartolotti	Mayor of Christopher
Ryan Buckingham	Franklin County EMA
William Beaty	Franklin County EMA
Rick Shryock	IEMA
Chris Pulley	IEMA
Nicholas Pinter	SIUC
Jonathan Remo	SIUC
Robert Clodi	Greater Egypt Regional Planning & Development Commission

The meeting was called to order.

Nicholas Pinter began the meeting by re-introducing the objectives of the PDM Planning document. The planning document is mandated as a result of the “Disaster Mitigation Act of 2000.”

Jonathan Remo stated that the objective of the meeting held today was to prioritize a list of disasters that are relevant to Franklin County.

Ike Kirkikis stated the importance of achieving participation from each of the incorporated communities. He explained that the 3rd meeting is the most important to achieve this community participation and will involve general public as well. He presented the planning team with the first chapters of the plan for review, which was handed out at the end of the meeting. He also provided the planning team with in-kind forms to document the time each planning team member has spent researching critical facilities information. Lastly, he presented the PDM Planning website and described the contents of the site.

Nicholas Pinter provided the planning team with a handout to direct the focus of the meeting discussion. As Jonathan began to conduct the prioritizing process, he described the risk assessment ranking that FEMA has established.

Narrative: The Planning Team was then asked to assess a risk level to each disaster that was identified in Franklin County. The risk level is ranked as followed:

Tornados	1
Thunderstorms/Wind	2
Hazmat	3
Earthquake	4
Pandemic Epidemic	5
Winter Storms	6
Flood	7

Narrative: The Planning Team was then asked to analyze the historical weather events that have been plotted on a map of the county and communities therein. No corrections were noted by the planning team.

The planning team agreed to complete in-kind forms and any missing information yet to be turn in, pertaining to critical facilities by the next meeting.

Meeting was adjourned.

**Franklin County Local Emergency Planning Committee Meeting
Attended In Connection With The Multi-Hazard Mitigation Plan:**

December 11, 2008, 10:00 a.m. at Franklin Hospital, Benton, IL

Attendees:

Ryan Buckingham	Franklin County EMA
Steve Buntin	Rend Lake Search and Rescue
Harold Jones	Franklin-Williamson County Human Services
Ronda Koch	Franklin-Williamson Bi-County Health Dept.
Marty Leffler	Franklin County Coroner Candidate
Cletus McBride	Sesser Fire Dept.
Whitney Mehaffy	Franklin-Williamson Bi-County Health Dept.
Gary Richardson	Little Egypt Amateur Radio Society (LEARS)
Lisa Sorenson	Franklin-Williamson Bi-County Health Dept.
Hollie Taylor	Franklin-Williamson Human Services
Wes Taylor	West Frankfort Fire Dept.
Steve Land	Williamson County EMA
Mona Sandefur	Benton Evening News

Narrative Paragraph:

At meeting Ryan Buckingham spoke to the committee as a group and explained to the committee members the concept of a Multi-Hazard Mitigation Plan. They emphasized the importance of having such a plan in the county and the importance of each jurisdiction adopting the document when it is completed. They explained how the plan can provide a roadmap for mitigation activities in the years to come and how adopting the plan can open doors for mitigation grants that previously were not open to us. At the end of the presentation they asked for questions, which were then answered. Each member of the committee was encouraged to provide input into the development of the plan and was invited to the next scheduled planning meeting.

IEMA Pre-Disaster Mitigation Plan

Assembly of the Franklin County Planning Team Meeting 3:

Chairman: Ryan Buckingham, Franklin County Emergency Management Agency
Plan Directors: Greater Egypt Regional Planning & Development Commission, SIUC Geology Department, and IUPIU-Polis

Meeting Date: Thursday, December 18, 2008, at 1:30 pm

Meeting Time: 1.5 hrs

Place: Franklin Hospital

Planning Team/Attendance:

Ronda Koch	Franklin-Williamson County Health Dept.
Ronald Somers	Village of Ewing
Wes Taylor	West Frankfort Fire Dept.
Martin Buchanan	Village of Valier
Marion Presley	City of West Frankfort
William Dill	FREDCO
Gary Kraft	City of Benton
Gary Bartolotti	City of Christopher
Ryan Buckingham	Franklin County EMA
Jamia McGrew	Peoples National Bank
Mandy Greger	Franklin County Assessor's Office
Rick Shryock	IEMA
Chris Pulley	IEMA
Nicholas Pinter	SIUC
Jonathan Remo	SIUC
Megan Carlson	SIUC
Robert Clodi	Greater Egypt Regional Planning & Development Commission

The meeting was called to order.

Robert Clodi opened the meeting by thanking everyone for coming and asked if representatives of the planning team had any knowledge of the ISO rating in Villages of Akin, Buckner, Royalton, Thompsonville and West City.

Narrative: Ryan Buckingham volunteered to track down the information on Akin, Buckner, Royalton, Thompsonville and West City.

Robert Clodi introduced Nicholas Pinter and gave a brief overview of what the meeting would cover that day.

Nicholas Pinter began by introducing his colleagues Jonathan Remo and Megan Carlson. In his presentation, Nicholas reviewed Polis and SIU's role in the planning process. He offered Jonathan Remo and himself as points of contact throughout the planning process. Nicholas moved on to explain the topics and objectives of the current meeting that was being held. First Nicholas presented the planning team with the list of hazards the team had ranked by their level of risk.

Narrative: A copy of Chapter Four, Risk Assessment, was given to each of the planning team members to review.

Nicholas covered each hazard in his presentation and produced historical accounts of each topic. He then transitioned to the focus of the meeting, mitigation strategies. He defined mitigation as the act of avoidance and preparedness.

Narrative: A copy of Mitigation Ideas, produced by FEMA Region 5 on July 2002, was given to each of the planning team members for review.

Nicholas explained that content of the booklet and asked that each of the planning team members return to meeting 4 with three mitigation strategies for each of the hazards identified by the planning team. He closed his presentation by thanking everyone for participating.

Meeting was adjourned.

IEMA Pre-Disaster Mitigation Plan

Assembly of the Franklin County Planning Team Meeting 4:

Chairman: Ryan Buckingham, Franklin County Emergency Management Agency
Plan Directors: Greater Egypt Regional Planning & Development Commission, SIUC Geology Department, and IUPIU-Polis

Meeting Date: Friday, January 23, 2009, at 2:00 pm

Meeting Time: 1.75 hrs

Place: Franklin Hospital

Planning Team/Attendance:

William Dill	FREDCO
Ronda Koch	Franklin-Williamson Bi-County Health Dept.
Martin Buchanan	Mayor of Valier
Mona Sandefur	Benton Evening News
Wes Taylor	WFFD
Mark Roderich	USACE
Burt Lancaster	Mayor of Royalton
Gary Kraft	Mayor of Benton
Gary Bartolotti	Mayor of Christopher
Ryan Buckingham	Franklin County EMA
Gayla Sink	Franklin County Board Administrative Assistant
William Beaty	Franklin County EMA
Zeth Montgomery	Franklin County EMA
Samantha Ramicone	Franklin County EMA
John Buechler	Polis
Jonathan Remo	SIUC
Robert Clodi	Greater Egypt Regional Planning & Development Commission

The meeting was called to order.

Robert Clodi thanked everyone for coming and distributed out in-kind forms to all the attending planning team members. He asked that each planning team member document the time spent reviewing the material on that form and return it to Greater Egypt Regional Planning Commission. Extra mitigation strategy handbooks were given to planning team members that were in need of one. Robert explained the today's meeting would cover mitigation strategies that the planning team believed would prevent or eliminate the loss of life and property. He explained that the planning team should not make any reservations in the form of money or resources when developing this list. Also whenever possible, be specific about the location or focus area of a strategy, in respects to being within a municipality or county wide. Lastly, he introduced John Buechler from the Polis Center.

John Beuchler began by briefly explaining the reason and process of the Multi-Hazard Mitigation Planning Project. After the new members of the planning team were brought up to current with the planning process the focus of the meeting began. The planning team listed new and current mitigation strategies, and then prioritized them.

Listed below are the New Mitigation Strategies conceived by the planning team:

New Strategy	Hazard	Jurisdiction	Priority Votes
Public Out Reach/Awareness	All	All	1
West Frankfort City Lake (Spillway Erosion)	Dam/Levee Failure	West Frankfort	0
Christopher City Reservoir (Erosion)	Dam/Levee Failure	Christopher	0
Stormwater System Management/Study	Flood	Benton, Royalton, West Frankfort	2
Stream Maintenance	Flood	County	0
Flood Prone Areas	Flood	Deering Rd. (County), Park Street Rd. (County), Yellow Banks Rd. (County), Old Johnston City Rd. (County), Canbon Lake Area, Bollis Pond (Benton)	0
Sirens	Tornado, Thunder Storms, Wind, Hail	All	1
Reverse 911	All	County	1
Weather Radio- Health Care, Special Needs, Daycare, Manufacturing Facilities	All	All	0
Generators for Critical Facilities	All	All	3
Hardening Critical Facilities	Tornado, Earthquake	All	7
Early Warning System for Critical Facilities	Tornado	All	0
Emergency Operations Center	All	County	14
Mobile Communication Tower	All	All	1
Mobile Field Command Center	All	County	2
Emergency Response Equipment/Training	All	County	2
Alternate Communication with Special Needs	All	All	0
Develop a Volunteer Corp. List	All	All	0
West Franklin Waste Water Treatment Plant in Flood Plain- Relocate or Flood Proofing	Flood	West Frankfort	0
Flood Proofing Senior Living Center by Bollis Pond	Flood	Benton	0
Intergovernmental Communication over Flood Mitigation/Planning (Watershed)	Flood	All	1

Improve Education on NFIP	Flood	All	0
Down Stream Warning System (Rend Lake)	Flood/Dam/Levee Failure	Rend Lake	0
Designated Hazmat Route/Signage	Hazmat	All	0
Flow Allocation Study of Trains	Hazmat	All	0
Plume Modeling Sensors/Equipment/Warning System	Hazmat	All	0
Inertial Valves	Earthquake	All	0
Investigate the Structural Integrity of all Critical Facilities	Earthquake	All	0
Stock Pile Emergency Supplies (food, water, construction material, equipment)	All	All	0
Snow Route Signage	Winter Storms	All	0
Warming Shelter	Winter Storms	All	0
Identify Sensitive Facilities with Special Needs	All	All	0
Encourage Tree Trimming	Tornado, Severe Storms, Winter Storms	All	0
Encourage Under Ground Utility Lines	Tornado, Severe Storms, Winter Storms	All	0

Listed below are the Current Mitigation Strategies already being implemented throughout the County:

Current Strategies	Hazard	Jurisdiction
Corp. of Engineers Monitoring Program	Dam/Levee Failure	Rend Lake
Sirens	Tornado, Thunder Storms, Wind, Hail	Benton, Christopher
Weather Radios in Schools with backup Battery	All	All
American Red Cross Shelters	All	All
West Frankfort installed new flood pumps	Flood	West Frankfort
Regional Hazmat Team	Hazmat	All
USGS Seismograph on Rand Lake Dam	Earthquake	Rend Lake
Regional Rescue Team (MAVUS)	All	All
List of Shelters with Zoned Service Areas	All	All

Meeting was adjourned.

**Franklin County Mayor's Meeting
Attended In Connection With The Multi-Hazard Mitigation Plan:**

March 26th, 2009, 6:30 p.m. at Six Mile Township Building, Zeigler, IL

Attendees:

Robert Clodi	Greater Egypt Regional Planning and Development Commission
Marion Presley	City of West Frankfort
Dennis Mitchell	City of Zeigler
Steve Mitchell	FREDCO
Brian Dorris	FREDCO
Linda Clark	Franklin County Board
Jim Kirkpatrick	Representative John Bradley's Office
Gary Kraft	City of Benton
Martin Buchanan	Village of Valier
Gary Bartolotti	City of Christopher
Ryan Buckingham	Franklin County EMA
Paul Burbank	Franklin County EMA
William Dill	FREDCO

The meeting was called to order.

Robert Clodi thanked everyone for attending and began by introduced the Franklin County Multi-Hazard Mitigation Plan. He explained that there were four over sighting agencies responsible for producing the plan. The plan is mandated by the Federal Disaster Mitigation Act of 2000. The benefit of producing a plan is to obtain eligibility for certain FEMA grant programs. Robert presented a list of four grant programs that require a mitigation plan to become eligible for funding. Examples were given to demonstrate the types of projects that could get funded from these programs.

A brief overview of the plan's content was described to the attendees. The Critical Facilities Map, Natural Hazards Map, and list of prioritized hazards were present to the attendees with a brief description of their roles and propose.

A list of individuals that have participated in the planning process was shown. Robert clarify that FEMA required each municipality to attend at least two meeting to become eligible for grant funding. Robert announced that Buckner, Hanaford, Orient, Thompsonville, and West City were lacking participation in the planning process. He further explain that even if a municipality adopts the plan they will not be eligible for grant funding from FEMA if they have not participated in the plan's development.

Robert informed the attendees that there were two stipulations on adopting the plan. First, the plan has a five year shelf life after the County adopts the plan. Second, the municipalities have one year window to adopt the plan after the County has adopted it.

The next meeting was announced for Thursday, April 9, 2009 at 2:00 p.m. The meeting will be held at the Franklin Hospital. The focus of the meeting will be to review the MHMP and add or correct any information.

The attendees were given a booklet of mitigation strategies produce by FEMA and were presented with the prioritized list of hazards for a second time. The attendees were asked to review the booklet and come up with mitigation strategies specific to their municipality. The objective of this exercise will demonstrate participation from those lacking communities.

The planning team web address was given to the attendees with a brief description of its content.

Robert closed his presentation by offering the GERPDC contact information and conducted a question and answer session.

Meeting was adjourned.

IEMA Pre-Disaster Mitigation Plan

Assembly of the Franklin County Planning Team Meeting 5:

Chairman: Ryan Buckingham, Franklin County Emergency Management Agency
Plan Directors: Greater Egypt Regional Planning & Development Commission, SIUC Geology Department, and IUPIU-Polis

Meeting Date: Thursday, April 9, 2009, at 2:00 pm

Meeting Time: 1.75 hrs

Place: Franklin Hospital

Planning Team/Attendance:

William Dill	FREDCO
Ronda Koch	Franklin-Williamson Bi-County Health Dept.
Martin Buchanan	Mayor of Valier
Mona Sandefur	Benton Evening News
Marion Presley	City of West Frankfort
Wes Taylor	West Frankfort Fire Dept.
Justin West	Franklin County EMA
Jake Curry	Franklin County EMA
Mandy Little	Franklin County EMA
Ron Little	Coello Fire Dept.
Dennis Harland	Village of North City
Les Darnell	Village of Thompsonville Fire Dept.
Gary Kraft	Mayor of Benton
Gary Bartolotti	Mayor of Christopher
Ryan Buckingham	Franklin County EMA
Pete Witkewiz	Village of Orient
Jonathan Remo	SIUC
Robert Clodi	Greater Egypt Regional Planning & Development Commission
Ike Kirkikis	Greater Egypt Regional Planning & Development Commission

The meeting was called to order.

Ike Kirkikis presented the planning team with the Final Draft of the Franklin County Pre-Disaster Mitigation Plan and two maps that defined and located critical facilities and hazards. He called onto the planning team to voice any changes or correction that need to be made to the plan.

Narrative: The planning team made several suggestions about the content of the plan. Listed below are the changes and corrections that were addressed at the meeting.

Page(s)	Changes
6	<p>Correction</p> <p>Burt Lancaster, Organization – Village of Royalton</p> <p>Zeth Montgomery, Title – Staff</p> <p>Kathie Flowers, Title – Public Information Officer</p> <p>Samantha Ramicone, Title – Administrative Assistant</p> <p>Wes Taylor, Title – Chief</p> <p>William Beaty, Title – Staff</p> <p>Deletion</p> <p>Duplicate - Mark Roderich</p> <p>Addition</p> <p>Ron Little, Title – Fireman, Organization – Coelo Fire Dept., Jurisdiction – North City</p> <p>Dennis Harland, Title – President, Organization – Village of North City, Jurisdiction – North City</p> <p>Les Darnell, Title – Fireman, Organization – Thompsonville C.E.F.P.D., Jurisdiction – Thompsonville</p> <p>Pete Witkewiz, Title – President Elect, Organization – Village of Orient, Jurisdiction – Orient</p>
8	<p>Addition</p> <p>Table 1-3</p> <p>Agency Name – Franklin County Emergency Management Agency, Resources Provided – GPS Coordinates and Critical Facilities Data</p>
11-13	<p>Deletion</p> <p><u>Did Not Participate</u></p> <p>Matthew Andrew, Robert Barrett, Rick Basso, Sherry Black, John Bradley, Jarrett Broy, Larry Castrale, Jeff Coleman, Patrick Creek, Andrew Elliott, Bruce Fasol, Wayne Gardner, John Gulley, Jerry Hiller, Don Jones, Shari Jones, Robin Koehl, Steve Leek, Carolyn Luster, Ronald Newton, Paul Oldani, Jeff Reed, Mike Rolla, Jami Somers, Monica Stewart, Danny Stowers, David Utley, Sandy Webster, Bill Wilson, and Darrell Wimberly</p> <p><u>Duplicates</u></p> <p>Gary Richardson, Jeff Coleman, Judith Coulter, Judy Eubanks, Karen Coulter, Mickey Marshall, Tom Jordan, and Gary Kraft</p>

	<p>Correction</p> <p>Dennis Harland, Mayor, Participation – Member, MHMP Planning Committee</p> <p>Jim Kirkpatrick, Representative of John Bradley, Illinois House of Representatives</p> <p>Mike O'Neill, Benton Chief of Police</p> <p>Louis Pechenino, Alderman</p> <p>Zeth Montgomery, FCEMA</p> <p>Kathie Flowers, Public Information Officer, FCEMA</p> <p>Martin Buchanan, President, Village of Valier</p> <p>Marion Presley, Mayor, City of West Frankfort</p> <p>Wes Taylor, Chief, West Frankfort Fire Dept.</p> <p>Addition</p> <p>Jurisdiction – Zeigler, Dennis Mitchell, City of Zeigler, Participation – Briefed on the plan, asked for comments</p> <p>Jurisdiction – North City, Ron Little, Coelo Fire Dept., Participation - Member, MHMP Planning Committee</p> <p>Jurisdiction – North City, Dennis Harland, President, Village of North City, Participation - Member, MHMP Planning Committee</p> <p>Jurisdiction – Thompsonville, Les Darnell, Thompsonville C.E.F.P.D., Participation - Member, MHMP Planning Committee</p> <p>Jurisdiction – Orient, Pete Witkewiz, President Elect, Village of Orient, Participation - Member, MHMP Planning Committee</p>
<p>18-19</p>	<p>Correction</p> <p>Walmart, Location – West City</p> <p>CrownLine Boats, Established – 1991</p> <p>Benton Community Consolidated School District #47, Location – Benton, Established – N/A, # of Employees - 123, Type of Business – School District</p> <p>Addition</p> <p>Benton Consolidated High School District #103, Location – Benton, Established – N/A, # of Employees - 85, Type of Business – School District</p> <p>Christopher Unit #99, Location – Benton, Established – N/A, # of Employees - 125, Type of Business – School District</p> <p>Sesser-Valier Community Unit School District #196, Location – Benton, Established – N/A, # of Employees - 95, Type of Business – School District</p>

	<p>Frankfort Community Unit School District #168, Location – Benton, Established – N/A, # of Employees - 198, Type of Business – School District</p> <p>Zeigler-Royalton CU School District #188, Location – Benton, Established – N/A, # of Employees - 100, Type of Business – School District</p> <p>Cardinal EMS, Location – Benton, Established – 2009, # of Employees – 90, Type of Business – Ambulance Service</p>
24	<p>Addition</p> <p>Table 4-6 is missing information for North City (Coello)</p>
40	<p>Correction</p> <p>Table 4-17, Typographical error – kjFranklin, Should be Franklin</p>
43-44	<p>Correction</p> <p>Table 4-18, Road – Parkhill Street</p> <p>Table 4-19, Missing Number of Structures</p> <p>Table 4-18 and Table 4-19, contents of Tables 4-18 need to be switch with Table 4-19.</p>
45	<p>Correction</p> <p>First Paragraph should read, “A review of the Illinois Department of Natural Resources (IDNR) files identified no state or federal levees in Franklin County.”</p>
96	<p>Addition</p> <p>A list of references was left out. The following has been inserted at the end of Chapter four.</p> <p>References:</p> <p>National Climatic Data Center (NCDC). 2008. The Storm Events Database. http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms, last accessed August, 21, 2008.</p> <p>Bauer, R.A. 2008. Planned Coal Mine Subsidence in Illinois: A Public Information Booklet, Circular 569, Illinois Department of Natural Resources and Illinois Geologic Survey, Springfield, Illinois. http://www.isgs.uiuc.edu/education/pdf-files/c569.pdf, last accessed, July 16, 2008.</p> <p>Bauer, R.A. 2006. Mine Subsidence in Illinois: Facts for Homeowners, Circular 573, Illinois Department of Natural Resources and Illinois Geologic Survey, Springfield, Illinois. http://www.isgs.uiuc.edu/education/pdf-files/c573.pdf, last accessed, July 16, 2008.</p> <p>Homan, J.D. 2001, Where did that come from? Sudden sinkhole causes several accidents on U.S. Route 51. http://thesouthern.com/articles/2001/12/26/top/export6747.prt, last accessed, July, 3, 2008.</p>

	<p>Illinois Coal Association. 1992. Illinois coal facts: Springfield, Illinois, 64p.</p> <p>Panno, S.V., Weibel, C.P., Li, W. 1997, Karst Regions of Illinois, Open File Series 1997-2. Illinois Geologic Survey, Champaign, Illinois, 42 p.</p> <p>Pinter, N. 1993. Exercises in Active Tectonics: An Introduction to Earthquakes and Tectonic Geomorphology. Prentice Hall: Upper Saddle River, NJ.</p> <p>Stover, C.W., Coffman J.L. 1993, Seismicity of the United States, 1568-1989 (Revised), U.S. Geological Survey Professional Paper 1527. United States Government Printing Office, Washington.</p> <p>Tackett, M. 1990. Even the Kitchens Sink in Southern Illinois. Chicago Tribune. December 14, 1990.</p> <p>United States Geologic Survey (USGS). 2008. Earthquake Hazards Program, Magnitude / Intensity Comparison. http://earthquake.usgs.gov/learning/topics/mag_vs_int.php, last accessed, July 10, 2008.</p> <p>United States Geologic Survey (USGS). 2008. Earthquake Hazards Program, Illinois Earthquake History. http://earthquake.usgs.gov/regional/states/illinois/history.php, last accessed, July 10, 2008.</p> <p>United States Geologic Survey (USGS). 2007. Earthquake Hazard in the Heart of America. http://pubs.usgs.gov/fs/2006/3125/pdf/FS06-3125_508.pdf, last accessed July 10, 2008.</p>
100	<p>Correction</p> <p>Table 5-3, Valier Fire Department, Fire Insurance Rating – ISO 6/9</p> <p>Deletion</p> <p>First sentence, “Franklin County uses the Illinois Capital Development Board’s Building Code as its guide for building standards.”</p>
104	<p>Correction</p> <p><u>Table 5-4</u></p> <p>Install outdoor weather warning system sires</p> <p>Comments – The City of Benton and Christopher oversaw this project. Benton completed this project in 2003. Christopher will complete this project in 2009</p> <p>Install flood pumps and flood gates</p> <p>Comments – The City of Frankfort oversaw this project. It was complete by April, 2009.</p>

105	<p>Deletion</p> <p><u>Table 5-4</u></p> <p>Initiate MABAS, a regional rescue team</p> <p>Addition</p> <p>Initiated community preparedness campaign,</p> <p>Goals and Objectives Satisfied – Goal: Develop long-term strategies to educate the public on the hazards affecting Franklin County; Objective: Improve education of emergency personnel and public officials,</p> <p>Hazard Address – All,</p> <p>Jurisdictions Covered - Franklin County, Benton, Buckner, Christopher, Ewing, Freeman Spur, Hanaford, Macedonia, Orient, Royalton, Sesser, Thompsonville, Valier, West City, West Frankfort, Zeigler,</p> <p>Comments - Franklin County EMA and Franklin County first responders participate in this project. It was ongoing as of February, 2009.</p> <p>Correction</p> <p>Initiated a regional TRT, MABAS, and Hazmat team</p> <p>Goals and Objects Satisfied - Goal: Ensure proper equipment and personnel are in place at time of emergency; Objective: Improve education of emergency personnel and public officials</p>
107	<p>Correction</p> <p>Implement a plan for voluntary buyout for structures in Benton and Franklin County</p> <p>Comments – The County EMA will oversee the implementation of this project. Local resources will be used to evaluate the applicable areas. Table 4-19 presents potential buyout properties. Funding has not been secured, but additional funding will be sought from the Pre-Disaster Mitigation program. Implementation is forecasted to be initiated within approximately three years.</p>
108	<p>Correction</p> <p>Install a high discharge/flood warning system for Rend Lake and down stream communities</p> <p>Comments – The County EMA will work with the US Corp of Engineers to help oversee the implementation of this project. Local resources and additional grants will be used to procure the system. If funding is available, is forecasted to be complete within approximately three years.</p>
109	<p>Correction</p> <p>Purchase permanent signage or flood gates for Dearing Road, Yellow Banks Road, Number 9 Blacktop, Park Street, Old Johnson City Road</p> <p>Comments – The County EMA will oversee the implementation of this project. Local resources and IDOT will be used to evaluate the areas for signage. Funding has not</p>

	been secured, but IDOT and IDNR are possible sources. Implementation is forecasted to be complete within approximately three years.
110	<p>Correction</p> <p>Conduct a transportation flow study of hazardous materials</p> <p>Comments – The County EMA will oversee the implementation of this project. Funding has not been secured, but additional funding will be sought from IDOT and local resources. Implementation is forecasted to be complete within approximately five years.</p>
116	<p>Deletion</p> <p><u>Did Not Attend the Meeting</u></p> <p>Matthew Andrew, Robert Barrett, Rick Basso, Sherry Black, John Bradley, Jarrett Broy, Larry Castrale, Jeff Coleman, Patrick Creek, Andrew Elliott, Bruce Fasol, Wayne Gardner, John Gulley, Jerry Hiller, Don Jones, Shari Jones, Robin Koehl, Steve Leek, Carolyn Luster, Ronald Newton, Paul Oldani, Jeff Reed, Mike Rolla, Jami Somers, Monica Stewart, Danny Stowers, David Utley, Sandy Webster, Bill Wilson, and Darrell Wimberly</p>
118	<p>Correction</p> <p>Billie-Jo Cockrum, Kathie Flowers, Allan Ninness</p>
120	<p>Correction</p> <p>Gary Bartolotti, William Beaty, Chris Pulley</p>
122	<p>Correction</p> <p>Chris Pulley</p>
124	<p>Correction</p> <p>Gary Bartolotti, Zeth Montgomery</p>
126	<p>Correction</p> <p><u>Current Mitigation Strategies</u></p> <p>Regional Rescue Team (MABAS)</p>
143	<p>Correction</p> <p><u>EOC Facilities list</u></p> <p>Franklin County EMA, Backup Power – Yes, Number of Stories – 2</p> <p>West Frankfort Police Department, Backup Power – Yes</p> <p><u>Fire Station Facilities list</u></p> <p>Benton Fire Dept., Backup Power – Yes, Contact Person Mickey Marshall</p> <p>Christopher Fire Dept., Backup Power – Yes</p> <p>Ceollo Fire Dept., Backup Power – Yes, Contact Person – Ron Little</p> <p>Cave Eastern FPD Station 1, Contact Person – Trevor Cardwell, Telephone Number (618) 927-2949</p>

	<p>Cave Eastern FPD Station 2, Contact Person – Trevor Cardwell, Telephone Number (618) 927-2949</p> <p>Valier Fire Dept., 217 W Main St.</p> <p><u>Police Station Facilities list</u></p> <p>West Frankfort Police Dept., Contact Person – Jeff Tharp</p> <p>Valier Police Dept., Address – 217 W Main St.</p> <p><u>Potable Water Facilities list</u></p> <p>Rend Lake Intercity Water System, Backup Power - Yes</p>
145	<p>Correction</p> <p><u>Waste Water Facilities list</u></p> <p>City of Benton northwest Sewage Treatment, Backup Power – Yes</p> <p>Christopher STP, Backup Power – Yes</p>
146	<p>Addition</p> <p>Missing location of Sirens</p> <p>Also new Siren need to be added</p>
Appendix A	<p>Addition</p> <p>Minutes from Franklin County Meeting 5, September - Mayor’s Meeting, and March – Mayor’s Meeting</p>
Appendix B	<p>Addition</p> <p>Newspaper Articles</p>

Ike Kirkikis thanked everyone for coming and providing their input.

Meeting was adjourned.

Appendix B – Articles Published by Local Newspapers

Faculty to help 17 counties prepare for disaster

Project receives \$1.3 million in federal funding

Allison Petty
DAILY EGYPTIAN

Roughly \$1.3 million in federal funds could help university faculty prepare southern Illinois for disaster.

Faculty members would work under a \$1,288,000 grant to help 17 southern Illinois counties prepare for natural disasters, university officials announced Tuesday. The Federal Emergency Management Agency supplied the funding, which will last until 2010, said geology professor Nicholas Pinter.

"There is a real need in this area to look at what disasters can

There is a real need in this area to look at what disasters can occur, have occurred in the past and ... reduce the threat, should these things occur in the future," Pinter said.

— Nicolas Pinter
geology professor at SIU

Counties covered by the grant include Pulaski, Massac, Union, Johnson, Jackson, Williamson, Franklin, Jefferson, Perry, Gallatin, Edwards, White, Crawford, Bond, St. Clair and Clinton. The city of Cairo in Alexander County will also participate in the project.

Pinter said the grant would help officials meet federal requirements for disaster planning. He added that the funding would help pay for several students to help with the project.

Andy Flor is the first of these students.

Flor, a graduate student from Flossmoor studying geology, said he would help gather and record data from the counties about their current emergency preparations.

Flor and other researchers will enter the data into a computer database, he said. Computer software helps develop more detailed planning and preparation for natural disasters.

You've got to go out and talk to the public. When we have a small tremor, public awareness is heightened and more people are interested in, 'Why are we having earthquakes? What does it mean potentially? Is it a threat, and what can we do about it?'

— Harvey Henson
geology professor at SIU

Southern Illinois natural disasters

New \$1.3 million federal grant will allow university faculty to help 17 southern Illinois counties prepare for natural disasters.

New Madrid Earthquake of 1812
-Ranek in Missouri
-Killed 50 people
-Covered nine states
-Remained in some areas for almost 200 days

Great Flood of 1993
-Caused \$15 billion in damages
-Killed 50 people
-Remained in some areas for almost 200 days

Tri-State Tornado of 1925
-Affected 219 miles in Missouri, Illinois and Indiana
-Killed 695 people
-Injured 2,027 people
-Destroyed 15,000 homes

Source: National Weather Service

"What we're really trying to do is inform communities where the flood plan is, what areas are going to be at risk, and you can plan around that," Flor said.

He added the project would focus on a variety of natural disasters.

"Floods are pretty obvious," Flor said. "In these counties they pose a big risk, but there's other things too — earthquakes, tornados."

Harvey Henson, a geology professor, said he has studied earthquakes for the past 22 years.

Under the grant, he said, it would be possible to raise a greater awareness about earthquakes. "You've got to go out and talk to

Michelle Arras — DAILY EGYPTIAN

the public," Henson said. "When we have a small tremor, public awareness is heightened and more people are interested in, 'Why are we having earthquakes? What does it mean potentially? Is it a threat, and what can we do about it?'"

Henson said southern Illinois position on the New Madrid Seismic Zone made it vulnerable to the possibility of a large quake.

"It's a backyard threat to southern Illinois," Henson said. "We have a small earthquake every so often which reminds us of that."

Allison Petty can be reached at 536-3311 ext. 259 or allison.petty@siue.edu.

1/30/08 DE

Daily Egyptian 1/30/08

Federal grant helps university lead 17-county disaster readiness effort

BY SCOTT FITZGERALD
THE SOUTHERN

CARBONDALE — Southern Illinois is not immune to natural disaster.

With help from the federal government and Southern Illinois University Carbondale researchers, however, the 17-county region in this part of the state can get a leg up on being prepared and reacting when flooding, earthquakes or other major disasters occur.

SIUC officials announced Tuesday during a news conference in the Student Center that Federal Emergency Management Agency is funding a \$1.2 million cooperative effort of SIUC and five

Illinois regional planning commissions in writing pre-disaster mitigation plans. FEMA requires and approves the plans that can open the door for more funding to help areas prepare for disaster.

"This grant from FEMA will help counties identify the risks they have and make plans to deal with any of those potential disasters," said Nicholas Pinter, a geology professor in SIUC's College of Science.

Pinter did not have a breakdown of the grant funding SIUC will share with colleagues from

Indiana University-Purdue University Indianapolis' Polis Center who are assisting with the project and the five regional planning commissions.

Those commissions are: Southern Five Regional Planning Commission, Greater Egypt Regional Planning and Development Commission, Greater Wabash Regional Planning Commission and Southwestern Illinois Planning Commission.

"What's important is that the planning commissions would have to pay anywhere from \$50,000 to \$60,000 each to go out and hire



CHUCK NOVAKA / THE SOUTHERN
Professor Nicholas Pinter walks from the podium after announcing SIUC will lead a \$1.2 million emergency preparedness effort funded by the federal government.

SEE GRANT / PAGE 7A

GRANT: Helps SIUC lead disaster readiness effort

FROM PAGE 1

expertise to put together and write their mitigation plans. Under this arrangement, we're providing the expertise for free," Pinter said.

Pinter said he will hire another full-time staff person and several graduate students to work on the effort through 2010.

The money is administered through the Illinois Emergency Management Agency.

Andy Flor, a second-year

graduate student in geology at SIUC, said the field work will consist of identifying areas that are prone to disasters and passing that information along to the planning commissions.

His graduate thesis, "Levee Safety, Levee Failure," identifies weak levee structures along the Mississippi in Southern Illinois, such as those structures near Grand Tower in Jackson County.

Grand Tower Levee District Commissioner Shawn McMahan said in April

that high waters from the great flood of 1993 took their toll on the levee infrastructures.

About 17.5 miles of sliding levee needs to be stabilized and 75 locking structures need repair or replacement, McMahan said.

The local levee district's \$15,000 annual budget collected from property taxes hardly meets the task at hand, said McMahan, who has sought federal assistance for many years.

scott.fitzgerald@thesouthern.com / 351-9076

County's emergency planning committee discusses plan's draft

By Mona Sandefur

Staff writer

mona@clearwave.com

Ryan Buckingham presented a draft of the resource management annex plan during Thursday's Local Emergency Planning Committee meeting.

Buckingham serves as director of the Franklin County Emergency Management Agency.

"Procedures for approving the revised emergency operation plan are for the county board to review and sign to approve and then for each county municipality to either adopt or not adopt the plan," Buckingham said. "When the plan has been revised and approved by the county board, staff will need to be educated.

"Our purpose is to prepare for hazard chemical accidents and other emergency situations," he said. "The committee reviews and makes suggestions to the county regarding the emergency operations plan. There are several

disciplines involved in the disaster response to a major emergency."

Discussing the mortuary annex plan, Buckingham said the plan meets state requirements. Newly elected Franklin County coroner Marty Leffler said he had reviewed the document.

"I believe more information is needed pertaining to identifying and requesting resource needs," Leffler said.

The plan was approved in October, pending minor changes and revisions.

Buckingham said the health and medical annex plan did not meet state standards during the October meeting.

"In particular, a representative for public health, mental health and hospitals is needed to report to the EOC," he said. "The Franklin-Williamson Bi-County Health Department will verify the information and work to ensure that the annex meets state recommenda-

tions."

The changes were approved and are being forwarded to Harold Jones with Franklin-Williamson Human Services and to Judy Courner of the Franklin Hospital to review the mental health and hospital sections.

Regarding the ambulance annex, Buckingham said a separate annex is needed.

"The plan will be forwarded to the incoming ambulance service provider," he said. "We are waiting to see what happens with Mercy Regional Emergency Health Services to determine who will write the annex."

Members also discussed resource management.

"Franklin County may experience a major emergency or disaster such as tornadoes, a major hazardous materials spill, a large fire or a county-wide ice storm that could deplete our immediate and local resources in the event of a power outage," Buckingham said.



Marty Leffler, newly elected Franklin County coroner, was among the agencies represented during Thursday's meeting of the Local Emergency Planning Committee.

Photo by Mona Sandefur

"Resources such as fuel during the winter months, potable water, backhoes, dump trucks, generators, transportation routes and shelter space could be depleted. The resource manual will be available to provide a thorough listing of resources that are likely to be needed."

Steve Land, deputy director of the Williamson County Emergency Management Agency, said staff are working to garner approval of the plan.

"We have to have each jurisdiction in Williamson County approve the plan," he said. "We are attending 15 council meetings. Every jurisdiction in the county has a copy of the 240-page plan."

Buckingham said changes to the document would be available on compact disc to committee members.

"It will be more cost-effective to have the changes on CDs instead of printing out copies of the entire docu-

See PLAN, page 3

PLAN

Continued from page 1

ment again," he said. "The document includes a list of resources, maps and appendices. As changes are made, a notation will be made on the CD version telling committee members where the changes to the plan apply.

He also advised members of an upcoming hazard mitigation meeting.

The third hazard mitigation planning meeting will be held at 1:30 p.m. on Thursday, Dec. 18 in the first floor conference room of the Franklin Hospital, Buckingham said. The meeting is open to the public.

Buckingham also reported on a grant received, saying the NOMAD platform would be arrive in the county after the first of the year.

"One of my staff will go to Washington, D.C., to pick up the equipment," he said. "Staff will be trained to use the equipment in February."

Members also accepted the resignation of committee secretary Whitney Mehaffy, who said her new job duties prohibit her from performing the functions of secretary.

"You have done an excellent job as secretary," Buckingham said. "Your organizational skills are impeccable."

Mehaffy said she would not have resigned unless another committee member had volunteered to serve in her place.

"I will be serving as public information officer for the Franklin-Williamson Bi-County Health Department," she said. "Rhonda Koch agreed to accept the position if I resigned, and I would like to nominate her for the role." Members unanimously approved the nomination.

Gary Richardson, with Franklin County Amateur Radio Emergency Services, reported testing would be offered for those interested in obtaining a license.

"The amateur radio club in Franklin County has evolved and is offering testing for those who want to upgrade their license or obtain an amateur radio operator's license," he said. "We have had one training session and another will be offered in February. A \$14 fee is required to take the test but the license good for 10 years." Richardson said members could be contacted for more information.

The next meeting will be at 10 a.m. on March 26 in the hospital conference room.

Benton Evening News
12/12/08

Hazard Mitigation Planning Team outlines its priorities

By Mona Sandefur

Staff writer
mona@clearwave.com

Friday afternoon's meeting of the Franklin County Hazard Mitigation Planning Team outlined priorities in the event of a natural disaster or the wrath of Mother Nature.

The meeting, led by Franklin County Emergency Management Agency director Ryan Buckingham, included representatives from a number of local agencies, as well as mayors.

Buckingham said the finalized plan would reduce the loss of life during disaster situations.

John J. Buechler, GIS

manager of the Polis Center, called the meeting the "most important one to date."

"During this meeting you will answer the question, 'What do you as communities want to do to mitigate disasters?'" he said. "Statistics prove that you can save \$4 in loss for every dollar spent.

"We can refer back to Hurricane Katrina as an example," Buechler said. "New Orleans would have saved \$2.5 billion in damages if the levee had been strengthened before the hurricane struck the coast."

Buechler, of Indiana University-Purdue University-See HAZARD, page 3

Benton Evening News

1/26/09

HAZARD

Continued from page 1

sity in Indianapolis, cited examples of what had been done in Indiana. He said fire departments had been strengthened to better withstand damage from earthquakes or other natural disasters. He said in some instances safe rooms were being constructed.

"Tie-downs on mobile homes are also being installed," Buechler said. "The biggest cause of damage to a mobile home is from rollover during strong winds."

He cautioned team members not to get "caught up in a wish list."

"Start with tornado, thunderstorm and damage from hail," Buechler said. "You can find outreach opportunities. This plan requires every community to participate."

Buckingham said the county had a "decent distribution of weather radios".

"We just put weather alert radios in schools," he said. "Benton has installed a new weather alert system." Christopher Mayor Gary Bartolotti said the community would receive a new weather alert system in the spring.

"Some communities rely on the Civil Air Defense sirens," Buckingham said.

Mark Roderick, with the U.S. Army Corps of Engineers, discussed the need for a shelter to be constructed for campers at Rend Lake.

Benton Mayor Gary Kraft said the weather alert system would eventually extend to

Rend Lake, citing money as the issue.

Buckingham said the county is in need of more equipment.

"We do not have a stand alone emergency operation center," he said. "There are no mobile communication towers available and we do not have a mobile command unit. We rely on the unit in Du Quoin to respond in the event of a disaster or other emergency. Few agencies have satellite communication capabilities."

He said flooding in some parts of the county is another priority. He said staff members are working to build a database of resources. Members also discussed establishing flood proof public structures and relocating residents from flood prone areas of the county.

Kraft and others cited the need for better storm drainage. Bartolotti said government programs constructed the majority of storm drainage systems in the 1930s and 40s.

"Royalton, West Frankfort and just about every town in Franklin County has storm drainage problems," Bartolotti said.

He also called for stream maintenance — saying streams in the area are overgrown with trees that should be cleared to improve stream flow during heavy rains.

Buckingham said two floods in the past 20 years in

West Frankfort had destroyed property and disrupted lives.

"Pumps have been installed but we are fighting Mother Nature," he said. "More mitigation is needed."

He also cited floodplain education management as a priority. "We are trying to do better public education as a part of the mitigation plan," Buckingham said. Buechler said grant funds are available to develop materials for education and to conduct workshops.

Buckingham said staff members set up booths during community events to talk to people about floodplain issues.

Members cited roads that regularly flood in the county, including Park Street Road, Number 9 Blacktop, Deering Road, Yellow Banks Road, Old Johnston City Road and Old Marion Road.

Kraft said a pond behind Franklin Hospital that had been declared a wetland also causes flooding problems to apartments behind the hospital during heavy rains.

Roderick said the Cambon Lake between Zeigler and Orient also experiences flooding during rainstorms.

Buckingham said more education is needed pertaining to watershed planning and mitigation. "We also need to better educate the public about the National Flood Insurance Program," he said.

Roderick said more education is needed about the Rend Lake Dam, saying a warning system located downstream would be a good thing to have in the future.

Buckingham said public education and training is also needed in the area of hazard mitigation. "Transportation improvements might reduce the number of incidents," he said. "We also need increased training of hazardous materials."

Buechler said the Federal Emergency Management Agency provides money to states to do a traffic flow study.

He said grants are also available to retrofit hospitals and critical access areas to withstand earthquakes and other natural disasters.

Bartolotti said warming facilities with backup generators are needed.

"During winter storms when ice or winds bring down the power lines, people need a warm place to go," he said.

Buechler said the priorities would be incorporated into a mitigation strategy report.

"You will review a copy of the draft document before it goes to the Illinois Emergency Management Agency for approval and then onto FEMA," he said. "The good news is that Williamson County's plan has already received FEMA approval."

Benton Evening News
1/26/09

Communities on verge of missing grant opportunities

By Mona Sandefur

Staff writer

mona@clearwave.com

ZEIGLER — Rob Clodi, a planner with Greater Egypt Planning and Development Commission, warned mayors that six communities are in jeopardy of losing grant funding.

During Thursday night's mayors' meeting in the Six Mile Township Building in Zeigler, a slide popped on the screen, requesting mayors or community leaders of Buckner, Hanaford, Orient, Thompsonville, West City and Zeigler to attend the fifth meeting of the county's Multi-Hazard Mitigation Plan.

"The Federal Emergency Management Agency requires the mayor or appointed city leader attend two sessions of the Franklin County Multi-Hazard Mitigation Plan," he said. "These communities can not apply for grant funding if they did not attend at least two sessions. Records indicate that a representative of Zeigler has attended two meetings but not the planning meetings."

Clodi said FEMA's Pre-Disaster Mitigation Program provides funds to communities for hazard mitigation planning and for the implementation of mitigation projects prior to a disaster event.

"The PDM program provides funding to reduce loss of life, as well as damage and destruction to property from

See MAYORS, page 3

MAYORS

Continued from page 1

natural disasters," he said. "The plan will be forwarded to the Illinois Emergency Management Agency for approval before being presented to the Franklin County Board for approval. The plan has a shelf life of five years. Communities have a year window of opportunity to adopt the plan.

"The fifth meeting will be held at 2 p.m. Thursday, April 9, in the conference room of the Franklin Hospital to add or correct data to the plan," Clodi said. "If the mayors of the communities listed attend the fifth meeting, we can schedule a meeting 5B for those who missed the first four meetings. We hope to have the plan completed by the end of April to send to IEMA."

Hosted by Franklin County Regional Economic Development members, Zeigler Mayor Dennis Mitchell welcomed those in attendance and introduced a restaurateur to the group. The new owner of Walker's in Zeigler said he expects the restaurant to open in mid-April. He said the restaurant would feature an extensive menu, including Italian cuisine, pizza, sandwiches, dinners, as well as macaroni and cheese and grilled cheese for children. He said popular Walker's favorites ranging from fried chicken to fish and ribs would also be on the menu.

Executive director William Dill spoke on behalf of Sen. Gary Forby, who is attending legislative sessions in Springfield.

"FREDCO applied for a \$25,000 grant last year that was funded through the Department of Commerce and Economic Opportunity," he said. "We have received half of the money. I have been submitting quarterly reports as required and expect we will get the rest of the money by the end of September."

Board chairman Dr. Allan Patton said the money had been used to purchase a copier.

He introduced Jim Kirkpatrick, who attended on behalf of Rep. John Bradley.

"They are busy in Springfield and have difficult decisions to make," Kirkpatrick said. "Gov. Pat Quinn was in Marion on Tuesday to outline a program to reduce the state's deficit. Legislators will be in session on Friday, which is very unusual. Rep. Bradley is chair of the house revenue committee. He has or will be having budget hearings in Herrin, Aurora, the Quad Cities, Decatur and the Chicago area."

Dill said he spoke during an infrastructure hearing held on March 16. "The speaking engagement was initiated by Rep. John Bradley," he said. "I worked with county engineer Mike Rolla to obtain information.

"I learned that the county has 600 miles of township roads that are oiled and chipped," Dill said. "Townships could receive \$120 per mile to recover the roads. Mike said it costs \$8,200 to oil and chip one mile of roadway."

He said he also requested more funding for truck routes. "We need more industrial truck routes to foster development in Franklin County," Dill said. "I made a pitch for more funding for roads, to expand truck routes and to look for rail sidings. I receive a number of Requests for Proposal and most of them ask if the area has rail sidings. They want access to railways. I also asked for three new on and off ramps in Franklin County."

West Frankfort Mayor Marion Presley said he had requested an interchange off 7th Street in West Frankfort, located north of the city.

"I am also working on a rail siding," he said.

Steve Mitchell gave an update on expanded marketing efforts, saying FREDCO has produced compact discs, a Web site and brochures to tout the area.

"I also work with Connect SI to identify industries the area has the potential to attract," he said. He distributed a list of industries identified and asked community leaders to choose those that FREDCO could work on. A number were identified, including healthcare technology, advanced manufacturing, green technologies, energy, mining technology, senior living and education and training.

Dill also reported on the revolving loan status. "There are 11 complete or partial loan documents out to Franklin County businesses that represent four communities," he said.

Mitchell said Connect SI is vying for a portion of the economic stimulus money.

"There is \$7.4 billion designated for broadband Internet access," he said. "Connect SI is working to get fiber optics to a 20-county area of Southern Illinois. We plan to connect hospitals, community colleges and schools. This will increase the opportunity to connect with SIU and a direct connection to St. Louis. We will be asking for letters of support."

HAZARD

Continued from page 1

mitigation practices that might help reduce those losses.

Throughout a series of meetings, members have identified tornadoes as the number one likelihood of property loss and the potential for reported deaths throughout the county.

Buckingham said Tuesday's elections resulted in mayoral changes. He is contacting mayors and village presidents throughout the county to ensure that each community participates in the plan.

"During Severe Weather Preparedness Week held in early March, we educated residents about the potential for tornadoes," Buckingham said. "The majority of tornadoes occur between April 1 and June 30 but that doesn't mean you should not keep an eye to the sky every month of the year. Tornadoes have occurred in every month of the year. Almost 30 percent of all tornadoes in Illinois occur after dark.

"It is also important to be aware that severe thunderstorms can produce tornadoes," he said. "Severe thunderstorms can also produce flooding and deadly lightning. Flooding is the number one severe weather killer nationwide."

Members also discussed the likelihood of damage from earthquakes. Buckingham said residents would be surprised by the amount of seismic activity that is undetected. "I receive reports from the U.S. Geological Survey," he said. "There are at least two or three reports of earthquakes every day that register below 3 on the Richter scale. They go unreported because people don't feel them."

They also discussed the need for back-up power at municipal buildings, and fire and police departments. Mayors reported back-up generators are in the majority of communities. He said he would verify that every municipality has a plan in place.

Benton Evening News 4/10/2009



Ike Kirkikis, left, director of Greater Egypt Planning & Development Commission, leads Thursday afternoon's meeting of the Multi-Hazard Mitigation Planning Committee. Mayors, village presidents and emergency responders attended the meeting to finalize a county mitigation plan.

Photo by Mona Sandefur

Members meet to fine-tune hazard mitigation plan

By Mona Sandefur

Staff writer
mona@clearwave.com

Emergency personnel and county mayors met to review the draft of Franklin County's hazard mitigation plan on Thursday.

Page by page, Ike Kirkikis, director of Greater Egypt Regional Planning & Development Commission, asked for omissions and additions to the draft. He said the final copy is subject to approval by county board members before being sent to the Federal Emergency Management Agency.

He identified missing titles of county and community officials and asked members to supply needed information before the final printing. Members discussed the need to remove duplicated information.

Ryan M. Buckingham, director of Franklin County Emergency Management Agency, said he would contact Matt Donkin, regional superintendent of schools, to obtain the number of employees to include in the plan.

He said FEMA has made reducing hazards as one of its primary goals. "The Multi-Hazard Mitigation Plan is a requirement of the Federal Disaster Mitigation Act of 2000," he said. "Communities must adopt the plan in order to be eligible for future mitigation funds from the National Flood Insurance Program."

Buckingham said the plan is a collaborative effort. "Greater Egypt Regional Planning Commission was established in 1961 to provide a plan of harmonious development of the Franklin, Jackson, Perry, and Williamson County region,"

See HAZARD, page 3

Appendix C – Adoption Resolution

RESOLUTION NO. 2009-14

**ADOPTING THE FRANKLIN COUNTY
MULTI-HAZARD MITIGATION PLAN**

WHEREAS, Franklin County recognizes the threat that natural hazards pose to people and property;
and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential
for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant
funding for mitigation projects; and

WHEREAS, Franklin County participated jointly in the planning process with the other local units
of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the Franklin County Board hereby adopts the
Franklin County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED, that the Franklin County Emergency Management Agency will
submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the
Illinois Emergency Management Agency and the Federal Emergency Management Agency for final
review and approval.

ADOPTED THIS 21st DAY OF July, 2009.

Randall Crocker
Chairman, Franklin County Board

Dave Dobell
Attested by:

Appendix D – Franklin County Historical Hazards

Table of Content

Fire D-2

Flooding D-3

Subsidence D-4

Thunderstorms/ High Winds/ Hall/ Lightning D-5

Tornado D-6

Hazardous Material Release D-7

Winter Storms D-8

Fire



Herrin, Zeigler, Johnston City and West Frankfort firefighters try to extinguish the remaining flames that engulfed a two store house. No one was injured in the fire.
WEST FRANKFORT FAMILY LOSES HOME TO FIRE

http://www.thesouthern.com/articles/2008/03/12/front_page/23707573.txt



Fire destroys Buckner home February 13, 2008. Pictures provided are during the fire and the aftermath.

BY BECKY MALKOVICH, The Southern, Wednesday, February 13, 2008 11:52 PM CST.

http://www.southernillinoisian.com/articles/2008/02/13/front_page/23360216.txt

BENTON PARK OFFICIALS SET TO DETERMIN FATE OF BURNED PLAYGROUND EQUIPMENT

<http://www.thesouthern.com/articles/2007/12/12/local/22542433.txt>

DOZENS OF ANIMALS DEAD IN FRANKLIN COUNTY ANIMAL CONTROL FACILITY BLAZE

http://www.thesouthern.com/articles/2007/11/20/news_alert/doc4742f295dba79844032487.txt

Flooding



Severe Flooding in Franklin County, IL on March 18-22, 2008. Picture provided by: <http://www.franklincountyema.com/pages/photos.htm>



“This train, headed for Christopher, was halted on the outskirts of West Frankfort when flood waters covered the tracks near the crossing with Highway 37. The highway is also flooded.” January 16, 1937. Photo provided by: The Southern Illinoisan

WEST FRANKFORT ACTS QUICKLY IN THE FACE OF FLOODING

March 19, 2008

http://www.thesouthern.com/articles/2008/03/19/breaking_news/doc47e12f5f2a253759146045.txt

Hazardous Material



An aerial view of the train derailment near Christopher Monday morning. It appears at least 5 tank cars were involved in the derailment. December 4, 2006.

TRAIN DERAILS NEAR CHRISTOPHER

<http://www.thesouthern.com/articles/2006/12/05/top/18427661.txt>



Train derailment near Yellowbanks road in Franklin County on December 4, 2006. Residence evacuated temporarily because of reports of a hazardous odor coming from the wreckage. Picture provided by:

<http://www.franklincountyema.com/pages/photos.htm>

Subsidence



A resident of West Frankfort, a retired coal miner who was in high school at the time when an explosion in the Orient No. 2 mine on December 21, 1951 killed 119 miners, uses a flashlight to illuminate the ventilation fan that is suspected to have contributed to the disaster.

56 YEARS OF TEARS

<http://www.thesouthern.com/articles/2007/12/21/top/22631693.txt>

Thunderstorms/ High Winds/ Hall/ Lightning



FAMILY RELOCATES AFTER TREE CRASHES INTO HOME

Thursday, September 4, 2008

<http://www.bentoneveningnews.com/news/x359567835/Family-relocates-after-tree-crashes-into-home>



Strong winds in Zeigler cause tree to fall on home.

STORM CAUSES DAMAGE IN ZEIGLER

<http://www.southernillinoisian.com/articles/2006/08/11/top/17203677.txt>

STORMS STRETCH OVER REGION

April 3, 2006

<http://www.southernillinoisian.com/articles/2006/04/03/top/doc44312de93da58947361926.txt>

STORMS BATTER REGION: POSSIBLE TORNADO SIGHTED; RAIN, HAIL CAUSE DAMAGE

Wednesday, November 10, 2004

<http://www.thesouthern.com/articles/2004/05/27/top/export23692.txt>

Tornado



INDUSTRIAL COAL CO. NO. 18 MINE. TORNADO AT WEST FRANKFORT, ILL., MAR. 18, 1925.



FLAT CAR FALLEN ON 5 AUTOS AT ORIENT. TORNADO AT WEST FRANKFORT, ILL., MAR. 18, 1925

WEST FRANKFORT ILL.



WRECK OF WATER TOWER AT ORIENT, WEST FRANKFORT, TORNADO, MAR. 18, 1925.



STREET IN NEW ADDITION AT WEST FRANKFORT, NEAR ORIENT NO. 2 MINE.



C. & E. I. ROUNDHOUSE AT WEST FRANKFORT, ILL.

Tri State tornado hit West Frankfort on March 18, 1925. Pictures provided by: The Southern Illinoisan

Winter storms

ICE, SNOW STRKE AGAIN

Wednesday, March 5, 2008

http://www.thesouthern.com/articles/2008/03/05/front_page/23618562.txt

A driver lost control in Zeigler, IL after the February 1, 2008 storm. Picture provided by:
<http://www.thesouthern.com/multimedia/snowart/index.html>

SOUTHERN COUNTIES DECLARED DISASTER AREAS

After a snow storm dumped up to 20 inches of snow in 17 counties in Southern Illinois and Gov. Rob Blagojevich declared all 17 counties disaster areas.

<http://www.southernillinoisian.com/articles/2005/01/07/top/doc41de8a4ca791c797192802.txt>

**FIRST SNOW CREATS HAVOC**

Thursday, December 9, 2005

<http://www.thesouthern.com/articles/2005/12/09/top/10002295.txt>**SNOWED UNDER: REGION CLEANING UP AFTER ROUNDS OF SNOWSTORMS**

Wednesday, December 22, 2004

<http://www.thesouthern.com/articles/2004/12/23/top/doc41ca4ef75fd98399413877.txt>**Appendix E – Hazard Map**

Appendix F – Complete List of Critical Facilities

Potable Water Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Replacement Cost (\$1,000)
REND LAKE INTERCITY WATER SYSTEM	1600 MARCUM BRANCH ROAD	PDFLT	Yes	BENTON	36963

Bus Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Contact Person	Replacement Cost (\$1,000)	Telephone Number
Laidlaw Transit Inc	1111 E 9th St	BDFLT	No	West Frankfort	Mike Patton	1209.9	618-937-1902
South Central Transit	709 N. Bryan St.		No	West Frankfort	Charlie York		618-412-6030

EOC Facilities

Facility Name	Address	Back-up Power	City	Contact Person	Number of Stories	Replacement Cost (\$1,000)	Telephone Number
Franklin County Jail Facility	403 E. Main Street	Yes	Benton	Ryan M. Buckingham	2		618-439-4362
West Frankfort Police Department	201 E. Nolen Street	Yes	West Frankfort	Ryan M. Buckingham	1		618-439-4362

Fire Stations

Facility Name	Address	Back-up Power	City	Contact Person	Number of Stories	Replacement Cost (\$1,000)	Telephone Number
Benton Fire Department	102 N. Maple St	Yes	Benton	Mickey Marshall	1	812	618-435-8121
Christopher Fire Department	211 N. Thomas Street	Yes	Christopher	Charles Lutes	1	812	618-724-2432
Cave Eastern FPD Station 1		No	Thompsonville	Trevor Cardwell	1	812	618-927-2949
Coello Fire Department	9095 Main Street	Yes	Coello	Ron Little	1	812	618-724-4354
Ewing - Northern FDP Station 1	115 W. Main Street	No	Ewing	David Monty Rea	1	812	618-218-1921
Royalton Fire Department	403 South Main St	No	Royalton	Mike Hooker	1	812	618-724-2432
Sesser FDP Station 1	910 S. Park St	No	Sesser	Cletus McBride	1	812	618-625-2441
Valier Fire Department	217 W Main St	No	Valier	Ron Patyski	1	812	618-724-9393
West Frankfort Fire Department	201 E. Nolen St	No	West Frankfort	Wesley Taylor	1	812	618-937-1234
Zeigler Fire Department	301 Church Street	No	Zeigler	David L. Gear	1	812	618-596-6301
Cave Eastern FPD Station 2	Summer Road	No	Akin	Trevor Cardwell	1	812	618-927-2949
Buckner Fire Department	207 E. Main St	No	Buckner	Chuch Bedar	1	812	618-724-2432
Ewing - Northern FDP Station 3	Main St. and IL 34	No	Steel City	David Monty Rea	1	812	618-629-2236
Sesser FDP Station 2	12140 Franklin Cemetary Rd	No	Sesser	Cletus McBride	1	812	618-724-2435
West City Fire Department	1000 Blakely Street	No	West City	Jimmy Reed	1	812	618-439-7871

Airport Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Contact Person	Facility Owner	Latitude	Longitude	Primary Function	Replacement Cost (\$1,000)	Telephone Number
ADAMS PVT		ADFLT	No	ROYALTON		Private	37.9028	-89.1376	Private	6049.5	
BESSIE RLA		ADFLT	No	BENTON		Private	37.9987	-88.8181	Private	6049.5	
Benton Municipal Airport	1 Airport Road	ADFLT	No	BENTON	Earl Sandusky	Public	38.0065	-88.9327	Public	6049.5	618-435-6161

Waste Water Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Replacement Cost (\$1,000)
CITY OF BENTON NORTHWEST SEWAGE TREATMEN	PETROFF ROAD	WDFLT	Yes	BENTON	73926
CHRISTOPHER STP	EAST 15TH STREET	WDFLT	Yes	CHRISTOPHER	73926
HANAFORD STP	POST OFFICE BOX 69	WDFLT	No	LOGAN	73926
ORIENT STP	P.O. BOX 161	WDFLT	No	ORIENT	73926
REND LAKE CONS. DIST. STP	157 ON EWING ROAD	WDFLT	No	EWING	73926
ROYALTON STP	VILLAGE HALL	WDFLT	No	ROYALTON	73926
SESSER STP	CORNER OF YOUNG & CHESTNUT ST.	WDFLT	No	SESSER	73926
THOMPSONVILLE STP	VILLAGE HALL	WDFLT	No	THOMPSONVILLE	73926
VALIER STP	P.O. BOX 427	WDFLT	No	VALIER	73926
WEST CITY STP	1000 WEST BLAKELY	WDFLT	No	WEST CITY	73926
WEST FRANKFORT SEWAGE TREATMENT PLANT	3716 STATE HIGHWAY 37	WDFLT	No	WEST FRANKFORT	73926
ZEIGLER STP	ILLINOIS ROUTE 148 SOUTH	WDFLT	No	ZEIGLER	73926

Medical Care Facilities

Facility Name	Address	AHA ID	Back-up Power	City	Contact Person	Facility Class	Number of Beds	Primary Function	Replacement Cost (\$1,000)	Telephone Number
UNITED MINE WORKERS UNION HOSP	507 WEST ST LOUIS STREET	6433185	No	WEST FRANKFORT		EFHS	10	Hospital	3885	
ST ANTHONY'S MEMORIAL HOSPITAL	503 NORTH MAPLE STREET	6431560	No	EFFINGHAM		EFHM	146	Hospital	7770	
FRANKLIN HOSPITAL	201 BAILEY LANE	5231	Yes	BENTON		EFHL	190	Hospital	13500	6184393161
Franklin-Williamson Human Services, Inc.	902 West Main		No	WEST FRANKFORT	Harold Jones	MDFLT		Nursing		6189376483
Colonial Manor	300 Chruch St		No	ZEIGLER	Linda Gregory	MDFLT	49	Nursing		6185966635
Highlander House	904 East Main		No	BENTON		MDFLT	10	Nursing		6184390057
Homestead House	905 N Jefferson		No	WEST FRANKFORT		MDFLT	16	Nursing		6189322725
Hopes Corner	1600 North Main		No	BENTON		MDFLT	8	Nursing		6184387777
MIDWAY GROUP HOME	1102 East St. Louis St		No	WEST FRANKFORT		MDFLT	8	Nursing		6189323681
WEST CITY APT	409 S George St		No	West City		MDFLT	8	Nursing		6184352275
BENTON HEALTH CARE	1409 N Main St		No	BENTON	Ron Slaviero	MDFLT	72	Nursing		6184352712
FIFTH SEASONS RESIDENTIAL	401 N. Du Quoin St		No	BENTON	Christy Lee	MDFLT	32	Assisted		6184396600
FRANKFORT HEIGHTS MANOR	2500 E St. Louis St		No	WEST FRANKFORT	Sherry Johnson	MDFLT	57	Nursing		6189323236
Helia Healthcare	100 Mrk Franklin St		No	BENTON	Rosalie Craig	MDFLT	83	Nursing		6184393514
HERITAGE WOODS OF BENTON	1305 Bailey Lane		No	BENTON	Susan Coloni	MDFLT	100	Nursing		6184399431
Redwood Manor	802 W Franklin St		No	SESSER	Paul Shockley	MDFLT	58	Nursing		6186255261
Serverin Intermediate	902 S McLeansboro St		No	BENTON	Diana Lefler	MDFLT	72	Nursing		6184394501
WESTSIDE CARE CENTER	601 N Columbia		No	WEST FRANKFORT	Jen Haberle	MDFLT	80	Nursing		6189322109

Police Stations

Facility Name	Address	Back-up Power	City	Contact Person	Facility Class	Replacement Cost (\$1,000)	Telephone Number
Christopher Police Dept	208 N. Thomas Street	No	Christopher	James Trogolo	EFPS	1554	618-724-2432
West Frankfort Police Dept	201 E. Nolen Street	Yes	West Frankfort	Jeff Tharp	EFPS	1554	618-937-3502
West City Police Dept	201 S Browning St	No	West City	Steve Mumbower	EFPS	1554	618-435-6112
Valier Police Department	217 W Main St	No	Valier	Shane Frank	EFPS	1554	618-724-7241
Sesser Police Dept	302 W Franklin St	Yes	Sesser	J. Robert Barrett	EFPS	1554	618-724-2432
Zeigler City Police Dept	303 Church St	No	Zeigler	Tim Scuras	EFPS	1554	618-724-2432
Franklin County Sheriff's Office	403 E Main St	No	Benton	Bill Wilson	EFPS	1554	618-438-8211
Benton Police Department	500 W Main St	No	Benton	Michael O'Neill	EFPS	1554	618-439-4504
Royalton Police Dept	311 S. Main St	No	Royalton	Bob Powell	EFPS	1554	618-724-2432
Ewing Police Dept	Village Hall	No	Ewing	William Young	EFPS	1554	618-629-2126
Thompsonville Police Dept	21230 Division St	No	Thompsonville	Les Summers	EFPS	1554	618-438-4841
Orient Police Dept	404 S. Lincoln Street	No	Orient	Joe Brown	EFPS	1554	618-438-4841
Buckner Police Dept	209 E. Main Street	No	Buckner	Steve Kalaher	EFPS	1554	618-438-4841
Freeman Spur Police Dept	Village Hall	No	Freeman Spur	Anthony Beck	EFPS	1554	618-942-3594

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
E860030		CDFLT	No	WEST FRANKFORT	Three Angels Broadcasting	37.9123	-88.7820		
WPLY679		CDFLT	No		AKIN WATER DISTRICT	37.9834	-88.7473		
WP301		CDFLT	No		AKIN, CITY OF	37.9873	-88.7806		
KSF508	NW COR OF JCT OF C&E AND IC RAILROADS	CDFLT	No	BENTON	AMEREN SERVICES	37.9937	-88.9153		
KBX73	2.0 MI NW OF	CDFLT	No	BENTON	Ameren Services Company	38.0148	-88.9481		
KSE53	1/2 MI S OF	CDFLT	No	WEST FRANKFORT	Ameren Services Company	37.8895	-88.9328		
KSF509	1/2 MI SO OF WEST FRANKFORT	CDFLT	No	WEST FRANKFORT	Ameren Services Company	37.8906	-88.9323		
KSL78	NW COR OF C&E I & IC RRS	CDFLT	No	BENTON	Ameren Services Company	37.9936	-88.9153		
WEE532	4.5 MI SE OF	CDFLT	No	WEST FRANKFORT	Ameren Services Company	37.8781	-88.8495		
WPYE912	0.8 km S	CDFLT	No	West Frankfort	Ameren Services Company	37.8894	-88.9328		
WPYE912		CDFLT	No	West Frankfort	Ameren Services Company	37.8894	-88.9328		
WQIV788	5623 Macedonia Rd	CDFLT	No	Thompsonville	Ameren Services Company	37.9451	-88.7081		
WPPX216	8595 BENNETT RD	CDFLT	No	BENTON	Arch Wireless License Co	37.9878	-88.8914		
WNWP739	1.4 MI S SESSER .5 MI W	CDFLT	No	MULKEYTOWN	BAUMAN, RAY L	38.0523	-89.0623		
WNWP739		CDFLT	No	MULKEYTOWN	BAUMAN, RAY L	38.0523	-89.0623		
WPPV492		CDFLT	No		BENTON GRADE SCHOOL DISTR	37.9967	-88.9201		
WQFY576	Benton Municipal Airport	CDFLT	No	Benton	Benton Municipal Airport	38.0066	-88.9325		
KNJN763	107 N MAPLE ST	CDFLT	No	BENTON	BENTON, CITY OF	37.9959	-88.9153		
KNJN763		CDFLT	No	BENTON	BENTON, CITY OF	37.9959	-88.9153		
KYL600	500 W MAIN ST	CDFLT	No	BENTON	BENTON, CITY OF	37.9298	-88.9278		

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
WPUQ586	500 INDUSTRIAL PARK ROAD	CDFLT	No	BENTON	BENTON, CITY OF	37.9969	-88.9206		
WPUQ586		CDFLT	No	BENTON	BENTON, CITY OF	37.9969	-88.9206		
WRLB2216	BENTON MUNICIPAL AIRPORT	CDFLT	No	BENTON	BENTON, CITY OF	38.0078	-88.9301		
KLP953	OLD BEN MINE 56	CDFLT	No	BENTON	BNSF Railway Co	38.0717	-89.0104		
KGW623	AT BN MP153.2 HWY 183 & BNRR TRACKS	CDFLT	No	SESSER	BNSF Railway Company	38.0923	-89.0473		
KGW623		CDFLT	No	SESSER	BNSF Railway Company	38.0923	-89.0473		
KGW623		CDFLT	No	SESSER	BNSF Railway Company	38.0923	-89.0473		
WPJY803	2 KM SR183 5 KM E	CDFLT	No	SESSER	BNSF Railway Company	38.0776	-89.0045		
KBU515	3 MI N 1 1/2 MI W 1/4 MI S	CDFLT	No	THOMPSONVILLE	BUNTING, ROBERT:BUNTING, MI	37.9651	-88.7928		
KBU515	4 MI N 1 1/4 MI W	CDFLT	No	THOMPSONVILLE	BUNTING, ROBERT:BUNTING, MI	37.9787	-88.7798		
WNQR379	.9 MI NE CITY LIMITS	CDFLT	No	ROYALTON	CAPOGRECO, ADAM	37.8939	-89.1404		
WNQR379		CDFLT	No	ROYALTON	CAPOGRECO, ADAM	37.8939	-89.1404		
WQBZ976	3596 MAIN ST	CCSV	No	THOMPSONVILLE	CAVE EASTERN FIRE PROTECT	37.9167	-88.7614		
WQBZ976		CCSV	No	THOMPSONVILLE	CAVE EASTERN FIRE PROTECT	37.9167	-88.7614		
KNKN477	5770 SATCH ROAD	CDFLT	No	Christopher	Cellco Partnership	37.9903	-89.0459		
KNKN477	3 mi E on Hwy 34	CDFLT	No	GALATA	Cellco Partnership	37.9029	-88.7199		
WLV458	5770 SATCH ROAD	CDFLT	No	CHRISTOPHER	Cellco Partnership	37.9903	-89.0459		
WPNC538	15346 STATE HWY 37	CDFLT	No	WHITTINGTON	Cellco Partnership	38.0861	-88.9064		
WPOT980	2731 Orient Road	CDFLT	No	Orient	Cellco Partnership	37.9022	-88.9675		
WPQR332	3 MI E OF HWY 54	CDFLT	No	THOMPSONVILLE	Cellco Partnership	37.9029	-88.7199		
KNKN477	5770 SATCH ROAD	CDFLT	No	Christopher	Cellco Partnership	37.9903	-89.0459		
KNKN477	3 mi E on Hwy 34	CDFLT	No	GALATA	Cellco Partnership	37.9029	-88.7199		
KNKN477	5770 SATCH ROAD	CDFLT	No	Christopher	Cellco Partnership	37.9903	-89.0459		
KNKN477	3 mi E on Hwy 34	CDFLT	No	GALATA	Cellco Partnership	37.9029	-88.7199		

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
WNYH306	501 S SNYDER	CDFLT	No	CHRISTOPHER	Christopher Unit School D	37.9742	-88.9754		
WNYH306		CDFLT	No	CHRISTOPHER	Christopher Unit School D	37.9742	-88.9754		
WPJR656	901 ERNESTINE	CDFLT	No	CHRISTOPHER	Christopher Unit School D	37.9895	-89.0990		
WPJR656		CDFLT	No		Christopher Unit School D	37.9895	-89.0990		
KNDU270	CENTER OF TOWN	CCSV	No	CHRISTOPHER	CHRISTOPHER, CITY OF	37.9737	-89.0562		
WNVF791	211 N THOMAS	CCSV	No	CHRISTOPHER	CHRISTOPHER, CITY OF	37.9737	-89.0562		
WNVF791		CCSV	No	CHRISTOPHER	CHRISTOPHER, CITY OF	37.9737	-89.0562		
KNDV951		CCSV	No	COELLO	COELLO, CITY OF	37.9876	-89.0695		
KNDV951	CORNER OF DIVISION & MAIN STS NORTH CITY	CCSV	No	COELLO	COELLO, CITY OF	37.9876	-89.0695		
WQI221	425 E CHURCH ST	CBT	No	BENTON	Comcast of Indiana/Kentuc	37.9956	-88.9126		
KWH311	0.6 KM. S. OF RTE 34	CBR	No	BENTON	Consolidated Communicatio	37.9881	-88.8928		
KWH311	0.6 KM. S. OF RTE 34	CBR	No	BENTON	Consolidated Communicatio	37.9881	-88.8928		
WPSH916	11884 COUNTRY CLUB ROAD	CDFLT	No	WEST FRANKFURT	CROWN LINE BOATS	37.8786	-88.9356		
WPSH916		CDFLT	No	WEST FRANKFURT	CROWN LINE BOATS	37.8786	-88.9356		
WPSM824		CDFLT	No	W FRANKFORT	CROWN LINE BOATS INC	37.8758	-88.9347		
KNFK986	5 MILE 2 MI N	CDFLT	No	EWING	DALE RICHARDSON FARMS	38.1126	-88.7631		
WLJ688	ROOF 80 BLDG PUB. SQUARE	CCSV	No	BENTON	DANA COMMUNICATIONS CORP.	37.9856	-88.8920		

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
WQDL973	1483 IL ROUTE 34 EAST	CCSV	No	BENTON	EFFINGHAM ADVANCED AMBULA	37.9918	-88.8780		
WQDL973		CDFLT	No	BENTON	EFFINGHAM ADVANCED AMBULA	37.9918	-88.8780		
WPPY560	OWENS BLDG TWR SQ	CDFLT	No	BENTON	EMERY, CONNIE	37.9973	-88.9203		
WPPY560		CDFLT	No	BENTON	EMERY, CONNIE	37.9973	-88.9203		
WPAM382	4 MI NE	CCSV	No	EWING	EWING NORTHERN FIRE PROTE	38.1178	-88.8178		
WPAM382		CCSV	No	EWING	EWING NORTHERN FIRE PROTE	38.1178	-88.8178		
WPZI415	Clarks Rd & N. Thompson Rd	CCSV	No	Macedonia	Ewing Northern Fire Prote	38.0388	-88.7562		
WPZI415		CCSV	No	Macedonia	Ewing Northern Fire Prote	38.0388	-88.7562		
WPRT325	2310 WEST FISHER LANE	CDFLT	No	ROYALTON	FISHER, TOMMY	37.9056	-89.1084		
WPRT325		CDFLT	No	ROYALTON	FISHER, TOMMY	37.9056	-89.1084		
KDC931	EZRA SCHOOL BLDG .5 MI S STATE RT 149 1	CCSV	No	WEST FRANKFORT	Franklin County Emergency	37.8845	-88.9618		
KDC932	1 MI S OF ST RT 149 AT POINT 1.75 MI W	CCSV	No	WEST FRANKFORT	Franklin County Emergency	37.8823	-88.9618		
WQGI325	RT 2	CCSV	No	WEST FRANKFORT	Franklin County Emergency	37.8778	-88.9590		
WYF934	1 MI S OF ST RT 149 AT POINT 1.75 MI W	CCSV	No	WEST FRANKFORT	Franklin County Emergency	37.8823	-88.9618		
WYF934		CCSV	No	WEST FRANKFORT	Franklin County Emergency	37.8823	-88.9618		
WZT893	1 MI S OF ST RT 149 AT POINT 1.75 MI W	CCSV	No	WEST FRANKFORT	Franklin County Emergency	37.8823	-88.9618		
WQFF592	1000 BLAKELY ST	CCSV	No	WEST CITY	FRANKLIN COUNTY EMERGENCY	37.9929	-88.9434		
WQFF592		CCSV	No	WEST CITY	FRANKLIN COUNTY EMERGENCY	37.9929	-88.9434		

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
WPBZ206	1405 E MAIN ST	CDFLT	No	WEST FRANKFORT	FRANKLIN COUNTY HOUSING A	37.8959	-88.9195		
WPBZ206		CDFLT	No	WEST FRANKFORT	FRANKLIN COUNTY HOUSING A	37.8959	-88.9195		
WPTU427	W END OF REND LAKE DAM	CCSV	No	BENTON	FRANKLIN COUNTY OF	38.0397	-88.9899		
WPTU427	209 W MAIN ST	CCSV	No	BENTON	FRANKLIN COUNTY OF	37.9998	-88.9179		
WPTU427		CCSV	No	BENTON	FRANKLIN COUNTY OF	38.0397	-88.9899		
WQGP899	12220 REND CITY RD	CCSV	No	BENTON	FRANKLIN COUNTY SHERIFF D	38.0403	-88.9881		
WZJ508	205 BAILEY LN	CCSV	No	BENTON	FRANKLIN HOSPITAL / Mercy	38.0101	-88.9164		
KQS591	221 W MARKET ST	CCSV	No	CHRISTOPHER	FRANKLIN, COUNTY OF	37.9737	-89.0562		
WNSQ945	5 MILE OF INT HWY 34 & 149	CCSV	No	THOMPSONVILLE	FRANKLIN, COUNTY OF	38.0092	-88.7781		
WNSQ945		CCSV	No	THOMPSONVILLE	FRANKLIN, COUNTY OF	38.0092	-88.7781		
WPVN396	211 WEST THOMAS ST	CCSV	No	CHRISTOPHER	FRANKLIN, COUNTY OF	37.9758	-89.0567		
WPVN396		CCSV	No	CHRISTOPHER	FRANKLIN, COUNTY OF	37.9758	-89.0567		
WPYC637	403 E. MAIN ST	CCSV	No	BENTON	FRANKLIN COUNTY SHERIFF D	37.9969	-88.9170		
WPYC637	201 E. NOLEN ST	CCSV	No	WEST FRANKFORT	West Frankfort Police Dep	37.8991	-88.9256		
WPYC637	218 W. MARKET ST.	CCSV	No	CHRISTOPHER	West Frankfort County Cent	37.9728	-89.0549		
WPYC637		CDFLT	No	BENTON	FRANKLIN, COUNTY OF	37.9969	-88.9170		
WQBC935	409 E WASHINGTON ST.	CDFLT	No	BENTON	FRANKLIN, COUNTY OF	37.9975	-88.9153		
WQBC935		CDFLT	No	BENTON	FRANKLIN, COUNTY OF	37.9975	-88.9153		

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
KNEM667	2.4 KM N ON IL RT 37	CDFLT	No	WEST FRANKFORT	FREEMAN UNITED COAL MININ	37.9128	-88.9301		
KNEM667		CDFLT	No	WEST FRANKFORT	FREEMAN UNITED COAL MININ	37.9128	-88.9301		
KB78428		CDFLT	No		GREENWOOD CREEK NATION WA	37.9717	-89.0798		
KB78428	BPS-Junction of Market St & Fairview Rd	CDFLT	No	Christopher	GREENWOOD CREEK NATION WA	37.9717	-89.0797		
WPEC598	RR 2.2.5 MI S	CDFLT	No	MULKEYTOWN	GREENWOOD CREEK NATION WA	37.9717	-89.0798		
WPEC598	W DIVISION ST	CDFLT	No	COELLO	GREENWOOD CREEK NATION WA	37.9964	-89.0715		
WPEC598		CDFLT	No	MULKEYTOWN	GREENWOOD CREEK NATION WA	37.9717	-89.0798		
WPEC598		CDFLT	No	COELLO	GREENWOOD CREEK NATION WA	37.9964	-89.0715		
KNFX952	1 BLOCK S OF ICRR & 2 BLOCKS E OF RT 37	CDFLT	No	BENTON	ILLINI ASPHALT CORP	37.9931	-88.9176		
WQBD751	Rt 14 and Water Road	CDFLT	No	Buckner	Illinois Central Railroa	37.9873	-89.0019		
WQBD751		CDFLT	No	Buckner	Illinois Central Railroa	37.9873	-89.0019		
KDA472	ICRR FREIGHT HOUSE 316 S COMMERCIAL AVE	CDFLT	No	BENTON	ILLINOIS CENTRAL GULF RAI	37.9945	-88.9176		
KNAT220	JOHN ROSE PREP PLANT 1.3 MI S OF INT SR	CDFLT	No	THOMPSONVILLE	ILLINOIS CENTRAL GULF RAI	37.8953	-88.8251		
WNHY565	260 FT N SR 14 ON ICRR	CDFLT	No	ODUM SPUR	ILLINOIS CENTRAL GULF RAI	38.0684	-88.7531		
WNTU453	ICRR 260 FT N OF SR 14	CDFLT	No	ODUM SPUR	ILLINOIS CENTRAL RAILROAD	38.0684	-88.7531		
KJM203	WAYNE FITZGERRELL STATE PARK 9 MI N	CCSV	No	BENTON	ILLINOIS, STATE OF	38.1051	-89.0065		

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
KSA229	RR 4 CONSERVATION REG OFC ON RT 37 1.5 M	CCSV	No	BENTON	ILLINOIS, STATE OF	38.1001	-88.9195		
WPBR868	503 E MAIN	CCSV	No	BENTON	ILLINOIS, STATE OF	37.9970	-88.9142		
WQDC374	5623 MACEDONIA ROAD	CCSV	No	THOMPSONVILLE	ILLINOIS, STATE OF	37.9451	-88.7081		
WQDC374		CCSV	No	THOMPSONVILLE	ILLINOIS, STATE OF	37.9451	-88.7081		
WNJF205	6.1 MI DUE E	CDFLT	No	BENTON	J & O COMMUNICATIONS INC	38.0092	-88.7612		
WNJF205		CDFLT	No	BENTON	J & O COMMUNICATIONS INC	38.0092	-88.7612		
WBS688	5 BLOCKS S OF INT 37 & 149	CDFLT	No	WEST FRANKFORT	J W REYNOLDS MONUMENT COM	37.8959	-88.9314		
WDM548	1410 S MAIN ST	CDFLT	No	BENTON	J W REYNOLDS MONUMENT COM	37.9839	-88.9178		
KUC903	0.75 MI N OF	CDFLT	No	CHRISTOPHER	JOPLIN BEEPERS, INC.	37.9903	-89.0459		
WPGM539	3 MI E	CDFLT	No	EWING	K & K STORAGE BARN, LLC	38.0876	-88.8251		
WPGM539		CDFLT	No	EWING	K & K STORAGE BARN, LLC	38.0876	-88.8251		
WQDU676		CDFLT	No	WEST FRANKFORT	K&E TECHNICAL INC	37.8865	-88.9316		
KNRS230	8595 BENNETT RD	CDFLT	No	BENTON	KLL CORPORATION	37.9878	-88.8914		
KNRS230		CDFLT	No	BENTON	KLL CORPORATION	37.9878	-88.8914		
WPLS777	8595 BENNETT RD	CDFLT	No	BENTON	KLL Corporation	37.9878	-88.8914		
WPLS777		CDFLT	No	BENTON	KLL Corporation	37.9878	-88.8914		
WPLU638	8595 BENNETT RD	CDFLT	No	BENTON	KLL CORPORATION	37.9878	-88.8914		
WPLU638		CDFLT	No	BENTON	KLL CORPORATION	37.9878	-88.8914		
WPF1321	NE 5 MI	CDFLT	No	MULKEYTOWN	KUHNS, ELDON	38.0403	-89.1348		
WPF1321		CDFLT	No	MULKEYTOWN	KUHNS, ELDON	38.0403	-89.1348		
WQEL832		CDFLT	No	THOMPSONVILLE	MACH MINING	37.8934	-88.7594		

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
WPXU254	BNSF MP 153.2 @ Hwy 183	CDFLT	No	Sesser	MCC Holdings	38.0922	-89.0472		
WPWE352	302 W FRANKLIN AVE	CDFLT	No	SESSER	SESSER, CITY OF	38.0919	-89.0499		
WPWE352		CDFLT	No	SESSER	SESSER, CITY OF	38.0919	-89.0499		
WPMF845	1 MI W OF INTER. OF US HWY 148 AND	CDFLT	No	SESSER	SESSER/VALIER	38.0809	-89.0673		
WPMF845		CDFLT	No	SESSER	COMM CONSOL	38.0809	-89.0673		
KDJ409	AT AN ABANDONED MINE 1 MI E AND 1/4 MI S	CDFLT	No	BUCKNER	SMITH, CHARLES M:LOVE, AR	37.9806	-89.0001		
KDJ409		CDFLT	No	BUCKNER	SMITH, CHARLES M:LOVE, AR	37.9806	-89.0001		
WNAN798	2 MI S 1 MI E	CDFLT	No	EWING	SNEED, DONNIE	38.0631	-88.8437		
WNAN798	2 MI S	CDFLT	No	EWING	SNEED, DONNIE	38.0678	-88.8570		
WNAN798		CDFLT	No	EWING	SNEED, DONNIE	38.0631	-88.8437		
WNAN798		CDFLT	No	EWING	SNEED, DONNIE	38.0678	-88.8570		
WQFM765	SE Corner of Four Mile Rd & Baseline Rd,	CDFLT	No	Thompsonville	SOUTHEASTERN ILLINOIS ELE	37.9286	-88.8182		
WNGA913	BETWEEN RT 34 & 149 2.6 MI NNW	CDFLT	No	THOMPSONVILLE	SOUTHEASTERN ILLINOIS ELE	37.9284	-88.8178		
WNGA913		CDFLT	No	THOMPSONVILLE	SOUTHEASTERN ILLINOIS ELE	37.9284	-88.8178		
WNXU590	BETWEEN RT 34 & 149 2.6 MI NW	CDFLT	No	THOMPSONVILLE	SOUTHEASTERN ILLINOIS ELE	37.9284	-88.8178		
WNXU590		CDFLT	No	THOMPSONVILLE	SOUTHEASTERN ILLINOIS ELE	37.9284	-88.8178		
WNMT537	10KM E	CDFLT	No	BENTON	SOUTHERN FS INC	38.0092	-88.7612		
WNMT537		CDFLT	No	BENTON	SOUTHERN FS INC	38.0092	-88.7612		
WPVT806	214 SOUTH MAIN	CCSV	No	BENTON	SOUTHERN ILLINOIS EMS	37.9926	-89.0037		
WPVT806		CCSV	No	BENTON	SOUTHERN ILLINOIS EMS	37.9926	-89.0037		

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
KNDQ997	1.5 MI S OF SR 149 3 MI SW	CDFLT	No	THOMPSONVILLE	SOUTHERN ILLINOIS POWER C	37.8842	-88.8187		
WAQ702	BETWEEN STATE ROUTES 34 & 149 5 MI ENE O	CDFLT	No	WEST FRANKFORT	SOUTHERN ILLINOIS POWER C	37.9284	-88.8178		
WNWB921	APPROX 3 MI NNW	CDFLT	No	BENTON	SOUTHERN ILLINOIS POWER C	38.0526	-88.9381		
WQBA918	SE Corner of Four Mile Rd & Baseline Rd,	CDFLT	No	Thompsonville	Southern Illinois Power C	37.9286	-88.8182		
WQCC351	SE Corner of Fourmile Road and Baseline	CDFLT	No	Thompsonville	Southern Illinois Power C	37.9285	-88.8182		
KNKN506	GRAMMER HILL, 3.2 KM NE OF VALIER	CDFLT	No	BENTON	Southern Illinois RSA Par	38.0367	-89.0131		
KNKN506	1300 S. LOGAN STREET, ROUTE 37	CDFLT	No	WEST FRANKFORT	Southern Illinois RSA Par	37.8845	-88.9289		
KNKN506	SUITE 600, WOOD BUILDING	CDFLT	No	BENTON	Southern Illinois RSA Par	37.9973	-88.9203		
WMMK706	GRAMMER HILL	CDFLT	No	BENTON	Southern Illinois RSA Par	38.0373	-89.0137		
WPRU741	21679 Clark Road	CDFLT	No	West City	Southern Illinois RSA Par	38.0388	-88.7561		
WNUE273	302 W	CCSV	No		State of Illinois, Depart	37.8976	-88.9523		
WNSM376	SHAWNEETOWN RD	CDFLT	No	THOMPSONVILLE	THOMPSONVILLE GRADE SCHO	37.8789	-88.7651		
WNSM376		CDFLT	No	THOMPSONVILLE	THOMPSONVILLE GRADE SCHO	37.8789	-88.7651		
WPTY225	3391 CHARLIE GOOD RD.	CDFLT	No	WEST FRANKFORT	THREE ANGELS BROADCASTING	37.9122	-88.7819		
WPTY225		CDFLT	No	WEST FRANKFORT	THREE ANGELS BROADCASTING	37.9122	-88.7819		
WPTY225		CDFLT	No	WEST FRANKFORT	THREE ANGELS BROADCASTING	37.9122	-88.7819		
WQBD908	700 WEST MAIN STREET	CDFLT	No	WEST FRANKFORT	TREASURE ISLES, INC.	37.8980	-88.9365		

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
WBU36	300 FT S OF WEBSTER ST AND 20 FT E OF MO	CDFLT	No	BENTON	UNION PACIFIC RAILROAD	37.9934	-88.9148		
WNTT957	300 FT S OF WEBSTER ST & 20 FT E OF MO P	CDFLT	No	BENTON	UNION PACIFIC RAILROAD	37.9934	-88.9148		
KLH975	510 GRAIN ST	CDFLT	No	BENTON	UNION PACIFIC RAILROAD CO	37.9934	-88.9148		
KLH975		CDFLT	No	BENTON	UNION PACIFIC RAILROAD CO	37.9934	-88.9148		
WPBZ391	MP 293.5 MVN SUB 0.9 MI E	CDFLT	No	BENTON PARK	UNION PACIFIC RAILROAD CO	38.0609	-88.9031		
WPBZ391	MP 308.4 MVN SUB 3 MI NE	CDFLT	No	ZEIGLER	UNION PACIFIC RAILROAD CO	37.9328	-89.0162		
KNHC207	MAIN ST	CDFLT	No	VALIER	VALIER, VILLAGE OF	38.0126	-89.0418		
WPDY690	VALIER MUNICIPAL BLDG MAIN ST	CDFLT	No	VALIER	VALIER, VILLAGE OF	38.0126	-89.0418		
WPDY690		CDFLT	No	VALIER	VALIER, VILLAGE OF	38.0126	-89.0418		
WPFSS696		CDFLT	No	West Frankfort	VF Factory Store	37.8981	-88.9497		
KSI364	522 S SHORT ST	CDFLT	No	WEST FRANKFORT	WALTON, ROBERT C	37.8976	-88.9170		
WNFU955	2 MI E 1 MI S	CDFLT	No	EWING	WEAVER, LEONARD N	38.0781	-88.8131		
WNFU955		CDFLT	No	EWING	WEAVER, LEONARD N	38.0781	-88.8131		
KMA395	200 S BROWNING	CCSV	No	WEST CITY	West City, Police departm	37.9956	-88.9414		
KNED294	1000 BLAKLEY	CDFLT	No	WEST CITY	WEST CITY, VILLAGE OF	37.9948	-88.9378		
WPLP485	1000 BLAKELY ST	CDFLT	No	WEST CITY	WEST CITY, VILLAGE OF	37.9981	-88.9206		
WPLP485		CDFLT	No	WEST CITY	WEST CITY, VILLAGE OF	37.9981	-88.9206		
KAW733	208 N EMMA ST	CDFLT	No	WEST FRANKFORT	WEST FRANKFORT, CITY OF	37.9012	-88.9262		

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
KSA872	208 N EMMA ST	CDFLT	No	WEST FRANKFORT	WEST FRANKFORT, CITY OF	37.9012	-88.9262		
KSF593	201 E NOLEN	CDFLT	No	WEST FRANKFORT	WEST FRANKFORT, CITY OF	37.8987	-88.9195		
KSF593		CDFLT	No	WEST FRANKFORT	WEST FRANKFORT, CITY OF	37.8987	-88.9195		
WPTH258	208 N EMMA	CDFLT	No	WEST FRANKFORT	WEST FRANKFORT, CITY OF	37.9012	-88.9264		
WPTH258		CDFLT	No	WEST FRANKFORT	WEST FRANKFORT, CITY OF	37.9012	-88.9264		
KQC592	4 MI NE	CDFLT	No	BENTON	WILLIS, BRUCE;WILLIS, LLO	38.0481	-88.8651		
KQC592	4 MI NE	CDFLT	No	BENTON	WILLIS, BRUCE;WILLIS, LLO	38.0492	-88.8659		
KSW922		CDFLT	No	WEST FRANKFORT	MRR LICENSE LLC	37.8823	-88.9618		
WQCK291	14262 SR 37	CDFLT	No	WHITTINGTON	NEXTEL WIP LICENSE CORP.	38.0703	-88.9131		
WQCK291		CDFLT	No	WHITTINGTON	NEXTEL WIP LICENSE CORP.	38.0703	-88.9131		
WPEA545	100 E ST LOUIS ST	CDFLT	No	WEST FRANKFORT	ODUM CONCRETE PRODUCTS IN	37.9003	-88.9278		
KEF461	FRANKLIN COUNTY INDUSTRIAL PARK	CDFLT	No	WEST FRANKFORT	OIL FIELD ELECTRIC CO INC	37.9001	-88.9487		
WNSH981	4 MI E	CDFLT	No	BENTON	PAGE, ROBERT	38.0645	-88.8178		
WNSH981	8 MI E	CDFLT	No	BENTON	PAGE, ROBERT	38.0845	-88.7359		
WNSH981		CDFLT	No	BENTON	PAGE, ROBERT	38.0645	-88.8178		
KNAZ513	1/4 MI N RT 14 ON EWING BLCKTOP	CDFLT	No	EWING	PAUL DREW FARMS	38.0489	-88.8287		
KNAZ513		CDFLT	No	EWING	PAUL DREW FARMS	38.0489	-88.8287		
WQBL900	11228 MARCUM BRANCH RD	CDFLT	No	BENTON	REND LAKE CONSERVANCY DIS	38.0528	-88.9556		
WQBL900		CDFLT	No	Benton	REND LAKE CONSERVANCY DIS	38.0528	-88.9556		
WQHU366	11228 MARCUM BRANCH ROAD	CDFLT	No	BENTON	REND LAKE CONSERVANCY DIS	38.0519	-88.9481		

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
WQHU366	NEAR 1200 NORTH ANNA ST.	CDFLT	No	WEST FRANKFORT	REND LAKE CONSERVANCY DIS	37.9092	-88.9289		
WQHU366	NEAR LOGAN ROAD & MARSHALL ST.	CDFLT	No	LOGAN	REND LAKE CONSERVANCY DIS	37.9561	-88.8386		
WQHU366	CORNER OF STATE RT. 149 & CHARLEY GOOD R	CDFLT	No	THOMPSONVILLE	REND LAKE CONSERVANCY DIS	37.9142	-88.7811		
WQHV888	11228 MARCUM BRANCH ROAD	CDFLT	No	BENTON	REND LAKE CONSERVANCY DIS	38.0519	-88.9481		
WQHV888	CORNER OF URBAN RD. & EAST RAY AVE.	CDFLT	No	CHRISTOPHER	REND LAKE CONSERVANCY DIS	37.9753	-89.0400		
WQHV888	CORNER OF MAIN ST. & MADISON ST.	CDFLT	No	VALIER	REND LAKE CONSERVANCY DIS	38.0136	-89.0472		
WQHV888	1000 FT. SOUTH OF COAL ST. & CHERRY ST.	CDFLT	No	SESSER	REND LAKE CONSERVANCY DIS	38.0781	-89.0456		
WQHV889	11228 MARCUM BRANCH ROAD	CDFLT	No	BENTON	REND LAKE CONSERVANCY DIS	38.0519	-88.9481		
WQHV890	11228 MARCUM BRANCH ROAD	CDFLT	No	BENTON	REND LAKE CONSERVANCY DIS	38.0519	-88.9481		
WQHV890	NEAR 3200 EAST MAIN ST.	CDFLT	No	EWING	REND LAKE CONSERVANCY DIS	38.0892	-88.8456		
WQHV890	NEAR SNOW FLAKE ROAD & OAK HILL ROAD	CDFLT	No	EWING	REND LAKE CONSERVANCY DIS	38.1131	-88.7314		
WQHV890	NEAR COPPLE ST. & GRAND ST.	CDFLT	No	BENTON	REND LAKE CONSERVANCY DIS	38.0064	-88.9147		
WPAP238		CDFLT	No		REND LAKE GOLF CLUB	37.9848	-88.8942		
WPPU538	REND LAKE WATER PLANT	CDFLT	No	BENTON	REND LAKE INTERCITY WATER	38.0514	-88.9478		
WPPU538	FRISCO TWR	CDFLT	No	FRISCO	REND LAKE INTERCITY WATER	38.1131	-88.7314		
WRG539	1200M W OF 1425 E & 150M N OF RT 14	CDFLT	No	BENTON	RUBENACKER, RICHARD	38.0184	-88.8920		

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
WRG539		CCSV	No	BENTON	RUBENACKER, RICHARD	38.0184	-88.8920		
KNJN692	910 S PARK	CCSV	No	SESSER	SESSER FIRE PROTECTION DI	38.0834	-89.0418		
KNJN692	12140 FRANKLIN CEMETERY RD	CCSV	No	WHITTINGTON	SESSER FIRE PROTECTION DI	38.0664	-88.9306		
KNJN692		CCSV	No	SESSER	SESSER FIRE PROTECTION DI	38.0834	-89.0418		
		CDFLT	No		Christopher	37.9727	-89.0607	WHELEN VortexR4	Sirens
		CDFLT	No		Christopher	37.9658	-89.0502	WHELEN VortexR4	Sirens
Sesser City Hall		CDFLT	No			38.0922	-89.0531		Sirens
Christopher Fire Department		CDFLT	No			37.9740	-89.0562		Sirens
Zeigler Fire Department		CDFLT	No			37.9015	-89.0533		Sirens
Valier Fire Department		CDFLT	No			38.0140	-89.0435		Sirens
Coello Fire Department		CDFLT	No			37.9944	-89.0670		Sirens
Buckner Fire Department		CDFLT	No			37.9814	-89.0158		Sirens
Royalton Fire Department		CDFLT	No			37.8765	-89.1139		Sirens
Orient Water Tower		CDFLT	No			37.9651	-88.9556		Sirens
Thompsonville Fire Station - T'Ville		CDFLT	No			37.9154	-88.7621		Sirens
Thompsonville Fire Station - Akin		CDFLT	No			37.9865	-88.7475		Sirens
Plumbers and Pipefitters		CDFLT	No			37.8961	-88.9412		Sirens
Ken Gray Blvd by MAT		CDFLT	No			37.9006	-88.9525		Sirens
Heights Cemetary - Water Tower		CDFLT	No			37.9033	-88.9028		Sirens

Communication Facilities

Facility Name	Address	Analysis Class	Back-up Power	City	Facility Owner	Latitude	Longitude	Misc. Comments	Primary Function
Old City Hall - WF		CDFLT	No			37.8987	-88.9259		Sirens
Fire Station - WF - Old Ken Gray Buildin		CDFLT	No			37.8978	-88.9076		Sirens
West Frankfort Park		CDFLT	No			37.8922	-88.9143		Sirens
Du Quoin Street		CDFLT	No			38.0059	-88.9291		Sirens
Gazells Rt 37 North		CDFLT	No			38.0683	-88.9149		Sirens
Benton Lake		CDFLT	No			38.0535	-88.9116		Sirens
Rendshaw & Bailey Lane		CDFLT	No			38.0109	-88.9101		Sirens
Bowling Alley Rd.		CDFLT	No			38.0237	-88.9188		Sirens
Benton FD		CDFLT	No			37.9976	-88.9220		Sirens
Benton Middle School		CDFLT	No			37.9901	-88.9075		Sirens
Huddleson St - Civic Center		CDFLT	No			37.9914	-88.9259		Sirens

User Define

Facility Name	Address	Backup Power Yes or No	City	Contact Person	Number of Beds	Primary Function	Replacement Cost (\$1,000)	Telephone Number
Franklin County Jail	403 E. Main		Benton	Lt. Chet Shaffer	100	Jail	10000	6184389553
Franklin Co Juvenile Detention Center	411 E. Main St		Benton	Lynne Edwards	38	Juvenile Detention Center	50000	6184382222
FIRST CHRISTIAN CHURCH	302 S Main		BENTON			Shelter	5000	6184385841
SOUTHERN ILL CHRISTIAN SERVICE CAMP	1200 E. Cleveland		WEST FRANKFORT			Shelter	5000	
ROYALTON GYMNASIUM	100 N Meadow St		ROYALTON			Shelter	2000	
CHRISTOPHER COMMUNITY CENTER	208 N Thomas St		CHRISTOPHER			Shelter	5000	

Railway Bridges

Bridge Name	Analysis Class	Daily Traffic (cars/day)	Flood Structure Foundation Type	Latitude	Longitude	Maximum Span Length (m)	Replacement Cost (\$1,000)	Structure Type	Total Bridge Length (m)	Year Built (Between 1500 and 2100)
ICG RR	RLB1	125	4	37.86366	-88.73336	10.4	116.55	30200009	35	1900
ICG RR	RLB1	29800	4	37.9913	-88.93483	18.9	216.45	30200011	65	1963
ICG RR	RLB1	2650	4	38.06752	-88.75396	15.2	103.23	30300006	31	1900
ICG RR	RLB1	13100	4	37.8949	-88.9321	27.7	96.57	30300016	29	1960
ICG RR	RLB1	225	4	38.00979	-88.76105	10.1	116.55	30200007	35	1900
ICG RR	RLB1	450	4	38.00867	-88.76105	14.3	169.83	30200007	51	1900
B N RR	RLB6	175	4	38.11257	-89.00728	8.2	29.97	30200009	9	1958
ICG RR	RLB1	49	4	37.98713	-89.13235	8.2	99.9	30200009	30	1900
ICG RR	RLB1	79	4	38.01064	-88.76015	7	96.57	30200009	29	1900
ICG RR	RLB1	79	4	38.01064	-88.75997	8.5	93.24	30200009	28	1900
ICG RR	RLB1	100	4	37.98151	-88.83531	6.7	96.57	30200009	29	1900
ICG RR	RLB10	29	4	37.95851	-88.75384	5.5	143.19	70200009	43	1900
ICG RR	RLB1	125	4	37.87608	-88.73465	9.1	83.25	30200009	25	1900
ICG RR	RLB1	125	4	37.87101	-88.73513	9.1	83.25	30200009	25	1900
ICG RR	RLB6	2850	4	37.99288	-88.92843	5.8	59.94	30200017	18	1900
BNRR OVERPASS	RLB3	5600	4	37.97976	-89.04956	24.1	86.58	30300006	26	1998

School Facilities

Facility Name	Address	Back-up Power	City	Contact Person	Latitude	Longitude	Number of Stories	Number of Students	Phone Number	Replacement Cost (\$1,000)	School District
ST JOHN -BAPTIST CATHO ELEM SC	702 EAST POPLAR STREET	No	WEST FRANKFORT	Sister Brenda Engleman	37.8990	-88.9204		90	6189372017	555	555
EZRA CHRISTIAN SCHOOL	1345 EZRA STREET	No	WEST FRANKFORT		37.8802	-88.9612		42	6189326988		555
STARQUEST ACADEMY	410 W 5TH ST	No	BENTON		38.0008	-88.9248		5	6184383016		555
CHRISTOPHER HIGH	1 BEARCAT DRIVE	No	CHRISTOPHER	Roy Kirkpatrick	37.9775	-89.0639	1	234	6187249461		555
CHRISTOPHER ELEM SCHOOL	501 S SNIDER ST	No	CHRISTOPHER	Cabness Karen	37.9679	-89.0590	1	527	6187247604		555
BENTON ELEMENTARY SCHOOL	1000 MCKINZIE ST	No	BENTON	Sue Krapf	37.9887	-88.9069		322	6184387181		555 CCSD #47
BENTON MIDDLE SCHOOL	1000 FORREST ST	No	BENTON	Karmie Neal	37.9893	-88.9056		480	6184384011		555 CCSD #47
BENTON CONS HIGH SCHOOL	511 E MAIN ST	No	BENTON	Mark Miller	37.9970	-88.9127		643	6184393103		555 CCSD #47
THOMPSONVILLE GRADE SCHOOL	21165 SHAWNEETOWN RD	No	THOMPSONVILLE		37.9192	-88.7655		198	6186272511		555
EWING-NORTHERN CCSD #115	51 N. Main St	No	EWING	Marian Nipper	38.0894	-88.8536		236	6186292181		555
THOMPSONVILLE HIGH SCHOOL	21135 SHAWNEETOWN RD	No	THOMPSONVILLE	Kim Kaytor	37.9194	-88.7660		98	6186272301		555
CENTRAL JR HIGH SCHOOL	1500 E 9TH ST	No	WEST FRANKFORT	Gayle Crawford	37.9059	-88.9084	1	325	6189372444		555
DENNING ELEMENTARY SCHOOL	1401 W 6TH ST	No	WEST FRANKFORT	LeAnn Miller	37.9053	-88.9443		497	6189372464		555
FRANKFORT HIGH SCHOOL	601 E MAIN ST	No	WEST FRANKFORT	John Hixson	37.8980	-88.9216	3	558	6189323126		555
AKIN CCSD #91	21962 Akin Blacktop	No	THOMPSONVILLE	Brian Hodge	37.9872	-88.7807		130	6186272180		555
Franklin Co. Regional Vocational System	202 W. Main St	No	BENTON		37.9666	-88.9220		525	6184389711		555
Franklin-Jefferson Special Ed. Coop.	409 E. Park st	No	BENTON		38.0113	-88.9155		28	6184397231		555
FRANKFORT INTERMEDIATE	800 N Cherry	No	WEST FRANKFORT	Marl Zahm	37.9052	-88.9081		571	6189371412		555
SESSER-VALIER CUSD #196	4626 State Hwy 154	No	SESSER	Wesley Choate	38.0800	-89.0679		771	6186255105		555 CUSD #196
ZEIGLER-ROYALTON CUSD #188	4989 State Hwy 148	No	MULKEYTOWN	Quent Hamilton	37.9333	-89.0595		700	6185965841		555 CUSD #188

Hazardous Material Facilities

Facility Name	Address	Analysis Class	CAS Registry Number	Chemical Name	Chemical Quality (lbs.)	City	Contact Person	EPA ID	Latitude	Longitude	Standard Industrial Code
BOMBARDIER MOTOR CORP. OF AMERICA	451 E. ILLINOIS AVE.	HDFLT	100425	STYRENE	4	BENTON	MIKE RANDOLPH	ILD084394089	38.0103	-88.9133	3732
MARIAH BOATS INC.	10231 SUGAR CREEK RD.	HDFLT	100425	STYRENE	4	BENTON	GUY W. COONS	ILD984809970	38.0133	-88.9389	3732
CROWNLINE BOATS INC.	11884 COUNTRY CLUB RD.	HDFLT	100425	STYRENE	4	WEST FRANKFORT	DAVID M. MCKENZIE	IL0000125633	37.8786	-88.9356	3732
Schwans Home Services	10812 Mark Twain Rd	HDFLT	100425			West Frankfort			37.8942	-88.9194	3732
Southern FS, INC.	21785 State HWY 14	HDFLT	100425			Macedonia			38.0673	-88.7544	3732
Swift Station #249	1110 E Main Street	HDFLT	100425			West Frankfort			37.8942	-88.9194	3732
Godfrey Marine IL	10231 Sugar Creek Rd	HDFLT	100425			Benton			37.9997	-88.9211	3732
Crownline Boats Inc.	11884 Country Club Rd	HDFLT	100425			West Frankfort			37.8758	-88.9331	3732
IL Central Railroad	601 S Duquion St	HDFLT	100425			Benton			37.9941	-88.9195	3732
Airgas-Mid America, Inc	12238 Petroff Rd	HDFLT	100425			Benton			38.0161	-88.9251	3732
Alltel Communications, Inc	7592 Grammer Rd	HDFLT	100425			Sesser			38.0375	-89.0188	3732
Continental Resources, Inc		HDFLT	100425			West Frankfort			37.8836	-88.9468	3732
Continental Resources, Inc		HDFLT	100425			West City			38.0027	-88.9493	3732
Continental Resources, Inc		HDFLT	100425			West City			38.0018	-88.9462	3732
Continental Resources, Inc		HDFLT	100425			Benton			38.0778	-88.9079	3732
Continental Resources, Inc		HDFLT	100425			West City			38.0028	-88.9617	3732
Continental Resources, Inc		HDFLT	100425			West City			38.0048	-88.9418	3732
Continental Resources, Inc		HDFLT	100425			West City			38.0097	-88.9436	3732
Continental Resources, Inc		HDFLT	100425			West City			38.0090	-88.9476	3732
Continental Resources, Inc		HDFLT	100425						38.0061	-88.9291	3732
Continental Resources, Inc		HDFLT	100425						38.0335	-89.0585	3732
Continental Resources, Inc		HDFLT	100425						37.9075	-88.7068	3732
Continental Resources, Inc		HDFLT	100425						38.0184	-88.9448	3732
Continental Resources, Inc		HDFLT	100425						37.8956	-88.8445	3732
Continental Resources, Inc		HDFLT	100425						38.0447	-89.0618	3732
Continental Resources, Inc		HDFLT	100425						37.9860	-88.7818	3732
Continental Resources, Inc		HDFLT	100425						38.0500	-88.9427	3732
Continental Resources, Inc		HDFLT	100425						37.9877	-88.7522	3732
Continental Resources, Inc		HDFLT	100425						38.0499	-88.9430	3732
Continental Resources, Inc		HDFLT	100425						38.0488	-88.9387	3732
Continental Resources, Inc		HDFLT	100425						38.0317	-88.9421	3732
Continental Resources, Inc		HDFLT	100425						38.0732	-88.9067	3732
Continental Resources, Inc		HDFLT	100425						38.0447	-89.0621	3732
Continental Resources, Inc		HDFLT	100425						37.9951	-88.7798	3732
Continental Resources, Inc		HDFLT	100425						38.0792	-88.9093	3732
Continental Resources, Inc		HDFLT	100425						38.0732	-88.9067	3732

Highway Bridges

Bridge Name	Analysis Class	Bridge Length (m)	Bridge Owner	Bridge Width (m)	Daily Traffic (cars/day)	Flood Structure Foundation Type	General Condition Rating	Latitude	Longitude	Maximum Span Length (m)	Misc. Comments	Number of Spans	Replacement Cost (\$1,000)	Skew Angle (degrees)	Structure Type	Year Bridge Was Remodeled	Year Built (Between 1500 and 2100)
000028323403153	HWB26	7	Town Highway Agency	7	350.4	N	8	37.8943	-89.0073	3.1	IL NBI 2008	2	156.87	8	0.119	1600	1981
000028323502285	HWB26	7	Town Highway Agency	7	125.4	8	8	38.1134	-88.7582	9.1	IL NBI 2008	1	224.1	18	0.505	1600	1981
000028323602308	HWB26	14	Town Highway Agency	7	25.4	8	8	37.9251	-89.0889	13.1	IL NBI 2008	1	313.74	8	0.505	1600	1981
000028323707182	HWB26	11	County Highway Agency	8	400.4	8	8	38.1115	-89.0692	10.1	IL NBI 2008	1	246.51	8	0.505	1600	1981
000028323807186	HWB26	14	County Highway Agency	8	275.4	8	8	38.1121	-89.1154	14.1	IL NBI 2008	1	313.74	8	0.505	1600	1981
000028323907192	HWB26	18	Town Highway Agency	7	50.4	8	8	37.9799	-88.8353	19.1	IL NBI 2008	3	403.38	8	30.505	1600	1981
000028324007202	HWB17	36	County Highway Agency	8	850.4	8	8	38.0226	-89.1382	18.1	IL NBI 2008	3	1064.52	8	0.505	1600	1981
000028324110891	HWB26	8	Town Highway Agency	8	200.4	N	8	37.8925	-88.8286	3.1	IL NBI 2008	2	156.87	8	0.119	1600	1982
000028324207208	HWB26	14	Town Highway Agency	7	50.4	8	8	38.1089	-89.0242	13.1	IL NBI 2008	2	313.74	8	0.505	1600	1981
000028324310881	HWB26	8	Town Highway Agency	8	75.4	N	8	38.1198	-88.8757	3.1	IL NBI 2008	2	134.46	8	0.119	1600	1982
000028324410898	HWB26	6	Town Highway Agency	8	100.4	N	8	38.0606	-89.0954	3.1	IL NBI 2008	2	134.46	8	30.119	1600	1982
000028324509609	HWB26	15	County Highway Agency	8	400.4	8	8	37.8808	-88.8054	14.1	IL NBI 2008	2	336.15	8	0.505	1600	1982
000028324701167	HWB17	37	County Highway Agency	8	700.4	8	8	37.9877	-88.7583	12.1	IL NBI 2008	3	1094.09	N	0.505	1983	1943
000028324815042	HWB26	17	Town Highway Agency	8	450.4	8	8	38.0244	-88.8900	16.1	IL NBI 2008	1	390.97	8	0.505	1983	1900
000028324904679	HWB26	8	City Highway Agency	8	1100.4	N	8	38.0160	-88.9321	3.1	IL NBI 2008	2	156.87	8	0.119	1983	1900
000028325015089	HWB26	7	Town Highway Agency	8	25.4	8	8	37.8876	-88.7082	14.1	IL NBI 2008	1	336.15	8	0.505	1983	1922
000028325201063	HWB26	8	Town Highway Agency	8	50.4	N	8	38.0637	-88.8017	3.1	IL NBI 2008	2	134.46	8	0.119	1983	1900
000028325301010	HWB17	23	County Highway Agency	9	850.4	8	8	38.0237	-89.1233	22.1	IL NBI 2008	2	680.11	8	20.505	1983	1938
000028325401102	HWB26	19	County Highway Agency	8	1150.4	8	8	38.0237	-89.0332	19.1	IL NBI 2008	1	425.79	8	0.505	1983	1938
000028325515024	HWB17	142	County Highway Agency	8	850.4	8	8	37.9499	-88.9003	20.1	IL NBI 2008	7	4198.94	8	0.505	1600	1983
000028325603163	HWB26	10	Town Highway Agency	8	50.4	N	8	37.9566	-89.1378	4.1	IL NBI 2008	2	224.1	8	0.119	1600	1983
000028325703173	HWB26	8	Town Highway Agency	8	50.4	N	8	37.9178	-89.1457	3.1	IL NBI 2008	2	156.87	8	45.119	1600	1983
000028325803183	HWB26	6	Town Highway Agency	8	50.4	N	8	37.8771	-89.9978	3.1	IL NBI 2008	2	134.46	8	0.119	1600	1983
000028325903077	HWB26	7	Town Highway Agency	8	50.4	8	8	37.9658	-88.7182	14.1	IL NBI 2008	1	336.15	8	30.505	1600	1983
000028326008460	HWB26	8	County Highway Agency	8	600.4	N	8	37.9723	-88.7570	3.1	IL NBI 2008	2	156.87	8	30.119	1600	1984
000028326103201	HWB26	7	Town Highway Agency	8	50.4	N	8	37.9569	-89.1378	3.1	IL NBI 2008	2	156.87	8	0.119	1600	1983
000028326208025	HWB17	27	County Highway Agency	9	750.4	8	8	37.9553	-88.7576	10.1	IL NBI 2008	3	798.39	8	0.505	1984	1937
000028326305173	HWB17	39	County Highway Agency	8	600.4	8	8	37.9218	-88.7459	15.1	IL NBI 2008	3	1153.23	N	9.505	1600	1985
000028326409135	HWB26	15	Town Highway Agency	7	25.4	8	8	38.0039	-88.7429	14.1	IL NBI 2008	1	336.15	8	30.505	1984	1900
000028326515056	HWB17	36	Town Highway Agency	7	100.4	8	8	37.9347	-88.8083	12.1	IL NBI 2008	3	1064.52	8	30.505	1984	1900
000028326601105	HWB26	15	Town Highway Agency	7	100.4	N	8	38.0570	-89.0953	14.1	IL NBI 2008	2	336.15	8	0.505	1600	1985
000028326700916	HWB26	8	Town Highway Agency	8	25.4	N	8	38.0127	-88.8577	3.1	IL NBI 2008	2	179.28	8	25.119	1600	1985
000028326801211	HWB26	15	Town Highway Agency	7	75.4	8	8	38.0945	-88.8849	15.1	IL NBI 2008	1	336.15	8	0.505	1600	1985
00002832690808	HWB26	9	Town Highway Agency	8	175.4	N	8	37.8967	-88.8170	4.1	IL NBI 2008	2	201.69	8	0.119	1600	1985
000028327013069	HWB17	35	County Highway Agency	7	200.4	8	8	37.9692	-88.7551	12.1	IL NBI 2008	3	1034.95	N	0.505	1600	1986
000028327100389	HWB17	21	Town Highway Agency	7	300.4	8	8	37.9720	-89.0282	10.1	IL NBI 2008	2	620.97	8	0.505	1600	1986
000028327201239	HWB26	7	Town Highway Agency	7	25.4	N	8	38.0889	-88.7401	3.1	IL NBI 2008	2	156.87	8	20.119	1600	1986
000028327301261	HWB26	9	Town Highway Agency	9	150.4	N	8	38.1056	-88.0402	3.1	IL NBI 2008	2	156.87	8	0.119	1600	1986
000028327415943	HWB26	12	Town Highway Agency	7	50.4	8	8	37.8931	-89.1423	11.1	IL NBI 2008	1	268.92	8	0.505	1600	1986
000028327515940	HWB26	7	Town Highway Agency	8	1150.4	8	8	37.9861	-89.0675	6.1	IL NBI 2008	1	156.87	8	0.505	1600	1986
000028327720468	HWB26	15	Town Highway Agency	8	275.4	8	8	38.1162	-89.1058	14.1	IL NBI 2008	1	336.15	8	0.505	1600	1987
000028327820470	HWB17	20	Town Highway Agency	8	275.4	8	8	37.8866	-88.9213	20.1	IL NBI 2008	2	591.48	8	0.505	1600	1987
000028327920788	HWB17	9	County Highway Agency	9	500.4	8	8	38.0188	-88.7615	13.1	IL NBI 2008	2	798.39	7	1600	1987	1987
000028328020270	HWB17	27	County Highway Agency	7	100.4	8	8	38.0385	-88.8577	15.1	IL NBI 2008	3	1212.37	N	0.505	1600	1987
000028328120483	HWB26	15	Town Highway Agency	7	75.4	8	8	38.0484	-88.8546	14.1	IL NBI 2008	1	336.15	8	0.505	1600	1987
000028328201658	HWB26	15	County Highway Agency	8	900.4	8	8	37.9501	-89.0401	14.1	IL NBI 2008	1	336.15	8	35.505	1600	1988
000028328306494	HWB17	40	County Highway Agency	8	350.4	8	8	38.0643	-88.7056	13.1	IL NBI 2008	3	1182.8	8	0.505	1600	1988
000028328406532	HWB26	15	County Highway Agency	8	350.4	8	8	38.0632	-88.7056	14.1	IL NBI 2008	1	336.15	8	0.505	1600	1988
000028328518599	HWB17	49	Town Highway Agency	7	125.4	8	8	37.9292	-88.7473	16.1	IL NBI 2008	3	1448.93	N	9.505	1600	1989
000028328609836	HWB26	11	Town Highway Agency	7	25.4	8	8	37.9563	-89.0767	10.1	IL NBI 2008	1	246.51	8	30.505	1600	1988
000028328709845	HWB26	14	Town Highway Agency	7	25.4	8	8	38.0099	-88.7443	13.1	IL NBI 2008	1	313.74	8	0.505	1600	1988
000028328815588	HWB26	8	Town Highway Agency	8	25.4	9	8	38.0236	-88.8354	8.1	IL NBI 2008	1	179.28	8	0.505	1989	1941
000028328920417	HWB17	39	County Highway Agency	9	650.4	8	8	38.0831	-88.7769	15.1	IL NBI 2008	3	1153.23	7	0.505	1989	1936
000028329020422	HWB26	18	Town Highway Agency	7	275.4	8	8	37.9066	-89.0809	17.1	IL NBI 2008	1	403.38	8	0.505	1600	1989
000028329121975	HWB26	15	Town Highway Agency	7	225.4	8	8	37.9835	-88.9562	14.1	IL NBI 2008	1	336.15	8	0.505	1600	1989

Highway Bridges

Bridge Name	Analysis Class	Bridge Length (m)	Bridge Owner	Bridge Width (m)	Daily Traffic (cars/day)	Flood Structure Foundation Type	General Condition Rating	Latitude	Longitude	Maximum Span Length (m)	Misc. Comments	Number of Spans	Replacement Cost (\$1,000)	Scour Index	Skew Angle (degrees)	Structure Type	Year Bridge Was Remodeled	Year Built (Between 1500 and 2100)
0000283329220424	HVB26	9	Town Highway Agency	7	175 4	175 4	8	37.9434	-89.0397	8	IL NBI 2008	1	201.69	8	30.505	1600	1989	
0000283329320436	HVB26	15	Town Highway Agency	7	75 4	75 4	8	38.1221	-89.0964	14	IL NBI 2008	1	336.15	8	0.505	1600	1989	
0000283329422533	HVB19	23	Town Highway Agency	9	275 4	8	37.8832	-88.9209	23	IL NBI 2008	1	692.64	8	15.505	1600	1990		
0000283329524578	HVB19	49	Town Highway Agency	7	125 4	8	38.1134	-88.7504	18	IL NBI 2008	3	1454.32	N	3.505	1600	1990		
0000283329725308	HVB26	12	Town Highway Agency	7	250 4	8	38.0882	-89.0311	11	IL NBI 2008	1	268.92	8	0.505	1600	1990		
0000283329825373	HVB26	12	Town Highway Agency	7	25 4	8	37.9506	-88.8635	11	IL NBI 2008	1	268.92	8	0.505	1600	1990		
0000283329925309	HVB26	7	Town Highway Agency	7	25 4	9	38.0558	-88.8232	11	IL NBI 2008	1	268.92	8	0.505	1600	1990		
0000283330027222	HVB26	8	Town Highway Agency	8	200 4	8	37.9007	-88.8262	11	IL NBI 2008	1	268.92	8	30.505	1600	1991		
0000283330122514	HVB26	12	Town Highway Agency	7	50 4	9	38.0170	-88.7152	11	IL NBI 2008	1	268.92	8	0.505	1600	1990		
0000283330227760	HVB19	45	Town Highway Agency	7	500 4	9	38.0161	-89.0469	16	IL NBI 2008	3	1335.6	N	17.505	1600	1991		
0000283330327401	HVB26	9	Town Highway Agency	8	600 4	9	38.0084	-89.0008	1	IL NBI 2008	1	201.69	8	0.505	1600	1991		
0000283330427498	HVB26	15	Town Highway Agency	7	100 4	9	38.0146	-89.0954	14	IL NBI 2008	1	336.15	8	0.505	1600	1991		
0000283330528900	HVB19	71	County Highway Agency	9	500 4	9	38.0490	-88.7603	15	IL NBI 2008	5	2107.28	7	45.505	1600	1991		
0000283330628216	HVB26	12	County Highway Agency	8	600 4	9	37.9567	-88.9053	11	IL NBI 2008	1	268.92	8	0.505	1600	1991		
0000283330728569	HVB26	7	Town Highway Agency	7	175 4	9	37.9445	-89.0397	18	IL NBI 2008	1	425.79	8	0.505	1600	1991		
0000283330828217	HVB26	8	Town Highway Agency	8	600 4	9	38.0062	-88.9003	8	IL NBI 2008	1	201.69	8	0.505	1600	1991		
0000283330930095	HVB26	17	Town Highway Agency	7	125 4	9	37.8643	-88.8540	8	IL NBI 2008	2	380.97	8	0.505	1600	1992		
0000283331030074	HVB26	7	Town Highway Agency	7	50 4	9	38.0631	-88.8536	11	IL NBI 2008	1	268.92	8	0.505	1600	1992		
0000283331130054	HVB19	24	Town Highway Agency	7	150 4	9	38.0015	-89.0278	12	IL NBI 2008	2	712.32	8	0.505	1600	1992		
0000283331230055	HVB26	15	Town Highway Agency	7	175 4	9	38.0867	-89.0821	14	IL NBI 2008	1	336.15	8	30.505	1600	1992		
0000283331330080	HVB26	8	Town Highway Agency	7	125 4	9	38.0315	-88.8725	7	IL NBI 2008	1	179.28	8	0.505	1600	1992		
0000283331430075	HVB26	12	County Highway Agency	8	550 4	9	38.0528	-89.0155	11	IL NBI 2008	1	268.92	8	0.505	1600	1992		
0000283331530266	HVB26	18	County Highway Agency	7	25 4	9	38.0239	-88.9479	18	IL NBI 2008	1	403.38	8	0.505	1600	1992		
0000283331630306	HVB26	18	Town Highway Agency	7	25 4	9	37.9135	-88.8263	18	IL NBI 2008	1	403.38	8	0.505	1600	1993		
0000283331730910	HVB19	44	Town Highway Agency	7	50 4	8	37.9453	-88.7501	15	IL NBI 2008	3	1305.92	N	0.505	1600	1993		
0000283331830628	HVB26	16	County Highway Agency	7	550 4	9	38.0523	-89.0918	15	IL NBI 2008	1	358.56	8	0.505	1600	1993		
0000283331930732	HVB26	9	Town Highway Agency	7	75 4	9	37.9066	-89.1463	8	IL NBI 2008	1	201.69	8	0.505	1600	1993		
0000283332030838	HVB26	15	Town Highway Agency	7	125 4	9	38.1134	-88.7571	14	IL NBI 2008	1	336.15	8	0.505	1600	1993		
0000283332131013	HVB26	18	Town Highway Agency	7	75 4	9	37.9682	-88.7248	18	IL NBI 2008	1	403.38	8	0.505	1600	1993		
0000283332231000	HVB26	12	Town Highway Agency	7	375 4	9	38.0034	-89.0443	11	IL NBI 2008	1	268.92	8	0.505	1600	1994		
0000283332331390	HVB26	7	Town Highway Agency	7	50 4	9	38.1126	-89.0168	8	IL NBI 2008	1	201.69	8	0.505	1600	1994		
0000283332431061	HVB26	18	Town Highway Agency	7	25 4	9	38.0236	-88.8389	18	IL NBI 2008	1	403.38	8	30.505	1600	1994		
0000283332531037	HVB26	12	Town Highway Agency	7	25 4	9	38.1184	-88.8479	11	IL NBI 2008	1	268.92	8	0.505	1600	1994		
0000283332631038	HVB26	8	Town Highway Agency	8	850 4	9	38.0034	-89.0443	11	IL NBI 2008	1	268.92	8	0.505	1600	1994		
0000283332731626	HVB19	48	County Highway Agency	7	450 4	9	38.0798	-88.7535	18	IL NBI 2008	3	1424.64	N	25.505	1600	1995		
0000283332831514	HVB26	12	Town Highway Agency	7	50 4	9	37.9187	-89.0956	11	IL NBI 2008	1	268.92	8	0.505	1600	1995		
0000283332931871	HVB19	8	Town Highway Agency	8	950 4	9	37.8752	-89.0917	19	IL NBI 2008	3	1424.64	8	0.505	1600	1995		
0000283333031976	HVB26	18	Town Highway Agency	7	10 4	8	38.0857	-89.0917	18	IL NBI 2008	1	403.38	8	0.505	1600	1995		
0000283333129476	HVB26	7	Town Highway Agency	7	275 4	9	38.0181	-88.8618	18	IL NBI 2008	1	403.38	8	0.505	1600	1995		
0000283333231667	HVB26	9	Town Highway Agency	7	175 4	9	37.9293	-88.8337	8	IL NBI 2008	1	201.69	8	0.505	1600	1995		
0000283333331849	HVB26	7	Town Highway Agency	7	175 4	9	37.9292	-88.8427	8	IL NBI 2008	1	201.69	8	0.505	1600	1995		
0000283333432061	HVB19	37	Town Highway Agency	7	75 4	9	37.9904	-89.0257	15	IL NBI 2008	3	1098.16	8	10.505	1600	1996		
0000283333532062	HVB19	69	County Highway Agency	8	500 4	9	37.9112	-88.8449	17	IL NBI 2008	3	2047.92	8	30.505	1600	1996		
0000283333632320	HVB19	38	Town Highway Agency	7	300 4	9	37.9276	-88.8171	18	IL NBI 2008	3	1088.48	8	45.505	1600	1997		
000028333373157	HVB26	15	Town Highway Agency	7	25 4	9	37.9599	-89.0692	14	IL NBI 2008	1	336.15	8	0.505	1600	1996		
0000283333932084	HVB26	9	Town Highway Agency	7	75 4	9	38.0956	-88.8756	8	IL NBI 2008	1	201.69	8	0.505	1600	1996		
0000283334132499	HVB19	62	Town Highway Agency	7	10 4	9	38.0909	-88.7526	22	IL NBI 2008	3	1840.16	N	45.505	1600	1997		
0000283334232736	HVB26	15	Town Highway Agency	7	50 4	9	38.0375	-88.8039	14	IL NBI 2008	1	336.15	8	0.505	1600	1997		
0000283334332697	HVB26	12	Town Highway Agency	7	200 4	9	37.9842	-89.0318	11	IL NBI 2008	1	268.92	8	0.505	1600	1997		
0000283334432698	HVB26	9	Town Highway Agency	7	200 4	9	38.0847	-89.0318	8	IL NBI 2008	1	201.69	8	0.505	1600	1997		
0000283334532627	HVB26	12	Town Highway Agency	7	75 4	9	37.9688	-88.8231	11	IL NBI 2008	1	268.92	8	30.505	1600	1997		
0000283334632628	HVB26	12	Town Highway Agency	7	150 4	9	38.0853	-88.7971	11	IL NBI 2008	1	268.92	8	0.505	1600	1997		
0000283334733127	HVB26	9	Town Highway Agency	7	75 4	9	38.0899	-88.8757	8	IL NBI 2008	1	201.69	8	0.505	1600	1999		
0000283334833075	HVB26	11	Town Highway Agency	7	100 4	9	38.0119	-89.0954	10	IL NBI 2008	1	246.51	8	30.505	1600	1999		
0000283334933074	HVB26	15	Town Highway Agency	7	75 4	9	37.9182	-88.8767	14	IL NBI 2008	1	336.15	8	0.505	1600	1998		

Highway Bridges

Bridge Name	Analysis Class	Bridge Length (m)	Bridge Owner	Bridge Width (m)	Daily Traffic (cars/day)	Flood Structure Foundation Type	General Condition Rating	Latitude	Longitude	Maximum Span Length (m)	Misc. Comments	Number of Spans	Replacement Cost (\$1,000)	Scour Index	Skew Angle (degrees)	Structure Type	Year Bridge Was Remodeled	Year Built (Between 1500 and 2100)
000028335033081	HWB26	11	Town Highway Agency	7	225.4	4	9	37.9040	-88.9795	10	IL NBI 2008	1	246.51	8	0.505	0.505	1600	1999
000028335133092	HWB26	12	Town Highway Agency	7	150.4	4	9	37.9610	-88.9563	11	IL NBI 2008	1	268.92	8	10	0.505	1600	1999
000028335232955	HWB26	8	County Highway Agency	8	550.4	4	9	38.0528	-88.0249	11	IL NBI 2008	1	268.92	8	0.505	0.505	1600	1998
000028335333219	HWB19	20	Town Highway Agency	7	25.4	4	9	37.9987	-88.7585	19	IL NBI 2008	1	593.6	N	0.505	0.505	1600	1999
000028335433614	HWB26	11	Town Highway Agency	7	150.4	4	9	37.9821	-88.0635	10	IL NBI 2008	1	246.51	8	0.505	0.505	1600	2000
000028335533503	HWB26	18	Town Highway Agency	7	50.4	4	9	37.9825	-88.8169	18	IL NBI 2008	1	403.38	8	0.505	0.505	1600	1999
000028335633517	HWB26	11	Town Highway Agency	7	25.4	4	9	37.9213	-89.0731	10	IL NBI 2008	1	246.51	8	0.505	0.505	1600	1999
000028335733579	HWB26	8	County Highway Agency	8	550.4	4	9	37.8832	-88.8262	7	IL NBI 2008	1	179.28	8	0.505	0.505	1600	2000
000028335833434	HWB19	48	Railroad	7	10.4	4	9	37.9985	-88.7893	17	IL NBI 2008	3	1454.32	N	26	0.505	1600	2001
000028335933463	HWB26	8	Town Highway Agency	7	75.4	4	9	38.0378	-88.0047	7	IL NBI 2008	1	179.28	8	0.505	0.505	1600	2001
0000283360334627	HWB26	8	Town Highway Agency	7	275.4	4	9	38.0346	-88.8949	7	IL NBI 2008	1	179.28	8	0.505	0.505	1600	2001
0000283361334620	HWB26	15	Town Highway Agency	7	25.4	4	9	37.8647	-88.7355	14	IL NBI 2008	1	336.15	8	0.505	0.505	1600	2001
0000283362334530	HWB26	12	Town Highway Agency	7	100.4	4	9	37.8990	-88.0053	11	IL NBI 2008	1	268.92	8	0.505	0.505	1600	2001
0000283363333757	HWB26	18	Town Highway Agency	7	50.4	4	9	38.0782	-89.0994	18	IL NBI 2008	1	403.38	8	0.505	0.505	1600	2001
0000283364334604	HWB26	8	Town Highway Agency	7	25.4	4	9	38.0645	-88.7330	8	IL NBI 2008	1	179.28	8	0.505	0.505	1600	2001
0000283366335758	HWB26	18	Town Highway Agency	8	900.4	4	9	37.8805	-88.9029	18	IL NBI 2008	1	403.38	8	0.505	0.505	1600	2002
0000283367335847	HWB26	12	Town Highway Agency	7	175.4	4	9	38.0448	-88.8780	11	IL NBI 2008	1	268.92	8	0.505	0.505	1600	2002
0000283368334956	HWB26	12	Town Highway Agency	8	200.4	4	9	37.9830	-88.9510	12	IL NBI 2008	1	268.92	8	30	0.505	1600	2001
0000283369335788	HWB26	7	Town Highway Agency	7	50.4	4	9	38.0355	-89.0582	8	IL NBI 2008	1	201.69	8	30	0.505	1600	2002
0000283370335592	HWB26	12	Town Highway Agency	7	100.4	4	9	37.9545	-88.7939	11	IL NBI 2008	1	268.92	8	0.505	0.505	1600	2002
0000283371335593	HWB26	12	Town Highway Agency	7	75.4	4	9	37.9689	-88.8358	11	IL NBI 2008	1	268.92	8	0.505	0.505	1600	2002
0000283372335782	HWB26	14	County Highway Agency	7	375.4	4	9	37.9501	-89.0669	13	IL NBI 2008	1	313.74	8	15	0.505	1600	2002
0000283373334346	HWB26	8	Town Highway Agency	7	50.4	4	9	38.1128	-89.0357	7	IL NBI 2008	1	179.28	8	0.505	0.505	1600	2003
0000283375336278	HWB26	13	Town Highway Agency	7	50.4	4	9	38.0220	-88.9388	12	IL NBI 2008	1	291.33	8	0.505	0.505	1600	2003
0000283376336241	HWB26	8	County Highway Agency	8	600.4	4	9	37.9674	-88.9052	9	IL NBI 2008	1	201.69	8	0.505	0.505	1600	2003
0000283377336497	HWB26	8	Town Highway Agency	8	950.4	4	9	37.9815	-88.9100	7	IL NBI 2008	1	179.28	8	30	0.505	1600	2002
0000283379333568	HWB26	8	Town Highway Agency	7	50.4	4	9	37.9107	-88.1314	7	IL NBI 2008	1	179.28	8	30	0.505	1600	2004
0000283380333628	HWB26	8	Town Highway Agency	7	25.4	4	9	38.0448	-88.0860	7	IL NBI 2008	1	179.28	8	30	0.505	1600	2004
0000283381333742	HWB26	12	Town Highway Agency	8	900.4	4	9	37.8811	-88.9218	11	IL NBI 2008	1	268.92	8	30	0.505	1600	2004
0000283382333829	HWB26	7	Town Highway Agency	0	275.4	4	N	37.8916	-88.9491	2	IL NBI 2008	2	156.87	8	35	119	1600	2004
0000283383333663	HWB26	8	Town Highway Agency	8	650.4	4	9	37.8635	-88.7623	8	IL NBI 2008	1	201.69	8	30	0.505	1600	2004
0000283384334560	HWB19	202	Town Highway Agency	7	375.4	4	9	37.9015	-88.7898	20	IL NBI 2008	12	5995.36	8	0.502	1600	2005	
0000283385334982	HWB26	8	Town Highway Agency	7	1000.4	4	9	38.0236	-89.0178	7	IL NBI 2008	1	179.28	8	0.502	1600	2005	
0000283386334557	HWB26	12	Town Highway Agency	7	175.4	4	9	38.0838	-88.8646	11	IL NBI 2008	1	268.92	8	0.505	0.505	1600	2005
0000283387334974	HWB26	12	Town Highway Agency	7	100.4	4	9	37.9809	-88.9573	11	IL NBI 2008	1	268.92	8	30	0.505	1600	2005
0000283388334975	HWB26	8	Town Highway Agency	7	225.4	4	9	37.8983	-88.9794	7	IL NBI 2008	1	179.28	8	0.505	0.505	1600	2005
0000283389334559	HWB26	12	Town Highway Agency	7	79.4	4	9	38.0099	-88.7634	11	IL NBI 2008	1	268.92	8	10	0.505	1600	2005
000028500106866	HWB26	12	County Highway Agency	0	500.4	4	N	38.0744	-88.0104	3	IL NBI 2008	4	268.92	8	0.119	0.119	1970	1967
000028500215008	HWB26	7	County Highway Agency	0	1200.4	4	N	37.9069	-88.8996	3	IL NBI 2008	2	156.87	8	0.119	0.119	1967	1954
000028500324245	HWB26	7	County Highway Agency	0	1000.4	4	N	38.0314	-88.9853	3	IL NBI 2008	2	156.87	8	40	119	1600	1971
000028600101368	HWB26	9	City Highway Agency	9	550.4	4	7	37.8973	-89.1130	9	IL NBI 2008	1	201.69	5	15	402	1600	1938
000028600231611	HWB19	22	City Highway Agency	9	325.4	4	9	38.0550	-88.9116	21	IL NBI 2008	1	652.96	8	0.505	0.505	1600	1995
000028600433318	HWB26	8	City Highway Agency	8	25.4	4	9	38.0025	-88.8958	15	IL NBI 2008	1	336.15	5	15	505	1600	1997
000041364516424	HWB26	18	Town Highway Agency	7	50.4	4	8	38.1257	-88.7594	18	IL NBI 2008	7	403.38	8	15	505	1600	1986
CEPLMSIL-000003	HWB15	184	Corps of Eng. (CIV)	9	1575.4	4	7	38.0378	-88.9564	30	IL NBI 2008	6	8793.36	8	0.402	0.402	1600	1971
000028000323823	HWB12	49	Other Federal Agencies	0	36200.4	4	9	37.8932	-88.9455	25	IL NBI 2008	0	1703.24	0	0.302	0.302	1600	1963
000028000406803	HWB15	59	Other Federal Agencies	0	800.4	4	9	37.9082	-88.9465	15	IL NBI 2008	0	2819.61	0	0.402	0.402	1600	1962
000028000506804	HWB15	59	Other Federal Agencies	0	800.4	4	9	37.9082	-88.9463	15	IL NBI 2008	0	2819.61	0	0.402	0.402	1600	1962
000028001023827	HWB12	65	Other Federal Agencies	0	32900.4	4	9	37.9905	-88.9354	18	IL NBI 2008	0	2259.4	0	0.302	0.302	1600	1963
000028002206821	HWB15	64	Other Federal Agencies	0	28400.4	4	9	37.9969	-88.9344	19	IL NBI 2008	0	3154.14	0	0.402	0.402	1600	1964
000028003090840	HWB15	66	Other Federal Agencies	0	32900.4	4	9	37.8978	-88.9464	18	IL NBI 2008	0	3058.56	0	0.402	0.402	1600	1963
0000280050306900	HWB15	67	Other Federal Agencies	0	28400.4	4	9	38.0525	-88.9245	20	IL NBI 2008	0	3201.93	0	0.402	0.402	1600	1962
0000280050406902	HWB15	63	Other Federal Agencies	0	32900.4	4	9	37.9649	-88.9355	18	IL NBI 2008	0	3010.77	0	0.402	0.402	1600	1962
0000280050506910	HWB15	67	Other Federal Agencies	0	30200.4	4	9	38.1255	-88.9120	37	IL NBI 2008	0	3201.93	0	0.402	0.402	1600	1963
0000280050606924	HWB15	69	Other Federal Agencies	0	28400.4	4	9	38.0671	-88.9234	21	IL NBI 2008	0	3297.51	0	0.402	0.402	1600	1961

Highway Bridges

Bridge Name	Analysis Class	Bridge Length (m)	Bridge Owner	Bridge Width (m)	Daily Traffic (cars/day)	Flood Structure Foundation Type	General Condition Rating	Latitude	Longitude	Maximum Span Length (m)	Misc. Comments	Number of Spans	Replacement Cost (\$1,000)	Scour Index	Skew Angle (degrees)	Structure Type	Year Bridge Was Remodeled	Year Built (Between 1500 and 2100)
000028005706938	HWB15	67	Other Federal Agencies	0	28400	4	38.0161	-88.9259	20	IL NBI 2008	0	3201.93	0.402	0.402	1600	1963		
000028005806987	HWB15	0	36200	4	36200	4	37.8758	-88.9414	23	IL NBI 2008	0	3488.67	0.402	0.402	1600	1961		
000028005906988	HWB15	0	30200	4	30200	4	38.0804	-88.9158	20	IL NBI 2008	0	3249.72	0.402	0.402	1600	1962		
000028006125745	HWB15	0	36200	4	36200	4	37.8912	-88.9451	19	IL NBI 2008	0	2962.98	0.402	0.402	1600	1962		
000028006206876	HWB15	0	32900	4	32900	4	37.9503	-88.9357	18	IL NBI 2008	0	3010.77	0.402	0.402	1600	1962		
000028006325746	HWB15	0	32900	4	32900	4	37.9941	-88.9352	24	IL NBI 2008	0	4109.94	0.402	0.402	1600	1964		
000028006325746	HWB15	0	3200	4	3200	4	37.9941	-88.9352	24	IL NBI 2008	0	4109.94	0.402	0.402	1600	1964		
000028006425747	HWB15	0	28400	4	28400	4	38.0085	-88.9285	26	IL NBI 2008	0	4301.1	0.402	0.402	1600	1963		
000028000066807	HWB26	0	325	4	325	4	37.9795	-88.9355	7	IL NBI 2008	0	179.28	0.119	0.119	1600	1962		
000028990323837	HWB12	0	1450	4	1450	4	38.0672	-88.7546	15	IL NBI 2008	0	1077.56	0.303	0.303	1600	1900		
000028990523840	HWB12	0	250	4	250	4	38.0091	-88.7615	10	IL NBI 2008	0	1216.6	0.302	0.302	1600	1900		
000028990623841	HWB12	0	500	4	500	4	38.0079	-88.7615	14	IL NBI 2008	0	1738	0.302	0.302	1600	1900		
000028991023842	HWB24	0	50	4	50	4	38.1123	-89.0076	8	IL NBI 2008	0	196.47	0.302	0.302	1600	1958		
000028991123843	HWB12	0	75	4	75	4	37.9689	-89.1323	8	IL NBI 2008	0	1042.8	0.302	0.302	1600	1900		
000028991723846	HWB12	0	75	4	75	4	38.0099	-88.7606	7	IL NBI 2008	0	973.28	0.302	0.302	1600	1900		
000028991823847	HWB12	0	75	4	75	4	38.0099	-88.7604	8	IL NBI 2008	0	973.28	0.302	0.302	1600	1900		
000028992023849	HWB12	0	50	4	50	4	37.9803	-88.8353	6	IL NBI 2008	0	1008.04	0.302	0.302	1600	1900		
000028992423850	HWB28	0	50	4	50	4	37.9555	-88.7528	5	IL NBI 2008	0	1294.86	0.702	0.702	1600	1900		
000028992523851	HWB12	0	25	4	25	4	37.8758	-88.7360	9	IL NBI 2008	0	869	0.302	0.302	1600	1900		
000028992623852	HWB12	0	25	4	25	4	37.8707	-88.7349	9	IL NBI 2008	0	834.24	0.302	0.302	1600	1900		
000028993001706	HWB24	0	1850	4	1850	4	37.9824	-88.9290	5	IL NBI 2008	0	382.94	0.302	0.302	1600	1900		
000028993132845	HWB14	0	6400	4	6400	4	37.9794	-89.0497	24	IL NBI 2008	0	578.25	0.303	0.303	1600	1998		
000028000106801	HWB15	13	18100	4	18100	4	37.8826	-88.9427	14	IL NBI 2008	3	1911.65	11.402	11.402	1993	1961		
000028000206802	HWB15	13	18100	4	18100	4	37.8828	-88.9427	14	IL NBI 2008	3	1911.65	11.402	11.402	1984	1961		
000028000406803	HWB15	12	16450	4	16450	4	37.9082	-88.9465	15	IL NBI 2008	4	2819.61	0.402	0.402	1600	1962		
000028000506804	HWB15	12	16450	4	16450	4	37.9082	-88.9465	15	IL NBI 2008	4	2819.61	0.402	0.402	1600	1962		
000028000606805	HWB15	11	16450	4	16450	4	37.9284	-88.9467	23	IL NBI 2008	5	5352.48	0.402	0.402	1993	1962		
000028000706806	HWB15	13	16450	4	16450	4	37.9286	-88.9467	23	IL NBI 2008	5	5352.48	0.402	0.402	1994	1962		
000028000806808	HWB15	12	16450	4	16450	4	37.9811	-88.9354	27	IL NBI 2008	3	3393.09	49.402	49.402	1600	1962		
000028000906809	HWB15	12	16450	4	16450	4	37.9814	-88.9354	27	IL NBI 2008	3	3393.09	49.402	49.402	1600	1962		
000028001006810	HWB15	13	14200	4	14200	4	38.0467	-88.9248	13	IL NBI 2008	3	1816.02	7	28.402	1984	1962		
000028001206811	HWB15	13	14200	4	14200	4	38.0468	-88.9248	13	IL NBI 2008	3	1816.02	7	28.402	1993	1962		
000028001306812	HWB15	13	15100	4	15100	4	38.1002	-88.9117	16	IL NBI 2008	3	2341.71	0.402	0.402	1993	1962		
000028001406813	HWB15	13	15100	4	15100	4	38.1003	-88.9117	16	IL NBI 2008	3	2341.71	0.402	0.402	1994	1962		
000028001706816	HWB26	13	6300	4	6300	4	37.9797	-89.0284	12	IL NBI 2008	1	291.33	0.104	0.104	1947	1920		
000028002006819	HWB15	14	7900	4	7900	4	37.9940	-88.9774	29	IL NBI 2008	4	5085.74	0.402	0.402	1970	1923		
000028002206821	HWB15	24	14500	4	14500	4	37.9969	-88.9344	19	IL NBI 2008	4	3154.14	15.402	15.402	1995	1964		
000028002406823	HWB26	9	2900	4	2900	4	38.0176	-88.8609	8	IL NBI 2008	1	201.69	0.101	0.101	1600	1924		
000028002506824	HWB26	12	2900	4	2900	4	38.0293	-88.8467	12	IL NBI 2008	1	291.33	0.104	0.104	1953	1923		
000028002606825	HWB26	10	2900	4	2900	4	38.0351	-88.8396	9	IL NBI 2008	1	201.69	0.451	0.451	1600	1924		
000028002806828	HWB26	12	1550	4	1550	4	38.0409	-88.8256	9	IL NBI 2008	1	201.69	33.104	33.104	1953	1923		
000028002906829	HWB5	12	1550	4	1550	4	38.0604	-88.7768	12	IL NBI 2008	1	291.33	7	45.104	1600	1953		
000028003006830	HWB26	12	1550	4	1550	4	38.0611	-88.7743	9	IL NBI 2008	2	725.67	0.104	0.104	1953	1923		
000028003106831	HWB26	12	1450	4	1450	4	38.0691	-88.7483	12	IL NBI 2008	1	268.92	5	25.104	1600	1953		
000028003206832	HWB15	11	3650	4	3650	4	38.0713	-88.7140	13	IL NBI 2008	1	313.74	5	15.104	1600	1953		
000028003306833	HWB15	12	1500	4	1500	4	38.1046	-88.9077	23	IL NBI 2008	3	2915.19	5	30.402	2002	1964		
000028003406835	HWB26	12	5100	4	5100	4	38.0489	-88.9212	9	IL NBI 2008	1	224.15	0.104	0.104	1952	1921		
000028003506837	HWB10	10	4850	4	4850	4	37.9167	-88.9332	22	IL NBI 2008	6	5352.48	0.402	0.402	1987	1938		
000028003706839	HWB15	10	7100	4	7100	4	37.8852	-88.9317	13	IL NBI 2008	3	1512.5	0.204	0.204	1600	1951		
000028003823839	HWB15	10	3100	4	3100	4	37.8916	-89.0211	26	IL NBI 2008	6	6595.02	5	0.402	1988	1928		
000028003906840	HWB15	10	7400	4	7400	4	37.8983	-88.9893	13	IL NBI 2008	3	1959.39	N	14.402	1984	1934		
000028004006841	HWB15	24	13500	4	13500	4	37.8978	-88.9464	12	IL NBI 2008	4	3058.56	N	0.402	1995	1963		
000028004006841	HWB26	10	1950	4	1950	4	37.9089	-88.8233	12	IL NBI 2008	1	291.33	5	0.505	1982	1928		
000028004106842	HWB15	10	1950	4	1950	4	37.9106	-88.8058	13	IL NBI 2008	2	1338.12	5	45.402	1983	1928		
000028004206843	HWB26	10	7600	4	7600	4	37.9932	-88.8865	11	IL NBI 2008	1	246.51	7	26.104	1981	1934		

Highway Bridges

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000028004306844	HWB15	45	State Highway Agency	11	2750	4	7	37.9861	-88.8657	16	IL NBI 2008	3	2150.55	7	0	402	2001	1957	
000028004406845	HWB10	27	State Highway Agency	10	2750	4	6	37.9838	-88.8621	10	IL NBI 2008	3	1020.61	7	0	201	1600	1957	
000028004506846	HWB10	27	State Highway Agency	10	2750	4	6	37.9819	-88.8591	10	IL NBI 2008	3	1020.61	7	0	201	1600	1957	
000028004606847	HWB17	36	State Highway Agency	10	2850	4	2	37.9751	-88.8491	22	IL NBI 2008	2	1064.52	N	22	505	1973	1934	
000028004706848	HWB17	24	State Highway Agency	10	2800	4	4	37.9422	-88.7986	11	IL NBI 2008	2	709.68	7	20	505	1975	1928	
000028004906886	HWB26	15	State Highway Agency	7	100	4	3	37.9479	-88.0572	13	IL NBI 2008	1	336.15	3	45	104	1600	1928	
000028005006887	HWB15	64	State Highway Agency	10	3250	4	6	38.0898	-88.9802	3	IL NBI 2008	3	3058.56	7	0	402	1600	1966	
000028005106888	HWB15	151	State Highway Agency	10	3250	4	7	38.0896	-88.9594	36	IL NBI 2008	4	7216.29	7	25	403	1600	1967	
000028005206889	HWB15	89	State Highway Agency	10	3250	4	6	38.0880	-88.9298	19	IL NBI 2008	5	4253.31	5	0	402	1600	1966	
000028005306890	HWB15	67	State Highway Agency	9	600	4	7	38.0525	-88.9245	20	IL NBI 2008	4	3201.93	N	2	402	1600	1962	
000028005406892	HWB15	63	State Highway Agency	9	350	4	6	37.9649	-88.9355	18	IL NBI 2008	4	3010.77	N	0	402	1600	1962	
000028005506894	HWB15	67	State Highway Agency	10	1100	4	7	38.1255	-88.9120	20	IL NBI 2008	4	3201.93	N	0	402	1600	1963	
000028005606892	HWB15	69	State Highway Agency	9	25	4	7	38.0671	-88.9234	21	IL NBI 2008	4	3297.51	N	14	402	1600	1961	
000028005706938	HWB15	67	State Highway Agency	9	2000	4	7	38.0161	-88.9259	20	IL NBI 2008	4	3201.93	N	5	402	1600	1963	
000028005806987	HWB15	73	State Highway Agency	9	950	4	7	37.8758	-88.9414	23	IL NBI 2008	4	3488.87	N	2	402	1600	1961	
000028005906988	HWB15	68	State Highway Agency	11	3200	4	8	38.0804	-88.9158	20	IL NBI 2008	4	3249.72	N	1	402	1995	1962	
000028006125745	HWB15	62	State Highway Agency	9	650	4	7	37.8912	-88.9451	19	IL NBI 2008	4	2962.98	N	8	402	1600	1962	
000028006206876	HWB15	63	State Highway Agency	9	850	4	7	37.9503	-88.9357	18	IL NBI 2008	4	3010.77	N	0	402	1600	1962	
000028006325746	HWB15	86	State Highway Agency	10	1050	4	6	37.9941	-88.9352	24	IL NBI 2008	5	4109.94	N	7	402	1600	1964	
000028006425747	HWB15	90	State Highway Agency	9	1000	4	7	38.0085	-88.9285	26	IL NBI 2008	4	4301.11	N	45	402	1600	1963	
000028006630130	HWB16	36	State Highway Agency	10	2750	4	8	38.0823	-89.1226	12	IL NBI 2008	3	1780.92	8	0	402	1600	1992	
000028007032987	HWB11	32	State Highway Agency	11	2850	4	8	37.8919	-89.0801	11	IL NBI 2008	3	1285.12	8	0	201	1600	1999	
000028007133602	HWB7	23	State Highway Agency	10	2500	4	9	38.0820	-89.0922	22	IL NBI 2008	1	727.95	8	0	102	1600	2002	
000028007233717	HWB7	22	State Highway Agency	10	2500	4	9	38.0822	-89.1179	21	IL NBI 2008	1	696.38	8	0	102	1600	2002	
000028007334707	HWB16	64	State Highway Agency	11	4350	4	8	37.9098	-88.7435	27	IL NBI 2008	3	3166.08	N	30	402	1600	2004	
000028007435925	HWB14	20	State Highway Agency	11	1550	4	8	38.0516	-88.7997	20	IL NBI 2008	1	462.68	8	0	302	1600	2004	
000028200006807	HWB26	8	State Highway Agency	44	32900	4	N	37.9795	-88.9395	7	IL NBI 2008	1	179.28	N	0	119	1600	1962	
000028200206833	HWB26	12	State Highway Agency	0	3650	4	N	38.1011	-88.9077	4	IL NBI 2008	3	268.92	8	0	219	1600	1965	
000028200306836	HWB26	8	State Highway Agency	14	7100	4	N	37.8880	-88.9317	3	IL NBI 2008	2	179.28	8	0	219	1600	1960	
000028200406850	HWB26	7	State Highway Agency	0	3850	4	N	37.9480	-89.0540	3	IL NBI 2008	2	156.87	8	0	219	1600	1967	
000028200527919	HWB26	6	State Highway Agency	0	3600	4	N	37.9759	-89.1511	3	IL NBI 2008	2	134.46	8	0	219	1600	1955	
000028200629185	HWB26	7	State Highway Agency	0	30200	4	N	38.0879	-89.9126	3	IL NBI 2008	2	156.87	8	0	35	219	1600	1963
000028200729186	HWB26	7	State Highway Agency	0	4450	4	N	38.0337	-89.0536	3	IL NBI 2008	2	156.87	8	0	45	219	1600	1965
000028200829187	HWB26	9	State Highway Agency	0	4350	4	N	37.9055	-88.7277	4	IL NBI 2008	2	201.89	8	0	45	219	1600	1929
000028201032946	HWB26	8	State Highway Agency	0	5400	4	N	37.9213	-88.9332	4	IL NBI 2008	2	179.28	8	0	219	1600	1998	
000028201132988	HWB26	8	State Highway Agency	10	8000	4	N	37.9866	-89.0052	4	IL NBI 2008	2	179.28	8	0	119	1600	2001	
000028201232989	HWB26	10	State Highway Agency	0	7900	4	N	37.9940	-88.9725	3	IL NBI 2008	3	224.18	8	0	119	1600	2001	

Dams	Facility Name	Action Plan	Analysis Class	Distance to Nearest City (mile)	Drainage Area of Dam (sq. miles)	Height of Dam (ft)	Length of Dam (ft)	Latitude	Longitude	Maximum Discharge Rate (ft ³ /sec)	Maximum Storage Area (acre-ft)	Name of River	NATDAM ID Number	Nearest City to Dam	Normal Storage Area (acre-ft)	Owner of the Dam	Purpose of the Dam	Relative Hazard Rating	Spillway Type on Dam	Spillway Volume (cubic yards)	Spillway Width (ft)	Structural Height of Dam (ft)	Surface Area of Water (acres)	Year Built
	NEW CITY LAKE DAM	Y	HPDE	11	7.78	25	1155	37.9083	-88.8033	9750	4327	STEVENS CREEK, TRIB EWING CR	IL00010	WEST FRANKFORT	1700	City of West Frankfort	RO	H	U	0	125	0	206	1945
	ZEIGLER CITY LAKE DAM	N	HPDE	6	1	19	1025	37.9250	-89.0333	0	528	TRIB BIG MUDDY RIVER	IL00020	ZEIGLER	290	City of Zeigler	R	S	U	0	48	0	0	1948
	VALLER LAKE DAM	N	HPDE	1	2.5	21	1710	38.0400	-89.0487	5670	890	ANDY CREEK	IL00019	VALER	330	George O Freeman	R	H	U	0	340	0	71	1905
	FREEMAN UNITED/LAKE DAM	N	HPDE	6	0.2	18	2700	37.9600	-88.8633	0	293	TRIB MIDDLEE FORK BIG MUDDY RI	IL00011	WEST FRANKFORT-OFFSTREAM	167	United Coal Minn	O	S	U	0	24	0	0	1960
	OLD CITY LAKE DAM	Y	HPDE	7	3.8	24	850	37.8933	-88.8150	1620	2300	TILLEY CREEK	IL00009	WEST FRANKFORT	1420	City of West Frankfort	RS	S	U	0	86	0	197	1945
	CAMBON LAKE DAM	N	HPDE	7	0	10	1650	37.9050	-89.0333	0	323	TRIB BIG MUDDY RIVER	IL00075	ZEIGLER	64	Frankfort West Sunset Clu	R	S	N	0	0	0	0	0
	SESSER RESERVOIR DAM	N	HPDE	22	0	15	800	38.0700	-89.0317	0	358	TRIB SANDUSKY CREEK	IL00073	ZEIGLER	182	City of Sesser	R	L	U	0	49	0	0	0
	CHRISTOPHER OLD RESERVOIR DAM	N	HPDE	1	0	15	780	37.9850	-89.0683	0	190	TRIB ANDY CREEK	IL00059	CHRISTOPHER	112	City of Christopher	R	S	U	0	45	0	0	1900
	BEAVER LAKE DAM	N	HPDE	6	0	10	550	37.9317	-89.0166	0	267	TRIB BIG MUDDY RIVER	IL00054	ZEIGLER	99	Jeff Mitchell City of	R	S	N	0	0	0	0	0
	BUCKNER RESERVOIR DAM	N	HPDE	11	0	15	425	37.9750	-89.0050	0	78	OFF STREAM MARCHUM	IL00055	ZEIGLER	40	Buckner City of	R	L	N	0	0	0	0	1910
	LAKE HAMILTON DAM	N	HPDE	22	0	13	565	38.0550	-88.9100	0	216	BRANCH TRIB DRUMMOND	IL00056	ZEIGLER	117	City of Benton Resources	R	S	U	0	16	0	0	1912
	LAKE MOSES DAM	N	HPDE	11	0	10	1100	38.0200	-88.8633	0	1269	BRANCH TRIB ANDY CREEK	IL00058	WEST FRANKFORT-ELKVILLE-OFFSTREAM	370	U.S. Steel Company City of	R	S	U	0	1270	0	0	1918
	CHRISTOPHER NEW RESERVOIR DAM	N	HPDE	14	0	19	640	38.0083	-89.1017	0	358	TRIB ANDY CREEK	IL00060	OFFSTREAM	233	Christopher	R	L	U	0	35	0	0	1923
	LAKE BENTON DAM	N	HPDE	22	0	22	1100	38.0550	-89.9167	0	873	BRANCH TRIB JACKIE	IL00057	ZEIGLER	371	City of Benton Resources	R	S	U	0	399	0	0	1939
	OLD BENMINE 21/SLURRY CELL 2 DAM	N	HPDE	3	0	23	3300	38.1183	-89.0083	0	425	BRANCH TRIB JACKIE	IL50127	SESSER	170	Illinois Resources Inc.	O	L	U	0	2	0	0	1984
	OLD BENMINE 21/SLURRY CELL 3 DAM	Y	HPDE	3	0	25	6900	38.1183	-89.0067	41	1405	BRANCH TRIB JACKIE	IL50128	SESSER	1057	Illinois Resources Inc.	O	L	U	0	3	0	0	1984
	OLD BENMINE 24/SEDIMENT AND SLURRY DAM	N	HPDE	0.1	0	30	650	38.0050	-88.9433	160	600	TRIB BIG MUDDY RIVER	IL50024	BENTON	326	Old Ben Coal Company	O	L	U	0	7	0	0	1982
	OLD BENMINE 24/NORTH POND DAM	N	HPDE	0.1	0	24	970	38.0217	-88.9333	58	105	TRIB SUGAR CREEK	IL50020	BENTON	65	Old Ben Coal Company	O	L	U	0	6	0	0	1982
	OLD BENMINE 21/RESERVOIR DAM	N	HPDE	21	0	21	1040	38.1033	-89.0083	0	1122	JACKIE BRANCH TRIB JACKIE	IL00963	ZEIGLER	581	Illinois Resources Inc.	O	S	U	0	119	0	0	0
	OLD BENMINE 21/SLURRY CELL 4 DAM	Y	HPDE	0.1	0	47	5240	38.1166	-89.0217	42	1389	BRANCH TRIB JACKIE	IL50151	SESSER	1200	Illinois Resources Inc.	O	S	U	0	2	0	0	1986
	OLD BENMINE 26/SLURRY CELL 4 DAM	N	HPDE	2	0.17	56	5200	38.0667	-89.0000	86	2495	SANDUSKY CREEK	IL50357	SESSER	2134	Old Ben Coal Company	O	L	U	0	3	0	108	0
	BENZ/4/FRESHWATER LAKE DAM	N	HPDE	0	0	20	940	38.0067	-88.9650	543	356	TRIB BIG MUDDY RIVER	IL50327	NONE	197	Old Ben Coal Company	O	L	U	0	19	0	0	1996
	OLD BENMINE 24/SLURRY CELL 2 DAM	N	HPDE	0.1	0	55	7400	38.0200	-88.9533	28	1665	TRIB BIG MUDDY RIVER	IL50208	BENTON	1402	Old Ben Coal Company	O	L	U	0	2	0	0	1988
	OLD BENMINE 26/SLURRY CELL 3 DAM	Y	HPDE	0.1	0	40	5800	38.0667	-89.0083	193	1640	TRIB REND LAKE CREEK	IL50183	SESSER	0	Old Ben Coal Company	O	S	U	0	12	0	0	1987
	OLD BENJOHN ROSS PLANT/SLURRY CELL 2	Y	HPDE	0.1	0	55	7500	37.8667	-88.8233	38	3260	TRIB TILLEY CREEK	IL50244	THOMPSONVILLE	1570	National Coal Museum, Inc	O	H	U	0	3	0	0	1987
	OLD BEN COAL CO/JOHN ROSS/SEDIMENT POND	Y	HPDE	0.1	0	20	1850	37.9017	-88.8333	24	363	TRIB TILLEY CREEK	IL50246	THOMPSONVILLE	136	Old Ben Coal Company	O	L	U	0	4	0	0	1988
	REND LAKE DAM	Y	HPDE	20	488	54	10228	38.0383	-89.9700	87250	607910	BIG MUDDY RIVER	IL00117	ZEIGLER, IL	184675	CEMVS	CRSO	H	U	2278700	1235	54	18900	1971
	MINE NO. 21	N	HPDZ	2	5.08	16	0	38.1250	-89.0000	1925	900	TRIB BIG MUDDY RIVER	IL83470	SESSER	0	OLD BEN COAL CO.	S	S	U	0	0	0	0	0
	MINE NO. 21	N	HPDZ	2	5.08	20	0	38.1250	-89.0000	300	1450	TRIB BIG MUDDY RIVER	IL83471	SESSER	0	OLD BEN COAL CO.	T	S	U	0	0	0	0	0
	MINE NO. 21	N	HPDZ	2	3.51	45	0	38.1250	-89.0000	380	2245	TRIB BIG MUDDY RIVER	IL83472	SESSER	0	OLD BEN COAL CO.	T	S	U	0	0	0	0	0
	MINE NO. 24	N	HPDZ	0	0.14	23	0	38.0000	-89.0000	50	100	TRIB BIG MUDDY RIVER	IL83473	NO TOWN	0	OLD BEN COAL CO.	T	L	U	0	0	0	0	0
	MINE NO. 24	N	HPDZ	2	0.41	25	0	38.0000	-89.0000	420	63	TRIB BIG MUDDY RIVER	IL83474	WEST CITY	0	OLD BEN COAL CO.	T	L	U	0	0	0	0	0
	MINE NO. 24	N	HPDZ	0	0.05	40	0	38.0000	-89.0000	440	300	TRIB BIG MUDDY RIVER	IL83475	WEST CITY	0	OLD BEN COAL CO.	T	S	U	0	0	0	0	0
	MINE NO. 24	N	HPDZ	1	0.2	55	0	38.0000	-89.0000	26	1665	TRIB BIG MUDDY RIVER	IL83476	WEST CITY	0	OLD BEN COAL CO.	T	S	U	0	0	0	0	0
	MINE NO. 25	N	HPDZ	5	0.26	20	20	37.8750	-88.8750	132	363	TRIB BIG MUDDY RIVER	IL83478	WEST FRANKFORT	0	OLD BEN COAL CO.	T	S	U	0	0	0	0	0
	MINE NO. 26	N	HPDZ	2	0.05	35	0	38.0833	-89.0000	88	1200	TRIB BIG MUDDY RIVER	IL83479	SESSER	0	OLD BEN COAL CO.	T	S	U	0	0	0	0	0
	MINE NO. 26 CONSOL/REND LAKE	N	HPDZ	2	0	40	0	38.0833	-89.0000	143	1640	TRIB SILVER CREEK	IL83480	SESSER	0	Old Ben Coal Consoliation Company	T	S	U	0	0	0	0	0
	MINE/SEDIME	N	HPDE	2.75	0.172	15.5	1150	38.0830	-89.0250	693.2	76	TRIB SILVER CREEK	IL50446	SESSER	28	Coal Company	O	L	U	0	20	0	8.1	1999

Appendix G – Map of Critical Facilities

Appendix H – Top ten flood flows form the USGS Stream Gauge Data

County Station River Period of Record Latitude Longitude	Franklin County Plumfield, IL Big Muddy River 1971-2007 37.9014 89.0139	Franklin County Benton, IL Big Muddy River 1946-1970 37.9939 88.9772	Franklin County Valier, IL Andy Creek 1956-1972 38.0208 89.0444
Rank	Year Discharge (cfs)	Year Discharge (cfs)	Year Discharge (cfs)
1	1983 1,515	1962 70,002	1970 835
2	1985 1,278	1961 38,600	1959 564
3	2002 1,168	1946 28,200	1968 543
4	1979 1,141	1958 17,500	1961 500
5	1994 1,124	1957 16,400	1957 420
6	1973 1,045	1950 16,300	1958 399
7	1975 1,031	1949 15,300	1969 277
8	1984 1,023	1964 15,100	1965 260
9	1989 974.9	1968 10,200	1966 237
10	1974 923.4	1969 9,220	1956 222