Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Plan Update

Vermilion County, Illinois

Participants:

Vermilion County
Danville, City of
Fairmount, Village of
Fithian, Village of
Georgetown, Village of
Hoopeston, City of
Muncie, Village of
Oakwood, Village of
OSF HealthCare Sacred Heart Medical Center
Rossville, Village of
Sidell, Village of
Sidell Volunteer Fire Department
Tilton, Village of
Vermilion County Conservation District

January 2024

The five year update of this Plan must be completed on or before (date).

Cover photographs from top to bottom and left to right:

- *February 21-24, 2018 riverine flooding in Morin's Addition on the west side of Danville – Photograph courtesy of Vermilion County Emergency Management Agency*
- *Hail stones from the May 16, 2019 hail event in Danville – Photograph courtesy of OSF HealthCare Sacred Heart Medical Center*
- *EF1 tornado damaged sustained on March 31, 2023 near Rankin/East Lynn – Photograph courtesy of Vermilion County Emergency Management Agency*
- *Tree damage sustained in Georgetown as the result of a June 10, 2018 thunderstorm with damaging winds – Photograph courtesy of Vermilion County Emergency Management Agency*

VERMILION COUNTY MULTI-JURISDICTIONAL MULTI-HAZARD MITIGATION PLAN

VERMILION COUNTY, ILLINOIS

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Researched and written for the Vermilion County Multi-Jurisdictional
Multi-Hazard Mitigation Planning Committee
by American Environmental Corporation

1.0 INTRODUCTION

Each year natural hazards (i.e., severe thunderstorms, tornadoes, severe winter storms, flooding, etc.) cause damage to property and threaten the lives and health of the residents of Vermilion County. Since 1968, Vermilion County has been included in eight major federally-declared disasters. **Figure I-1** identifies each declaration including the year the disaster was declared and the type of natural hazard that triggered the declaration. Since 2010, the County has been included in twelve state disaster proclamations. **Figure I-2** identifies the year the proclamation was issued and the type of natural hazard that triggered the declaration. The natural hazard(s) recognized as contributing to the declaration for Vermilion County is identified in bold.

Figure I-1
Major Federal Disaster Declarations: Vermilion County

Declaration #	Year	Natural Hazard(s) Covered by Declaration
242	1968	tornadoes; severe storms; **flooding**
427	1974	**tornadoes**
860	1990	**severe ice storm**
1025	1994	severe storms; **flooding**
1112	1996	severe storms; **flooding**
1416	2002	severe storms; tornadoes; **flooding**
4157	2013	**severe storms; straight-line winds; tornadoes**
4489	2020	**COVID-19 pandemic**

Figure I-2
State Disaster Proclamations: Vermilion County

Year	Hazard(s) Covered by Declaration
2011	**winter weather**
2011	**high wind**; tornadoes; torrential rain
2013	**severe storms; straight-line winds; tornadoes**
2014	**heavy snowfall; frigid temperatures**
2015	**severe storms; straight-line winds**; tornadoes; flooding
2016	**severe storms**; heavy rainfall; flooding
2018	**heavy rainfall; flooding**
2019	**winter storm** (frigid temperatures)
2020	**COVID-19**
2021	**winter storms**
2022	**winter storms**
2022	**Monkeypox**

In the last 10 years alone (2013 – 2022), there have been 107 thunderstorms with damaging winds, 39 severe storms with hail one inch in diameter or greater, 34 flash flood events, 29 extreme cold events, 27 excessive heat events, 21 severe winter storms, 9 tornadoes, 8 riverine flood events, 1 mine subsidence event, and 1 lightning strike with verified damages in the County.

While natural hazards cannot be avoided, their impacts can be reduced through effective hazard mitigation planning. This prevention-related concept of emergency management often receives the least amount of attention, yet it is one of the most important steps in creating a hazard-resistant community.

What is hazard mitigation planning?

Hazard mitigation planning is the process of determining how to reduce or eliminate the loss of life and property damage resulting from natural and man-made hazards. This process helps the County and participating jurisdictions reduce their risk from these hazards by identifying vulnerabilities and developing mitigation actions to lessen and sometimes even eliminate the effects of a hazard. The results of this process are documented in a multi-hazard mitigation plan.

Why update a multi-hazard mitigation plan?

By updating and adopting a multi-hazard mitigation plan, participating jurisdictions become eligible to apply for and receive federal hazard mitigation funds to implement mitigation actions identified in the plan. These funds can help provide local government entities with the opportunity to complete mitigation projects and activities that would not otherwise be financially possible.

The federal hazard mitigation funds are made available through the Disaster Mitigation Act of 2000, an amendment to the Robert T. Stafford Disaster Relief and Emergency Assistance Act, which provides federal aid for mitigation projects, but only if the local government entity has a Federal Emergency Management Agency (FEMA) approved hazard mitigation plan.

How is this plan different from other emergency plans?

A multi-hazard mitigation plan is aimed at identifying projects and activities that can be conducted prior to a natural or man-made disaster, unlike other emergency plans which provide direction on how to respond to a disaster after it occurs. This is the first update of the Vermilion County multi-hazard mitigation plan since the original plan was prepared in 2014. This update describes in detail the actions that can be taken to help reduce or eliminate damages caused by specific types of natural and man-made hazards.

1.1 PARTICIPATING JURISDICTIONS

Recognizing the benefits of having an updated multi-hazard mitigation plan, the Vermilion County Board authorized the update of the Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Plan (hereto referred to as the Plan). The County then invited all the local government entities within Vermilion County to participate. **Figure I-3** identifies the participating jurisdictions represented in the Plan update who sought Plan approval.

Figure I-3
Participating Jurisdictions Represented in the Plan

- Danville, City of
- Fairmount, Village of
- Fithian, Village of
- Georgetown, Village of
- Hoopeston, City of
- Muncie, Village of
- Oakwood, Village of
- OSF HealthCare Sacred Heart Medical Center
- Rossville, Village of
- Sidell, Village of
- Sidell Volunteer Fire Department
- Vermilion County
- Vermilion County Conservation District

While all of the municipalities within the County were invited and encouraged to participate in the Plan update, none of the remaining municipalities chose to engage in the process and therefore are not included as participating jurisdictions in the Plan update.

1.2 COUNTY PROFILE

Vermilion County is located in east-central Illinois and covers approximately 901 square miles. **Figure I-4** provides a location map of the County and the participating municipalities while **Figures I-5** and **I-6** identify the boundaries of the census tracts located in the County. **Figure I-7** identify the boundaries of the fire department/fire protection districts in Vermilion County.

The County is bounded to the north by Iroquois County, to the south by Edgar County, to the west by Champaign and Ford Counties, and to the east the Indiana border beyond which is Benton, Vermilion and Warren Counties. The City of Danville is the county seat. The topography is nearly level to gently sloping.

The County is situated in the northern portion of the Till Plains Section of the Central Lowland Province of the Interior Plains. Soils are characterized by a series of end moraines, ground moraines, and valley train deposits, and the erosion of these landforms. Most areas are well-drained for crops grown in this area. The Vermilion watershed encompasses almost the entire County. The northwestern portion of the County is in the Iroquois watershed while a portion of the County along the southern edge is drained by the Wabash watershed.

According to the Multi-Resolution Land Characteristics (MRLC) Consortium, in 2021 approximately 90% of the County's land cover was vegetation, including developed open spaces, cultivated crop land, pasture/hay, and deciduous/mixed forest while 8.5% of the County's land cover was considered developed with 2.3% impervious surfaces. Between 2016 and 2021 approximately 0.49 square miles or 0.05% of the land cover in the County changed with 0.08 square miles of development and 0.41 square miles of impervious surfaces gained. **Figure I-8** illustrates the changes by land cover type.

Agriculture has been the dominant land use in Vermilion County. According to the 2017 Census of Agriculture, there were 1,049 farms in Vermilion County occupying approximately 82% (471,468 acres) of the total land area in the County. In comparison, there were 954 farms occupying 75.3% (432,540 acres) of the total land area in the County in 2012. The major crops include corn and soybeans, while the major livestock includes cattle and hogs. The County ranks 9th in the State for crop cash receipts and 66th in the State for livestock cash receipts.

The largest employment sectors in Vermilion County are health care/social assistance, manufacturing, retail trade, and transportation/warehousing according to the Illinois Department of Commerce and Economic Opportunity. According to the Vermilion Advantage, leading employers include Vermilion County Public Schools, the Illiana Health Care System, McLane Midwest, Company, OSF HealthCare Sacred Heart Medical Center, and AutoZone.

Figure I-9, located at the end of this section, provides demographic and socio-economic data for the County and municipalities. Four of the ten municipalities meet the definition of an Economically Disadvantaged Rural Community (EDRC). FEMA defines an EDRC as a

community of 3,000 or fewer individuals whose residents have an average per capita annual income not exceeding 80 percent of the U.S. per capita income based on best available data.

Figure I-8
Vermilion County Land Cover Data: 2016 to 2021

Land Cover Categories	Area 2016	Area Lost	Area Gained	Area 2021	Net Change	Percent Change
Developed, High Intensity	3.28	0.00	0.20	3.48	0.20	6.21%
Developed, Medium Intensity	9.37	-0.01	0.59	9.95	0.58	6.22%
Developed, Low Intensity	32.22	-0.28	0.13	32.07	-0.14	-0.44%
Developed, Open Space	31.76	-0.58	0.02	31.20	-0.56	-1.77%
Cultivated Crops	708.46	-0.41	0.02	708.07	-0.39	-0.06%
Pasture/Hay	21.10	-0.03	0.01	21.08	-0.02	-0.09%
Grassland	2.94	-0.16	0.30	3.08	0.14	4.71%
Deciduous Forest	73.50	-0.10	0.12	73.53	0.03	0.04%
Evergreen Forest	0.11	-0.03	0.01	0.09	-0.02	-19.44%
Mixed Forest	4.70	-0.10	0.02	4.61	-0.09	-1.89%
Scrub/Shrub	0.18	-0.07	0.10	0.20	0.03	15.72%
Woody Wetland	6.29	-0.02	0.00	6.27	-0.02	-0.30%
Emergent Herbaceous Wetland	0.64	-0.01	0.56	1.19	0.56	87.23%
Barren Land	1.12	-0.15	0.40	1.37	0.25	22.72%
Open Water	5.72	-0.57	0.03	5.17	-0.54	-9.52%
Perennial Snow/Ice	0.00	0.00	0.00	0.00	0.00	0.00%
*All numbers expressed in square miles						

Source: Multi-Resolution Land Characteristics Consortium's National Landcover Database.

Figure I-10, also located at the end of this section, provides additional demographic information by census tract along with the U.S. Council on Environmental Quality Climate and Economic Justice Screening Tool (CEJST) and the CDC/ATSDR Social Vulnerability Index (SVI) and overall level of vulnerability. CEJST is a geospatial mapping tool that identifies census tracts across the nation where communities are faced with significant burdens, which are grouped into eight categories: climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. Communities are considered disadvantaged if they are in census tracts that meet the thresholds for at least one of these categories.

The SVI is a database that uses U.S. Census Bureau American Community Survey data to rank census tracts and counties on 16 social factors within four themes: Socioeconomic Status, Household Characteristics, Racial & Ethnic Minority Status, and Housing Type & Transportation. The goal of the SVI is to help emergency response planners and public health officials identify, map, and plan support for communities that will most likely need support before, during, and after a public health emergency.

The rankings generated by the SVI describe a county's or census tract's relative vulnerability among all other U.S. counties and census tracts. The SVI data used in this document is based on 2020 census tract information. Rankings are based on percentiles ranging from 0 to 1, with higher values indicating greater vulnerability. Each ranking is assigned to one of four levels of vulnerability: Low (0 – 0.2499), Low to Medium (0.2500 – 0.4999), Medium to High (0.5000 – 0.7499), and High (0.7500 – 1). A community with an SVI of 0.6000 or greater is considered an

underserved and/or disadvantaged community. In Vermilion County the participating jurisdictions that meet this definition would be Danville, Hoopeston, and Tilton.

Figure I-11 provides basic demographic information about the size and populations served by the participating fire protection districts.

Figure I-11
Demographic Data by Participating Fire Protection Districts

Participating District	Number of Fire Stations	Estimated Population Served	Area Served (Sq. Miles) (2020)	Communities / Unincorp. Areas Served in Vermilion County
Sidell Volunteer Fire Department	1	1,200	36	Jamaica, Sidell

Source: Capability Assessment Worksheets – Fire Protection Districts.

1.3 LAND USE AND DEVELOPMENT TRENDS

Population growth and economic development are two major factors that trigger changes in land use. Vermilion County is largely rural with a population that has seen an increase between 1900 and 2010 from 65,635to 81,625. Between 2010 and 2020 the population decreased by 9.1% from 81,625 to 74,188. During that same time period, seven of the ten participating municipalities experienced population decreases with the exception of Fithian, Muncie, and Tilton, which increased slightly.

Land use in Vermilion County is primarily agricultural. As discussed in the previous section, approximately 82% of the land within the County is used for farming practices. Agriculture and agribusiness are and will continue to be important components of the County's economy.

According to the Vermilion Advantage, there have been few substantial changes in development within the County or any of the participating jurisdictions that have impacted their overall vulnerability since the original Plan was completed in 2014. In the western portion of the County, about four miles north of Interstate 74, approximately 100 wind turbines for energy generation have been installed along Illinois Route 49.

A smaller wind turbine project (about 50 turbines) has been installed west of Rossville according to the Vermilion County Supervisor of Assessments. In addition, three solar energy projects have been installed in the County, one west of Ridge Farm, one east of Danville, and one on the former site of General Motors on the north side of Tilton. Additional development of rural wind farms and solar energy are expected in the coming years. For example, "Vermilion Wind", a 255-megawatt, 15,000-acre wind project, which would be the largest in east-central Illinois, has begun the development phase in the County. The County has ordinances in place that govern the development of these facilities.

Of the participating jurisdictions, only Hoopeston has experienced any small residential development (i.e., new home subdivisions, multi-family use housing, etc.). The second phase of the Prairie Meadows Homes single family affordable housing development built on the south side of the City by the East Central Illinois Community Action Agency was completed in 2018. The second phase included 30 units on approximately 10 acres. The project was originally approved

by the Hoopeston Planning Commission and construction began on the first 25 units in 2010 prior to the completion of the original Plan. The development of Prairie Meadows Homes occurred outside of the floodplain and did not increase the City's vulnerabilities to any of their identified hazards.

There are no other large-scale economic development initiatives underway in the County. Substantial changes in land use (from forested and agricultural land to residential, commercial, and industrial) are not anticipated within the County in the immediate future. No sizeable increases in commercial or industrial developments are expected within the next five years.

Figure I-4
Location Map

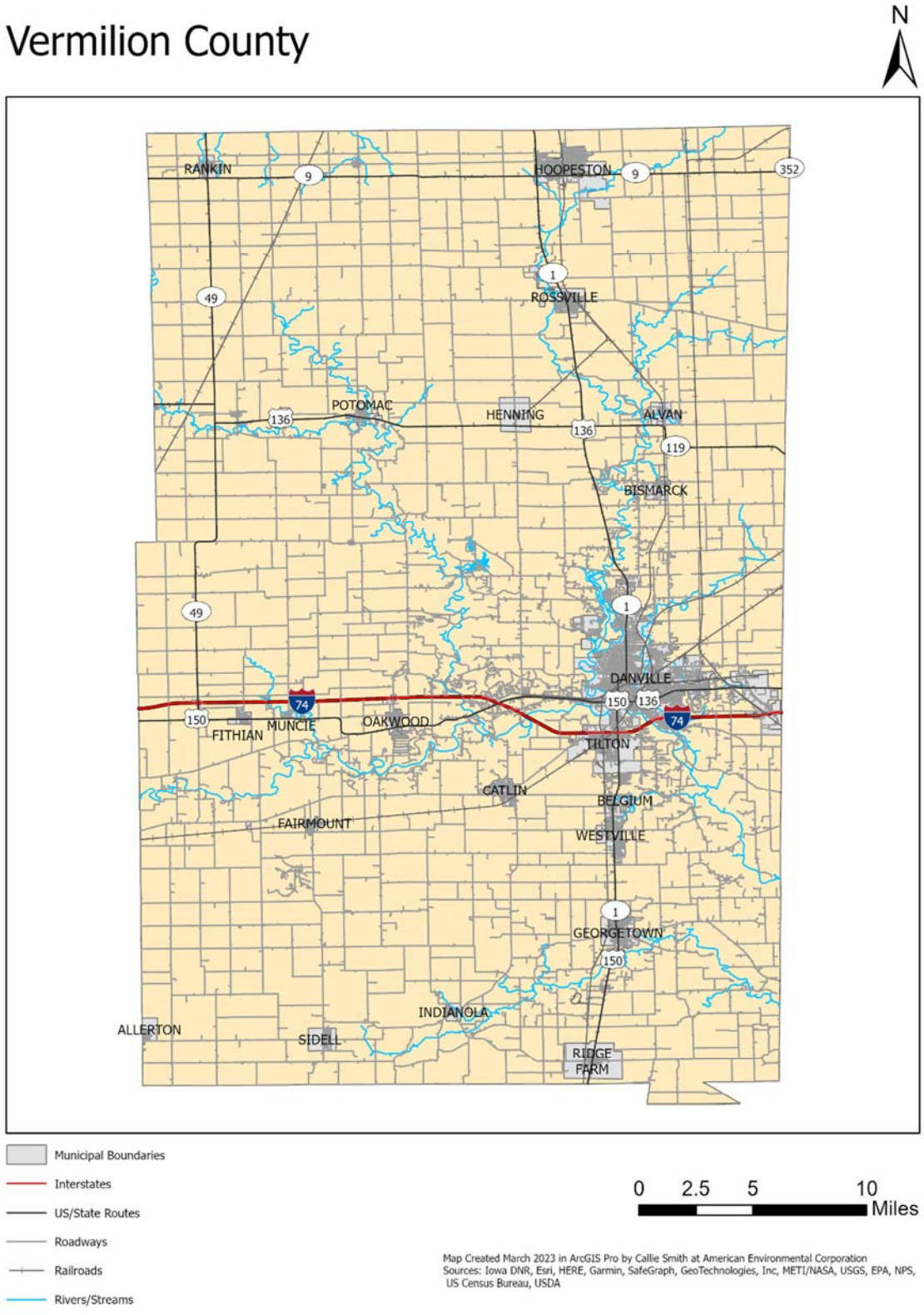


Figure I-5
Vermilion County 2020 Census Tract Map

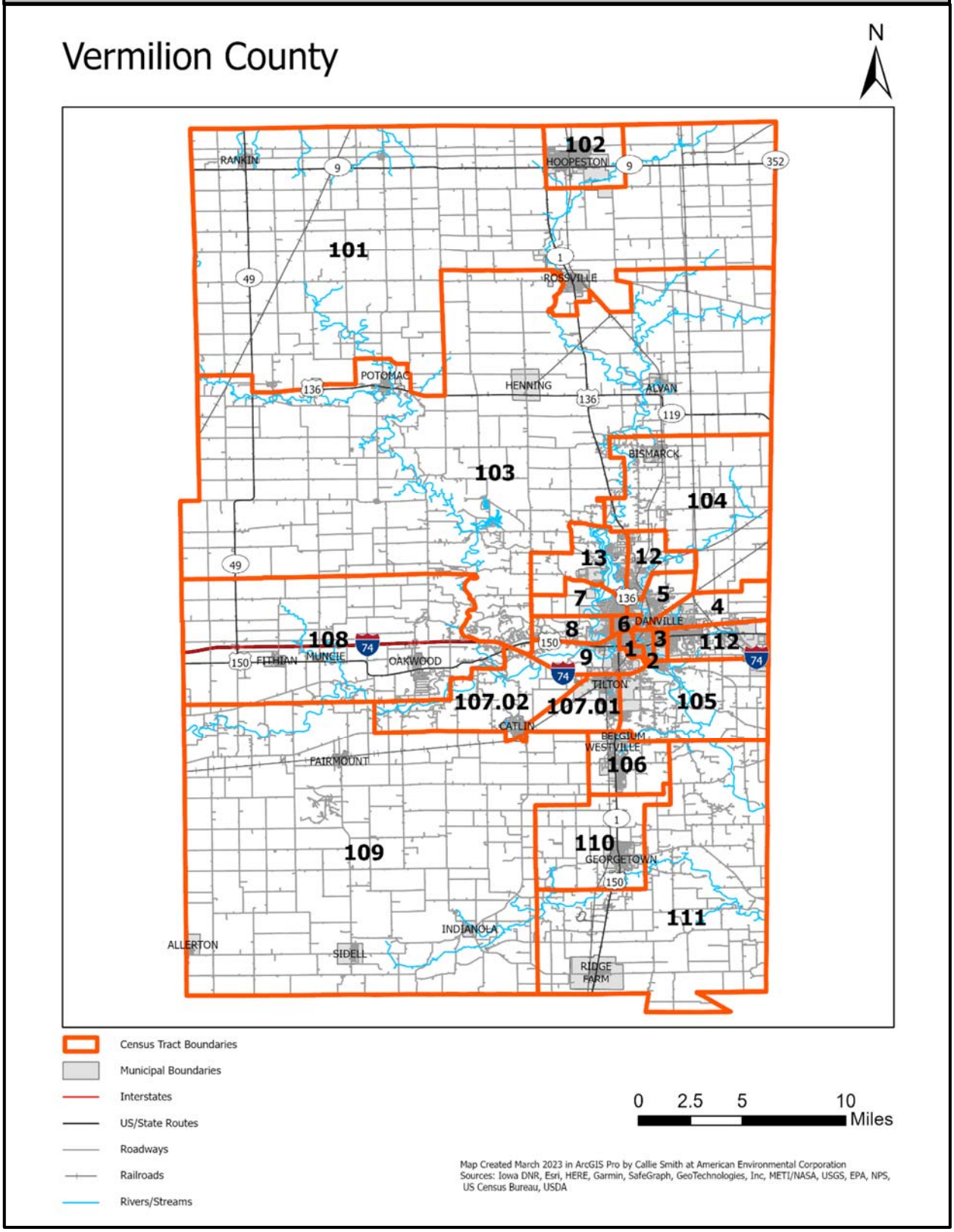


Figure I-6
Danville Area 2020 Census Tract Map

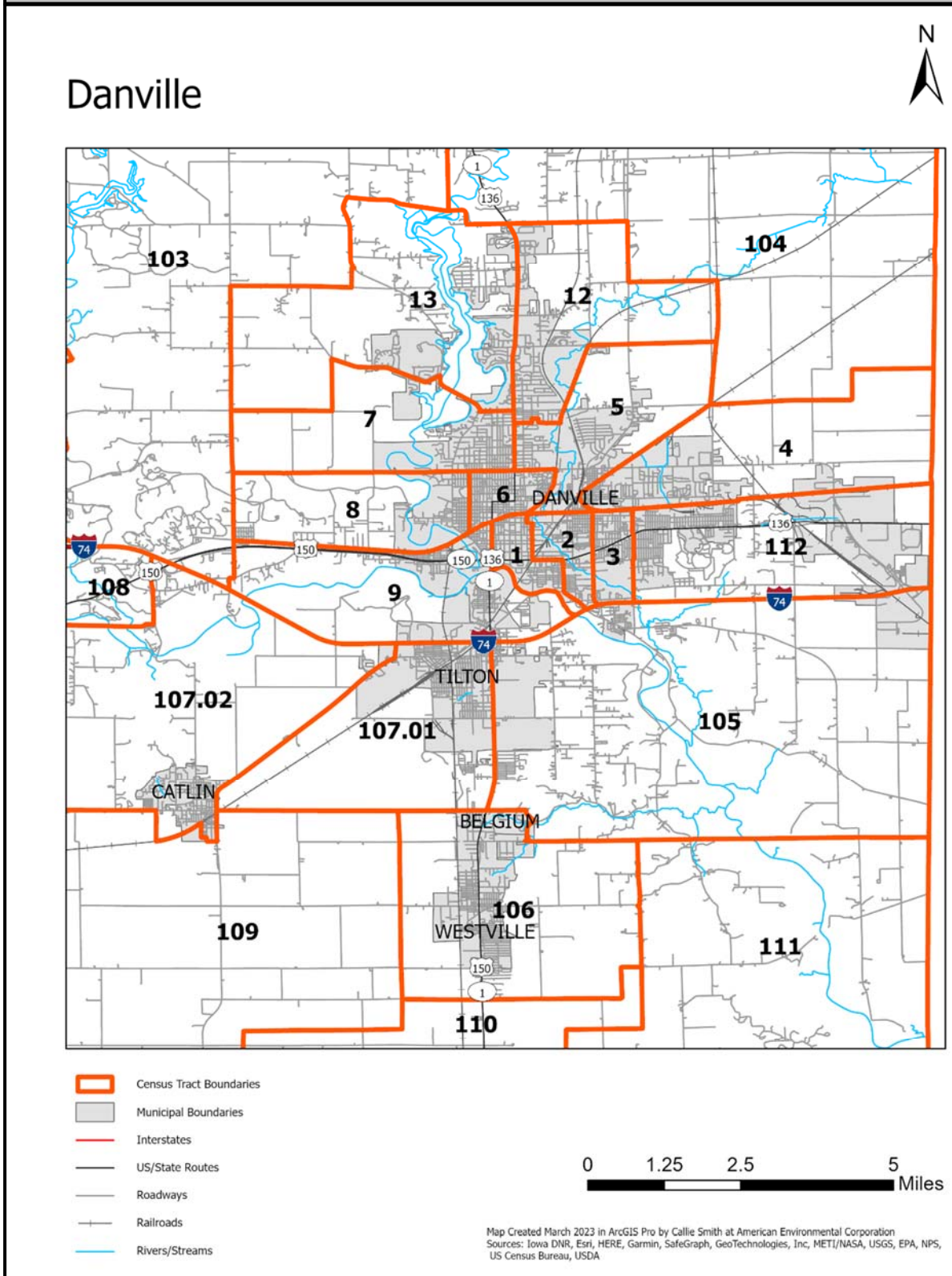


Figure I-7
Fire Department/Fire Protection District Boundary Map

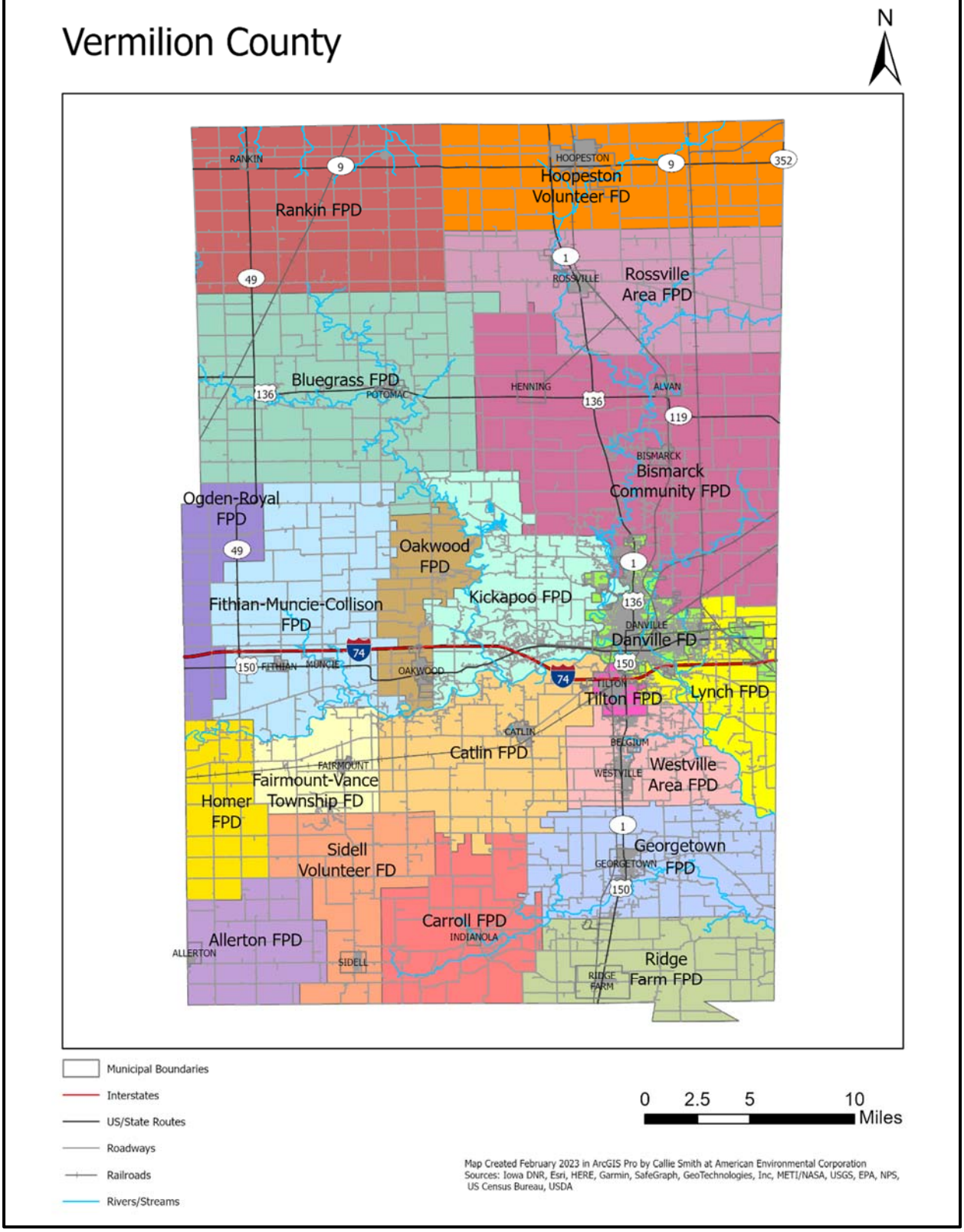


Figure I-9
2017-2021 Demographic Data by Participating Jurisdiction

Participating Jurisdiction	Population	Projected Population (2030)	Total Area (Sq. Miles) (2020)	Number of Housing Units	Percent Race								Income			Total Assessed Value of Housing Units (2021)
					White (alone)	Black or African American (alone)	Asian (alone)	Hispanic or Latino (of any race)	American Indian & Alaska Native (alone)	Native Hawaiian & Other Pacific Islander (alone)	Some other Race (alone)	Two or more Races	% of People whose Income is below the Poverty Line	Per Capita Income	EDRC*	
Vermilion County (Total)	74,953	68,957	898.319	34,626	81.0%	14.4%	0.9%	5.3%	0.1%	0.0%	0.6%	3.0%	18.6%	$26,527	---	$402,273,201
Vermilion County (Unincorp.)	20,606	18,958	854.956	9,251	95.0%	1.8%	0.3%	2.0%	0.0%	0.0%	0.3%	2.5%	2.8%		---	$27,019,655
Danville	29,534	27,171	17.856	13,905	59.7%	33.8%	1.3%	6.8%	0.1%	0.0%	1.0%	4.0%	28.5%	$22,627	N	$154,352,003
Fairmount	631	581	1.391	255	96.2%	0.3%	0.0%	2.5%	0.0%	0.0%	2.9%	0.6%	8.6%	$25,438	Y	$4,082,902
Fithian	544	501	0.383	240	95.0%	2.6%	0.0%	2.0%	0.0%	0.0%	1.8%	0.6%	10.5%	$30,676	N	$5,177,282
Georgetown	3,182	2,927	1.616	1,661	92.2%	6.7%	0.0%	1.3%	0.0%	0.3%	0.0%	0.9%	11.4%	$29,962	N	$19,909,986
Hoopeston	5,210	4,793	3.686	2,555	90.7%	1.6%	2.7%	13.6%	0.8%	0.0%	0.5%	3.7%	29.3%	$21,615	N	$22,044,883
Muncie	115	106	0.179	60	96.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	11.6%	$30,297	N	$1,146,031
Oakwood	1,420	1,306	0.928	635	97.2%	0.4%	0.0%	0.7%	0.0%	0.0%	0.0%	2.4%	21.0%	$36,687	N	$10,904,360
Rossville	1,072	986	1.398	502	96.0%	0.0%	1.4%	14.3%	0.0%	0.0%	0.3%	2.3%	13.7%	$23,965	Y	$8,912,554
Sidell	526	484	0.927	204	98.5%	0.0%	0.4%	2.1%	0.0%	0.0%	0.0%	1.1%	5.7%	$23,621	Y	$3,052,766
Tilton	2,717	2,500	3.788	1,255	96.7%	1.0%	0.0%	8.1%	0.0%	0.0%	0.0%	2.3%	11.9%	$28,559	Y	$11,516,512
Illinois	12,821,813	12,841,250	55,513.18	5,412,995	67.8%	14.1%	5.7%	17.5%	0.3%	0.04%	6.2%	6.2%	11.8%	$39,571	---	---
US	329,725,481	---	3,533,038	139,647,020	68.2%	12.6%	5.7%	18.4%	0.8%	0.2%	5.6%	5.6%	12.6%	$37,638	---	---

* For the purposes of FEMA's Hazard Mitigation Assistance grant programs administered by the Illinois Emergency Management Agency, an Economically Disadvantaged Rural Community (EDRC) is defined in Illinois as a community of 3,000 or fewer individuals whose residents have an average per capita annual income not exceeding 80 percent of the U.S. per capita income based on best available data.

Sources: Vermilion County Clerk.
Illinois Department Public Health, Population Projections – Illinois, Chicago and Illinois Counties by Age and Sex: July 1, 2015 to July 1, 2030 (2019 Edition).
U. S. Census Bureau, American Community Survey, 5-Year Data Profile.

Figure I-10
2017-2021 Demographic Data by Census Tract

Census Tract (2020)	Incorporated Municipalities that Fall Within Census Tract	Population (2017-2021)	Total Area (Sq. Miles) (2020)	Number of Housing Units (2017-2021)	Percent Race								Income	CEJST	Social Vulnerability Index	
					White (alone)	Black or African American (alone)	Asian (alone)	Hispanic or Latino (of any race)	American Indian & Alaska Native (alone)	Native Hawaiian & Other Pacific Islander (alone)	Some other Race (alone)	Two or more Races	% of People whose Income is below the Poverty Line	Identified as Dis-Advantaged	Nation-wide Overall SVI Ranking (2020)	Level of Vulnerability
1	Danville	1,580	0.761	927	73.4%	19.2%	0.0%	7.7%	0.0%	0.0%	4.4%	3.0%	46.6%	Yes	0.9248	High
2	Danville	1,410	0.862	734	50.1%	48.7%	0.0%	6.4%	0.0%	0.0%	0.0%	1.1%	22.7%	Yes	0.701	Medium to High
3	Danville	1,910	0.768	895	57.9%	36.2%	0.0%	13.4%	1.5%	0.0%	2.6%	1.7%	42.4%	Yes	0.7675	High
4	Danville	2,935	6.223	1,345	35.2%	57.9%	0.6%	1.4%	0.0%	0.0%	0.4%	5.9%	46.5%	Yes	0.7942	High
5	Danville	3,375	3.884	1,811	60.0%	31.3%	4.7%	5.2%	0.0%	0.0%	0.0%	4.0%	26.3%	Yes	0.7468	Medium to High
6	Danville	2,472	0.765	1,107	49.6%	45.3%	0.0%	5.3%	0.0%	0.0%	0.2%	4.9%	34.1%	Yes	0.7807	High
7	Danville	3,795	4.317	1,725	77.2%	17.9%	1.6%	1.7%	0.0%	0.0%	0.5%	2.8%	8.2%	No	0.4165	Low to Medium
8	Danville	1,938	3.495	1,115	92.9%	2.8%	1.5%	0.0%	0.3%	0.0%	0.0%	2.5%	14.1%	No	0.47	Low to Medium
9	Danville, Tilton	1,881	5.359	1,057	92.1%	6.9%	0.0%	1.0%	0.1%	0.0%	0.0%	0.9%	16.6%	Yes	0.3928	Low to Medium
12	Danville	3,031	4.890	1,655	73.1%	14.5%	3.3%	9.8%	0.0%	0.0%	3.0%	6.1%	13.8%	No	0.5282	Medium to High
13	Danville	3,714	8.008	1,998	87.6%	8.4%	1.3%	2.6%	0.0%	0.0%	0.3%	2.4%	5.8%	No	0.0684	Low
101	Rankin, Rossville	3,145	193.312	1,328	96.7%	0.0%	0.8%	7.7%	0.0%	0.0%	0.3%	2.2%	11.3%	No	0.3615	Low to Medium
102	Hoopeston	5,251	8.736	2,561	90.2%	2.1%	2.7%	13.5%	0.8%	0.0%	0.5%	3.7%	29.6%	Yes	0.8322	High
103	Alvan, Henning, Potomac, Rossville	4,393	224.901	1,903	93.4%	2.5%	1.5%	1.2%	0.0%	0.1%	0.0%	2.6%	8.7%	No	0.1431	Low
104	Bismarck	2,391	35.105	891	95.4%	1.5%	0.7%	1.1%	0.0%	0.0%	0.2%	2.2%	10.6%	No	0.2815	Low to Medium
105	Danville, Tilton	3,279	20.489	1,692	92.7%	1.7%	0.0%	4.6%	0.0%	0.0%	0.0%	5.5%	14.7%	No	0.508	Medium to High
106	Belgium, Westville	4,096	8.386	1,793	98.4%	0.0%	0.5%	1.7%	0.0%	0.0%	0.0%	1.1%	7.9%	Yes	0.5027	Medium to High
107.01	Tilton	3,237	6.530	1,277	96.6%	0.8%	0.0%	7.5%	0.0%	0.0%	0.6%	1.9%	15.5%	Yes	0.651	Medium to High
107.02	Catlin	2,760	16.810	1,271	98.7%	1.1%	0.1%	4.2%	0.0%	0.0%	0.0%	0.2%	6.2%	No	0.149	Low
108	Fithian, Muncie, Oakwood	3,211	64.528	1,439	97.8%	0.6%	0.0%	0.7%	0.0%	0.0%	0.3%	1.3%	15.4%	No	0.4034	Low to Medium
109	Allerton, Catlin, Fairmount, Indianola, Sidell	2,739	181.459	1,213	96.1%	0.8%	0.2%	1.3%	0.0%	0.0%	1.9%	1.1%	8.6%	No	0.1679	Low
110	Georgetown	3,929	18.036	1,978	91.9%	7.0%	0.0%	1.1%	0.0%	0.4%	0.0%	0.8%	15.7%	Yes	0.289	Low to Medium
111	Ridge Farm	2,348	74.451	1,096	97.5%	0.6%	0.6%	3.0%	0.0%	0.0%	0.1%	1.2%	5.9%	No	0.383	Low to Medium
112	Danville	6,133	6.243	1,815	45.5%	47.1%	0.0%	14.6%	0.0%	0.6%	0.9%	6.3%	40.0%	Yes	0.8879	High
Vermilion County		74,953	898.319	34,626	81.0%	14.4%	0.9%	17.1%	0.1%	0.02%	0.2%	1.9%	18.6%	---	0.6582	Medium to High

Sources: CDC/ATSDR Social Vulnerability Index.
Council on Environmental Quality, Climate and Economic Justice Screening Tool.
U.S. Census Bureau, American Community Survey, 5-Year Data Profile.

2.0 PLANNING PROCESS

The Vermilion Multi-Jurisdictional Multi-Hazard Mitigation Plan (the Plan) was updated through the Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Planning Committee. The Plan was prepared to comply with the Disaster Mitigation Act of 2000 and incorporates the nine recommended tasks for developing or updating a local hazard mitigation plan as outlined in Federal Emergency Management Agency's (FEMA) *Local Mitigation Planning Handbook*. **Figure PP-1** provides a brief description of the process utilized to prepare this Plan.

Figure PP-1
Description of Planning Process

Tasks	Description
Task One: Building the Planning Team	The Planning Committee was reformed with broad representation and specific expertise to assist the County and the Consultant in updating the Plan.
Task Two: Outreach Strategy	Early and ongoing public involvement activities were conducted throughout the Plan's development to ensure the stakeholders and public was given every opportunity to participate and provide input.
Task Three: Risk Assessment	The Consultant identified and profiled the natural and man-made hazards that have impacted the County and conducted vulnerability analyses to evaluate the risk to each participating jurisdiction.
Task Four: Capability Assessment	Participating jurisdictions have a unique set of capabilities and resources available to accomplish hazard mitigation. Capabilities that include planning and regulatory, administrative and technical, financial, and education and outreach were identified and cataloged to determine the existing capabilities of each participant related to hazard and loss reduction/prevention.
Task Five: Mitigation Strategy	After reviewing existing plans and completing the risk assessment, the Consultant assisted the Planning Committee in updating the goals and objectives for the Plan. The participating jurisdictions were then asked to identify mitigation actions that had been started and/or completed since the previous Plan was adopted. In addition, they were asked to identify any new mitigation actions based on the results of the risk assessment. The new mitigation actions were then analyzed, categorized, and prioritized.
Task Six: Plan Maintenance and Update	The method and schedule for monitoring, evaluating, and updating the Plan was reviewed and discussed with the participating jurisdictions. The Plan update will be monitored and evaluated by a Plan Maintenance Subcommittee on an annual basis and updated again in five years.
Task Seven: Review and Adopt the Plan	The draft Plan update summarized the results of Tasks Two through Seven. The Plan was reviewed by the participants and a public forum was held to give the public an additional opportunity to provide input. Comments received were incorporated into the draft Plan update and submitted to the Illinois Emergency Management Agency and Office of Homeland Security (IEMA-OHS) and FEMA for review and approval. Comments received from IEMA-OHS and FEMA were incorporated into the final Plan update. The final Plan update was then submitted to the County and participating jurisdictions for adoption.

The Plan update and development was led at the staff level by Russell Rudd, the Vermilion County Emergency Management Agency (EMA) Director. American Environmental Corp. (AEC) an environmental consulting firm, with experience in hazard mitigation, risk assessment and public involvement, was employed to guide the County and participating jurisdictions through the planning process.

Participation in the planning process, especially by the County and local government representatives, was crucial to the update and development of the Plan. To ensure that all participating jurisdictions took part in the planning process, participation requirements were established. Each participating jurisdiction agreed to satisfy the following requirements in order to be included in the Plan update. All of the participating jurisdictions met the participation requirements.

- Attend at least one Planning Committee meeting.
- Complete a capability assessment identifying existing capabilities and resources (i.e., plans, policies, ordinances studies, reports, maps, etc.) available to accomplish hazard mitigation.
- Identify/submit a list of critical infrastructure and facilities.
- Review the risk assessment and provide additional information on events and damages when available.
- Participate in the update of the mitigation goals and project prioritization methodology.
- Provide information on any mitigation actions started and/or completed since the adoption of the original Plan.
- Identify and submit a list of new mitigation actions.
- Review and comment on the draft Plan update.
- Formally adopt the Plan update.
- Where applicable, incorporate the Plan update into existing planning efforts.
- Participate in the Plan update maintenance.

2.1 MITIGATION ADVISORY COMMITTEE

As previously mentioned, at the start of the planning process, the Vermilion County Multi-Jurisdictional All Hazard Mitigation Planning Committee was formed to update the hazard mitigation plan. The Committee included representatives from each participating jurisdiction, as well as business, education, emergency services, healthcare, and social services.

Figure PP-2 details the entities represented on the Committee and the individuals who attended on their behalf. The Planning Committee was chaired by the Vermilion County EMA. Additional technical expertise was provided by the staff at the Illinois Emergency Management Agency and the Illinois Department of Natural Resources Office of Water Resources.

Figure PP-2
Vermilion County Planning Committee Member Attendance Record

Representing	Name	Title	10/27/2022	2/23/2023	5/18/2023	8/17/2023	11/2/2023
Alvin, Village of	Cunningham, Mike	Mayor	X				
American Environmental Corporation	Bostwick-Campbell, Andrea	EMS Manager	X	X	X	X	X
American Environmental Corporation	Runkle, Ken	Environmental Toxicologist / Risk Assessor	X	X	X	X	X
Champaign County - EMA	Dwyer, John	Coordinator					X
Danville Area Community College	Conklin, Lara	Executive Director of College Relations	X		X		
Danville Mass Transit	Beith, Lisa	Director		X			
Danville NAACP Branch #3009	Brandon, Gayle	Member	X	X			
Danville NAACP Branch #3009	Butler, Edward	President	X	X	X	X	X
Danville NAACP Branch #3009	McCullough, Mary Ann	Treasurer	X				
Danville, City of	Butler, Edward	Alderman				X	X
Danville, City of	Marcott, Aaron	Fire Chief			X	X	
Danville, City of	McMasters, Don	Fire Chief	X				
Danville, City of	Ruwe, David	Operations Administrator	X	X	X	X	X
Danville, City of	Williams, Rickey, Jr.	Mayor	X				
Fairmount, Village of	Darr, Caroline	Trustee			X	X	X
Fairmount, Village of	Ferber, Dave	President	X	X			
Fithian, Village of	Fox, Kim	Treasurer		X	X	X	X
Fithian, Village of	Powell, Lisa	Clerk		X		X	
Georgetown, City of	Davidson, Dennis	Alderman			X	X	
Hoopeston, City of	Hardcastle, Brad	EMA Director		X	X	X	X
Hoopeston, City of	Kohl, Roy	Deputy Director		X			
Iroquois County - EMA	Anderson, Scott	Coordinator					X
Muncie, Village of	Lane, Synthia	Mayor	X	X	X	X	X
Muncie, Village of	Warren, Shane	Designated Representative		X	X		
Oakwood, Village of	Darr, Caroline	EMS Coordinator	X		X	X	X
Oakwood, Village of	Wasman, Dennis	Police Officer		X			
OSF Sacred Heart Medical Center	McCullers, Rob	Emergency Preparedness Coordinator	X	X			
OSF Sacred Heart Medical Center	Seyfert, Jacee	Nursing Director				X	X
Public	Hall, Alex	Resident	X	X	X		
Rossville, Village of	Bray, Mike	EMA Director		X		X	X
Sidell Volunteer Fire Department	Bates, Terry	Chief	X	X	X		X
Sidell, Village of	Bates, Terry	Mayor	X	X	X		X
Tilton, Village of	George, Terry	Director of Public Works	X				
Tilton, Village of	Jones-McClellan, Tiffany	City Administrator	X			X	X
Tilton, Village of	Pentecost, Daniel	Deputy Fire Chief			X		
United Way of Danville Area	Surprenant, Mary	CEO	X	X			
Vermilion Advantage	Dudley, Tim	CEO	X	X			
Vermilion County	Donahue, Bill	Risk Consultant	X				
Vermilion County - 911	Thompson, John	Director	X				
Vermilion County - EMA	Rudd, Russell	Director	X	X	X	X	X
Vermilion County - Health Department	Ballentine, Preston	Emergency Response Coordinator		X			
Vermilion County - Health Department	Lacy, Amy	Emergency Response Coordinator	X				
Vermilion County - Health Department	Messmore, Jana	Interim Public Health Administrator / Director of Emergency Health		X			
Vermilion County - Health Department	Toole, Douglas	Public Health Administrator	X				
Vermilion County - Highway Department	Greenwell, Adrian	County Engineer	X	X	X	X	X
Vermilion County Conservation District	Fox, Kim	Associate Director		X	X	X	X

Mission Statement

Over the course of the first two meetings the Planning Committee developed a mission statement that described their objectives for the Plan update.

The mission of the Vermilion County Multi-Jurisdictional Multi-Mitigation Planning Committee is to prepare a mitigation plan that:
1) documents the risks associated with the natural and man-made hazards that impact the County and
2) identifies projects and activities that mitigate risk from these hazards to people, structures, facilities, and systems that provide support to the County, its residents and economy as well as community lifelines that enable the continuous operation of critical government and business functions."

Planning Committee Meetings

The Planning Committee met five times between October 2022 and November 2023. **Figure PP-2** identifies the representatives by jurisdiction present at each meeting. **Appendices A** and **B** contain copies of the attendance sheets and meeting minutes for each meeting. The purpose of each meeting, including the topics discussed, is provided below.

First Planning Committee Meeting – October 27, 2022

The purpose of this meeting was to explain the planning process to the Planning Committee members and give them a brief overview of the planning process including what mitigation is, what a hazards mitigation plan is and why the Plan needs to be updated. A discussion regarding the hazards to be included in the Plan update was conducted and an electronic survey was sent out following the meeting asking Planning members whether dam failures, mine subsidence, levee failures, and landslides should be included in the Plan update. Based on the responses received, the Task Force chose to include dam failures and mine subsidence. The Committee did not feel levee failures or landslides posed a significant impact on the County and therefore decided not to include either hazard in the update.

Information needed from each participant was discussed and representatives for the County and the participating jurisdictions were asked to complete the forms entitled "Capability Assessment Worksheet," "Critical Facilities & Infrastructure," "Identification of Severe Weather Shelters" and "Drinking Water Supply Worksheet" and return them at the next meeting.

Committee members were then asked to identify any recent or historic natural hazard events that have impacted the County and participants. A "Hazard Events Questionnaire" was distributed to solicit information on hazard events. Community participation was also discussed. The County and participating jurisdictions were asked to make information available on the planning process at their offices and in the communities. A "Citizen Questionnaire," was also distributed electronically to Committee members prior to the meeting for distribution to their constituents to gauge the public's perception about the hazards that impact the County. Finally, drafts of a mission statement and updated mitigation goals were presented for review.

Second Planning Committee Meeting – February 23, 2023

At the second Committee meeting portions of the updated natural and man-made hazard risk assessment sections were presented for review. Following the review of the risk assessment, the Committee members participated in an exercise to calculate the Risk Priority Index (RPI) for the County and participating jurisdictions. The RPI can assist participants in determining which hazards present the highest risks and therefore which ones to focus on when formulating mitigation

projects and activities. The Committee then discussed the draft mission statement and updated mitigation goals. The mission statement and mitigation goals were then reviewed, discussed, and finalized with no changes.

Next, mitigation actions were defined, and examples were discussed. As part of the Plan update, individual mitigation action lists will be created for each participating jurisdiction. Committee members were asked to identify any mitigation projects and activities their jurisdictions had started and/or completed since the previous Plan was completed in 2014. Ideas for new potential mitigation projects and activities were presented. Representatives for the County and the participating jurisdictions were asked to complete the forms entitled "Existing Mitigation Project/Activity Status" and "New Hazard Mitigation Projects" and return them at the next meeting.

Third Planning Committee Meeting – May 18, 2023

The purpose of the third Committee meeting was to discuss the vulnerability analysis for select natural hazards and the preliminary results of the RPI exercise. The Committee members then discussed vulnerable community assets and completed the form entitled "Assets Vulnerability Survey" which will be used in the vulnerability analyses.

The concept of community lifelines was also discussed. Community lifelines enable the continuous operation of critical government and business functions essential to human health and safety or economic security. While the concept was developed to support emergency response and planning, FEMA has begun applying it to all phases of emergency management, including mitigation. Community lifelines will be included in most project descriptions to create a clear connection to the concept.

Next, an explanation of what a mitigation action prioritization methodology is and how it fits into the Mitigation Strategy was provided. The Committee reviewed the updated mitigation project prioritization methodology and approved it with no changes. Finally, a discussion on how the mitigation projects and activities identified by the participating jurisdictions will be presented in the Plan update was provided. Participants were encouraged to provide their mitigation project lists prior to the 4th meeting when draft lists will be distributed for review.

Fourth Planning Committee Meeting – August 17, 2023

At the fourth Committee Meeting, members reviewed the draft jurisdiction-specific mitigation action tables which identified and prioritized the new and existing mitigation projects and activities provided by the participants. Members were given the opportunity to add additional projects and activities to their tables.

The public forum and adoption process were then discussed, and a date for the public forum was set. Finally, the plan maintenance and update requirements were discussed. The Plan update will be monitored and evaluated on an annual basis by a Plan Maintenance Subcommittee which will be made up of the participating jurisdictions, and key members of the Committee. The Plan must be reviewed, revised, and resubmitted to IEMA and FEMA at least once every five years.

Fifth Planning Committee Meeting – November 1, 2023

At this Committee meeting the public was provided an opportunity to ask questions and provide comments on the draft Plan update.

2.2 OUTREACH STRATEGY

To engage the public in the planning process, a comprehensive outreach strategy was developed. The strategy was structured to engage the public, including underserved communities and vulnerable populations, in a two-way dialogue, encouraging the exchange of information throughout the planning process. A mix of public involvement techniques and practices were utilized to:

- disseminate information;
- identify additional useful information about natural hazard occurrences and impacts;
- assure that interested residents would be involved throughout the Plan update's development; and
- cultivate ownership of the Plan update, thus increasing the likelihood of adoption by the participating jurisdictions.

The dialogue with the public followed proven risk communication principles to help assure clarity and avoid overstating or understating the impacts posed by the natural hazards identified in the Plan update. The following public involvement techniques and practices were applied to give the public an opportunity to access information and participate in the dialogue at their level of interest and availability.

Citizen Questionnaire

A citizen questionnaire was developed to gather facts and gauge public perceptions about natural hazards that affect Vermilion County. The questionnaire was distributed electronically to the Committee members who were encouraged to make it available to their residents and the general public. A copy of the questionnaire is contained in **Appendix C**.

A total of 18 questionnaires were completed and returned to the Committee. Questionnaires were completed by residents in each participating jurisdiction with the exception of Fairmount, Fithian, Georgetown, Muncie, and Rossville. These responses provide useful information to decision makers as they determine how best to disseminate information on natural hazards and safeguard the public. Additionally, these responses identify the types of projects and activities the public is most likely to support. The following provides a summary of the results.

- Respondents felt that severe summer storms were the most frequently encountered natural hazard in Vermilion County followed by flooding and severe winter storms. These results are consistent with the weather records compiled for the County and as described in this Plan.
- The most effective means of communication identified by respondents to disseminate information about natural hazards were the Internet and social media, followed by television and radio. Fact sheets/brochures disseminated via fire departments/law enforcement, as well as public workshops/meetings also received some support among respondents.

- In terms of the most needed mitigation projects and activities, the following categories received the strongest support:
  - maintain power during storms by burying power lines, trimming trees and/or purchasing backup generators (83%);
  - maintain roadway passages during snowstorms and heavy rains (67%);
  - retrofit critical infrastructure (61%);
  - flood or drainage protection (44%); and
  - identify residents with special needs in order to provide assistance during a natural hazard event (44%).

FAQ Fact Sheet

A "Frequently Asked Questions" fact sheet was disseminated to help explain what a hazard mitigation plan is and briefly describe the planning process. The fact sheet was made available to each participating jurisdiction to provide to their constituents. A copy of the fact sheet is contained in **Appendix D**.

News Releases/Articles & Social Media Posts

News releases were prepared and submitted to local media outlets and posted to the Vermilion County EMA Facebook page prior to each Committee meeting. The releases announced the purpose of the meetings and how the public could become involved in the Plan update's development. **Appendix E** contains a list of the media outlets that received the news releases while copies of the releases, Facebook posts, and any news articles published can be found in **Appendix F**.

Planning Committee Meetings

All of the meetings conducted by the Planning Committee were open to the public and publicized in advance to encourage public participation. At the end of each meeting, time was set aside for public comment. In addition, Committee members were available throughout the planning process to talk with residents and local government officials and were responsible for relaying any concerns and questions voiced by the public to the Committee. Interested individuals from the public who attended the Planning Committee meetings were provided handout materials and encouraged though not required to provide their names and/or sign the attendance sheets. Copies of the attendance sheets are included in **Appendix A**.

Public Forum

The final meeting of the Committee, held on November 2, 2023 was conducted as an open-house public forum. The open-house format was chosen for this forum instead of a hearing to provide greater flexibility for residents who wished to participate. Residents were able to come and go at any time during the forum, reducing conflicts with business, family, and social obligations.

In conjunction with the public forum, the draft Plan update was made available for review and comment on the Vermilion County EMA webpage. A two-page handout summarizing the planning process and a link to a comment survey that could be used to provide feedback on the draft Plan update were also posted on the website.

At the forum, residents could review a draft of the Plan update; meet with representatives from the County, the participating jurisdictions, and the Consultant; ask any questions; and provide verbal and/or written comments on the draft Plan update. Individuals attending the public forum were provided with a two-page handout summarizing the planning process and a comment sheet that could be used to provide feedback on the draft Plan update. **Appendices G** and **H** contain copies of these materials.

Public Comment Period

After the public forum, the draft Plan update was made available for public review and comment through November 16, 2023 at the Vermilion County EMA Office and on the County's website. A two-page handout summarizing the planning process and a link to a comment survey that could be used to provide feedback on the draft Plan update were also posted on the website. **Appendix H** contains a copy of the online comment survey. Residents were encouraged to submit their comments electronically, by mail or through representatives of the Committee.

Results of Outreach Strategy

The public involvement strategy implemented during the planning process created a dialogue among participants and interested residents, which resulted in many benefits, a few of which are highlighted below.

- *Acquired additional information about natural hazards*. Verifiable hazard event and damage information was obtained from participants that presents a clearer assessment of the extent and magnitude of natural hazards that have impacted the County. This information included details about thunderstorms with damaging winds, hail, severe winter storms, flash floods, and tornadoes not available from state and federal databases.
- *Obtained critical facilities damage information*. Data collection surveys soliciting information about critical facilities damaged by natural hazards were used to supplement information obtained from government databases. This information was vital to the preparation of the vulnerability analysis.
- *Increased awareness of the impacts associated with natural hazard events within the County*. Understanding how mitigation actions can reduce risk to life and property helped generate ***over 80 new mitigation projects and activities*** at the local level that had not been previously identified in any other planning process.

2.3 PARTICIPATION OPPORTUNITIES FOR INTERESTED PARTIES

Businesses, schools, not-for-profit organizations, neighboring counties, and other interested parties were provided multiple opportunities to participate in the planning process. Wide-reaching applications were combined with direct, person-to-person contacts to identify anyone who might have an interest or possess information which could be helpful in updating the Plan.

Business Community

Representatives from those segments of the community who had the most interest in natural hazard mitigation were invited to serve on the Planning Committee through Vermilion Advantage. This organization is a combination of the Economic Development Corporation and the Danville Chamber of Commerce and represents both small and large businesses in Danville and Vermilion County. The CEO of Vermilion Advantage served as a technical partner on the Planning

Committee, receiving all electronic communications including surveys, meeting announcements, and meeting handouts to provide their members and provided input into the planning process.

Education
The Vermilion County Regional Office of Education, Danville School District #118, and Danville Area Community College were invited to participate in the planning process. A representative from the Danville Area Community College attended the Committee meetings, providing input into the planning process. The College chose to be a technical partner rather than a participating jurisdiction.

Healthcare
Input was sought from the healthcare community. OSF Healthcare Sacred Health Medical Center, VA Illiana Healthcare, and the Vermilion County Health Department were invited to participate in the planning process. Representatives from OSF Healthcare Sacred Health Medical Center and the Vermilion County Health Department attended the Committee meetings, providing input into the planning process. Both chose to be included as participating jurisdictions in the Plan update.

Social Service Agencies & Other Not-for-Profits
American Red Cross, American Rivers, Danville NAACP Branch #3009, Vermilion County Conservation District, and Vermilion County United Way were invited to participate in the planning process. Representatives from Danville NAACP Branch #3009, Vermilion County Conservation District, and Vermilion County United Way attend the Committee meetings, providing input into the planning process. While Danville NAACP Branch #3009 and the Vermilion County United Way chose to be technical partners, the Vermilion County Conservation District chose to be included as a participating jurisdiction in the Plan update.

Other Government Entities
The fire departments/fire protection districts and townships in Vermilion County were contacted and invited to participate in the Plan update. A representative from the Sidell Volunteer Fire Department attended the meetings, providing input into the planning process. The Fire Department chose to be included as a participating jurisdiction in the Plan update.

Neighboring Counties
A memo was sent to EMA/ESDA coordinators in the neighboring counties inviting them to participate in the mitigation planning process. The counties contacted included Champaign, Ford, Iroquois, Edgar, and Douglas in Illinois and Vermilion and Warren in Indiana. **Appendix I** contains a copy of the invitation memo.

2.4 IDENTIFICATION OF EXISTING CAPABILITIES

Each participating jurisdiction has a unique set of capabilities and resources available to accomplish hazard mitigation and reduce long-term vulnerabilities to hazard events. In order to identify these existing capabilities and resources, a Capability Assessment was conducted. The Capability Assessment helps determine the ability of the participating jurisdictions to implement the Mitigation Strategy and to identify potential opportunities for establishing or enhancing specific mitigation policies, program, or projects. It is important to try and establish which goals and actions are feasible based on an understanding of the organizational capacity of those entities

tasked with their implementation. This assessment is designed to provide a general overview of the key capabilities in place for each participating jurisdiction along with their potential effect of loss reduction.

In order to catalog the existing capabilities of each participant, Capability Assessment Worksheets were distributed to each of the participating jurisdictions at the first Committee meeting on January 31, 2023. The worksheets requested information on four primary types of capabilities: planning and regulatory; administrative and technical; financial; and education and outreach. The following provides a brief description of each capability type.

Planning & Regulatory Capabilities: Planning and regulatory capabilities are based on the implementation of existing plans, policies, codes, ordinances, resolutions, local laws, and programs that prevent or reduce the impacts of hazards and guide and manage growth and development.

Administrative & Technical Capabilities: Administrative and technical capabilities are based on the available staff and personnel resources as well as their related skills and tools that can be used to develop and implement mitigation actions, policies, and programs.

Financial Capabilities: Financial capabilities include those resources a jurisdiction has access to or is eligible to use to implement mitigation actions, polices, and programs.

Education & Outreach Capabilities: Education and outreach capabilities include programs and methods already in place that could be used to support implementation of mitigation actions and communicate hazard-related information.

Figures PP-3 through **PP-12** summarize the results of the Capability Assessment by participating jurisdiction type (i.e., county/municipalities, schools, fire protection districts, townships, healthcare facilities, etc.) A capability level of "Limited", "Moderate" or "High" was assigned by capability type to each participating jurisdiction based on the number of available capabilities and resources as well as the jurisdiction's size/area served. **Figure PP-13** summarizes the individual capability levels by capability type and provides an overall capability ranking for each participant.

This assessment provides a consolidated inventory of existing plans, ordinances, programs, and resources in place. Whenever applicable, these existing capabilities were reviewed and incorporated into the Plan.

Highlights from the Capability Assessment include:

- While seven of the ten municipalities have building codes in place, the County does not.
- Five of the ten municipalities have zoning ordinances in place.
- Only the Danville and Tilton have comprehensive/master plans in place.
- Only the County has a continuity of operations plan in place.

The County, Danville, Hoopeston, Oakwood, Rossville, Tilton, Sidell Volunteer Fire Department, and OSF Healthcare are fortunate to have the resources and abilities to potentially expand on and improve the existing policies and programs identified. Fairmount, Fithian, Georgetown, Muncie,

Sidell, and Vermilion County Conservation District have more limited resources and abilities to expand on and improve the existing policies and programs identified. The lack of legal authority and policies/programs currently in place, may hamper these participants' abilities to expand and strengthen existing policies and programs. Their fiscal and staffing situations are also limited.

Overcoming these limitations will require time and a range of actions including, but not limited to improved general awareness of natural hazards and the potential benefits that may come from the development of new standards in terms of hazard loss prevention and the identification of resources available to expand and improve existing policies and programs should the opportunity arise.

Based on conversations with Committee members, none of the jurisdictions that participated in the 2014 Plan update have incorporated it into other planning mechanisms within their jurisdictions.

2.5 REVIEW & INCORPORATION OF EXISTING PLANS

The existing plans, studies, reports, technical information, and maps that were reviewed and incorporated into the Plan update, where appropriate, can be found in Section 7.0 References and are cited in each appropriate section.

A review of local plans revealed that while Danville and Tilton have comprehensive/land use plans, they have not been updated since the original Plan was completed in 2014. None of the other participating municipalities have developed comprehensive/land use plans. Of the County and three municipalities that have stormwater management plans, none have been comprehensively updated since the original Plan was completed.

Figure PP-3
County / Municipalities – Planning & Regulatory Capabilities

Capability Type	County/Municipality										
	Vermilion County	Danville	Fairmount	Fithian	Georgetown	Hoopeston	Muncie	Oakwood	Rossville	Sidell	Tilton
Plans, Policies, Codes & Ordinances											
Comprehensive/Master Land Use Plan		X									X
Continuity of Operations Plan	X										
Stormwater Management Plan	X	X							X		X
Transportation Plan		X									
Economic Development Plan	X	X									
Emergency Operations Plan	X	X							X		
Disaster Recovery Plan	X										
Threat & Hazard Identification Risk Assessment (THIRA) - County Only	X										
Infrastructure Maps		X	X			X	X		X	X	X
Building Codes		X			X	X	X	X	X		X
Floodplain Ordinance	X	X	X		X	X	X	X			
Stormwater Ordinance	X	X						X	X		X
Zoning Ordinance		X				X			X	X	X
Subdivision Ordinance	X	X				X		X	X		X
Historic Preservation Ordinance		X				X					
Private Sewage Disposal System Ordinance - County Only	X										
Manufactured/Mobile Home Tie Down Ordinance						X	X	X			X
Steep Slope Ordinance								X			
Mined Areas/Developed Over Mined Areas Ordinance								X			
National Incident Management System (NIMS) Adoption	X	X				X		X			X
National Flood Insurance Program (NFIP) Participation	X	X	X		X	X	X	X			
Community Rating System (CRS) Participation											
Level of Capability	**M**	**M/H**	**L**	**L**	**L**	**L/M**	**L**	**M**	**L/M**	**L**	**M**

An "X" indicates that the item is currently in place and being implemented.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" = High

Figure PP-4
County / Municipalities – Administrative & Technical Capabilities

Capability Type	County/Municipality										
	Vermilion County	Danville	Fairmount	Fithian	Georgetown	Hoopeston	Muncie	Oakwood	Rossville	Sidell	Tilton
Adminstrative & Technical											
Zoning Board		X				X			X	X	X
Public Utility Board		X			X				X		
Planning Commission		X				X			X		X
Mutual Aid Agreements	X		X		X	X		X	X	X	X
Administrator/Manager	X	X					X	X	X	X	X
Building Inspector/Officer		X			X	X	X	X	X	X	X
Community/Economic Development Planner		X									
Emergency Manager	X					X		X	X	X	
Engineer/Construction Project Manager	X	X			X			X	X		X
GIS Coordinator	X	X									
Grant Administrator/Writer		X	X		X			X			
Fire Chief - Municipalities Only		X									
Floodplain Administrator	X	X									
Police Chief - Municipalities Only		X	X	X	X	X		X	X	X	X
Public Works/Streets Director - Municipalities Only		X	X		X	X		X	X	X	X
Water Superintendent - Municipalities Only			X	X	X	X			X	X	
Zoning Officer/Administrator		X				X				X	X
Solid Waste Director - County Only	X										
Level of Capability	**M**	**H**	**L**	**L**	**M**	**M**	**L**	**M**	**M**	**M**	**M**

An "X" indicates the presence of staff with specified knowledge or skills.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" = High

Figure PP-5
County / Municipalities – Financial / Education & Outreach Capabilities

Capability Type	County/Municipality										
	Vermilion County	Danville	Fairmount	Fithian	Georgetown	Hoopeston	Muncie	Oakwood	Rossville	Sidell	Tilton
Financial											
Roadway/Bridge Improvement Plan - County Only	X										
Capital Improvements Program	X	X							X		
Tax Levies for Special Purposes	X	X	X			X		X	X	X	X
Motor Fuel Tax	X	X	X	X	X	X	X	X	X	X	X
General Obligation Bonds and/or Special Tax Bonds	X	X	X		X	X	X		X	X	
Utility Fees (Stormwater, Sewer, Water, Gas, or Electric Service)		X	X	X	X	X			X		X
Impact Fees - New Development		X						X			X
Federal Funding Programs (Non-FEMA)	X	X	X			X			X	X	
Level of Capability	**M/H**	**H**	**M**	**L**	**L**	**L/M**	**L**	**L**	**H**	**L/M**	**M**
Education & Outreach											
StormReady Certification	X					X					
Natural Disaster/Safety-Related School Programs	X					X			X	X	
Ongoing Public Education or Information Programs (Fire Safety, Household Preparedness, Responsible Water Use)	X					X			X	X	
Seasonal Outreach	X					X		X		X	
Local Citizen Groups/Non-Profit Organizations (Emergency Preparedness, Access & Functional Needs Populations)	X									X	
Public-Private Partnership Initiatives Addressing Disaster-Related Issues	X									X	
Level of Capability	**H**	**L**	**L**	**L**	**L**	**M**	**L**	**L**	**L**	**H**	**L**

An "X" indicates a given resource is locally available for mitigation purposes.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" = High

Figure PP-6
Fire Protection Districts – Planning & Regulatory Capabilities

Capability Type	FPD
	Sidell Volunteer Fire Department
Plans, Policies, Codes, Ordinances, Resolutions, & Technical Documents	
Standard Operating Procedures/Guidelines for Structural Fire Fighting (NFPA 1700)	X
Standard Operating Procedures for Operations at Technical Search & Rescue Incidents (NFPA 1670)	
Pre-Incident Planning (NFPA 1620)	X
Fire Prevention Codes	
Burn Ordinance	X
National Incident Management System (NIMS) Adoption	X
Incident Command System (ICS) Adoption	X
Building Inspections	
Tier II Reports	
County Emergency Operations Plan	X
Safety Data Sheets	
Pipeline Maps	X
Hazardous Materials Facilities Maps	X
Water Supply Systems Maps	X
Impassable Roads & Bridges Maps	X
Evacuation Zones Maps	X
Community & Special Residential Areas Maps (i.e., manufactured home parks, subdivisions, recreational communities)	
Level of Capability	**M**

An "X" indicates that the item is currently in place and being implemented.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" = High

Figure PP-7
Fire Protection Districts –
Administrative & Technical Capabilities

Capability Type	FPD
	Sidell Volunteer Fire Department
Adminstrative & Technical	
Board of Trustees	X
Board of Fire Commissioners	
Mutual Aid Box Alarm System (MABAS)	X
Mutual Aid Agreements	X
Hazardous Materials Response Team	
Water Rescue/Dive Team	
Technical Rescue Team	
Fire Chief	X
Deputy Fire Chief	X
Administrative Assistant	
Financial/Business Manager	
Inspector	
Public Education Director/Officer	
Telecom Director	
Training Coordinator	X
Level of Capability	**M**

An "X" indicates the presence of staff with specified knowledge or skills.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" = High

Figure PP-8
Fire Protection Districts –
Financial / Education & Outreach Capabilities

Capability Type	FPD
	Sidell Volunteer Fire Department
Financial	
Capital Improvements Program	X
Tax Levies for Special Purposes	X
General Obligation Bonds and/or Special Tax Bonds	
Federal Funding Programs (Non-FEMA)	X
Level of Capability	**M**
Education & Outreach	
Natural Disaster/Safety-Related School Programs	X
Ongoing Public Education or Information Programs (Fire Safety, Household Preparedness, Responsible Water Use)	X
Seasonal Outreach	
Public-Private Partnership Initiatives Addressing Disaster-Related Issues	
Level of Capability	**M**

An "X" indicates a given resource is locally available for mitigation purposes.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" = High

Figure PP-9
Healthcare Facilities – Planning & Regulatory / Administrative & Technical Capabilities

Capability Type	Health
	OSF HealthCare
Plans, Policies, Codes, Ordinances & Resolutions	
Continuity of Operations Plan	X
Strategic Plan	X
Facilities Plan	X
Emergency Preparedness Plan	X
Medical Disaster Preparedness & Response Plan	X
Community Health Needs Assessment (CHNA)	X
Severe Weather Plan	X
National Incident Management System (NIMS) Adoption	X
Level of Capability	**H**
Administrative & Technical	
Board of Directors	X
Patient Advisory Board	X
Mutual Aid Agreements	X
Chief Executive Officer	X
Chief Medical Officer	X
Chief Financial Officer	X
Chief Development Officer	
Chief Nursing Officer	X
Communications Director	X
EMS Director	X
ER Director	X
Grant Writer	
IT Director/GIS Specialist	X
Maintenance Manager	X
Rehab & Long-Term Care Director	X
Safety Officer	X
Level of Capability	**H**

An "X" indicates that the item is currently in place and being implemented or the presence of staff with specified knowledge or skills.

Level of Capacity: "L" = Limited; "M" = Moderate; "H" = High

Figure PP-10
Healthcare Facilities – Financial / Education & Outreach Capabilities

Capability Type	Health
	OSF HealthCare
Financial	
Capital Improvements Program	X
Tax Levies for Special Purposes	
General Obligation Bonds and/or Special Tax Bonds	
Federal Funding Programs (Non-FEMA)	
Level of Capability	**L/M**
Education & Outreach	
StormReady Certification	
Natural Disaster/Safety-Related School Programs	X
Ongoing Public Education or Information Programs (Fire Safety, Household Preparedness, Responsible Water Use)	X
Seasonal Outreach	
Local Citizen Groups/Non-Profit Organizations (Emergency Preparedness, Access & Functional Needs Populations)	
Public-Private Partnership Initiatives Addressing Disaster-Related Issues	
Level of Capability	**L/M**

An "X" indicates a given resource is locally available for mitigation purposes.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" = High

Figure PP-11
Park Districts – Planning & Regulatory / Administrative & Technical Capabilities

Capability Type	Park
	Vermilion County Conservation District
Plans & Policies	
Strategic/Framework Plan	
Comprehensive/Master Plan	X
Trails Plan	
Land Acquisition Plan	
Annual Plan	
Emergency Management/Operations Plan	X
Continuity of Operations Plan	
Disaster Recovery Plan	
Inclement Weather Policy	
General Use Ordinance	X
Budget & Appropriations Ordinance	X
National Incident Management System (NIMS) Adoption	
Level of Capability	**L**
Adminstrative & Technical	
Board of Commissioners/Trustees	X
Mutual Aid Agreements	
Executive Director	X
Superintendent of Recreation	
Superintendent of Parks	X
Director of Business Services	
Director of Program Services	X
Director of Golf	
Chief of Park District Police	
Safety & Training Coordinator	
Recreation Program Manager	
Level of Capability	**L**

An "X" indicates that the item is currently in place and being implemented or the presence of staff with specified knowledge or skills.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" = High

Figure PP-12
Park Districts – Financial / Education & Outreach Capabilities

Capability Type	Park
	Vermilion County Conservation District
Financial	
Capital Improvements Program	
Tax Levies for Special Purposes	X
General Obligation Bonds and/or Special Tax Bonds	X
Endowments/Bequests	X
Federal Funding Programs (Non-FEMA)	X
Level of Capability	**M**
Education & Outreach	
Natural Disaster/Safety-Related School Programs	
Ongoing Public Education or Information Programs (Fire Safety, Household Preparedness, Responsible Water Use)	
Seasonal Outreach	
Public-Private Partnership Initiatives Addressing Disaster-Related Issues	
Level of Capability	**L**

An "X" indicates a given resource is locally available for mitigation purposes.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" = High

Figure PP-13
Capability Rankings by Participating Jurisdiction

Capability Type	County/Municipality											FPD	Health	Park
	Vermilion County	Danville	Fairmount	Fithian	Georgetown	Hoopeston	Muncie	Oakwood	Rossville	Sidell	Tilton	Sidell Volunteer Fire Department	OSF HealthCare	Vermilion County Conservation District
Planning & Regulatory	M	M/H	L	L	L	L/M	L	M	L/M	L	M	M	H	L
Administrative & Technical	M	H	L	L	M	M	L	M	M	M	M	M	H	L
Financial	M/H	H	M	L	L	L/M	L	L	H	L/M	M	M	L/M	M
Education & Outreach	H	L	L	L	L	M	L	L	L	H	L	M	L/M	L
Overall Capability	**M/H**	**M/H**	**L**	**L**	**L**	**L/M**	**L**	**L/M**	**M**	**L**	**M**	**M**	**M/H**	**L/M**

Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

3.0 RISK ASSESSMENT

Risk assessment is the process of evaluating the vulnerability of assets in order to estimate the potential loss of life, personal injury, economic loss, and property damage resulting from natural and man-made hazards. Assets are determined by each participant and can include people; structures (i.e., critical facilities, lifelines, and infrastructure); systems (i.e., networks such as electrical and communications, etc.); and natural, historic, and cultural resources). This section summarizes the results of the risk assessment conducted on the natural and man-made hazards in Vermilion County. The information contained in this section was gathered by evaluating local, state, and federal records from the last 20 to 70 years.

This risk assessment identifies the natural and man-made hazards deemed most important to the Planning Committee and includes a profile of each hazard that identifies past occurrences, the severity or extent of the events, and the likelihood of future occurrences. It also provides a vulnerability analysis that identifies the impacts to public health and property, evaluates the assets of the participating jurisdictions and estimates the potential impacts each natural hazard would have on the evaluated assets. Where applicable, the differences in vulnerability between participating jurisdictions are described.

The subsequent sections provide detailed information on each of the selected natural hazards. The sections are color coded and ordered by the frequency with which the natural hazard has previously occurred within the County. Each natural hazard section contains three subsections: hazard identification, hazard profile, and hazard vulnerability.

Hazard Selection
One of the responsibilities of the Committee was to review the natural hazards detailed in the previous Plan and decide if additional hazards should be included in the Plan update. Over the course of the first two meetings, the Committee members discussed their experiences with natural and man-made hazard events and reviewed information on various hazards. After discussing the information provided, the Committee chose not to add any additional hazards to this Plan update.

The following identifies the hazards included in the Plan update:

- severe storms (thunderstorms, hail, lightning & heavy rain)
- severe winter storms (snow & ice)
- floods (riverine & flash)
- excessive heat
- extreme cold
- tornadoes
- drought
- earthquakes
- mine subsidence
- dam failures
- man-made hazards including:
  - hazardous substances (generation, transportation & storage/handling)
  - waste disposal
  - hazardous materials incidents
  - waste remediation
  - terrorism

The Planning Committee chose not to include levee failures or landslides in the Plan update. Information obtained from the U.S. Army Corps of Engineers' National Levee Database indicates there are two small, locally constructed, locally operated and maintained levees located in Vermilion County. No records were located to indicate either of the levees have ever experienced

a levee failure. Neither of the levees protect a sizeable amount of land or a considerable number of structures or individuals. The largest of the two levees, Danville Sanitary District Levee, is 0.36 miles long and protects an area of 0.36 square miles with one structure.

A review of the USGS Landslide Inventory and NASA's Global Landslide Catalog did not identify any landslide events within the County. The Illinois State Geological Survey's (ISGS) *Landslide Inventory of Illinois* only contains two instances of landslides in the County from 1970 and 1982. Both events occurred along waterways. Discussions with the Planning Committee did not reveal any recent occurrences of landslides.

Based on the information provided, the Planning Committee did not consider levee failures and landslides warranted inclusion in the Plan update.

Risk Priority Index

After reviewing the preliminary results of the risk assessment at the second meeting, Committee members and the participating jurisdictions were asked to complete a Risk Priority Index (RPI) exercise for the hazards that have the potential to impact the County and participating jurisdictions. The RPI provides quantitative guidance for ranking the hazards and offers participants with another tool to determine which hazards present the highest risk and therefore which ones to focus on when formulating mitigation actions.

Each hazard was scored on three categories: 1) frequency, 2) impacts on life and health, and 3) impacts on property and infrastructure. A scoring system was developed that assigned specific factors to point values ranging from 1 to 4 for each category. For those hazards that were not applicable to a particular jurisdiction, a value of "NA" was assigned to each category. The higher the point value, the greater the risk associated with that hazard. **Figure R-1**, located at the end of this section, identifies the factors and values/point values associated with each category. Participants were asked to score the selected hazards based on the perspective of the entity they represented on the Committee.

The Consultant took the point values assigned to each category and averaged the remaining results and came up with an overall value for each category. The values for each category were then added together to calculate an RPI score for each hazard. A ranking was then assigned to each hazard based on the RPI score. **Figure R-2**, located at the end of this section, provides the hazard rankings for the participating jurisdictions.

Figure R-3 provides a side-by-side comparison of how the hazards ranked between the RPI exercise conducted for the original Plan in 2014 and the exercise conducted for the Plan update for each original participants who completed both exercises. RPIs were not generated in 2014 for any of the special districts. The top hazards for the County in 2014 were floods, followed by tornadoes and severe winter storms/extreme cold. In 2023, the top hazards were thunderstorms with damaging winds, followed by tornadoes, lightning and severe winter storms.

FEMA's National Risk Index

The National Risk Index (NRI) is an online mapping and data-based interface that helps illustrate a community's risk to 18 identified natural hazards. The natural hazards identified by the NRI and

included in this Plan are: cold wave, drought, earthquake, hail, heat wave, ice storm, landslides, lightning, riverine flooding, strong wind, tornado, and winter weather. The NRI leverages available source data for natural hazard and community risk factors, such as social vulnerability and community resilience, to develop a baseline relative risk measurement for each county and census tract in the U.S. The goal is to help individuals better understand the natural hazard risk of their communities.

In the NRI, risk is defined as the potential for negative impacts as a result of a natural hazard. The risk equation behind the NRI includes three components: a natural hazards risk component (expected annual loss), a consequence enhancing component (social vulnerability), and a consequence reduction component (community resilience). Social vulnerability represents the susceptibility of social groups to the adverse impacts of natural hazards. Community resilience represents the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions.

The scores and ratings generated by the NRI describe a county's or census tract's relative position among all other U.S. counties and census tracts for a given component. Dataset Update Version 1.19.0 released March 2023 was used in this analysis. Scores can range from 0 (the lowest possible value) to 100 (the highest possible value). For every score there is assigned one of five qualitative ratings: "Very Low", "Relatively Low", "Relatively Moderate", "Relatively High", and "Very High." Because all ratings are relative, there are no specific numeric values that determine the rating.

In order to provide the participating jurisdictions and public with additional information on the natural hazards included in the Plan, **Figure R-4** located at the end of this section, presents the overall NRI scores and ratings for each census tract as well as for the County. 2020 census tract information was used in this version of the NRI. In 2020, there were 24 census tracts in Vermilion County. Only two of the census tracts has a Risk Index rating of "Relatively Moderate". The rest of the census tracts have a Risk Index rating of "Relatively Low" or "Very Low". Three of the census tracts have a Social Vulnerability rating of "Very High" and six have a rating of "Relatively High". Five of the census tracts have a Social Vulnerability rating of "Relatively Moderate". The remaining ten census tracts have a Social Vulnerability rating of "Relatively Low" or "Very Low".

Figure R-5, located at the end of this section, provides the NRI scores and ratings by hazard type for each census tract as well as the County. Hazard ratings of "Relatively High" and "Very High" are highlighted in yellow by census tract. The hazards with the highest relative rating include extreme cold, strong winds, excessive heat, and hail.

Critical Facilities & Infrastructure

Critical facilities and infrastructure include structures, lifelines, systems, networks, and institutions that are critical for life, safety, and economic viability and necessary for a community's response to and recovery from emergencies. The loss of function of any of these assets can intensify the severity of the impacts and speed of recovery associated a hazard event. Critical facilities and infrastructure may include, but are not limited to, the following:

- **Essential Facilities**: Facilities essential to the health and welfare of the whole population including hospitals and other medical facilities, police and fire stations, emergency operations centers, evacuation shelters, and schools.
- **Government Facilities**: Facilities associated with the continued operations of government services such as courthouses, city/village halls, township buildings, and highway/maintenance centers.
- **Infrastructure Systems**: Infrastructure associated with drinking water, wastewater, transportation (roads, railways, waterways), communication systems, electric power, natural gas and oil.
- **Housing Facilities**: Facilities that serve populations that have access and function needs such as nursing homes, skilled and memory care facilities, residential group homes, and day care centers.
- **High Potential Loss Facilities**: Facilities that would have an impact or high loss associated with them if their functionality is compromised such as nuclear power plants, dams, levees, military installations and facilities housing industrial or hazardous materials.
- **Gathering Places**: Facilities such as parks, libraries, community centers, and churches.

As part of the planning process each participating jurisdiction reviewed and/or completed a questionnaire identifying the critical facilities and infrastructure located within their jurisdiction, both publicly and privately-owned. **Figure R-6**, located at the end of this section, identifies the number of critical facilities and infrastructure located in each participating jurisdiction for select categories. Identifying these assets makes local leaders more aware of the critical facilities and infrastructure located within their jurisdictions and helps them make informed choices on how to better protect these key resources.

While considered a "local government entity" for planning purposes, OSF HealthCare Sacred Heart Medical Center, Sidell Volunteer Fire Department, and Vermilion County Conservation District do not have an extensive inventory of assets to consider when conducting the risk assessment.

Since the assets for these local government entities, with the exception of Vermilion County Conservation District, are located within a participating municipality and are a subset of these municipalities' critical facilities, their risk is considered to be the same or similar to the risk experienced by the municipalities for those hazards that either impact the entire planning area or can occur at any location within the planning area (i.e., severe storms, severe winter storms, etc.). For those hazards where the risk to these entities varies from the risk facing the municipalities, a separate narrative assessment will be provided under the appropriate hazard's vulnerability subsection.

The critical facilities for the Vermilion County Conservation District are located in unincorporated Vermilion County. Their risk is considered to be the same or similar to the risk experienced by the County for those hazards that either impact the entire planning area or can occur at any location within the planning area (i.e., severe storms, severe winter storms, etc.) For those hazards where the risk to the Conservation District's critical facilities varies from the risk facing the planning

area (i.e., the County), a separate narrative assessment will be provided under the appropriate hazard's vulnerability subsection.

Assets Vulnerability Survey

The participating jurisdictions were also asked to complete an Assets Vulnerability Survey at the third meeting to assist them in creating problem statements summarizing the consequences and/or effects the studied hazards have on their assets. The Survey asked participants to describe their jurisdiction's greatest vulnerabilities to natural hazards and which assets they felt have the greatest vulnerabilities and the hazards they are most vulnerable to. This information is summarized under the appropriate hazard's vulnerability subsection.

Future Conditions

While we cannot predict with certainty what the weather of the future will look like, we can use models to help us make sense of the patterns we have seen in the past and to use that information to predict what events will be more likely to occur going forward.

By looking at data from previous weather conditions and taking into account trends in that data that have emerged over time, we can with some degree of accuracy project what weather may look like in the future. It is important to consider that nearer term predictions have the greatest likelihood of accuracy since they require the least extrapolation and guesswork; however, this does not mean that longer term predictions are not plausible or not useful. Often, having a prediction that is even partly right is preferable to having no guide at all. By coming up with best case and worst case scenarios, even if neither is terribly likely, we can gain a better understanding of the range of potential outcomes and a good idea of what the most probable outcomes might look like.

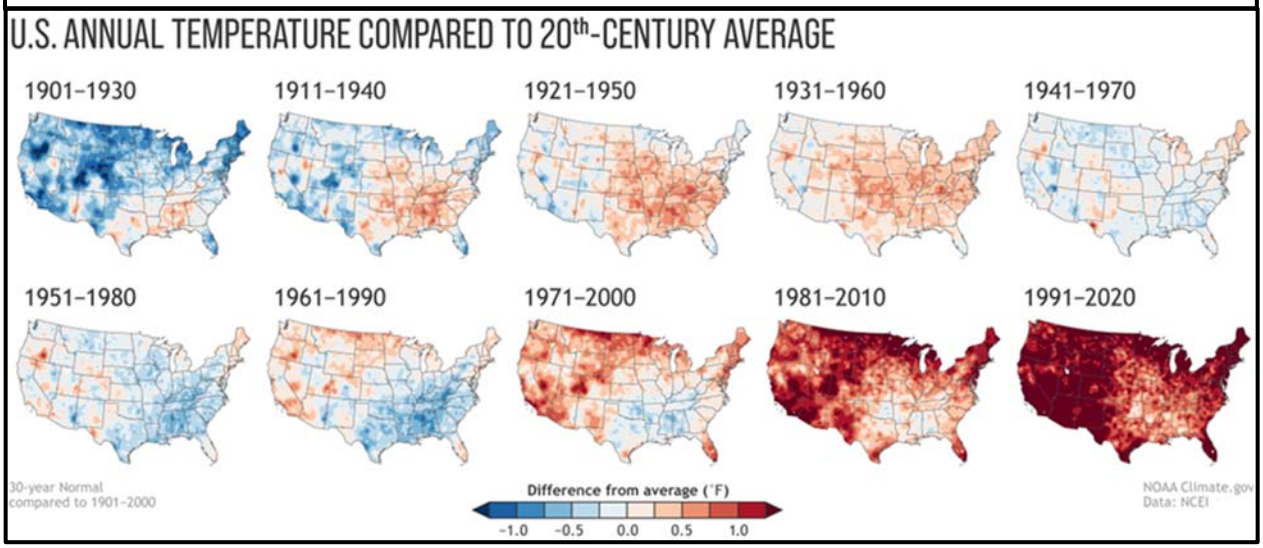
Earth's weather and climate have always been variable. Over time, sea levels have risen and fallen, glaciers have advanced and retreated, and droughts, floods, wildfires, and storms have periodically upended the notion of "normal". In recent years in the U.S., there have been several trends observed in weather patterns that offer us some insight as to what the near future may hold. Broadly, these likely changes can be referred to as "future conditions". They include more general seasonal trends as well as more specific weather pattern trends.

In recent decades we have seen both earlier springs (earlier last frost dates) and later winters (later first frost dates) in the U.S. Taken together, these two changes mean that winters are likely to be shorter and milder, and summers are likely to be longer and hotter across much of the continental U.S. than they were historically. In combination, shorter, milder winters and longer, more intense summers have resulted in an observed increase in average annual temperature.

As with any change that occurs gradually, the difference can be difficult to perceive if the time frame you are looking at is small. Additionally, smaller windows of time are more likely to be skewed by rare occurrences or anomalies. Looking at longer time frames allows us to see the big picture, putting highly unusual years into context by averaging them out with other more typical years. Looking at consecutive 30-year period averages called "Normals" allows us to detect how what is average (or 'normal') has shifted over time.

Figure R-7 shows U.S. annual temperature compared to 20th-century averages. By looking at 30 Year Normals for average annual temperature compared to overall 20th century averages, a trend of increasing annual temperature is particularly apparent in the final three 30 year periods. (1971-2000, 1981-2010, 1991-2020). Since these are average annual temperatures, even a small difference corresponds to larger temperature changes recorded within a year.

Figure R-7
U.S. Annual Temperature Compared to 20th Central Average



Also observed have been changes in when, where, and how much precipitation occurs across the U.S. **Figure R-8** shows U.S. annual precipitation compared to 20th-century averages. For some areas of the Country, this has resulted in increases in overall precipitation. The Midwestern U.S. has been on average getting progressively wetter in 30 year rolling averages from the period of 1951-1980 onwards; elsewhere, it has resulted in decreases, such as in much of the Western and Southwestern US, which has been getting drier since the period of 1971-2000 onwards.

Trends also reveal an uptick in the frequency and severity of hazardous weather events. While this is in part due to better record-keeping and a higher number of people and monitoring devices to witness hazardous events in order to report them, this trend is at least in part due to warmer bodies of air that tend to "supercharge" summer storm systems, making them more likely to produce severe weather events.

Specific information on future conditions is summarized under the appropriate hazard's probability subsection.

Figure R-8
U.S. Annual Precipitation Compared to 20th Central Average

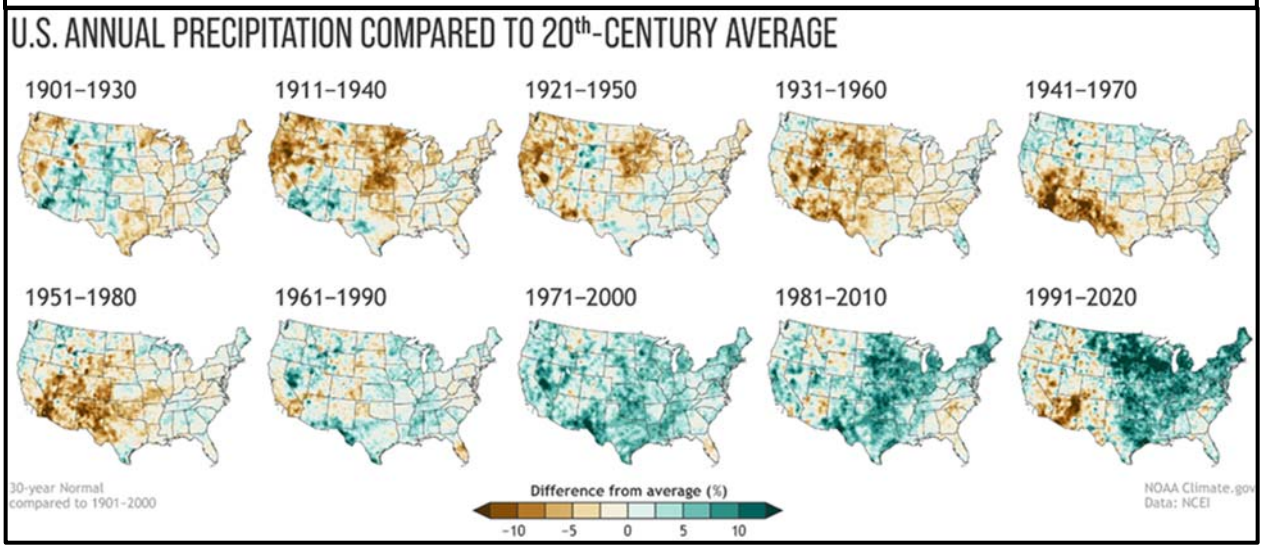


Figure R-1
Risk Priority Index Scoring System

Category	Factors	Value	Point Value
Hazard Frequency	An event is likely to occur in the next 1 to 3 years.	High	3
	An event is possible in the next 3 to 10 years.	Moderate	2
	An event is unlikely to occur within the next 10 years.	Low	1
Impacts on Life & Health	While fatalities are unlikely, injuries, some requiring hospitalization, may occur during the event.	High	3
	Minor injuries not requiring hospitalization may occur during the event.	Moderate	2
	Injuries or fatalities are unlikely to occur during the event.	Low	1
Impacts on Property & Infrastructure	- Substantial property damage is likely to occur including damage to infrastructure and critical facilities. AND/OR - Loss of access/operations at infrastructure and critical facilities (i.e., road & school closures, loss of power to drinking water/wastewater treatment facilities, municipal buildings, etc.) is anticipated for a period of time (i.e., a day or more).	High	3
	- Some minor property damage is anticipated (i.e., shingles & siding torn off homes, windows broken, etc.) but no significant damage to infrastructure or critical facilities is anticipated. AND/OR - Loss of access/operations to infrastructure and critical facilities is anticipated but only for a short period of time (i.e., up to a couple hours).	Moderate	2
	- Property damage is likely to be negligible and no loss of access/operations is anticipated at any infrastructure/critical facilities during the event.	Low	1

Figure R-2
Risk Priority Index Hazard Ranking by Participating Jurisdiction
(Sheet 1 of 2)

Hazard	Hazard Ranking by Participating Jurisdiction						
	Vermilion County	Danville	Fairmount	Fithian	Georgetown	Hoopeston	Muncie
Dam Failures	13	9/10	n/a	n/a	n/a	n/a	n/a
Drought	14	12/13	6	10/11/12/13/14	7/8/9	9/10/11/12	10/11
Earthquakes	15/16	14	8/9/10/11/12/13/14/15	10/11/12/13/14	10/11/12/13/14/15	13/14	13
Excessive Heat	9/10	6	3/4	2/3	1	2/3/4/5/6/7/8	4
Extreme Cold	5/6	3	3/4	4/5/6	5/6	2/3/4/5/6/7/8	6
Floods	12	5	8/9/10/11/12/13/14/15	7/8/9	10/11/12/13/14/15	2/3/4/5/6/7/8	7/8/9
Hail	11	9/10	8/9/10/11/12/13/14/15	4/5/6	7/8/9	1	7/8/9
HazMat Incidents: Fixed Facility	7/8	11	8/9/10/11/12/13/14/15	10/11/12/13/14	5/6	9/10/11/12	14/15
HazMat Incidents: Transportation	9/10	12/13	7	7/8/9	10/11/12/13/14/15	9/10/11/12	10/11
Heavy Rain	7/8	7/8	5	7/8/9	3/4	2/3/4/5/6/7/8	5
Lightning	3/4	7/8	8/9/10/11/12/13/14/15	4/5/6	3/4	2/3/4/5/6/7/8	7/8/9
Mine Subsidence	15/16	15	8/9/10/11/12/13/14/15	n/a	10/11/12/13/14/15	n/a	12
Terrorism	5/6	16	8/9/10/11/12/13/14/15	10/11/12/13/14	10/11/12/13/14/15	13/14	14/15
Thunderstorms w/ Damaging Winds	1	2	1/2	1	2	2/3/4/5/6/7/8	3
Tornadoes	2	1	8/9/10/11/12/13/14/15	10/11/12/13/14	10/11/12/13/14/15	2/3/4/5/6/7/8	1/2
Winter Storms	3/4	4	1/2	2/3	7/8/9	9/10/11/12	1/2

Figure R-2
Risk Priority Index Hazard Ranking by Participating Jurisdiction
(Sheet 2 of 2)

Hazard	Hazard Ranking by Participating Jurisdiction						
	Oakwood	Rossville	Sidell	Tilton	Sidell Volunteer Fire Dept.	OSF HealthCare	Vermilion County Conservation District
Dam Failures	n/a	n/a	n/a	n/a	n/a	n/a	9/10/11
Drought	10/11	7/8/9/10/11	12	9/10/11/12	10/11/12	12/13/14	12/13
Earthquakes	12/13/14/15	3/4/5/6	13/14	9/10/11/12	13	12/13/14	1
Excessive Heat	10/11	7/8/9/10/11	4/5/6/7/8	6/7/8	1/2/3/4/5/6	3/4/5/6	3/4/5/6/7
Extreme Cold	4/5/6/7/8/9	12/13/14	4/5/6/7/8	3/4/5	1/2/3/4/5/6	1/2	3/4/5/6/7
Floods	12/13/14/15	12/13/14	13/14	1/2	14	7/8	2
Hail	4/5/6/7/8/9	3/4/5/6	9/10/11	3/4/5	7/8	7/8	8
HazMat Incidents: Fixed Facility	12/13/14/15	12/13/14	4/5/6/7/8	13/14	10/11/12	11	14/15/16
HazMat Incidents: Transportation	2	7/8/9/10/11	4/5/6/7/8	13/14	10/11/12	12/13/14	12/13
Heavy Rain	4/5/6/7/8/9	7/8/9/10/11	9/10/11	6/7/8	9	9/10	9/10/11
Lightning	3	3/4/5/6	4/5/6/7/8	9/10/11/12	1/2/3/4/5/6	9/10	3/4/5/6/7
Mine Subsidence	4/5/6/7/8/9	n/a	n/a	9/10/11/12	n/a	n/a	14/15/16
Terrorism	12/13/14/15	1	9/10/11	15	7/8	1/2	14/15/16
Thunderstorms w/ Damaging Winds	4/5/6/7/8/9	3/4/5/6	2/3	6/7/8	1/2/3/4/5/6	3/4/5/6	3/4/5/6/7
Tornadoes	1	2	1	3/4/5	1/2/3/4/5/6	3/4/5/6	3/4/5/6/7
Winter Storms	4/5/6/7/8/9	7/8/9/10/11	2/3	1/2	1/2/3/4/5/6	3/4/5/6	9/10/11

Figure R-3
Comparison of 2014 & 2023 Risk Priority Index Hazard Rankings by Participating Jurisdiction

Hazard	Hazard Ranking by Participating Jurisdiction									
	Vermilion County		Danville		Georgetown		Oakwood		Rossville	
	2014	2023	2014	2023	2014	2023	2014	2023	2014	2023
Dam Failures	---	13	---	9/10	---	n/a	---	n/a	---	n/a
Drought	5	14	2	12/13	2	7/8/9	2	10/11	---	7/8/9/10/11
Earthquakes	9	15/16	7	14	5	10/11/12/13/14/15	---	12/13/14/15	6	3/4/5/6
Excessive Heat	5	9/10	2	6	2	1	2	10/11	---	7/8/9/10/11
Extreme Cold	3	5/6	6	3	---	5/6	---	4/5/6/7/8/9	4	12/13/14
Floods	1	12	5	5	3	10/11/12/13/14/15	3	12/13/14/15	3	12/13/14
Hail	4	11	1	9/10	1	7/8/9	1	4/5/6/7/8/9	2	3/4/5/6
HazMat Incidents: Fixed Facility	6	7/8	4	11	---	5/6	---	12/13/14/15	5	12/13/14
HazMat Incidents: Transportation	7	9/10	---	12/13	4	10/11/12/13/14/15	4	2	---	7/8/9/10/11
Heavy Rain	---	7/8	---	7/8	---	3/4	---	4/5/6/7/8/9	---	7/8/9/10/11
Lightning	4	3/4	1	7/8	1	3/4	1	3	2	3/4/5/6
Mine Subsidence	8	15/16	---	15	---	10/11/12/13/14/15	---	4/5/6/7/8/9	---	n/a
Terrorism	---	5/6	---	16	---	10/11/12/13/14/15	---	12/13/14/15	---	1
Thunderstorms w/ Damaging Winds	4	1	1	2	1	2	1	4/5/6/7/8/9	2	3/4/5/6
Tornadoes	2	2	3	1	---	10/11/12/13/14/15	---	1	1	2
Winter Storms	3	3/4	6	4	---	7/8/9	---	4/5/6/7/8/9	4	7/8/9/10/11

Figure R-4
National Risk Index Overall Scores/Ratings by Census Tract

Census Tract No.	Incorporated Municipality Located in Census Tract	Risk Index Score	Risk Index Rating	Social Vulnerability Score	Social Vulnerability Rating	Community Resilience Score	Community Resilience Rating
1	Danville	39.72	Relatively Low	89.72	Very High	*	*
2	Danville	17.31	Very Low	63.60	Relatively High	*	*
3	Danville	21.51	Very Low	72.86	Relatively High	*	*
4	Danville	57.58	Relatively Low	78.71	Relatively High	*	*
5	Danville	50.72	Relatively Low	76.11	Relatively High	*	*
6	Danville	37.70	Relatively Low	74.77	Relatively High	*	*
7	Danville	33.75	Relatively Low	42.94	Relatively Moderate	*	*
8	Danville	21.22	Very Low	44.98	Relatively Moderate	*	*
9	Danville, Tilton	28.68	Relatively Low	35.76	Relatively Low	*	*
12	Danville	41.69	Relatively Low	53.35	Relatively Moderate	*	*
13	Danville	31.29	Relatively Low	7.86	Very Low	*	*
101	Rankin, Rossville	51.68	Relatively Low	35.44	Relatively Low	*	*
102	Hoopeston	66.81	Relatively Moderate	87.39	Very High	*	*
103	Alvan, Henning, Potomac	55.51	Relatively Low	15.41	Very Low	*	*
104	Bismarck	26.11	Very Low	27.05	Relatively Low	*	*
105	Danville, Tilton	45.73	Relatively Low	52.45	Relatively Moderate	*	*
106	Belgium, Westville	43.11	Relatively Low	52.15	Relatively Moderate	*	*
107.01	Tilton	36.71	Relatively Low	65.86	Relatively High	*	*
107.02	Catlin	25.39	Very Low	14.23	Very Low	*	*
108	Fithian, Muncie, Oakwood	45.63	Relatively Low	39.58	Relatively Low		
109	Allerton, Catlin, Fairmount, Indianola, Sidell	44.06	Relatively Low	15.62	Very Low	*	*
110	Georgetown	39.76	Relatively Low	30.86	Relatively Low	*	*
111	Ridge Farm	33.52	Relatively Low	37.20	Relatively Low	*	*
112	Danville	73.17	Relatively Moderate	90.79	Very High	*	*
Vermilion County		66.31	Relatively Low	65.82	Relatively High	85.71	Very High

* Community Resilience scores are only available at the county level.

Figure R-5
NRI Hazard Scores/Ratings by Hazard by Census Tract
(Sheet 1 of 2)

Census Tract No.	Incorporated Municiplity Located in Census Tract	Severe Storms						Severe Winter Storms				Riverine Floods	
		Hail Score	Hail Rating	Lightning Score	Lightning Rating	Strong Wind Score	Strong Wind Rating	Ice Storm Score	Ice Storm Rating	Winter Weather Score	Winter Weather Rating	Score	Rating
1	Danville	88.77	RM	53.11	RM	86.13	RH	66.47	RL	61.64	RM	30.29	VL
2	Danville	80.51	RM	44.10	RL	68.01	RM	52.06	RL	54.65	RL	66.50	RL
3	Danville	82.30	RM	56.12	RM	72.83	RM	59.91	RL	63.53	RM	41.72	RL
4	Danville	90.31	RH	70.91	RM	89.63	RH	73.44	RM	73.48	RM	84.91	RRM
5	Danville	89.56	RH	74.22	RM	88.52	RH	74.02	RM	76.43	RM	61.29	RL
6	Danville	87.74	RM	60.24	RM	84.24	RH	67.05	RL	66.46	RM	0.00	NR
7	Danville	85.52	RM	66.44	RM	80.39	RM	67.38	RL	71.23	RM	37.10	RL
8	Danville	81.46	RM	52.61	RM	70.89	RM	58.15	RL	62.06	RM	55.11	RL
9	Danville, Tilton	85.65	RM	49.06	RM	79.66	RM	61.36	RL	59.90	RM	42.68	RL
12	Danville	88.21	RM	63.09	RM	85.44	RH	69.10	RL	69.59	RM	66.70	RL
13	Danville	86.11	RM	54.46	RM	80.93	RM	64.03	RL	64.24	RM	59.60	RL
101	Rankin, Rossville	90.11	RH	63.48	RM	88.37	RH	71.62	RM	68.29	RM	76.87	RM
102	Hoopeston	92.82	RH	87.95	RH	94.07	RH	82.42	RM	83.19	RM	64.68	RL
103	Alvan, Henning, Potomac	90.02	RH	67.00	RM	88.25	RH	71.43	RM	71.65	RM	78.98	RM
104	Bismarck	83.63	RM	50.19	RM	74.84	RM	58.61	RL	59.99	RM	63.06	RL
105	Danville, Tilton	88.64	RM	65.46	RM	86.34	RH	70.67	RM	71.84	RM	71.68	RM
106	Belgium, Westville	87.50	RM	72.50	RM	84.50	RH	71.49	RM	75.18	RM	50.05	RL
107.01	Tilton	86.27	RM	62.80	RM	81.70	RM	67.49	RL	70.43	RM	42.47	RL
107.02	Catlin	82.68	RM	52.93	RM	73.35	RM	59.41	RL	62.40	RM	68.78	RL
108	Fithian, Muncie, Oakwood	88.34	RM	58.83	RM	85.46	RH	68.49	RL	68.98	RM	61.39	RL
109	Allerton, Catlin, Fairmount, Indianola, Sidell	87.13	RM	52.87	RM	81.64	RM	64.70	RL	62.91	RM	58.90	RL
110	Georgetown	86.51	RM	67.32	RM	82.09	RH	67.81	RL	70.64	RM	39.23	RL
111	Ridge Farm	85.08	RM	54.38	RM	77.71	RM	63.75	RL	63.09	RM	54.74	RL
112	Danville	94.54	RH	86.76	RH	96.00	VH	82.98	RM	84.39	RM	52.88	RL
Vermilion County		90.36	RM	73.58	RM	84.98	RM	67.16	RM	62.52	RM	50.78	RL

Rating Abbreviations: NR = No Rating; VL = Very Low; RL = Relatively Low; RM = Relatively Moderate; RH = Relatively High; VH = Very High

Figure R-5
NRI Hazard Scores/Ratings by Hazard by Census Tract
(Sheet 2 of 2)

Census Tract No.	Incorporated Municiplity Located in Census Tract	Extreme Cold		Excessive Heat		Tornadoes		Drought		Landslides		Earthquakes	
		Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating
1	Danville	90.78	RH	73.31	RM	66.61	RM	0.00	NR	81.42	RM	74.80	RL
2	Danville	87.38	RM	66.78	RM	49.90	RL	0.00	NR	69.25	RL	55.52	RL
3	Danville	91.68	RH	75.13	RM	54.44	RM	0.00	NR	76.39	RM	54.40	RL
4	Danville	95.41	RH	84.07	RH	73.08	RM	86.76	RL	40.89	VL	77.23	RL
5	Danville	96.31	RH	86.47	RH	71.66	RM	83.40	RL	44.53	RL	73.80	RL
6	Danville	92.83	RH	77.72	RM	64.65	RM	0.00	NR	66.30	RL	72.99	RL
7	Danville	94.60	RH	82.06	RH	61.29	RM	81.68	RL	76.89	RM	65.26	RL
8	Danville	91.08	RH	73.77	RM	52.89	RL	72.67	VL	75.07	RM	61.50	RL
9	Danville, Tilton	90.06	RM	71.78	RM	59.43	RM	79.92	VL	78.03	RM	70.14	RL
12	Danville	94.02	RH	80.58	RH	66.36	RM	84.06	RL	63.91	RL	69.12	RL
13	Danville	92.01	RH	75.77	RM	60.97	RM	82.95	RL	74.39	RM	63.17	RL
101	Rankin, Rossville	95.92	RH	82.21	RH	72.06	RM	90.94	RL	0.00	NR	72.78	RL
102	Hoopeston	98.10	RH	91.50	RH	85.72	RL	0.00	NR	0.00	NR	77.42	RL
103	Alvan, Henning, Potomac	96.43	RH	84.35	RH	70.67	RM	96.01	RM	56.32	RL	74.42	RL
104	Bismarck	91.03	RH	72.66	RM	55.47	RM	92.33	RL	54.18	RL	62.62	RL
105	Danville, Tilton	94.95	RH	82.72	RH	67.78	RM	88.87	RL	68.37	RL	70.46	RL
106	Belgium, Westville	95.97	RH	85.52	RH	66.04	RM	87.25	RL	45.77	RL	70.53	RL
107.01	Tilton	94.38	RH	81.41	RH	62.35	RM	86.96	RL	0.00	NR	71.82	RL
107.02	Catlin	91.46	RH	74.31	RM	54.70	RM	87.91	RL	57.43	RL	59.37	RL
108	Fithian, Muncie, Oakwood	94.59	RH	80.86	RH	66.50	RM	94.35	RM	55.97	RL	74.54	RL
109	Allerton, Catlin, Fairmount, Indianola, Sidell	94.25	RH	77.49	RM	60.69	RM	97.00	RM	41.76	VL	75.09	RL
110	Georgetown	94.56	RH	81.70	RH	62.80	RM	90.13	RL	59.96	RL	74.79	RL
111	Ridge Farm	92.86	RH	76.03	RM	57.35	RM	94.74	RM	55.56	RL	71.79	RL
112	Danville	98.36	RH	92.28	RH	89.26	RH	84.59	RL	86.41	RM	81.11	RM
Vermilion County		94.50	RH	89.98	RM	76.46	RM	75.44	RL	41.15	RL	81.83	RL

Rating Abbreviations: NR = No Rating; VL = Very Low; RL = Relatively Low; RM = Relatively Moderate; RH = Relatively High; VH = Very High

Figure R-6
Critical Facilities & Infrastructure by Jurisdiction

Participating Jurisdiction	Critical Facilities				Critical Infrastructure						
	Government[1]	Emergency Protection[2]	Medical & Healthcare[3]	Schools	Drinking Water[4]	Wastewater Treatment[5]	Rail Lines	Bridges	Interstates US/State Routes & Key Roads	Power Plants	Comm. Systems
Vermilion County	3	3	4	---	---	---	3	3	21	---	---
Danville	3	5	4	---	---	14	---	32	14	---	---
Fairmount	4	2	---	---	1	---	1	---	---	---	---
Fithian	2	1	---	---	1	4	---	---	---	---	---
Georgetown	---	2	---	3	1	---	---	---	---	---	---
Hoopeston	6	3	2	5	3	2	1	---	4	---	---
Muncie	1	1	---	---	---	---	---	---	2	---	---
Oakwood	4	2	1	3	---	---	---	---	2	---	---
Rossville	4	2	1	2	1	3	---	1	1	---	---
Sidell	4	2	---	1	1	---	---	---	---	---	---
Tilton	2	2	2	2	---	1	1	9	2	---	---
Sidell Volunteer Fire Department	4	2	---	1	1	---	---	---	---	---	---
OSF Sacred Heart Medical Center	---	2	4	---	---	---	---	---	---	---	---
Vermilion County Conservation District	---	1	---	---	1	---	---	---	---	---	---

[1] Government includes: courthouses, city/village halls, township buildings, highway/road maintenance centers, libraries, etc.
[2] Emergency Protection includes: sheriff's department, police, fire, ambulance, emergency operations centers, jail/correctional facilities and evacuation shelters.
[3] Medical & Healthcare includes: public health departments, hospitals, urgent/prompt care and medical clinics, nursing homes, skilled nursing facilities, memory care facilities, residential group homes, etc.
[4] Drinking Water includes: drinking water treatment plants, drinking water wells, and water storage towers/tanks.
[5] Wastewater Treatment includes: wastewater treatment plants and lift stations.
--- Indicates the jurisdiction does not own/maintain any critical facilities within that category.

3.1 SEVERE STORMS (THUNDERSTORMS, HAIL, LIGHTNING & HEAVY RAIN)

HAZARD IDENTIFICATION

What is the definition of a severe storm?

The National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) defines a "severe storm" as any thunderstorm that produces one or more of the following:

- winds with gust of 50 knots (58 mph) or greater;
- hail that is at least one inch in diameter (quarter size) or larger; and/or
- a tornado.

While severe storms are capable of producing deadly lightning and heavy rain that may lead to flash flooding, the NWS does not use lightning/either to define a severe storm. However, a discussion of both lightning and heavy rain is included in this section because both are capable of causing extensive damage. For the purposes of this report, tornadoes and flooding are categorized as separate hazards and are not discussed under severe storms.

What is a thunderstorm?

A thunderstorm is a rain shower accompanied by lightning and thunder. An average thunderstorm is approximately 15 miles in diameter, affecting a relatively small area when compared to winter storms or hurricanes, and lasts an average of 30 minutes. Thunderstorms can bring heavy rain, damaging winds, hail, lightning and tornadoes.

There are four basic types of thunderstorms: single-cell, multi-cell, squall line, and supercell. The following provides a brief description of each.

Single-cell Thunderstorm

Single cell storms are small, weak storms that only last about ½ hour to an hour and are not usually considered severe. They are typically driven by heating on a summer afternoon. Occasionally a single cell storm will become severe, but only briefly. When this happens, it is called a pulse severe storm.

Multi-cell Thunderstorm

Multi-cell storms are the most common type of thunderstorms. A multi-cell storm is organized in clusters of at least two to four short-lived cells. Each cell usually lasts 30 to 60 minutes while the system as whole may persist for many hours. Multi-cell storms may produce hail, strong winds, brief tornadoes, and/or flooding.

Squall Line

A Squall line is a group of storms arranged in a line, often accompanied by "squalls" of high wind and heavy rain. The line of storms can be continuous or there can be gaps and breaks in the line. Squall lines tend to pass quickly and can be hundreds of miles long but are typically only 10 to 20 miles wide. A "bow echo" is a radar signature of a squall line that "bows out" as winds fall behind the line and circulation develops on either end.

Supercell Thunderstorm

Supercell storms are long-lived (greater than one hour) and highly organized storms that feed off a rising current of air (an updraft). The main characteristic that sets a supercell storm apart from other thunderstorm types is the presence of rotation in the updraft. The rotating updraft of a supercell (called a mesocyclone when visible on radar) helps a supercell storm produce extreme weather events. Supercell storms are potentially the most dangerous storm type and have been observed to generate the vast majority of large and violet tornadoes, as well as downburst winds and large hail.

Despite their size, all thunderstorms are dangerous and capable of threatening life and property. Of the estimated 100,000 thunderstorms that occur each year in the U.S., roughly 10% are classified as severe.

What kinds of damaging winds are produced by a thunderstorm?

Aside from tornadoes, thunderstorms can produce straight-line winds. A straight-line wind is defined as any wind produced by a thunderstorm that is not associated with rotation. There are several types of straight-line winds including downdrafts, downbursts, microbursts, gust fronts and derechos.

Damage from straight-line winds is more common than damage from tornadoes and accounts for most thunderstorm wind damage. Straight-line wind speeds can exceed 87 knots (100 mph), produce a damage pathway extending for hundreds of miles and can cause damage equivalent to a strong tornado.

The NWS measures a storm's wind speed in knots or nautical miles. A wind speed of one knot is equal to approximately 1.15 miles per hour. **Figure SS-1** shows conversions from knots to miles per hour for various wind speeds.

Figure SS-1
Wind Speed Conversions

Knots (kts)	Miles Per Hour (mph)	Knots (kts)	Miles Per Hour (mph)
50 kts	58 mph	60 kts	69 mph
52 kts	60 mph	65 kts	75 mph
55 kts	63 mph	70 kts	81 mph
58 kts	67 mph	80 kts	92 mph

What is hail?

Hail is precipitation in the form of spherical or irregular-shaped pellets of ice that occur within a thunderstorm when strong rising currents of air (updrafts) carry raindrops upward into extremely cold areas of the atmosphere where they freeze into ice.

Hailstones grow by colliding with supercooled water drops. The supercooled water drops freeze on contact with ice crystals, frozen rain drops, dust, etc. Thunderstorms with strong updrafts continue lifting the hailstones to the top of the cloud where they encounter more supercooled water and continue to grow. Eventually the updraft can no longer support the weight of the hail, or the updraft weakens, and the hail falls to the ground.

In the U.S., hail causes more than $1 billion in damages to property and crops annually. Hail has been known to cause injuries, although it rarely causes fatalities or serious injury.

How is the severity of a hail event measured?

The severity or magnitude of a hail event is measured in terms of the size (diameter) of the hailstones. The hail size is estimated by comparing it to known objects. **Figure SS-2** provides descriptions for various hail sizes.

Figure SS-2
Hail Size Descriptions

Hail Diameter (inches)	Description	Hail Diameter (inches)	Description
0.25 in.	pea	1.75 in.	golf ball
0.50 in.	marble/mothball	2.50 in.	tennis ball
0.75 in.	penny	2.75 in.	baseball
0.88 in.	nickel	3.00 in.	teacup
1.00 in.	quarter	4.00 in.	grapefruit
1.50 in.	ping pong ball	4.50 in.	softball

Source: NOAA, National Severe Storm Laboratory.

Hail size can vary widely. Hailstones may be as small as 0.25 inches in diameter (pea-sized) or, under extreme circumstances, as large as 4.50 inches in diameter (softball-sized). Typically hail that is one (1) inch in diameter (quarter-sized) or larger is considered severe.

The severity of a hail event can also be measured or rated using the TORRO Hailstorm Intensity Scale. This scale was developed in 1986 by the Tornado and Storm Research Organisation of the United Kingdom. It measures the intensity or damage potential of a hail event based on several factors including: maximum hailstone size, distribution, shape and texture, numbers, fall speed and strength of the accompanying winds.

The Hailstorm Intensity Scale identifies ten different categories of hail intensity, H0 through H10. **Figure SS-3** gives a brief description of each category. This scale is unique because it recognizes that, while the maximum hailstone size is the most important parameter relating to structural damage, size alone is insufficient to accurately categorize the intensity and damage potential of a hail event.

It should be noted that the typical damage impacts associated with each intensity category reflect the building materials predominately used in the United Kingdom. These descriptions may need to be modified for use in other countries to take into account the differences in building materials typically used (i.e., whether roofing materials are predominately shingle, slate or concrete, etc.).

What is lightning?

Lightning, a component of all thunderstorms, is a visible electrical discharge that results from the buildup of charged particles within storm clouds. It can occur from cloud-to-ground, cloud-to-cloud, within a cloud or cloud-to-air. The air near a lightning strike is heated to approximately

50,000°F (hotter than the surface of the sun). The rapid heating and cooling of the air near the lightning strike causes a shock wave that produces thunder.

Figure SS-3
TORRO Hailstorm Intensity Scale

Intensity Category		Typical Hail Diameter		Description	Typical Damage Impacts
		millimeters (approx.)*	inches (approx.)*		
H0	Hard Hail	5 mm	0.2”	pea	no damage
H1	Potentially Damaging	5-15 mm	0.2” – 0.6”	pea / mothball	slight general damage to plants, crops
H2	Significant	10-20 mm	0.4” – 0.8”	dime / penny	significant damage to fruit, crops, vegetation
H3	Severe	20-30 mm	0.8” – 1.2”	nickel / quarter	severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-40 mm	1.0” – 1.6”	half dollar / ping pong ball	widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50 mm	1.2” – 2.0”	golf ball	wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60 mm	1.6” – 2.4”	golf ball / egg	bodywork of grounded aircraft dented; brick walls pitted
H7	Destructive	50-75 mm	2.0” – 3.0”	egg / tennis ball	severe roof damage, risk of serious injuries
H8	Destructive	60-90 mm	2.4” – 3.5”	tennis ball / teacup	severe damage to aircraft bodywork
H9	Super Hailstorms	75-100 mm	3.0” – 4.0”	teacup / grapefruit	extensive structural damage, risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	> 100 mm	> 4.0”	softball	extensive structural damage, risk of severe or even fatal injuries to persons caught in the open

* Approximate range since other factors (i.e., number and density of hailstones, hail fall speed and surface wind speed) affect severity.

Source: Tornado and Storm Research Organisation, TORRO Hailstorm Intensity Scale Table.

Lightning on average causes 60 fatalities and 400 injuries annually in the U.S. Most fatalities and injuries occur when people are caught outdoors in the summer months during the afternoons and evenings. In addition, lightning can cause structure and forest fires. Many of the wildfires in the western U.S. and Alaska are started by lightning. According to the NWS lightning strikes cost more than $1 billion in insured losses each year.

Are alerts issued for severe storms?

Yes. The NWS Weather Forecast Office in Lincoln, Illinois is responsible for issuing **severe thunderstorm watches** and **warning**s for Vermilion County depending on the weather conditions. The following provides a brief description of each type of alert.

- **Watch.** A severe thunderstorm watch is issued when severe thunderstorms are possible in or near the watch area. Individuals should stay alert for the latest weather information and be prepared to take shelter.
- **Warning.** A severe thunderstorm warning is issued when severe weather has been reported by spotters or indicated by radar. Warnings indicate imminent danger to life and property for those who are in the path of the storm and individuals should seek safe shelter.

HAZARD PROFILE

The following identifies past occurrences of severe storms; details the severity or extent of each event (if known); identifies the locations potentially affected; and estimates the likelihood of future occurrences.

When have severe storms occurred previously? What is the extent of these previous severe storms?

Tables 1, 2, and 3 located in **Appendix J,** summarize the previous occurrences as well as the extent or magnitude of severe storm events recorded in Vermilion County. Severe storm events are separated into four categories: thunderstorms with damaging winds, hail, lightning, and heavy rain. In Vermilion County, severe storms are the most frequently occurring natural hazard.

Thunderstorms with Damaging Winds

NOAA's Storm Events Database was used to document 258 reported occurrences of thunderstorms with damaging winds in Vermilion County between 1974 and 2022. Of the 258 occurrences, 219 had reported wind speeds of 50 knots or greater. There were 39 occurrences, however, where the wind speed was not recorded. Included in the 258 thunderstorms with damaging winds is one event from November 17, 2013 that contributed to a federally-declared disasters in Vermilion County.

Severe Storms Fast Facts – Occurrences

Number of recorded Thunderstorms with Damaging Winds (1974 – 2022): ***258***

Number of recorded Severe Hail Events (1974 – 2022): ***89***

Number recorded of Lightning Strike Events (1994 – 2022): ***3***

Highest Recorded Wind Speed: ***78 knots (June 19, 2009 & May 26, 2017)***

Largest Hail Recorded: ***3.5 inches (June 29, 2012)***

Most Likely Month for Thunderstorms with Damaging Winds to Occur: ***June***

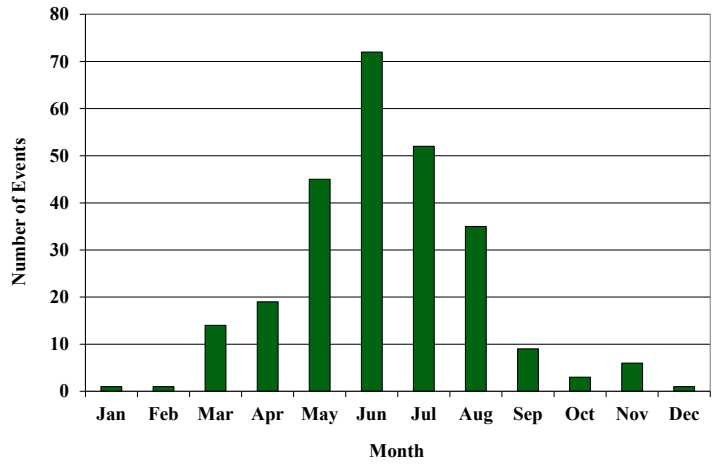
Most Likely Month for Severe Hail to Occur: ***May***

Number of Federal Disaster Declarations Related to Severe Storms: ***1 (November 17, 2013)***

The highest wind speed recorded in Vermilion County occurred in Oakwood on June 19, 2009 and again in Rossville on May 26, 2017 when winds reached 78 knots (90 mph) during a thunderstorm event. Thunderstorms with damaging winds have been recorded in every participating jurisdiction within the County on multiple occasions.

Figure SS-4 charts the reported occurrences of thunderstorms with damaging winds by month. Of the 258 events, 169 (66%) took place in May, June, and July making this the peak period for thunderstorms with damaging winds in Vermilion County. Of those 169 events, 72 (43%) occurred during June, making this the peak month for thunderstorms with damaging winds. Of the 258 occurrences, 78% of all thunderstorms with damaging winds occurred during the p.m. hours.

Figure SS-4
Thunderstorms with Damaging Winds by Month
1957 – 2022



Hail

NOAA's Storm Events Database was used to document 61 reported occurrences of severe storms with hail one (1) inch in diameter or greater in Vermilion County between 1974 and 2022. Of the 89 occurrences, 47 produced hailstones 1.50 inches or larger in diameter.

The largest hail stones documented in Vermilion County measured 3.5 inches in diameter (larger than a softball) and fell on June 29, 2012 near Bismarck and Henning. Hail one (1) inch in diameter or greater has been recorded in every participating jurisdiction except Fairmount on at least one occasion. This does not mean that hail one inch in diameter or greater has not fallen in Fairmount, it simply indicates it wasn't recorded.

Figure SS-5 charts the reported occurrences of hail by month. Of the 89 occurrences, 62 (70%) took place in April, May, and June making this the peak period for hail in Vermilion County. Of these 62 events, 35 (56%) occurred during May, making this the peak month for hail events. Seventy-three (82%) of the 89 severe storms with hail occurred during the p.m. hours.

Lightning

While lightning strike events occur regularly across east-central Illinois, NOAA's Storm Events Database records were only able to identify three occurrences of lightning strikes with verified damages in Vermilion County. The data limitations are almost certainly due to the rural nature of most of the County.

According to data from Vaisala's National Lightning Detection Network, Vermilion County averaged from to 6 to 20 cloud-to-ground lightning flashes per square mile annually between 2009 and 2018. **Figure SS-6** illustrates the cloud-to-ground lightning flash density (number of cloud-to-ground flashes per square mile per year) by county for the continental U.S. In comparison, Illinois averaged 12.7 cloud-to-ground lightning flashes per square mile from 2009 to 2018, ranking it eighth in the Country for lightning flash density.

Figure SS-5
Hail Events by Month
1981 – 2022

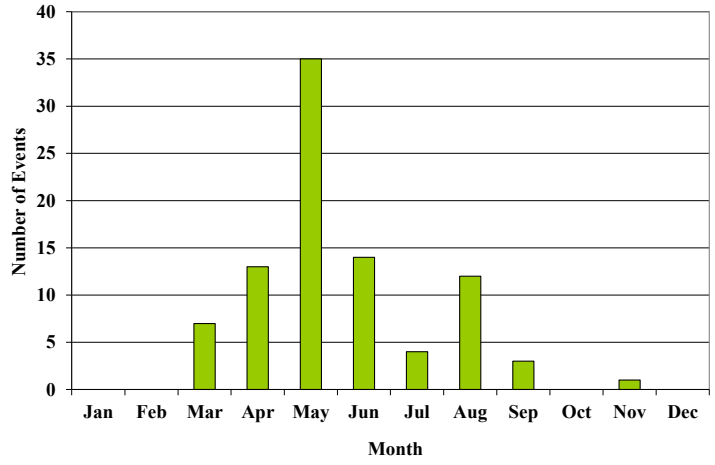
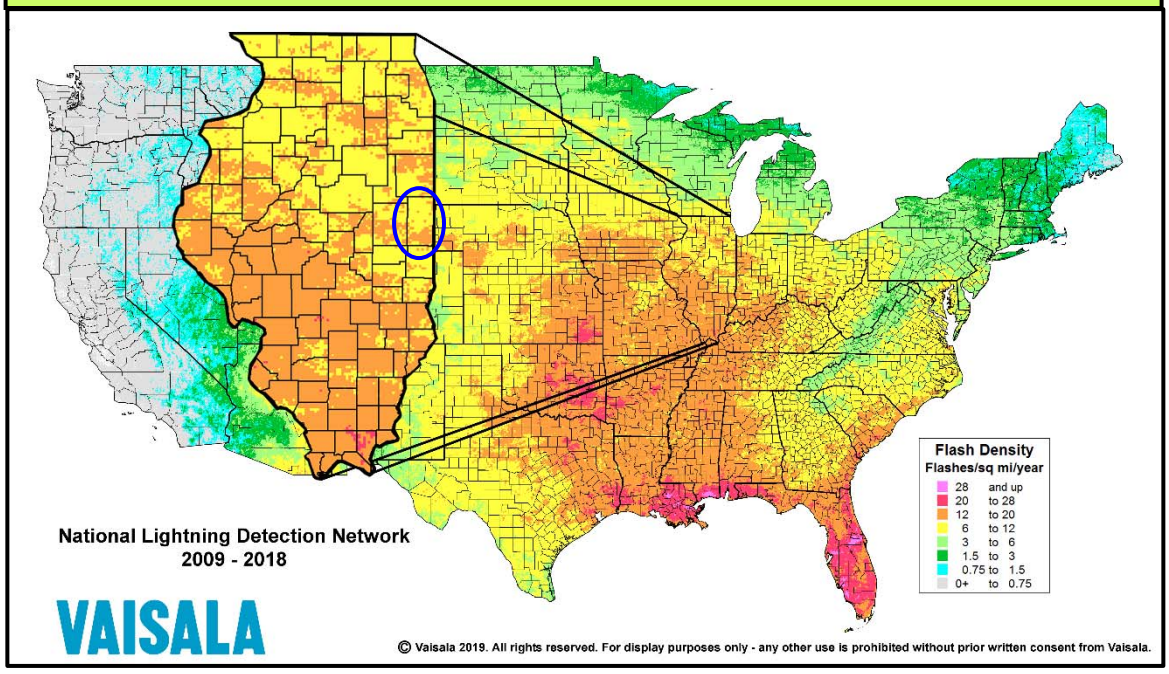


Figure SS-6
Cloud-to-Ground Lightning Flash Density: Continental U.S.



Heavy Rain

While heavy rain events occur on a fairly regular basis across central Illinois, NOAA's Storm Events Database does not include any *recorded* heavy rain events for Vermilion County. This may be due in part to a lack of uniform reporting guidelines for heavy rain events.

What locations are affected by severe storms?

Severe storms affect the entire County. A single severe storm event will generally extend across the entire County and affect multiple locations. Severe storms have been recorded in every participating jurisdiction within the County on multiple occasions.

What is the probability of future severe storm events occurring based on historical data?

Thunderstorms with Damaging Winds

Vermilion County has had 258 verified occurrences of thunderstorms with damaging winds between 1974 and 2022. With 258 occurrences over the past 49 years, Vermilion County would expect to experience at least five thunderstorms with damaging winds in any given year. There were 29 years over the last 49 years where multiple (three or more) thunderstorms with damaging winds occurred. This indicates that the probability that multiple thunderstorms with damaging winds may occur during any given year within the County is 59%.

Damage sustained in Danville during the June 7, 2015 thunderstorm with damaging winds.

Photograph courtesy of Russell Rudd, Vermilion County EMA Director

Hail

There have been 89 verified occurrences of hail one (1) inch in diameter or greater between 1974 and 2022. With 89 occurrences over the past 49 years, the County should expect to experience at least one severe storm with hail event each year. There were 14 years over the last 49 years where two or more hail events occurred. This indicates that the probability that more than one severe storm with hail may occur during any given year within the County is 29%.

What is the probability of future severe storm events occurring based on modeled future conditions?

Severe storms are very difficult to forecast in the near-term future, let alone in the long-term future. This owes to the fact that these events arise due to a combination of multiple factors (including pressure fronts, wind speeds, temperatures, and humidity) working together.

What can be predicted with more certainty looking into the future is the likelihood of supercell formation, which occurs with fewer conditions needing to be met, mainly a temperature differential in fronts and a relatively low moisture content. Supercells are strong, longer-lived storm systems characterized by rotation and updrafts that make them capable of producing hazards such as damaging winds, hail, and even tornadoes. While the formation of a supercell does not ensure that severe storm events will follow, supercells increase the probability of these events significantly, making supercell formation a good predictor for the likelihood of these other weather events.

In addition, in the last 120 years total annual precipitation in Illinois has increased by between 12% to 15% across the State. This trend is likely to continue, and as a result, precipitation in Illinois is forecasted to increase in coming decades. In addition to changes in the overall amount

of precipitation, changes in precipitation patterns indicate that future events will likely be less frequent, but larger and more severe. The Illinois State Climatologist indicates that since the beginning of the 20th Century, Illinois has seen a 40% increase in the number of days with extreme precipitation events (rainfall of 2 inches or greater) per year.

Based on existing trends of increasing supercell formation and future projections of precipitation and temperature, supercells are likely to continue to become more common in the future. For a discussion on future projections of temperature, see Section 3.4. Supercell formation today is mostly confined to the Great Plains and the Midwest, but future projections indicate that the geographic range over which supercells may develop is likely to increase as parts of the Country that were previously unfavorable to supercell formation become warmer and dryer. Additionally, if current trends of milder winters persist, supercell season is also likely to lengthen, starting earlier in the year and ending later.

Figure SS-7 contains a series of maps that show how the number of supercell tracks is likely to change in the future. The map at the top labeled a) depicts late 20th Century historical data showing the average number of supercells per year occurring within each grid square on the map. Below, projections for two different late 21st Century future scenarios for supercell frequency are given on the left, a low emission scenario depicted the top left map labeled b) and a high emission scenario depicted in the lower left map labeled d). On the right, the difference between each late 21st Century scenario and the late 20th Century historic baseline is shown, with redder areas showing an increase in supercell tracks per year, and blue areas showing a reduction.

Thunderstorms with Damaging Winds

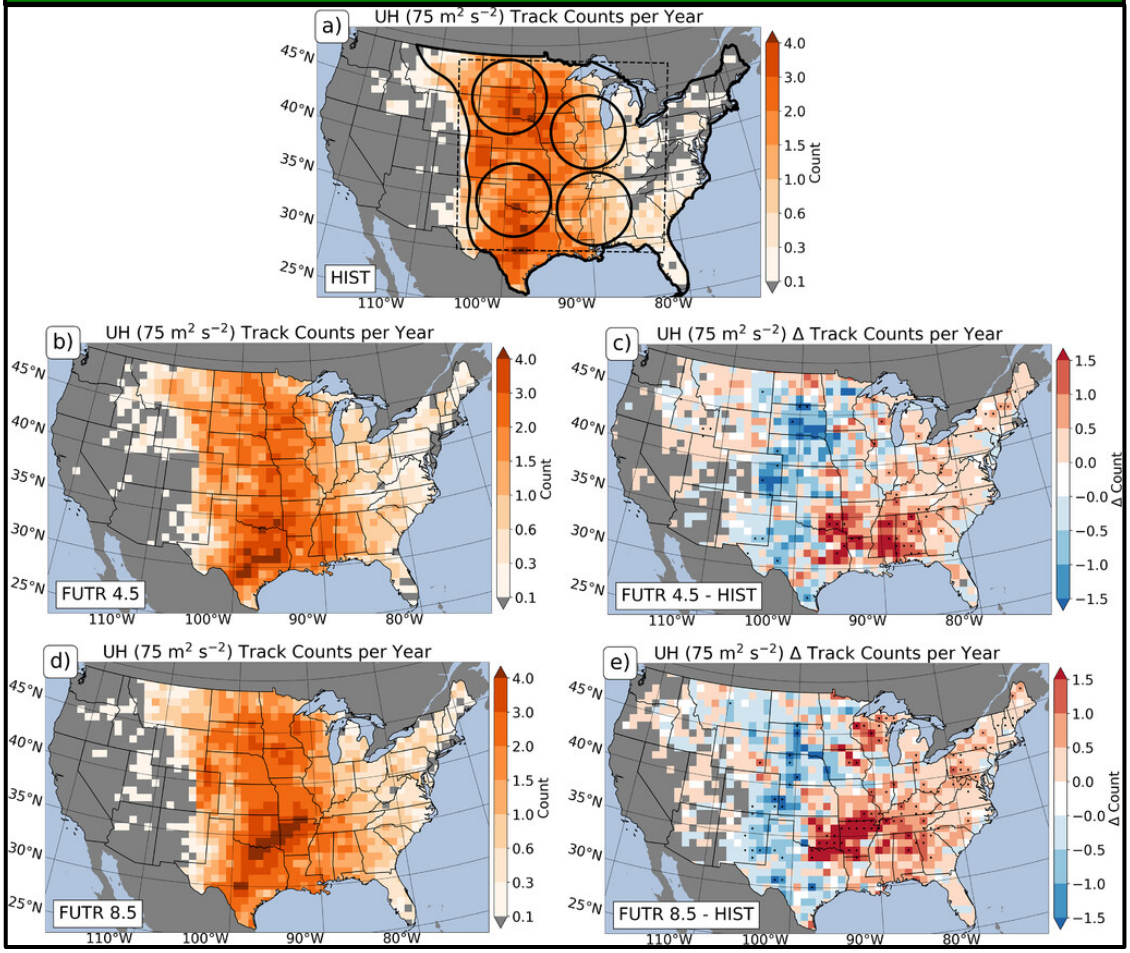
Damaging winds in severe storms are most often associated with powerful downdrafts, so looking at the changing prevalence of conditions favorable to generating these downdrafts can give us an indicator of how likely damaging thunderstorm winds may be in the future. The formation of powerful storms is typically energized by an influx of warm moist air. As the climate in the Midwest continues to become wetter and warmer, this makes strong thunderstorms with damaging winds a more probable occurrence in the future.

On the other hand, stronger warming occurring at more northerly latitudes is likely to decrease wind shear (a measurement of wind's change in speed and direction along a column of air), which is another important predictor of damaging winds. It is difficult to know which of these trends may be stronger than the other, or whether these two trends may wind up roughly cancelling each other out. The analysis of these trends should be revisited in subsequent planning efforts as more data becomes available.

Hail

Hail forms in storm systems with strong updrafts, so the formation of strong supercell storms is a good predictor of the occurrence of hail. The influx of moist, warm air rising over dryer, cooler air tends to create these updrafts, but for hail to occur, the air above the warm air must be cold enough for hail to form. Hail formation also depends on seasonality since the air above is cooler in spring and warmer in fall.

Figure SS-7
Mean Annual Supercell Track Counts



Citation: Bulletin of the American Meteorological Society 104, 1; 10.1175/BAMS-D-22-0027.1

While a wetter and warmer climate will likely lead to more severe storms with stronger updrafts, it is more difficult to predict whether more hailstorms will result. Less gradual warming in spring may mean there will not be sufficiently cool air aloft for hail to form. When cool enough air is present for hailstones to form, stronger updrafts and more massive storms could be able to generate larger hailstones on average than those seen today. As these trends play out and more data becomes available regarding any shifts in hail frequency or intensity, it will be important to continually reassess the risk posed by hail in future planning efforts.

Heavy Rain

Figures SS-8, SS-9, and **SS-10** provide tabular and graphical projections for Vermilion County, showing estimations for average annual precipitation and number of days with total precipitation greater than 2 inches in the early, mid, and late 21st century with both low and high estimates for each time period. Most likely, the true value will fall between these two estimates. By midcentury, the average annual precipitation in Vermilion County is projected to increase by 1.7 to 2.1 inches

per year, while the average number of days with precipitation per year is projected to decrease by 3 to 4 days according to the Climate Mapping for Resilience and Adaptation's Assessment Tool.

Figure SS-8
Average Annual Precipitation Projections Table – Vermilion County

Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Precipitation:							
Annual average total precipitation	**38"** 36 - 39	**39"** 36 - 43	**39"** 33 - 42	**39"** 35 - 43	**40"** 34 - 44	**40"** 35 - 44	**41"** 35 - 46
Days per year with precipitation (wet days)	**182 days** 177 - 187	**180 days** 164 - 189	**179 days** 163 - 193	**179 days** 162 - 193	**178 days** 155 - 195	**179 days** 165 - 193	**175 days** 134 - 201
Maximum period of consecutive wet days	**12 days** 11 - 14	**12 days** 10 - 13	**12 days** 11 - 13	**12 days** 11 - 14	**12 days** 10 - 14	**12 days** 11 - 15	**12 days** 10 - 15
Annual days with:							
Annual days with total precipitation > 1inch	**4 days** 3 - 4	**4 days** 4 - 5	**4 days** 3 - 6	**5 days** 3 - 6	**5 days** 3 - 6	**5 days** 4 - 7	**6 days** 4 - 8
Annual days with total precipitation > 2 inches	**0 days** 0 - 0	**0 days** 0 - 0	**0 days** 0 - 1	**0 days** 0 - 1	**0 days** 0 - 1	**0 days** 0 - 1	**1 days** 0 - 1
Annual days with total precipitation > 3 inches	**0 days** 0 - 0	**0 days** 0 - 0	**0 days** 0 - 0	**0 days** 0 - 0	**0 days** 0 - 0	**0 days** 0 - 0	**0 days** 0 - 0
Annual days that exceed 99th percentile precipitation	**5 days** 5 - 6	**6 days** 6 - 7	**6 days** 5 - 6	**6 days** 6 - 7	**7 days** 6 - 7	**6 days** 6 - 7	**8 days** 7 - 8
Days with maximum temperature below 32 °F	**32 days** 28 - 34	**23 days** 14 - 30	**22 days** 17 - 30	**20 days** 11 - 28	**18 days** 10 - 27	**17 days** 8 - 26	**10 days** 2 - 20

N/A = Data Not Available for the selected area

Figure SS-9
Average Annual Precipitation Projections Graph – Vermilion County

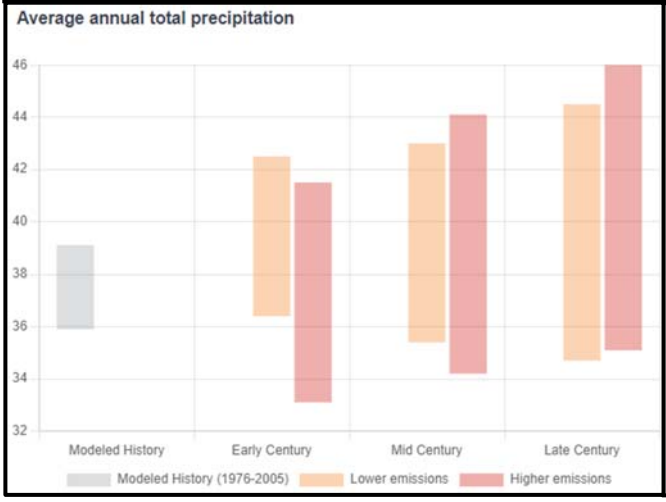
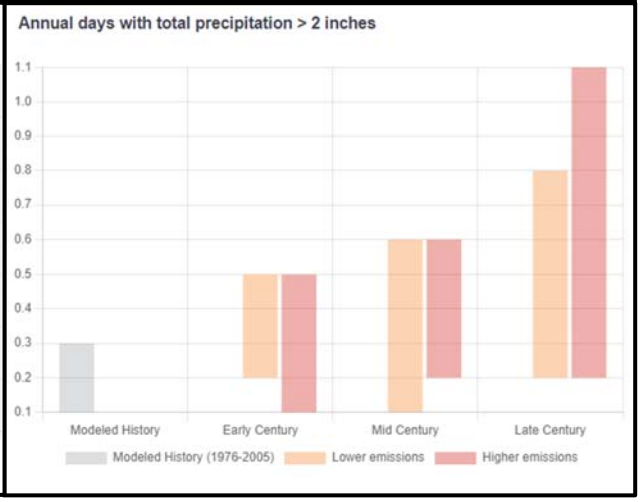


Figure SS-10
Number of Days with Total Precipitation > 2 Inches Graph – Vermilion County



The annual number of days with total precipitation greater than 2 inches is not projected to increase significantly. This is confirmed by the Climate Explorer which indicates that in Vermilion County the annual counts of intense rainstorms (rainfall of 2 inches or greater in one day) are not projected to increase. This is based on the findings of the 2018 National Climate Assessment and compares projections for the middle third of the century (2035-2064) with average conditions observed from 1961-1990.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from severe storms.

Are the participating jurisdictions vulnerable to severe storms?

Yes. All of Vermilion County is vulnerable to the dangers presented by severe storms due to the topography of the region and its location in relation to the movement of weather fronts across north-central Illinois. Since 2013, Vermilion County has recorded 107 thunderstorms with damaging winds, 39 heavy rain events, 17 severe storms with hail one (1) inch in diameter or greater, and one lightning strike with verified damages.

Figure SS-11 details the number of thunderstorms with damaging winds and hail events that were recorded in or near each participating municipality while **Figure SS-12** details the number of thunderstorms with damaging winds and hail events that were recorded in or near unincorporated areas of Vermilion County.

Figure SS-11
Verified Severe Storm Events by Participating Municipality

Participating Municipality	Number of Events	
	Thunderstorm & High Wind	Severe Hail
Danville[1,3]	107	21
Fairmount	7	0
Fithian	9	2
Georgetown	27	5
Hoopeston	40	15
Muncie	7	3
Oakwood	17	5
Rossville	27	9
Sidell[2]	17	5
Tilton	25	4

Figure SS-12
Verified Severe Storm Events in Unincorporated Vermilion County

Unincorporated Area	Number of Events	
	Thunderstorm & High Wind	Severe Hail
Archie	11	3
Armstrong	2	---
Batestown	---	2
Cheneyville	---	1
Collison	2	3
East Lynn	---	2
Jamaica[2]	5	3
Jamesburg	3	---
Midway	12	4
Olivet	7	1
Vermilion Regional Airport	3	1

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center

Of the participating municipalities, Danville has had more recorded occurrences of thunderstorms with damaging winds and the greatest number of recorded severe storms with hail events than any of the other municipalities. The differences in the number of recorded events between participating municipalities is likely due to the relative size of the municipalities as well as well as the fact that there has been a long-term NWS COOP Observation Station located in Danville.

The *2023 Illinois Natural Hazard Mitigation Plan* prepared by the Illinois Emergency Management Agency and Office Homeland Security (IEMA-OHS) classifies Vermilion County's hazard rating for wind (thunderstorms) as "very high", hail as "high", and lightning as "low".

IEMA-OHS's overall hazard rating system has five levels: very low, low, medium, high, and very high.

For strong wind (thunderstorms), hail, and lightning FEMA's National Risk Index (NRI) rates the County as a whole as "relatively moderate". For strong wind, out of the 24 census tracts, one tract is rated "very high" and 12 tracts are rated "relatively high". For hail, six tracts are rated "relative high" and for lightning two tracts are rated "relatively high". **Table R-5** presents the overall NRI scores and ratings for each census tract as well as for the County as a whole.

Have any of the participating jurisdictions identified specific assets vulnerable to the impacts of severe storms?

Yes. Based on responses to an Assets Vulnerability Survey distributed to the participating jurisdictions, the following jurisdictions considered specific assets within their jurisdiction vulnerable to severe storms.

Vermilion County:

- The electrical network in the County is vulnerable to severe storms and the cascading effects from power disruption are a major impact on vulnerable assets including people, critical infrastructure and systems throughout the County.
- Utility poles and lines have been damaged during severe storms with damaging wind impacting service to residents.

Danville:

- Heavy rain events have caused sanitary sewer backups into residential and commercial structures.
- Heavy rain events have overwhelmed the storm sewer infrastructure causing roadway and basement flooding, including the main roads through the City.
- Severe storms with damaging winds have the potential to down power lines and trees causing service disruptions that affect critical services to residents and blocking roadways impacting travel of emergency responders.
- Severe storms have the potential to disrupt emergency communication systems within the City, impacting emergency response services.
- The Danville Mass Transit facility does not have an emergency backup generator so loss of power due to a severe storm will affect communications, disrupt operations, and affect service to customers.
- Communications equipment and technology systems are vulnerable to lightning strikes and loss of power.

Fairmount:

- The drinking water treatment plant's electrical system was damaged when severe storms with damaging winds downed trees onto power lines.
- The Village's drinking water treatment plant, water tower, and well system do not have emergency backup power supplies so loss of power due to a severe storm will affect service to residents.
- Severe storms with damaging winds have the potential to down power lines impacting service to residents.

Fithian:

- The Village's drinking water treatment facility, the wastewater treatment plant, and the lift stations do not emergency backup power supplies so loss of power due to a severe storm will affect service to residents.
- Low points in streets flood during heavy rain events impacting travel.

Georgetown:

There is a low spot in the main north-south road through the Village that floods during heavy rain events impacting travel.

Hoopeston:

- The City does not have an adequate emergency shelter to use in the event a severe storm causes extensive damage.
- Currently the City does not have a backup communication system in place and a lightning or a severe storm with damaging winds has the potential to render communications inoperable within the City, impacting emergency response efforts. .

Muncie:

- Severe storms with damaging winds have damaged buildings and downed power lines causing widespread and lengthy power outages in the Village.
- Heavy rains have overwhelmed and exceeded the capacity of our stormwater drainage system causing flooding within the Village.
- Severe storms with damaging winds have the potential to down power lines causing service disruptions that affect critical services to residents.

Oakwood:

Severe storms with damaging winds have the potential to down power lines impacting service to residents.

OSF HealthCare Sacred Heart Medical Center:

- During severe storms, damaging winds have the potential to down trees and tree limbs which can impact electrical service to the Medical Center and block roadways impacting travel and access for emergency responders.
- A major hail event caused leaf debris to block storm drains which backed up causing flooding of the Emergency Department.
- The Medical Center does not have a whole hospital generator so certain services are not supported nor do the Center's outbuildings which put medications and normal business operations at risk when power outages are experienced as the result of severe storms with damaging winds.

Rossville:

The Village's Thompson Street lift station does not have a backup power supply, so it is vulnerable to power outages caused by severe storms with damaging winds.

Sidell:

- Lightning strikes have the potential to damage the Village's drinking water system infrastructure.
- Severe storms with damaging winds have the potential to down overhead power lines, disrupting service to residents.
- Power outages caused by severe storms have the potential to disrupt operation of the drinking water wells, potentially impacting service to residents.

Sidell Volunteer Fire Department:

- Severe storms with damaging winds have caused grain bins in the District to collapse.
- Severe storms with damaging winds have the potential to down overhead electrical lines impacting service to the Fire Station and residents
- Rural roads within the district are vulnerable to washouts from heavy rain events, causing adverse travel and delays in emergency response times.

Tilton:

During severe storms, damaging winds can down overhead electric lines causing power outages that affect service to residents.

Vermilion County Conservation District:

- Critical facilities and infrastructure, including water service, communications, and park administration, do not have emergency backup generators and therefore are vulnerable to potential power losses caused by severe storms.
- The water treatment building at Forest Glen Park and the wellhouse at Kennekuk Park are both vulnerable to lightning strikes which could impact service to visitors within the parks.
- Severe storms with damaging winds have the potential to down overhead power lines to crucial facilities and infrastructure, impacting service within the parks.

What impacts resulted from the recorded severe storms?

Severe storms as a whole have caused an estimated $27.5 million in recorded property damages and $30,000 in recorded crop damages. The following provides a breakdown of impacts by category.

Thunderstorms with Damaging Winds

Data obtained from NOAA's Storm Events Database and Committee member records indicates that between 1974 and 2022, 126 of the 258 thunderstorms with damaging winds caused $17,903,700 in property damages and $30,000 in crop damages. Damage information was either unavailable or none was recorded for the remaining 132 reported occurrences.

Severe Storms Fast Facts – Impacts/Risk

Thunderstorms with Damaging Winds Impacts:
- Total Property Damage (126 events): ***$17,903,700***
- Total Crop Damage (1 event): ***$30,000***
- Injuries (4 events): ***7***
- Fatalities: ***n/a***

Severe Hail Impacts:
- Total Property Damage (6 events): ***$9,651,000***
- Total Crop Damage : ***n/a***
- Injuries: ***n/a***
- Fatalities: ***n/a***

Lightning Strike Impacts:
- Total Property Damage (3 events): ***$4,000***
- Total Crop Damage: ***n/a***
- Injuries: ***n/a***
- Fatalities (1 event): ***1***

Severe Storms Risk/Vulnerability:
- Public Health & Safety: ***Low***
- Buildings/Infrastructure/Critical Facilities: ***Medium***

NOAA's Storm Events Database documented one fatality and seven injuries as the result of four separate thunderstorm with damaging wind events. Detailed information on the injuries and fatalities sustained was only available for two of the events. The following provides a brief description of each.

- On May 24, 1994, a custodian was injured by falling debris when a thunderstorm with damaging winds peeled the roof off an elementary school in Westville.

- A semi driver sustained minor injuries when a thunderstorm with damaging winds blew over the semi on I-74 just north of Fithian on February 11, 1999.

Hail

Data obtained from NOAA's Storm Events Database indicates that between 1974 and 2022, six of the 89 hail events caused $9,651,000 in property damages. Damage information was either unavailable or none was recorded for the remaining 83 events.

No injuries or fatalities were reported as a result of any of the recorded hail events.

Lightning

Data obtained from NOAA's Storm Events Database and Committee member records indicate that two of the three lightning strike events caused $4,000 in property damages. Damage information was unavailable for the remaining event. One fatality was reported as the result of a May 24, 1994 lightning strike event in Danville. A man was struck by lightning and killed while getting out of his car.

What other impacts can result from severe storms?

In Vermilion County, the greatest risk to health and safety from severe storms is vehicle accidents. Hazardous driving conditions resulting from severe storms (i.e., wet pavement, poor visibility, high winds, etc.) can contribute to accidents that result in injuries and fatalities. Traffic accident data assembled by the Illinois Department of Transportation from 2017 through 2021 indicates that wet road surface conditions were present for 11.7% to 18.3% of all crashes recorded annually in the County.

While other circumstances cause wet road surface conditions (i.e., melting snow, condensation, light showers, etc.), law enforcement officials agree that hazardous driving conditions caused by severe storms add to the number of crashes. **Figure SS-13** provides a breakdown by year of the number of crashes and corresponding injuries and fatalities that occurred when wet road surface conditions were present.

Figure SS-13
Severe Weather Crash Data for Vermilion County

Year	Total # of Crashes	Presence of Wet Road Surface Conditions		
		# of Crashes	# of Injuries	# of Fatalities
2017	866	145	46	1
2018	278	51	18	2
2019	864	101	31	1
2020	1,328	217	80	1
2021	1,425	203	56	1
Total:	**4,761**	**717**	**231**	**6**

Source: Illinois Department of Transportation.

What is the level of risk/vulnerability to public health and safety from severe storms?

For Vermilion County the level of risk or vulnerability posed by severe storms to public health and safety is considered to be ***low***. This assessment is based on the fact that despite their relative

frequency, the number of injuries and fatalities is low. In addition, OSF HealthCare Sacred Heart Medical Center, Danville VA Medical Center, and Carle Hoopeston Regional Health Center as well as nearby hospitals in Urbana (Champaign County), Gibson City (Ford County), Watseka (Iroquois County), Paris (Edgar County), and Williamsport (Warren County, Indiana) are equipped to provide care to persons injured during a severe storm.

Are existing buildings, infrastructure, and critical facilities vulnerable to severe storms?

Yes. All existing buildings, infrastructure and critical facilities located in Vermilion County and the participating jurisdictions are vulnerable to damage from severe storms. Structural damage to buildings is a relatively common occurrence with severe storms. Damage to roofs, siding, awnings, and windows can occur from hail, flying and falling debris and high winds. Lightning strikes can damage electrical components and equipment (i.e., appliances, computers etc.) and can cause fires that consume buildings. If the roof is compromised or windows are broken, rain can cause additional damage to the structure and contents of a building.

Hail up to 2.75 inches in diameter fell on May 16, 2019 in Tilton.

Photograph courtesy of the Tilton City Administrator

Infrastructure and critical facilities tend to be just as vulnerable to severe storm damage as buildings. The infrastructure and critical facilities that are the most vulnerable to severe storms are related to power distribution and communications. High winds, lightning and flying and falling debris have the potential to cause damage to communication and power lines; power substations; transformers and poles; and communication antennas and towers.

The damage inflicted by severe storms often leads to disruptions in communication and creates power outages. Depending on the damage, it can take anywhere from several hours to several days to restore service. Power outages and disruptions in communications can impair vital services, particularly when backup power generators are not available. Eleven of the participating jurisdictions acknowledged the need for emergency backup generators to allow continued operation of critical facilities such as administrative buildings, communications infrastructure, drinking water wells and treatment facilities, wastewater treatment plants, medical facilities, shelters, and fire stations.

According to the Critical Facilities Surveys completed by the participants, the County and only three of the participating municipalities have emergency backup generators at their administrative buildings while the County and six municipalities have generators at their sheriff's office/police stations. Of the seven participating jurisdictions with drinking water treatment facilities, only three, Hoopeston, Rossville, and Sidell, have emergency backup generators at those facilities. Only Hoopeston has a generator at its wastewater treatment plan.

In addition to affecting power distribution and communications, debris and flooding from severe storms can block state and local roads hampering travel. When transportation is disrupted, emergency and medical services are delayed, rescue efforts are hindered, and government services can be affected.

Based on the frequency with which severe storms occur in Vermilion County, the amount of property damage previously reported and the potential for disruptions to power distribution and communication; the risk or vulnerability to buildings, infrastructure and critical facilities from severe storms is ***medium***.

Are future buildings, infrastructure, and critical facilities vulnerable to severe storms?

Yes and No. While seven of the participating municipalities have building codes in place that will likely help lessen the vulnerability of new buildings and critical facilities to damage from severe storms, the County and the remaining three municipalities do not. However, infrastructure such as new communication and power lines will continue to be vulnerable to severe storms as long as they are located above ground. High winds, lightning and flying and falling debris can disrupt power and communication. Steps to bury all new lines would eliminate the vulnerability, but this action would be cost prohibitive in most areas.

What are the potential dollar losses to vulnerable structures from severe storms?

Unlike other natural hazards, such as tornadoes, there are no standard loss estimation models or methodologies for severe storms. With only 134 of the 350 recorded events listing property damage numbers for all categories of severe storms, there is no way to accurately estimate future potential dollar losses. However, according to the Vermilion County Clerk the total equalized assessed values of all residential, commercial, and industrial buildings in the planning area is $616,309,942. Since all of the structures in the planning area are vulnerable to damage, this total represents the countywide property exposure to severe storm events.

3.2 SEVERE WINTER STORMS

HAZARD IDENTIFICATION

What is the definition of a severe winter storm?

A severe winter storm can range from moderate snow over a few hours to significant accumulations of sleet and/or ice to blizzard conditions with blinding, wind-driven snow that last several days. The amount of snow or ice, air temperature, wind speed and event duration all influence the severity and type of severe winter storm that results. In general, there are three types of severe winter storms: blizzards, heavy snowstorms and ice storms. The following provides a brief description of each type as defined by the National Weather Service (NWS).

- **Blizzards.** Blizzards are characterized by strong winds of at least 35 miles per hour and are accompanied by considerable falling and/or blowing snow that reduces visibility to ¼ mile or less. Blizzards are the most dangerous of all winter storms.
- **Heavy Snowstorms.** Heavy snowstorms are generally defined as producing snowfall accumulations of four inches or more in 12 hours or less or six inches or more in 24 hours or less.
- **Ice Storms.** An ice storm occurs when substantial accumulations of ice, generally ¼ inch or more, build up on the ground, trees and utility lines as a result of freezing rain.

What is snow?

Snow is precipitation in the form of ice crystals. These ice crystals are formed directly from the freezing of water vapor in wintertime clouds. As the ice crystals fall toward the ground, they cling to each other creating snowflakes. Snow will only fall if the temperature remains at or below 32°F from the cloud base to the ground.

What is sleet?

Sleet is precipitation in the form of ice pellets. These ice pellets are composed of frozen or partially frozen rain drops or refrozen partially melted snowflakes. Sleet typically forms in winter storms when snowflakes partially melt while falling through a thin layer of warm air. The partially melted snowflakes then refreeze and form ice pellets as they fall through the colder air mass closer to the ground. Sleet usually bounces after hitting the ground or other hard surfaces and does not stick to objects.

What is freezing rain?

Freezing rain is precipitation that falls in the form of a liquid (i.e., rain drops), but freezes into a glaze of ice upon contact with the ground or other hard surfaces. This occurs when snowflakes descend into a warmer layer of air and melt completely. When the rain drops that result from this melting fall through another thin layer of freezing air just above the surface they become "supercooled", but they do not have time to refreeze before reaching the ground. However, because the raindrops are "supercooled", they instantly refreeze upon contact with anything that is at or below 32°F (i.e., the ground, trees, utility lines, etc.).

Are alerts issued for severe winter storms?

Yes. The NWS Weather Forecast Office in Lincoln, Illinois is responsible for issuing ***winter storm watches*** and ***warnings*** for Vermilion County depending on the weather conditions. The following provides a brief description of each type of alert.

- **Watch.** The following watches are issued in advance of a storm and indicate the potential for significant winter weather within the next day or two.
  - **Winter Storm Watch**. A winter storm watch is issued when conditions are favorable for the development of a hazardous winter weather event which has the potential to threaten life or property.
  - **Blizzard Watch**. A blizzard watch is issued when conditions are favorable for the development of blizzard conditions:
    - sustained winds or at least 35 mph and
    - reduced visibility of ¼ mile or less.
- **Advisories.** Winter advisories are issued for winter weather events that pose a significant inconvenience, especially to motorist, but should not be life-threatening if caution is exercised. The following advisories are generally issued 12 to 36 hours prior to an event.
  - **Freezing Rain Advisory.** A freezing rain advisory is issued when ice accumulations of up to ¼ inch are expected.
  - **Winter Weather Advisory.** A winter weather advisory is issued for one or more of the following:
    - snow accumulations of 3 to 5 inches in 12 hours or less;
    - sleet accumulations up to ¼ inch;
    - freezing rain in combination with sleet and/or snow; or
    - blowing and/or drifting snow.
- **Warnings.** The following winter weather warnings are issued when severe winter weather conditions are expected to cause a significant impact to life or property and make travel difficult to impossible. Individuals are advised to avoid travel and stay indoors.
  - **Blizzard Warning.** A blizzard warning is issued when reduced visibility of less than ¼ mile due to falling and/or blowing snow and strong winds of at least 35 mph or greater are expected for at least three hours.
  - **Ice Storm Warning.** An ice storm warning is issued when ice accumulations of ¼ inch or greater are expected, resulting in hazardous travel conditions, tree damage and extended power outages.
  - **Winter Storm Warning.** A winter storm warning is issued when there is one or more of the following expected:
    - heavy snow accumulations of at least 6 inches in 12 hours or at least 8 inches in 24 hours; or
    - sleet accumulations of at least ½ inch.

HAZARD PROFILE

The following identifies past occurrences of severe winter storms; details the severity or extent of each event (if known); identifies the locations potentially affected; and estimates the likelihood of future occurrences.

When have severe winter storms occurred previously? What is the extent of these previous severe winter storm?

Table 4, located in **Appendix J**, summarize the previous occurrences as well as the extent or magnitude of severe winter storms (snow & ice) recorded in Vermilion County.

Severe Winter Storm Fast Facts – Occurrences

Number of Severe Winter Storm Events Reported (1950 -2022): ***140***

Maximum 24-Hour Snow Accumulation: ***13.0 inches (December 18 & 19, 1973)***

Most Likely Month for Severe Winter Storms to Occur: ***January & February***

Number of Federal Disaster Declarations Related to Severe Winter Storms: ***1 (February 14 & 15, 1990)***

NOAA's Storm Events Database, Midwestern Regional Climate Center's cli-MATE database, and NWS's COOP data records were used to document 140 reported occurrences of severe winter storms (snow, ice and/or a combination of both) in Vermilion County between 1950 and 2022. Of the 140 recorded occurrences there were 104 heavy snowstorms or blizzards; 31 combination events (freezing rain, sleet, ice and/or snow); and five ice or sleet storms. Included in the 140 severe winter storms is one event, the 1990 Valentine's Day ice storm, that contributed to a federally-declared disaster in Vermilion County.

Figure SWS-1 charts the reported occurrences of severe winter storms by month. Of the 140 events, 110 (79%) took place in in December, January, and February making this the peak period for severe winter storms. Of these 110 events, 39 (35%) occurred during January and 39 (35%) occurred in February, making these the peak months for severe winter storms. There were two events that spanned two months; however, for illustration purposes only the month when the event started is graphed. Of the winter storm events with recorded times, 53% began during the p.m. hours.

According to the NWS's COOP data records, the maximum 24-hour snow accumulation in Vermilion County is 13 inches, which occurred on December 18 and 19, 1973 at the Danville COOP Observation Station.

What locations are affected by severe winter storms?

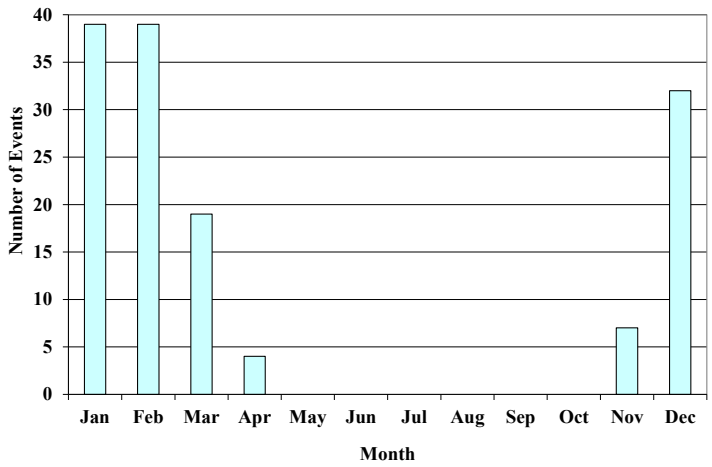
Severe winter storms affect the entire County. All communities in Vermilion County have been affected by severe winter storms. Severe winter storms generally extend across the entire County and affect multiple locations.

What is the probability of future severe winter storms occurring based on historical data?

Vermilion County has had 140 verified occurrences of severe winter storms between 1950 and 2022. With 140 occurrences over the past 73 years, Vermilion County should expect at least one severe winter storm in any given year. There were 40 years over the past 73 years where two or

more severe winter storms occurred. This indicates the probability that more than one severe winter storm may occur during any given year within the County is 55%.

Figure SWS-1
Severe Winter Storms by Month
1950 – 2022



What is the probability of future severe winter storms occurring based on modeled future conditions?

The number of days in a year where the temperature falls below 32°F are gradually decreasing in number, meaning that though there will still be winter weather events, there will be fewer days in a given year that could produce them. **Figure SWS-2 and SWS-3** provide tabular and graphical projections for Vermilion County showing estimations for the number of days per year with minimum temperatures below 32°F by decade in the early, mid, and late 21st century with both low and high estimates for each time period.

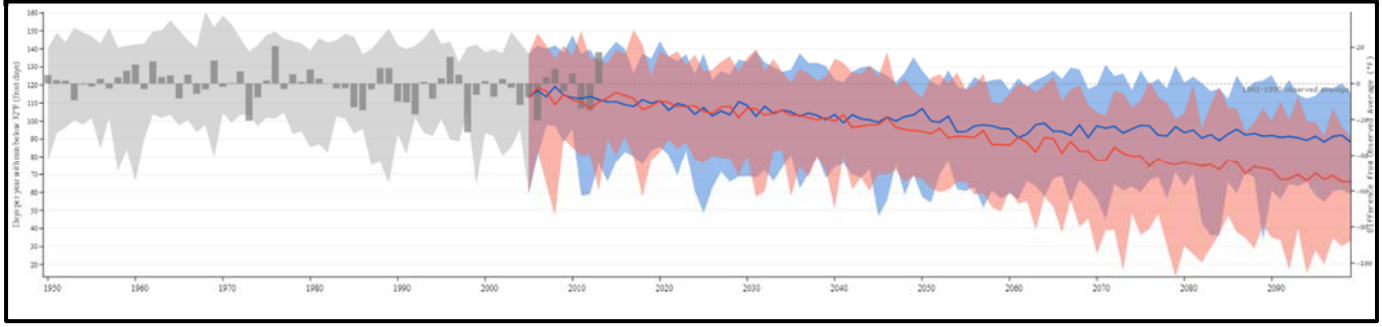
Figure SWS-2
Number of Days Per Year with Minimum Temperature < 32°F Table – Vermilion County

Indicator	Modeled Time Frame						
	2030s Min - Max	**2040s** Min - Max	**2050s** Min - Max	**2060s** Min - Max	**2070s** Min - Max	**2080s** Min - Max	**2090s** Min - Max
Days with minimum temperature below 32°F							
Lower Emissions	**105 days** 71 - 132	**102 days** 67 - 127	**99 days** 61 - 123	**95 days** 62 - 124	**96 days** 61 - 124	**93 days** 55 - 120	**91 days** 61 - 118
Higher Emissions	**104 days** 72 - 129	**98 days** 67 - 127	**92 days** 60 - 119	**87 days** 50 - 117	**79 days** 34 - 111	**75 days** 33 - 106	**68 days** 29 - 101

However, while overall trends of rising temperatures will lead to milder winters on average, this does not mean that severe winter storms will become a thing of the past. Heavy snow events could actually become more common due to rising temperatures. Warmer air is more favorable to the formation of high precipitation clouds, which in winter will increase the likelihood of severe winter storm events when it gets cold enough to snow instead of rain. Snow from these events tends to

be warm, wet, and heavy, but will melt relatively quickly in comparison to the finer, dustier snow that falls when temperatures are colder.

Figure SWS-3
Number of Days Per Year with Minimum Temperature < 32°F Graph – Vermilion County



HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from severe winter storms.

Are the participating jurisdictions vulnerable to severe winter storms?

Yes. All of Vermilion County, including the participating jurisdictions, is vulnerable to the dangers presented by severe winter storms. Severe winter storms are among the more frequently occurring natural hazards in Illinois. Since 2013, Vermilion County has experienced 21 severe winter storms.

Severe winter storms have immobilized portions of the County, blocking roads; downing power lines, trees, and branches; causing power outages and property damage; and contributing to vehicle accidents. In addition, the County, township, and municipalities must budget for snow removal and de-icing of roads and bridges as well as for roadway repairs.

The *2023 Illinois Natural Hazard Mitigation Plan* prepared by IEMA-OHS classifies Vermilion County's hazard rating for winter storms as "high" and ice storms as "medium". IEMA-OHS's overall hazard rating system has five levels: very low, low, medium, high, and very high.

For winter weather and ice storm FEMA's National Risk Index (NRI) rates the County as a whole as "relatively moderate". None of the 24 census tracts are rated higher than "relatively moderate" for winter weather and ice storm. **Table R-5** presents the overall NRI scores and ratings for each census tract as well as for the County as a whole.

Have any of the participating jurisdictions identified specific assets vulnerable to the impacts of severe winter storms?

Yes. Based on responses to an Assets Vulnerability Survey distributed to the participating jurisdictions, the following jurisdictions considered specific assets within their jurisdiction vulnerable to severe winter storms.

Vermilion County:

- The electrical network in the County is vulnerable to severe winter storms and the cascading effects from power disruption are a major impact on vulnerable assets including people, critical infrastructure and systems throughout the County.
- Utility poles and lines have been damaged during ice storms with damaging wind impacting service to residents.

Danville:

- Severe winter storms have the potential to disrupt emergency communication systems within the City, impacting emergency response services.
- Ice storms have the potential to down power lines causing service disruptions that affect critical services to residents.
- The Danville Mass Transit facility does not have an emergency backup generator so loss of power due to a severe winter storm will affect communications, disrupt operations, and affect service to customers.
- Severe winter storms disrupt operations at Danville Mass Transit and cause air lines to freeze on transportation fleet and increases the vulnerability of customers waiting for or exiting vehicles.

Fairmount:

- The Village's drinking water treatment plant, water tower, and well system do not have emergency backup power supplies so loss of power due to an ice storm will affect service to residents.
- Ice storms have the potential to down power lines causing service disruptions that affect critical services to residents.

Muncie:

Ice storms have the potential to down power lines causing service disruptions that affect critical services to residents.

Oakwood:

Ice storms have the potential to down power lines impacting service to residents.

OSF HealthCare Sacred Heart Medical Center:

The Medical Center does not have a whole hospital generator so certain services are not supported nor do the Center's outbuildings which put medications and normal business operations at risk when power outages are experienced as the result of a severe winter storm.

Rossville:

The Village's Thompson Street lift station does not have a backup power supply, so it is vulnerable to power outages caused by ice storms.

Sidell Volunteer Fire Department:

- During severe winter storms, high winds and ice have the potential to down power lines impacting services to the Fire Station and residents.
- Severe winter storms have the potential to impede travel, especially on rural roads.

Tilton:

- Severe winter storms have the ability to down overhead electric lines causing power outages that could affect service to residents
- Ice storms have the potential to down overhead power lines, disrupting service to residents.
- Power outages caused by severe winter storms with high winds have the potential to disrupt operation of the drinking water wells, potentially impacting service to residents.

Vermilion County Conservation District:

- Key facilities and infrastructure, including water service, communications, and park administration, do not have emergency backup generators and therefore are vulnerable to potential power losses caused by severe winter storms.
- Ice storms have the potential to down overhead power lines to crucial facilities and infrastructure, impacting service within the parks.

What impacts resulted from the recorded severe winter storms?

Data obtained from NOAA's Storm Events Database indicates that between 1950 and 2022, two of the 140 severe winter storms caused $55,000 in property damages. Property damage information was either unavailable or none was recorded for the remaining 138 reported occurrences.

Severe Winter Storms & Extreme Cold Events
Fast Facts – Impacts/Risk

Severe Winter Storm (Snow & Ice) Impacts:

- Total Property Damage (2 events): ***55,000***
- Injuries (5 events): ***9***
- Fatalities (3 events): ***6***

Severe Winter Storm Risk/Vulnerability:

- Public Health & Safety: ***Low to Medium***
- Buildings/Infrastructure/Critical Facilities: ***Medium***

In comparison, the State of Illinois has averaged $102 million annually in winter storm losses according to the Illinois State Water Survey's Climate Atlas of Illinois, ranking winter storms second only to flooding in terms of economic loss in the State. While behind floods in terms of the amount of property damage caused, severe winter storms have a greater ability to immobilize larger areas, with rural areas being particularly vulnerable.

NOAA's Storm Events Database documented six fatalities and nine injuries as the result of seven separate severe winter storm events. Detailed information on the injuries and fatalities sustained was only available for three of the events. The following provides a brief description of each.

- A winter storm on January 6, 2009 caused one injury and one fatality as the result of two separate vehicle accidents in the County. A woman slid off the road just north of Sidell and was transported to a local hospital with injuries. Another woman lost her life as her vehicle slid off I-74 just west of Tilton.
- A winter storm that began on February 8, 2010 caused slick and snow-covered roads. A driver lost control of their vehicle on I-74 just west of Danville and spun into the path of another vehicle, injuring one person.
- Two people were injured in a vehicle accident on I-74 just east of the Oakwood exit when a semi-trailer truck struck a car during a heavy snow event that started on January 6, 2010.

What other impacts can result from severe winter storms?

In Vermilion County, vehicle accidents are the largest risk to health and safety from severe winter storms. Hazardous driving conditions (i.e., reduced visibility, icy road conditions, strong winds, etc.) contribute to the increase in accidents that result in injuries and fatalities. A majority of all severe winter storm injuries result from vehicle accidents.

Traffic accident data assembled by the Illinois Department of Transportation from 2017 through 2021 indicates that treacherous road conditions caused by snow/slush and ice were present for 4.0% to 12.2% of all crashes recorded annually in the County. **Figure SWS-4** provides a breakdown by year of the number of crashes and corresponding injuries and fatalities that occurred when treacherous road conditions caused by snow and ice were present.

Figure SWS-4
Severe Winter Weather Crash Data for Vermilion County

Year	Total # of Crashes	Presence of Treacherous Road Conditions caused by Snow/slush and Ice		
		# of Crashes	# of Injuries	# of Fatalities
2017	866	64	18	0
2018	278	34	2	0
2019	864	82	17	0
2020	1,328	53	16	0
2021	1,425	101	19	0
Total:	**4,761**	**334**	**72**	**0**

Source: Illinois Department of Transportation.

Persons who are outdoors during and immediately following severe winter storms can experience other health and safety problems. Frostbite to hands, feet, ears and nose and hypothermia are common injuries. Treacherous walking conditions also lead to falls which can result in serious injuries, including fractures and broken bones, especially in the elderly. Over exertion from shoveling driveways and walks can lead to life-threatening conditions such as heart attacks in middle-aged and older adults who are susceptible.

What is the level of risk/vulnerability to public health and safety from severe winter storms?

While severe winter storms occur regularly in Vermilion County, the number of injuries and fatalities is relatively low. Taking into consideration the potential for hazardous driving conditions, snow-removal related injuries, and power outages that could leave individuals vulnerable to hypothermia, the risk to public health and safety of the *general population* from severe winter storms safety is seen as ***low*** to ***medium***.

The level of risk or vulnerability posed by severe winter storms to the public health and safety of *socially vulnerable populations* is considered to be ***medium***. Socially vulnerable populations such as older adults (those 75 years of age and older) are more susceptible to slips and falls caused by treacherous walking conditions and therefore their risk is elevated. **Figure SWS-5** identifies the percent of socially vulnerable populations by participating municipality and the County based on the U.S. Census Bureau's 2017-2021 American Community Survey data.

Figure SWS-5 Socially Vulnerable Populations by Participating Jurisdictions	
Participating Jurisdiction	**% of Population 75 year of age & Older**
Danville[1,3]	7.9%
Fairmount	7.4%
Fithian	7.7%
Georgetown	9.1%
Hoopeston	7.1%
Muncie	3.5%
Oakwood	9.8%
Rossville	10.6%
Sidell[2]	17.9%
Tilton	11.1%
Unincorp. Vermilion County	7.2%
Vermilion County	8.1%
State of Illinois	6.4%

[1]Vermilion County Conservation District [3]OSF Healthcare Sacred Heart Medical Center
[2]Sidell Volunteer Fire Department
Source: U.S. Census Bureau.

Are existing buildings, infrastructure, and critical facilities vulnerable to severe winter storms?
Yes. All existing buildings, infrastructure, and critical facilities located in Vermilion County and the participating jurisdictions are vulnerable to damage from severe winter storms.

Structural damage to buildings caused by severe winter storms (snow and ice) is very rare but can occur particularly to flat rooftops. Information gathered from Vermilion County residents indicates that snow and ice accumulations on communication and power lines as well as key roads presents the greatest vulnerability to infrastructure and critical facilities within the County. Snow and ice accumulations on lines often lead to disruptions in communications and create power outages. Depending on the damage, it can take anywhere from several hours to several days to restore service.

In addition to affecting communication and power lines, snow and ice accumulations on state and local roads hampers travel and can cause dangerous driving conditions. Blowing and drifting snow can lead to road closures and increases the risk of automobile accidents. Even small accumulations of ice can be extremely dangerous to motorists since bridges and overpasses freeze before other surfaces.

When transportation is disrupted, schools close, emergency, and medical services are delayed, some businesses close and government services can be affected. When a severe winter storm hits there is also an increase in cost to the County, township, and municipalities for snow removal and de-icing. Road resurfacing and pothole repairs are additional costs incurred each year as a result of severe winter storms.

Based on the frequency with which severe winter storms have occurred in Vermilion County; the damages described; the amount of property damage previously reported; and the potential for disruptions to power distribution and communication; the risk or vulnerability to buildings, infrastructure and critical facilities from severe winter storms is ***medium***.

Are future buildings, infrastructure, and critical facilities vulnerable to severe winter storms?

Yes and No. While seven of the participating municipalities have building codes in place that will likely lessen the vulnerability of new buildings and critical facilities to damage from severe winter storms, the County and the three remaining participating municipalities do not. However, infrastructure such as new communication and power lines will continue to be vulnerable to severe winter storms, especially to ice accumulations, as long as they are located above ground. Rural areas of the County have experienced extended periods without power due to severe winter storms. Steps to bury all new lines would eliminate the vulnerability, but this action would be cost prohibitive in most areas. In terms of new roads and bridges, there is very little that can be done to reduce or eliminate their vulnerability to severe winter storms.

What are the potential dollar losses to vulnerable structures from severe winter storms?

Unlike other natural hazards, such as tornadoes, there are no standard loss estimation models or methodologies for severe winter storms. Since only two of the 140 recorded events listing property damage numbers for severe winter storms, it is difficult to accurately estimate future potential dollar losses. However, according to the Vermilion County Clerk the total equalized assessed values of all residential, commercial, and industrial buildings in the planning area is $616,309,942. Since all of the structures in the planning area are vulnerable to damage, this total represents the countywide property exposure to severe winter storms.

3.3 FLOODS

HAZARD IDENTIFICATION

What is the definition of a flood?

The Federal Emergency Management Agency (FEMA) defines a "flood" as a general or temporary condition where two or more acres of normally dry land or two or more properties are inundated by:

- overflow of inland or tidal waters;
- unusual and rapid accumulation or runoff of surface waters from any source;
- mudflows; or
- a sudden collapse or subsidence of shoreline land.

The severity of a flooding event is determined by a combination of topography and physiography, ground cover, precipitation and weather patterns and recent soil moisture conditions. On average, flooding causes more than $5 billion in damages each year in the U.S. Floods cause utility damage and outages, infrastructure damage (both to transportation and communication systems), structural damage to buildings, crop loss, decreased land values and impede travel.

What types of flooding occur in the County?

There are two main types of flooding that affect Vermilion County: general flooding and flash flooding. General flooding can be broken down into two categories: riverine flooding and shallow flooding. The following provides a brief description of each type.

General Flooding – Riverine Flooding

Riverine flooding occurs when the water in a river or stream gradually rises and overflows its banks. This type of flooding affects low lying areas near rivers, streams, lakes, and reservoirs and generally occurs when:

- persistent storm systems enter the area and remain for extended periods of time,
- winter and spring rains combine with melting snow to fill river basins with more water than the river or stream can handle,
- ice jams create natural dams which block normal water flow, and
- torrential rains from tropical systems make landfall.

General Flooding – Shallow Flooding

Shallow flooding occurs in flat areas where there are no clearly defined channels (i.e., rivers and streams) and water cannot easily drain away. There two main types of shallow flooding: sheet flow and ponding. If the surface runoff cannot find a channel, it may flow out over a large area at a somewhat uniform depth in what's called sheet flow. In other cases, the runoff may collect in depressions and low-lying areas where it cannot drain out, creating a ponding effect. Ponding floodwaters do not move or flow away, they remain in the temporary ponds until the water can infiltrate the soil, evaporate, or are pumped out.

Flash Floods

Flash flooding occurs when there is a rapid rise of water along a stream or low-lying area. This type of flooding generally occurs within six hours of a significant rain event and is usually produced when heavy localized precipitation falls over an area in a short amount of time. Considered the most dangerous type of flood event, flash floods happen quickly with little or no warning. Typically, there is no time for the excess water to soak into the ground nor are the storm sewers able to handle the sheer volume of water. As a result, streams overflow their banks and low-lying (such as underpasses, basements etc.) areas can rapidly fill with water.

Flash floods are very strong and can tear out trees, destroy buildings and bridges and roll boulders the size of cars. Flash flood-producing rains can also weaken soil and trigger debris flows that damage homes, roads, and property. A vehicle caught in swiftly moving water can be swept away in a matter of seconds. Twelve inches of water can float a car or small SUV and 18 inches of water can carry away large vehicles.

What is a base flood?

A base flood refers to any flood having a 1% chance of occurring in any given year. It is also known as the 100-year flood or the one percent annual chance flood. The base flood is the national standard used by the National Flood Insurance Program (NFIP) and the State of Illinois for the purposes of requiring the purchase of flood insurance and regulating new development.

Many individuals misinterpret the term "100-year flood". This term is used to describe the risk of future flooding; it does not mean that it will occur once every 100 years. Statistically speaking, a 100-year flood has a 1/100 (1%) chance of occurring in any given year. In reality, a 100-year flood could occur two times in the same year or two years in a row, especially if there are other contributing factors such as unusual changes in weather conditions, stream channelization or changes in land use (i.e., open space land developed for housing or paved parking lots). It is also possible not to have a 100-year flood event over the course of 100 years.

While the base flood is the standard most commonly used for floodplain management and regulatory purposes in the U.S., the 500-year flood is the national standard for protecting critical facilities, such as hospitals and power plants. A 500-year flood has a 1/500 (0.2%) chance of occurring in any given year.

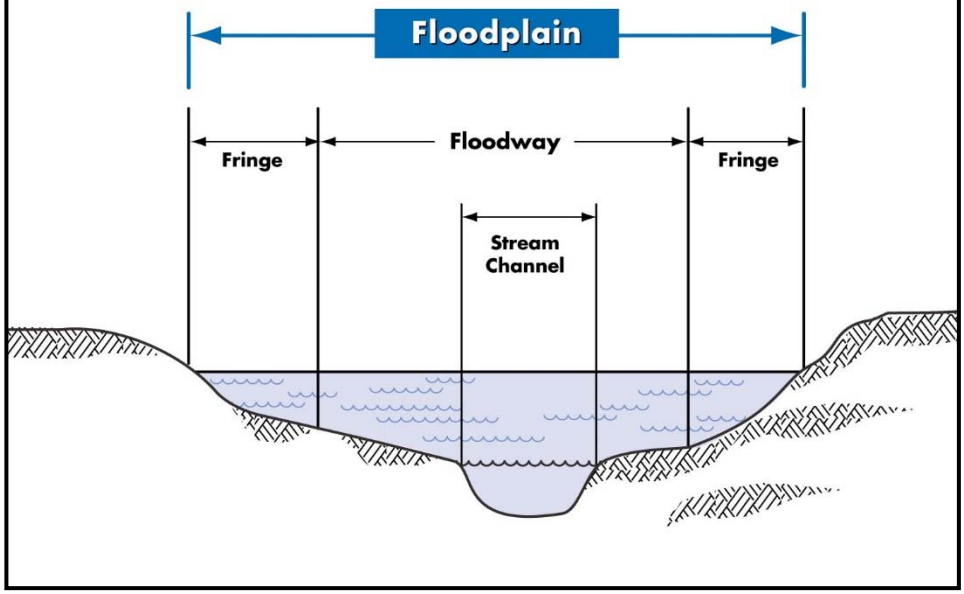
What is a floodplain?

The general definition of a floodplain is any land area susceptible to being inundated or flooded by water from any source (i.e., river, stream, lake, estuary, etc.). This general definition differs slightly from the regulatory definition of a floodplain.

A regulatory or base floodplain is defined as the land area that is covered by the floodwaters of the base flood. This land area is subject to a 1% chance of flooding in any given year. The base floodplain is also known as the 100-year floodplain or a Special Flood Hazard Area (SFHA). It is this second definition that is generally most familiar to people and the one that is used by the NFIP and the State of Illinois.

A base floodplain is divided into two parts: the floodway and the flood fringe. **Figure F-1** illustrates the various components of a base floodplain.

Figure F-1
Floodplain Illustration



Source: Illinois Department of Natural Resources, Quick Guide to Floodplain Management.

The floodway is the channel of a river or stream and the adjacent floodplain that is required to store and convey the base flood without increasing the water surface elevation. Typically, the floodway is the most hazardous portion of the floodplain because it carries the bulk of the base flood downstream and is usually the area where water is deepest and is moving the fastest. Floodplain regulations prohibit construction within the floodway that results in an increase in the floodwater's depth and velocity.

The flood fringe is the remaining area of the base floodplain, outside of the floodway, that is subject to shallow inundation and low velocity flows. In general, the flood fringe plays a relatively insignificant role in storing and discharging floodwaters. The flood fringe can be quite wide on large streams and quite small or nonexistent on small streams. Development within the flood fringe is typically allowed via permit if it will not significantly increase the floodwater's depth or velocity and the development is elevated above or otherwise protected to the base flood elevation.

What is a Special Flood Hazard Area?

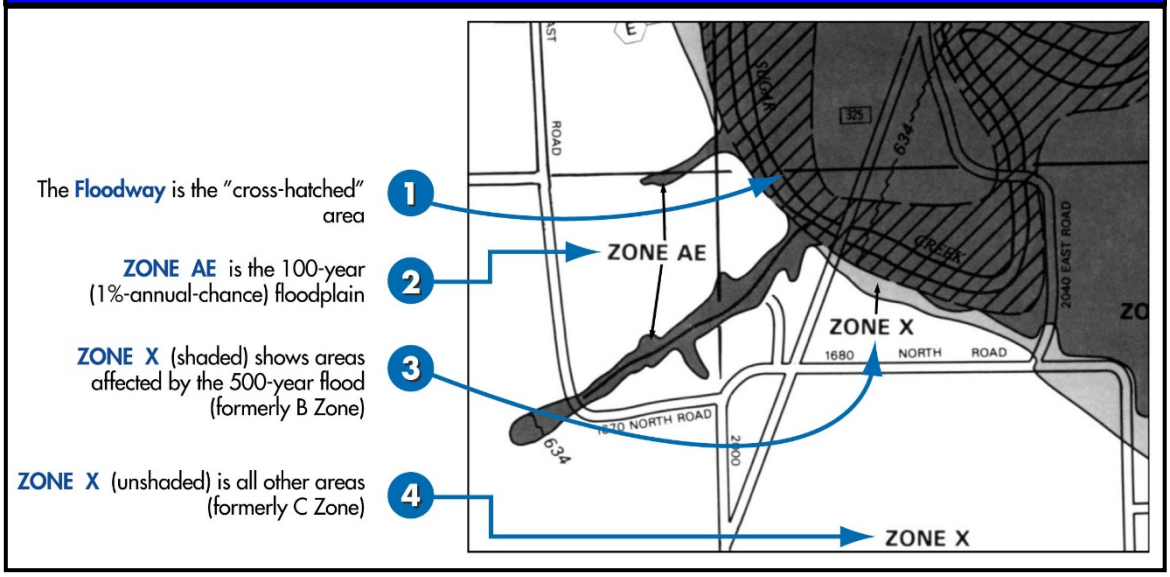
A Special Flood Hazard Area (SFHA) is the base floodplain. As discussed previously, this is the land area that is covered by the floodwaters of the base flood and has a 1% chance of flooding in any given year. The term SFHA is most commonly used when referring to the based floodplain on the Flood Insurance Rate Maps (FIRM) produced by FEMA. The SFHA is the area where floodplain regulations must be enforced by a community as a condition of participation in the NFIP and the area where mandatory flood insurance purchase requirements apply. SFHA are delineated

on the FIRMs and may be designated as Zones A, AE, A1-30, AO, AH, AR, and A99 depending on the amount of flood data available, the severity of the flood hazard or the age of the flood map.

What are Flood Insurance Rate Maps?

Flood Insurance Rate Maps (FIRMs) are maps that identify both the SFHA and the risk premium zones applicable to a community. These maps are produced by FEMA in association with the NFIP for floodplain management and insurance purposes. Digital versions of these maps are referred to as DFIRMs. **Figure F-2** shows an example of a FIRM.

Figure F-2
Example of a Flood Insurance Rate Map (FIRM)



Source: Illinois Department of Natural Resources, Quick Guide to Floodplain Management.

A FIRM will generally show a community's base flood elevations, flood zones and floodplain boundaries. The information presented on a FIRM is based on historic, meteorological, hydrologic, and hydraulic data as well as open-space conditions, flood-control projects, and development. ***These maps only define flooding that occurs when a creek or river becomes overwhelmed. They do not define overland flooding that occurs when an area receives extraordinarily intense rainfall and storm sewers, and roadside ditches are unable to handle the surface runoff.***

What are flood zones?

Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk and type of flooding. These zones are depicted on a community's FIRM. The following provides a brief description of each flood zone.

- **Zone A.** Zone A, also known as the Special Flood Hazard Area (SFHA) or base floodplain, is defined as the floodplain area that has a 1% chance of flooding in any given year. There are multiple Zone A designations, including Zones A, AO, AH, A1-30, AE, AR or A99. Land areas located within Zone A are considered high-risk flood areas.

During a 30-year period, the length of many mortgages, there is at least a 1 in 4 chance that flooding will occur in a SFHA. The purchase of flood insurance is mandatory for all buildings in SFHAs receiving federal or federally-related financial assistance.

- **Zone X (shaded).** Zone X (shaded), formerly known as Zone B, is defined as the floodplain area between the limits of the base flood (Zone A) and the 0.2% chance or 500-year flood. Land areas located within Zone X (shaded) are affected by the 500-year flood and are considered at a moderate risk for flooding.

  Zone X (shaded) is also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, shallow flooding areas with average depths of less than one foot or drainage areas less than one square mile. While flood insurance is not federally required in Zone X (shaded), it is recommended for all property owners and renters.

- **Zone X (unshaded).** Zone X (unshaded), formerly known as Zone C, is defined as all other land areas outside of Zone A and Zone X (shaded). Land areas located in Zone X (unshaded) are considered to have a low or minimal risk of flooding. While flood insurance is not federally required in Zone X (unshaded), it is recommended for all property owners and renters.

What is a Repetitive Loss Structure or Property?

FEMA defines a "repetitive loss structure" as a National Flood Insurance Program-insured structure that has received two or more flood insurance claim payments of more than $1,000 each within any 10-year period since 1978. These structures/properties account for approximately one-fourth of all National Flood Insurance Program (NFIP) insurance claim payments since 1978.

Currently, repetitive loss properties make up about 2% of all NFIP policies, and account for approximately $9 billion in claims or approximately 16% of the total claims paid over the history of the Program. These structures not only increase the NFIP's annual losses, but they also drain funds needed to prepare for catastrophic events. As a result, FEMA and the NFIP are working with states and local governments to mitigate these properties.

What is floodplain management?

Floodplain management is the administration of an overall community program of corrective and preventative measures to reduce flood damage. These measures take a variety of forms and generally include zoning, subdivision or building requirements, special-purpose floodplain ordinances, flood control projects, education, and planning. Where floodplain development is permitted, floodplain management provides a framework that minimizes the risk to life and property from floods by maintaining a floodplain's natural function. Floodplain management is a key component of the National Flood Insurance Program.

What is the National Flood Insurance Program?

The National Flood Insurance Program (NFIP) is a federal program, administered by FEMA, that:

- mitigates future flood losses nationwide through community-enforced building and zoning ordinances; and

- provides access to affordable, federally-backed insurance protection against losses from flooding to property owners in participating communities.

It is designed to provide an insurance alternative to disaster assistance to meet escalating costs of repairing damage to buildings and their contents due to flooding. The U.S. Congress established the NFIP on August 1, 1968 with the passage of the National Flood Insurance Act of 1968. This Program has been broadened and modified several times over the years, most recently with the passage of the Flood Insurance Reform Act of 2004.

Prior to the creation of the NFIP, the national response to flood disasters was generally limited to constructing flood-control projects such as dams, levees, sea-walls, etc. and providing disaster relief to flood victims. While flood-control projects were able to initially reduce losses, their gains were offset by unwise and uncontrolled development practices within floodplains. In light of the continued increase in flood losses and the escalating costs of disaster relief to taxpayers, the U.S. Congress created the NFIP. The intent was to reduce future flood damage through community floodplain management ordinances and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for protection.

Participation in the NFIP is voluntary and based on an agreement between local communities and the federal government. If a community agrees to adopt and enforce a floodplain management ordinance to reduce future flood risks to new construction in a SFHA (base floodplain), then the government will make flood insurance available within the community as a financial protection against flood losses.

If a community chooses not to participate in the NFIP or a participating community decides not to adopt new floodplain management regulations or amend its existing regulations to reference new flood hazard data provided by FEMA, then the following sanctions will apply.

- Property owners will not be able to purchase NFIP flood insurance policies and existing policies will not be renewed.
- Federal disaster assistance will not be provided to repair or reconstruct insurable buildings located in identified flood hazard areas for presidentially-declared disasters that occur as a result of flooding.
- Federal mortgage insurance and loan guarantees, such as those written by the Federal Housing Administration and the Department of Veteran Affairs, will not be provided for acquisition or construction purposes within an identified flood hazard area. Federally-insured or regulated lending institutions, such as banks and credit unions, are allowed to make conventional loans for insurable buildings in identified flood hazard areas of non-participating communities. However, the lender must notify applicants that the property is in an identified flood hazard area and that it is not eligible for federal disaster assistance.
- Federal grants or loans for development will not be available in identified flood hazard areas under programs administered by federal agencies such as the Environmental Protection Agency, Small Business Administration and the Department of Housing and Urban Development.

What is the NFIP's Community Rating System?

The NFIP's Community Rating System (CRS) is a voluntary program developed by FEMA to provide incentives (in the form of flood insurance premium discounts) for NFIP participating communities that have gone beyond the minimum NFIP floodplain management requirements to develop extra measures to provide protection from flooding. CRS discounts on flood insurance premiums range from 5% up to 45%. The discounts provide an incentive for communities to implement new flood protection activities that can help save lives and property when a flood occurs.

Are alerts issued for flooding?

Yes. The National Weather Service Weather Forecast Office in Lincoln, Illinois is responsible for issuing **flood watches** and **warnings** for Vermilion County depending on the weather conditions. The following provides a brief description of each type of alert.

- **Flood Watches.** A flood watch is issued when flooding or flash flooding is possible. It does not mean that flooding will occur, just that conditions are favorable. Individuals need to be prepared.
- **Flood Advisories.** A flood advisory is issued when flooding may cause significant inconvenience but is not expected to be to pose an immediate threat to life and/or property. Individuals need to be aware.
- **Warnings.** Warnings indicate a serious threat to life and/or property.
  - **Flood Warning**. A flood warning is issued when flooding is occurring or will occur soon and is expected to last for several days or weeks.
  - **Flash Flood Warning.** A flash flood warning is issued when flash flooding is occurring or is imminent. Flash flooding occurs very quickly so individuals are advised to take action immediately.

HAZARD PROFILE

The following identifies past occurrences of floods; details the severity or extent of each event (if known); identifies the locations potentially affected; and estimates the likelihood of future occurrences.

When has flooding occurred previously? What is the extent of these previous floods?

Tables 5 and **6**, located in **Appendix J**, summarize the previous occurrences as well as the extent or magnitude of flood events recorded in Vermilion County. The flood events are separated into two categories: general floods (riverine and shallow/overland) and flash floods.

General Floods

NOAA's Storm Events Database, NWS's Advanced Hydrologic Prediction Service, and the U.S. Geological Survey (USGS) river gauge data were used to document 26 occurrences of general flooding in Vermilion County between 1994 and

Flood Fast Facts – Occurrences

Number of General Floods Reported (1994 – 2022): ***26***

Number of Flash Floods Reported (1994 – 2022): ***88***

Most Likely Months for General Floods to Occur: ***May & June***

Most Likely Month for Flash Floods to Occur: ***June***

Number of Federal Disaster Declarations Related to General and Flash Flooding: ***4 (1968, 1994, 1996 & 2002)***

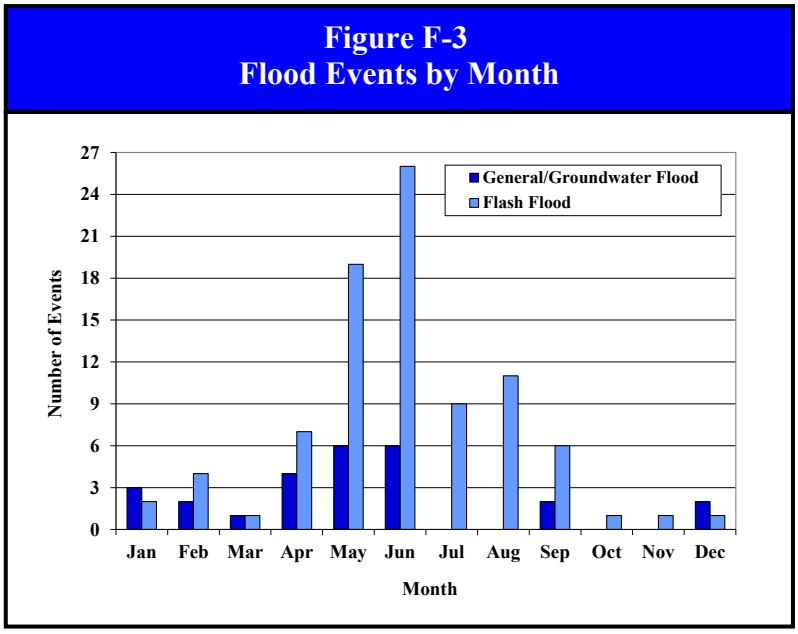
2022. Included in the 26 general flood events are two events, April 1994 and May 2002, that contributed to two separate federally-declared disasters in Vermilion County. Based on historical gauge data, the record setting Vermilion River flood at Danville occurred on April 13, 1994 when the River crested at 31.56 feet. The second and third highest crests at this location occurred in 1939 and 2018 respectively.

Flash Floods

NOAA's Storm Events Database and Iowa State University's National Weather Service Watch, Warning, and Advisories database were used to document 88 reported occurrences of flash flooding in Vermilion County between 1994 and 2022. Included in the 88 flash flood events are six flash flood events that contributed to four separate federally-declared disasters in Vermilion County. Two of the declarations also included general flood events.

Figure F-3 charts the reported occurrences of flooding by month. Of the 25 general flood events, 16 (64%) began in April, May, and June making this the peak period for general flooding. Of those 16 events, 6 (38%) began during May and 6 (38%) began in June making these the peak months for general flooding. There was one event that spanned two or more months; however, for illustration purposes only the month the event started in is graphed.

Figure F-3
Flood Events by Month



In comparison, 45 of the 88 flash flood events (51%) took place between May and June making this the peak period for flash floods. Of the 45 events, 26 (58%) occurred in June making this the peak month for flash flooding. Of the flash flood events with recorded times, 74% began during the p.m. hours.

What locations are affected by floods?

While specific locations are affected by general flooding, most areas of the County can be impacted by overland and flash flooding because of the topography and seasonally high water table of the area. In Vermilion County, approximately 3.9% of the area in the County is designated as being within the base floodplain and susceptible to riverine floods.

Figure F-4 identifies the floodplains in Vermilion County as well as the participating jurisdictions. This map is based on the most current Vermilion County DFRIMs that became effective May 16, 2012. While a large portion of the area prone to riverine flooding is in unincorporated portions of the County, Allerton, Alvin, Belgium, Bismarck, Catlin, Danville, Georgetown, Hoopeston, Indianola, Muncie, Potomac, Rankin, Rossville, Tilton, and Westville are also susceptible to riverine flooding because of their proximity to floodplains. **Appendix K** contains maps identifying the floodplains located in each of the participating municipalities.

Overland flooding occurred on January 10, 2020 at Western Ave. & Evans Ave. west of Danville

Photograph courtesy of Russell Rudd, Vermilion County EMA Director

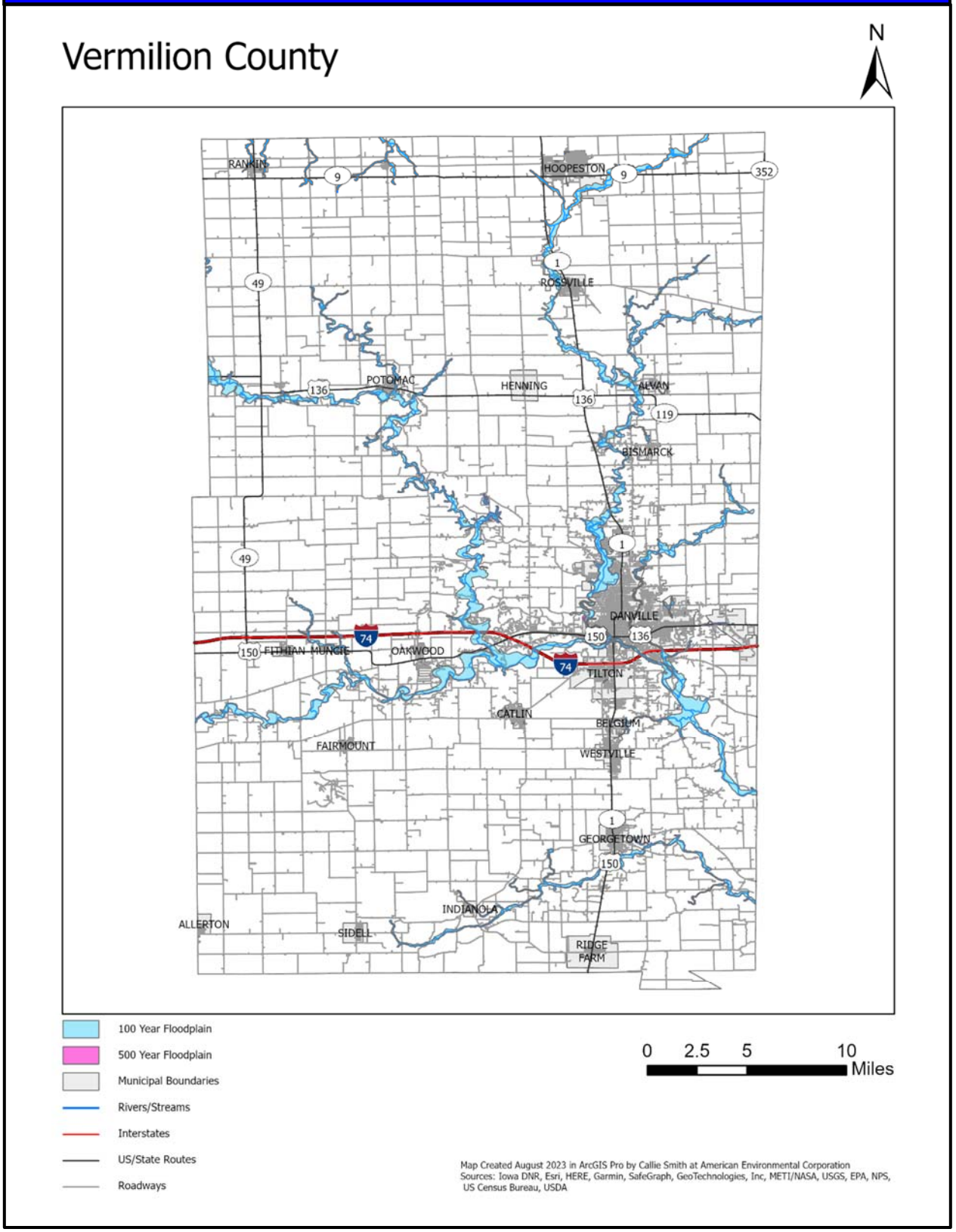
Figure F-5 identifies the bodies of water within or immediately adjacent to participating jurisdictions that are known to cause flooding or have the potential to flood. Water bodies with Special Flood Hazard Areas located within a participating jurisdiction (as identified on the DFIRMs) are identified in bold. Municipal, Township, and County officials have reported overland flood issues outside of the base floodplain in most of the participating municipalities and many unincorporated portions of the County. This overland flooding is known to impair travel.

Figure F-5
Bodies of Water Subject to Flooding

Participating Jurisdiction	Water Bodies
Danville	**Jordan Creek, Lick Creek, North Fork Vermilion River, Stoney Creek**
Fairmount	---
Fithian	---
Georgetown	**Unnamed Tributary to Little Vermilion River**
Hoopeston	**Unnamed Tributary to North Fork Vermilion River**
Muncie	**Feather Creek, Stony Creek**
Oakwood	---
Rossville	**North Fork Vermilion River**
Sidell	---
Tilton	**Grape Creek**
Unincorporated Vermilion County	**Archie Creek,** Baum Branch, **Bean Creek, Bluegrass Creek, Buck Creek, Butler Branch, Collison Branch,** Dillon Branch, **Fairview Ditch,** Fayette Creek, **Feather Creek, Fountain Creek,** Freadwell Branch, **Gimlet Branch, Glenburn Creek,** Goodall Branch, Grape Creek, **Hawbuck Creek,** Jonathan Creek, **Jordan Creek, Knight's Branch, Lick Creek, Little Vermilion River, Middle Branch North Fork Vermilion River, Middle Fork Vermilion River, North Fork Vermilion River,** Olive Branch, **Painter Creek, Pigeon Creek, Salt Fork Vermilion River, Stoney Creek, Stony Creek,** Swank Creek, **Unnamed Tributary to Little Vermilion River, Vermilion River,** Whippoorwill Branch, **Whiskey Creek,** White Branch, **Windfall Creek, Yankee Branch**

Source: FEMA's DFIRMs.

Figure F-4
Floodplain Areas in Vermilion County



What jurisdictions within the County take part in the NFIP?

Participating Jurisdictions

Vermilion County, Danville, Fairmount, Georgetown, Hoopeston, Muncie, and Oakwood participate in the NFIP. **Figure F-6 *provides information on each NFIP-participating jurisdiction,*** including the date each participant joined, the date of their current effective FIRM and the year of their most recently adopted floodplain zoning ordinance. Fithian and Sidell have no identified flood hazard boundaries within their corporate limits and do not wish to participate in the NFIP at this time. While the current effective DFIRMs for Rossville and Tilton (dated May 16, 2012) identify SFHAs within their limits, the Villages have chosen not to adopt floodplain regulations and participate in the NFIP. Rossville is listed with a sanction date of September 8, 1979 in FEMA's Community Status Book Report for Illinois while Tilton is listed with a sanction date of June 21, 1975. Rossville's current administration does not see the need to participate since the area within the identified flood hazard boundaries is wooded or agricultural land west of the Village proper and does not include any residences. Tilton's current administration also does not see the need to participate since only a vey small portion of the Village is located within the identified flood hazard boundaries of Grape Creek and only impacts approximately five houses.

Figure F-6
NFIP Participating Jurisdictions

Participating Jurisdictions	Participation (Date)	Current Effective FIRM (Date)	Floodplain Zoning/FIRM Adoption Ordinance (Year)	Adoption of Minimum NFIP Criteria (Yes/No)*	Local Floodplain Management Regulations Implemented & Enforced (Yes/No)	Position Responsible for Implementation of NFIP Commitments/ Requirements	CRS Participation
Vermilion County	06/01/1995	05/16/2012	2012	Yes	Yes	EMA Director	No
Danville	07/18/1983	05/16/2012	2012	Yes	Yes	Director of Public Development	No
Fairmount	05/16/2012	05/16/2012 (NSFHA)	2012	Yes	Yes	Village President	No
Georgetown	02/11/1976	05/16/2012	2012	Yes	Yes	Building Inspector	No
Hoopeston	07/03/1985	05/16/2012	2012	Yes	Yes	Building Inspector	No
Muncie	05/16/2012	05/16/2012	2012	Yes	Yes	Village President	No
Oakwood	05/16/2012	05/16/2012 (NSFHA)	2012	Yes	Yes	Superintendent of Public Works	No

* In Vermilion County, all the NFIP-participating jurisdictions have adopted the State of Illinois model floodplain ordinance. This ordinance goes above and beyond NFIP minimum standards and has much more restrictive floodway regulations. As a result, all of the NFIP-participating jurisdictions are in compliance with NFIP requirements.

Discussions with the individuals responsible for implementation of the NFIP commitments and requirements within their jurisdiction and a review of the participating jurisdictions floodplain ordinances indicates that each monitor flood events and, when applicable, conduct substantial damage determinations for structures within the floodplain using FEMA's Substantial Damage Estimator Tool. For structures that meet the definition of substantial damage (total cost of repairs is 50% or more of the structure's market value before the disaster occurred, regardless of the cause of damage), the owners are notified, and the structure must be brought back into compliance with local floodplain management regulations.

Participating jurisdictions will continue to comply with the NFIP by implementing mitigation projects and activities that enforce this ordinance to reduce future flood risks to new construction within the SFHA. At this time no new construction is planned within the base floodplain. Continued compliance with NFIP requirements is addressed in the Mitigation Action Tables of the participating jurisdictions found in Section 4.7.

Non-Participating Jurisdictions

Figure F-7 provides information on those incorporated municipalities within the County that chose not to participate in the planning process but take part in the NFIP. Henning and Ridge Farm have no identified flood hazard boundaries within their corporate limits and have chosen not to participate in the Program. While the current effective DFIRM for Alvin, Belgium, and Indianola (dated May 16, 2012) does identify a small SFHA within its limits, these villages have chosen not to adopt floodplain regulations and participate in the NFIP. Alvin is listed with a sanction date of February 21, 1976 in FEMA's Community Status Book Report for Illinois while Belgium is listed with a sanction date of March 28, 1976 and Indianola is listed with a sanction date of January 5, 1980. The current administrations of these villages do not see the need to participate since the areas within the identified flood hazard boundaries are largely natural drainage ways and do not include many structures.

Figure F-7
Non-Participating Jurisdiction NFIP Status

Participating Jurisdictions	Participation Date	Current Effective FIRM Date	CRS Participation	Most Recently Adopted Floodplain Zoning Ordinance
Allerton	05/16/2012	05/16/2012 (NSFHA)	No	2012
Bismarck	05/16/2012	05/16/2012 (NSFHA)	No	2012
Catlin	09/04/1985	05/16/2012	No	2012
Potomac	09/18/1985	05/16/2012	No	2012
Rankin	09/18/1985	05/16/2012	No	2012
Westville	08/19/1985	05/16/2012	No	2012

Sources: FEMA, Community Status Book Report: Illinois.

What is the probability of future flood events occurring based on historical data?

General Floods

Vermilion County has had 26 verified occurrences of general flooding between 1994 and 2022. With 26 occurrences over the past 29 years, the probability or likelihood that a general flood event may occur during any given year within the County is 90%. It is important to keep in mind there are almost certainly gaps in the general flood data. More events have almost certainly occurred than are documented in this section, which means that the probability is almost certainly higher than reported.

There were six years over the past 29 years where two or more general flood events occurred. This indicates that the probability or likelihood that more than one general flood event may occur during any given year within the County is 21%.

Flash Floods

There have been 88 verified flash flood events between 1994 and 2022. With 88 occurrences over the past 29 years, the County should expect at least two flash flood events in any given year. There were 20 years over the past 29 years where two or more flash flood events occurred. This indicates that the probability that more than one flash flood event may occur during any given year within the County is approximately 69%.

What is the probability of future flood events occurring based on modeled future conditions?

In the last 120 years, total annual precipitation in Illinois has increased by between 12% to 15% across the State. This means, according to the Illinois State Climatologist, that we get about an additional 5 inches of yearly rainfall compared to what was expected historically.

This trend is likely to continue, and as a result, precipitation in Illinois is forecasted to increase in coming decades. In addition to changes in the overall amount of precipitation, changes in precipitation patterns indicate that future events will likely be less frequent, but larger and more severe. The Illinois State Climatologist indicates that since the beginning of the 20th Century, Illinois has seen a 40% increase in the number of days with extreme precipitation events (rainfall of 2 inches or greater) per year.

One result of more precipitation overall and an increase in heavy rain events is an increased risk of flooding. In particular, extreme precipitation events are likely to lead to flash floods along rivers and in urban areas, where impermeable surfaces such as buildings, roads, and sidewalks will make drainage systems more likely to be overwhelmed. Rural areas will face different challenges, most notably those close to rivers and in low-lying areas with little or no drainage capability.

Figures SS-8 and **SS-9**, located in Section 3.1, provide tabular and graphical projections for Vermilion County, showing estimations for average annual precipitation in the early, mid, and late 21st century with both low and high estimates for each time period. Most likely, the true value will fall between these two estimates. By midcentury, the average annual precipitation in Vermilion County is projected to increase by 1.7 to 2.1 inches per year, while the average number of days with precipitation per year is projected to decrease by 3 to 4 days according to the Climate Mapping for Resilience and Adaptation's Assessment Tool.

By midcentury, the annual number of days with total precipitation greater than 1 inch is projected to increase by one day. The annual number of days with total precipitation greater than 2 inches is not projected to increase significantly. This is confirmed by the Climate Explorer, which indicates that in Vermilion County the annual counts of intense rainstorms (rainfall of 2 inches or greater in once day) are not projected to increase. This is based on the findings of the 2018 National Climate Assessment and compares projections for the middle third of the century (2035-2064) with average conditions observed from 1961-1990.

Taken together, the projected increase in annual rainfall, the decrease in frequency of rain events, and the negligible threat of intense rain events in Vermilion County means that the likelihood of flooding may be slightly higher than it is today.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from floods.

Several factors including topography, precipitation, and an abundance of rivers and streams make Illinois especially vulnerable to flooding. According to the Illinois State Water Survey's Climate Atlas of Illinois, since the 1940s Illinois climate records have shown an increase in heavy precipitation, which has led to increased flood peaks on Illinois rivers.

Are the participating jurisdictions vulnerable to flooding?

Yes. Vermilion County and the participating jurisdictions are vulnerable to the dangers presented by flooding. Precipitation levels and topography are factors that cumulatively make virtually the entire County susceptible to some form of flooding. Flooding occurs along the floodplains of all the rivers, streams, and creeks within the County as well as outside of the floodplains in low-lying areas where drainage problems occur. Since 2013, Vermilion County has experienced nine general flood events and 34 flash flood events.

Figure F-8 details the number of *recorded* flash flood events by participating jurisdiction. Of the 26 general flood events, 22 impacted either a large portion or the entire County and were not location specific. The remaining four general flood events took place in or near Danville.

Figure F-8
Verified Flash Flood Events by Participating Jurisdiction

Participating Jurisdiction	Number	Year
Danville[1,3]	4	1996, 2004, 2004, 2021
Fairmount	---	---
Fithian	---	---
Georgetown	---	---
Hoopeston	2	2004, 2004
Muncie	---	---
Oakwood	---	---
Rossville	1	2004
Sidell[2]	1	1996
Tilton	2	1996, 2021
countywide	19	1994, 1996, 2001, 2001, 2003, 2003, 2003, 2003, 2005, 2005, 2008, 2009, 2013, 2014, 2015, 2017, 2018, 2021, 2022
central portion of the County	7	2004, 2004, 2008, 2013, 2015, 2016, 2018
central southern portion of the County	3	2003, 2010, 2017
southern portion of the County	12	1998, 1998, 2002, 2002, 2002, 2008, 2009, 2010, 2010, 2015, 2019, 2020
southwestern portion of the County	2	2002, 2006
northern portion of the County	15	1998, 2002, 2002, 2003, 2003, 2004, 2004, 2009, 2013, 2014, 2015, 2017, 2017, 2018, 2018
northeastern portion of the County	9	2005, 2006, 2009, 2010, 2012, 2013, 2015, 2015, 2019
west central portion of the County	1	2016
western portion of the County	2	2002, 2010

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center

The *2023 Illinois Natural Hazard Mitigation Plan* prepared by IEMA-OHS classifies Vermilion County's hazard rating for riverine flooding and flash flooding as "high". IEMA-OHS's overall hazard rating system has five levels: very low, low, medium, high, and very high.

For riverine floods the FEMA's National Risk Index (NRI) rates the County as a whole as "relatively low". None of the 24 census tracts are rated higher than "relatively moderate" for riverine floods. **Table R-5** presents the overall NRI scores and ratings for each census tract as well as for the County as a whole.

Vulnerability to flooding can change depending on several factors, including land use. As land used primarily for agricultural and open space purposes is converted for residential and commercial/industrial uses, the number of buildings and impervious surfaces (i.e., parking lots, roads, sidewalks, etc.) increases. As the number of buildings and impervious surfaces increases, so too does the potential for flash flooding. Rather than infiltrating the ground slowly, rain and snowmelt that falls on impervious surfaces runs off and fills ditches and storm drains quickly creating drainage problems and flooding. According to the Multi-Resolution Land Characteristics (MRLC) Consortium, in 2021 approximately 8.5% of the County's land cover was considered developed with 2.33% impervious surfaces. Areas with impervious surface rates approaching or exceeding 12 to 15 percent will likely experience negative impacts to water quality. Between 2016 and 2021 approximately 0.49 square miles or 0.05% of the land cover in the County changed with 0.08 square miles of development and 0.41 square miles of impervious surfaces gained.

Morin's Addition on the west side of Danville experienced riverine flooding in February 2018.

Photograph courtesy of Russell Rudd, Vermilion County EMA Director

As described in Section 1.3 Land Use and Development Trends, substantial changes in land use (from forested, open, and agricultural land to residential, commercial, and industrial) are not anticipated within the County in the immediate future. No substantial increases in residential or commercial/industrial developments are expected within the next five years.

Have any of the participating jurisdictions identified specific assets vulnerable to the impacts of flooding?

Yes. Based on responses to an Assets Vulnerability Survey distributed to the participating jurisdictions, the following jurisdictions considered specific assets within their jurisdiction vulnerable to flooding.

Vermilion County:

- The County Highway going south from Potomac experiences water of the road at times during flood events.

- ❖ Flooding causes riverbank erosion at locations in Vance and Middlefork Townships and at one location along CH 21.

Danville:

- ❖ The City's wastewater treatment plant is partially located in the base floodplain of the Vermilion River and has been impacted by past flooding.
- ❖ Street flooding has caused Danville Mass Transit to re-route its fleet which impacts service to customers. Flooding has also caused damage to its fleet.
- ❖ Flooding has impacted streets and residential basements.

Georgetown:

The wastewater treatment lagoons are located in the base floodplain of an unnamed tributary of the Little Vermilion River while the wastewater treatment plant is located adjacent to the floodplain.

Tilton:

The Village is vulnerable to creek flooding.

Vermilion County Conservation District:

Flooding has the potential to damage Lake Mingo Dam.

What impacts resulted from the recorded floods?

Floods as a whole have caused a minimum of $13.25 million in property damages. The following provides a breakdown by category. In comparison, the State of Illinois has averaged an estimated $257 million annually in property damage losses, making flooding the single most financially damaging natural hazard in Illinois.

Flood Fast Facts – Impacts/Risk

General Flood Impacts:
- ❖ Total Property Damage (2 events): ***$13,000,000***
- ❖ Total Crop Damage: ***n/a***
- ❖ Injuries: ***n/a***
- ❖ Fatalities: ***n/a***

Flash Flood Impacts:
- ❖ Total Property Damage (3 events): ***$250,000***
- ❖ Total Crop Damage: ***n/a***
- ❖ Injuries: ***n/a***
- ❖ Fatalities: ***n/a***

Flood Risk/Vulnerability to:
- ❖ Public Health & Safety – General Flooding: ***Low***
- ❖ Public Health & Safety – Flash Flooding: ***Medium***
- ❖ Buildings/Infrastructure/Critical Facilities: ***Medium to High***

General Floods

Data obtained from NOAA's Storm Events Database indicates that between 1994 and 2022, two of the 26 general flood events caused $13 million in property damages. Damage information was either unavailable or none was recorded for the remaining 24 reported occurrences. No injuries or fatalities were reported as a result of any of the recorded events.

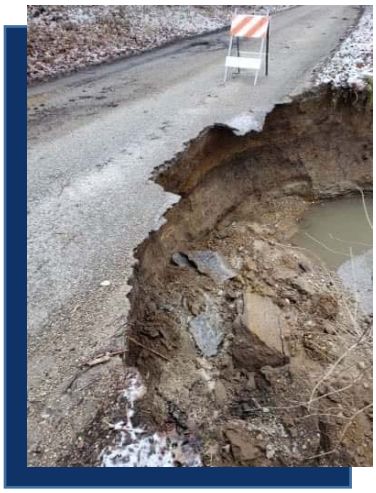
Flash Floods

Data obtained from NOAA's Storm Events Database indicates that between 1994 and 2022, one of the 88 flash flood events caused $250,000 in property damages. Damage information was either unavailable or none was recorded for the remaining 87 reported occurrences. No injuries or fatalities were reported as a result of any of the recorded events.

What other impacts can result from flooding?

One of the primary threats from flooding is drowning. Nearly half of all flash flood fatalities occur in vehicles as they are swept downstream. Most of these fatalities take place when people drive into flooded roadway dips and low drainage areas. It only takes two feet of water to carry away most vehicles.

Floodwaters also pose biological and chemical risks to public health. Flooding can force untreated sewage to mix with floodwaters. The polluted floodwaters then transport the biological contaminants into buildings and basements and onto streets and public areas. If left untreated, the floodwaters can serve as breeding grounds for bacteria and other disease-causing agents. Even if floodwaters are not contaminated with biological material, basements and buildings that are not properly cleaned can grow mold and mildew, which can pose a health hazard, especially for small children, the elderly, and those with specific allergies.



Flooding on January 10, 2020 washed out part of Hawbuck Road south of Danville.

Photograph courtesy of Russell Rudd, Vermilion County EMA Director

Flooding can also cause chemical contaminants such as gasoline and oil to enter the floodwaters if underground storage tanks or pipelines crack and begin leaking during a flood event. Depending on the time of year, floodwaters also may carry away agricultural chemicals that have been applied to farm fields.

Structural damage, such as cracks forming in a foundation, can also result from flooding. In most cases, however, the structural damage sustained during a flood occurs to the flooring, drywall, and wood framing. In addition to structural damage, a flood can also cause serious damage to a building's content.

Infrastructure and critical facilities are also vulnerable to flooding. Roadways, culverts, and bridges can be weakened by floodwaters and have been known to collapse under the weight of a vehicle. Buried power and communication lines are also vulnerable to flooding. Water can infiltrate lines and cause disruptions in power and communication.

What is the level of vulnerability to public health and safety from floods?

While both general and flash floods occur on a regular basis within the County, the number of injuries and fatalities is low. In terms of the risk or vulnerability to public health and safety from *general floods*, the risk is seen as ***low***. However, one-third of the recorded flood events were the result of flash flooding. Since there is very little warning associated with flash flooding the risk to public health and safety from *flash floods* is elevated to ***medium***.

Are there any repetitive loss structures/properties within Vermilion County?

No. According to information obtained from IEMA-OHS, there are no repetitive loss structures located in Vermilion County. As described previously, FEMA defines a "repetitive loss structure" as an NFIP-insured structure that has received two or more flood insurance claim payments of more than $1,000 each within any 10-year period since 1978.

Are existing buildings, infrastructure and critical facilities vulnerable to flooding?

Yes. **Figure F-9** identifies the *estimated number* of existing structures by participating jurisdiction located within a base floodplain. These counts were prepared by the Consultant using FEMA's National Flood Hazard Layer and building footprints prepared by the Illinois State Water Survey.

Figure F-9
Existing Buildings, Infrastructure and Critical Facilities Located in a Base Floodplain by Participating Jurisdiction

Participating Jurisdiction	Residential			Residential Garages	Businesses (Commercial/ Industrial)	Miscellaneous (Barns, Sheds, Silos)	Infrastructure/ Critical Facilities
	Houses	Duplexes	Apartment Complexes				
Danville[1,3]	159	---	1	50	33	39	3
Fairmount	---	---	---	---	---	---	---
Fithian	---	---	---	---	---	---	---
Georgetown	---	---	---	---	---	---	3
Hoopeston	3	---	---	1	1	2	---
Muncie	---	---	---	---	---	---	---
Oakwood	17	---	---	1	---	7	---
Rossville	---	---	---	---	---	---	---
Sidell	---	---	---	---	---	---	---
Tilton	6	---	---	4	---	1	---
Unincorp. Vermilion County	143	---	---	37	5	102	---

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center

Aside from key roads, bridges, electrical substations, and buried power and communication lines, the following provides a description of those jurisdictions that have specific infrastructure/critical facilities located within a floodplain:

Danville: A portion of the City's wastewater treatment plant and the Ellsworth Park lift station are located in the base floodplain of the Vermilion River while the City's salt dome is located in the base floodplain of Stoney Creek.

Georgetown: The Village's Pollution Control Facility lagoons are located in the base floodplain of an unnamed tributary of the Little Vermilion River.

While 3.9% of the land area in Vermilion County lies within the base floodplain and is susceptible to riverine flooding, ***almost the entire County is vulnerable to flash flooding***. As a result, ***a majority of the buildings, infrastructure and critical facilities that may be impacted by flooding are located outside of the base floodplain and are not easily identifiable.***

The risk or vulnerability of existing buildings, infrastructure and critical facilities to all forms of flooding is considered to be ***medium to high*** based on: (a) the frequency and severity of recorded flood events within the County; (b) the County's proximity to the Vermilion River and its tributaries; (c) the fact that most of the County is vulnerable to flash flooding; and (d) a majority of the buildings, infrastructure and critical facilities that may be impacted are located outside of the base floodplain.

Are future buildings, infrastructure and critical facilities vulnerable to flooding?

The answer to this question depends on the type of flooding being discussed.

Riverine Flooding

In terms of riverine flooding, the vulnerability of future buildings, infrastructure and critical facilities located within NFIP-participating jurisdictions is low as long as the existing floodplain ordinances are enforced. Enforcement of the floodplain ordinance is the mechanism that ensures that new structures either are not built in flood-prone areas or are elevated or protected to the base flood elevation.

Flash Flooding

In terms of flash flooding, all future buildings, infrastructure and critical facilities are still vulnerable depending on the amount of precipitation that is received, the topography and any land use changes undertaken within the participating jurisdictions.

What are the potential dollar losses to vulnerable structures from flooding?

An estimate of the potential dollar losses to vulnerable *residential structures* located within the *participating municipalities* can be calculated if several assumptions are made. These assumptions represent a probable scenario based on the reported occurrences of flooding in Vermilion County.

The purpose of providing an estimate is to help residents and local officials make informed decisions about how they can better protect themselves and their communities. These estimates are meant to provide a ***general idea*** of the magnitude of the potential damage that could occur from a flood event in each of the participating municipalities.

Assumptions

To calculate the overall potential dollar losses to vulnerable residential structures from a flood, a set of decisions/assumptions must be made regarding:

- type of flood event;
- scope of the flood event;
- number of potentially-damaged housing units;
- value of the potentially-damaged housing units; and
- percent damage sustained by the potentially-damaged housing units (i.e., damage scenario.)

The following provides a detailed discussion of each decision/assumption.

Type of Flood Event. The first step towards calculating the potential dollar losses to vulnerable residential structures is to determine the type of flood event that will be used for this scenario. While flash flooding has occurred more frequently, riverine floods have caused the greatest amount of recorded damages in the County. In addition, identifying residential structures vulnerable to flash flooding is problematic because most are located outside of the base floodplain and the number of structures impacted can change with each event depending on the amount of precipitation received, the topography and the land use of the area.

Assumption #1

A riverine flood event will impact vulnerable residential structures.

Therefore, a riverine flood event will be used since it is (a) relatively easy to identify vulnerable residential structures within each municipality (i.e., those structures located within the base floodplain or Special Flood Hazard Areas of any river, stream or creek); and (b) the number of structures impacted is generally the same from event to event.

Scope of the Flood Event. To establish the number of vulnerable residential structures (potentially-damaged housing units), the scope of the riverine flood event must first be determined. In this scenario, the scope refers to the number of rivers, streams and creeks that overflow their banks and the degree of flooding experienced along base floodplains for each river, stream and creek.

Assumption #2

All base floodplains will flood and experience the same degree of flooding.

Generally speaking, a riverine flood event only affects one or two rivers or streams at a time depending on the cause of the event (i.e., precipitation, snow melt, ice jam, etc.) and usually does not produce the same degree of flooding along the entire length of the river, stream or creek. However, for this scenario, it was decided that:

- ❖ all rivers, streams and creeks with base floodplains would overflow their banks, and
- ❖ the base floodplains of each river, stream and/or creek located within the corporate limits of each municipality would experience the same degree of flooding.

This assumption results in the following conditions for each municipality:

- ➢ Fairmount, Fithian, Oakwood, and Sidell would not experience any residential flooding since there are no river, stream or creek base floodplains located within their municipal limits;
- ➢ *Danville*: Jordan Creek, Lick Creek, North Fork of the Vermilion River, and Stoney Creek would overflow their banks and flood portions of the City;
- ➢ *Georgetown*: an unnamed tributary of the Little Vermilion River would overflow its banks and flood the eastern edge of the Village;
- ➢ *Hoopeston*: an unnamed tributary of the North Fork of the Vermilion River would overflow its banks along the southwestern edge of the Village;
- ➢ *Muncie*: Feather Creek and Stony Creek would overflow their banks and flood portions of the Village;
- ➢ *Rossville*: the North Fork of the Vermilion River would overflow its banks and flood the western edge of the Village; and
- ➢ *Tilton*: Grape Creek would overflow its banks and flood a small portion in the central part of the Village.

Number of Potentially-Damaged Housing Units. Since this scenario assumes that all the base floodplains will experience the same degree of flooding, the number of existing residential structures located within the base floodplain(s) can be used to determine the number of potentially-damaged housing units. **Figure F-9** identifies the total number of existing residential structures

Assumption #3

The number of existing residential structures located within the base floodplain(s) will be used to determine the number of potentially-damaged housing units.

located within the base floodplains(s) of each participating jurisdiction. These counts were prepared by the Consultant.

While base floodplains are present within Georgetown and Rossville, there are no residential structures located within their limits.

Value of Potentially-Damaged Housing Units. Now that the number of potentially-damaged housing units has been determined, the monetary value of the units must be calculated. Typically, when damage estimates are prepared after a natural disaster such as a flood, they are based on the market value of the structure. Since it would be impractical to determine the individual market value of each potentially-damaged housing unit, the average market value for a residential structure will be used.

Assumption #4

The average market value for a residential structure will be used to determine the value of potentially-damaged housing units.

To determine the average market value, the average assessed value must first be calculated. The average assessed value is determined by taking the total assessed value of residential buildings within a jurisdiction and dividing that number by the total number of housing units within the jurisdiction. The average market value is then determined by taking the averaged assessed value and multiplying that number by three (the assessed value of a structure in Vermilion County is approximately one-third of the market value). **Figure F-10** provides a sample calculation. The total assessed value is based on 2021 tax assessment information provided by the Vermilion County Clerk's Office. **Figure F-11** provides the average assessed value and average market value for each participating municipality.

Figure F-10
Sample Calculation of Average Assessed Value & Average Market Value – Hoopeston

Average Assessed Value

Total Assessed Value of Residential Buildings in the Jurisdiction÷ Total Housing Units in the Jurisdiction = Average Assessed Value

Hoopeston: $22,044,883 ÷ 2,555 housing units = $8,628

Average Market Value

Average Assessed Value x 3 = Average Market Value (Rounded to the Nearest Dollar)

Hoopeston: $8,628 x 3 = $25,884

Damage Scenario. The final decision that must be made to calculate potential dollar losses is to determine the percent damage sustained by the structure and the structure's contents during the flood event. In order to determine the percent damage using FEMA's flood loss estimation tables, assumptions must be made regarding (a) the type of residential structure flooded (i.e., manufactured home, one story home without a basement, one- or two-story home with a basement, etc.) and (b) the flood depth. **Figure F-12** calculates the

Assumption #5

The potentially-damaged housing units are one or two-story homes with basements and the flood depth is two feet.
Structural Damage = 20%
Content Damage = 30%

percent loss to a structure and its contents for different scenarios based on flood depth and structure type.

Figure F-11
Average Market Value of Housing Units by Participating Municipality

Participating Jurisdiction	Total Assessed Value of Residential Buildings (2021)	Total Housing Units (2017-2021)	Average Assessed Values	Average Market Value (2020)
Danville[1,3]	$154,352,003	13,905	$11,100	$33,300
Fairmount	$4,082,902	255	$16,011	$48,033
Fithian	$5,177,282	240	$21,572	$64,716
Georgetown	$19,909,986	1,661	$11,987	$35,961
Hoopeston	$22,044,883	2,555	$8,628	$25,884
Muncie	$1,146,031	60	$19,101	$57,303
Oakwood	$10,904,360	635	$17,172	$51,516
Rossville	$8,912,554	502	$17,754	$53,262
Sidell[2]	$3,052,766	204	$14,965	$44,895
Tilton	$11,516,512	1,255	$9,177	$27,531

[1]Vermilion County Conservation District
[2]Sidell Volunteer Fire Department
[3]OSF Healthcare Sacred Heart Medical Center

Source: Vermilion County Clerk's Office.

Figure F-12
FEMA Flood Loss Estimation Tables

Flood Building Loss Estimation Table

Flood Depth (feet)	One Story No Basement (% Building Damage)	Two Story No Basement (% Building damage)	One or Two Story With Basement (% Building damage)	Manufactured Home (% Building damage)
-2	0	0	4	0
-1	0	0	8	0
0	9	5	11	8
1	14	9	15	44
2	22	13	20	63
3	27	18	23	73
4	29	20	28	78
5	30	22	33	80
6	40	24	38	81
7	43	26	44	82
8	44	29	49	82
>8	45	33	51	82

Flood Content Loss Estimation Table

Flood Depth (feet)	One Story No Basement (% Contents Damage)	Two Story No Basement (% Contents damage)	One or Two Story With Basement (% Contents damage)	Manufactured Home (% Contents damage)
-2	0	0	6	0
-1	0	0	12	0
0	13.5	7.5	16.5	12
1	21	13.5	22.5	66
2	33	19.5	30	90
3	40.5	27	34.5	90
4	43.5	30	42	90
5	45	33	49.5	90
6	60	36	57	90
7	64.5	39	66	90
8	66	43.5	73.5	90
>8	67.5	49.5	76.5	90

Source: FEMA, Understanding Your Risks: Identifying Hazards and Estimating Losses

For this scenario it is assumed that the potentially-damaged housing units are one or two-story homes with basements and the flood depth is two feet. With these assumptions the expected percent damage sustained by the ***structure*** is estimated to be 20% and the expected percent damage sustained by the structure's ***contents*** is estimated to be 30%.

Potential Dollar Losses

Now that all of the decisions/assumptions have been made, the potential dollar losses can be calculated. First the potential dollar losses to the ***structure*** of the potentially-damaged housing units must be determined. This is done by taking the average market value for a residential structure and multiplying that by the percent damage 20% to get the average structural damage per unit. Next the average structural damage per unit is multiplied by the number of potentially-damaged housing units. **Figure F-13** provides a sample calculation.

Figure F-13
***Structure:* Potential Dollar Loss Sample Calculation – Hoopeston**

Average Market Value of a Housing Unit with the Jurisdiction x Percent Damage = Average Structural Damage per Housing Unit

Hoopeston: $25,884 x 20% = $5,176.80 per housing unit

Average Structural Damage x Number of Potentially-Damaged Housing Units within the Jurisdiction = *Structure* Potential Dollar Losses (Rounded to the Nearest Dollar)

Hoopeston: $5,176.80 per housing unit x 3 housing units = $15,530

Next the potential dollar losses to the ***content*** of the potentially-damaged housing units must be determined. Based on FEMA guidance, the value of a residential housing unit's content is approximately 50% of its market value. Therefore, start by taking one-half the average market value for a residential structure and multiply that by the percent damage 30% to get the average content damage per unit. Then take the average content damage per unit and multiply that by the number of potentially-damaged housing units. **Figure F-14** provides a sample calculation.

Figure F-14
***Content:* Potential Dollar Loss Sample Calculation – Hoopeston**

½ (Average Market Value of a Housing Unit with the Jurisdiction) x Percent Damage = Average Content Damage per Housing Unit

Hoopeston: ½ ($25,884) x 30% = $3,882.60 per housing unit

Average Content Damage per Housing Unit x Number of Potentially-Damaged Housing Units within the Jurisdiction = *Content* Potential Dollar Losses (Rounded to the Nearest Dollar)

Hoopeston: $3,882.60 housing unit x 3 housing unit = $11,648

Finally, the ***total potential dollar losses*** may be calculated by adding together the potential dollar losses to the structure and the content. **Figure F-15** provides a breakdown of the total potential dollar losses by participating municipality.

This assessment illustrates the *potential residential dollar losses* that should be considered when municipalities are deciding which mitigation projects to pursue. Potential dollar losses caused by riverine flooding to vulnerable residences ***is expected to be range from $27,178 in Hoopeston up to $1.8 million in Danville***. There are six participating municipalities in this scenario who do not have any residences considered vulnerable to riverine flooding.

Figure F-15
Estimated Potential Dollar Losses to Potentially-Damaged Housing Units from a Riverine Flood Event by Participating Municipality

Participating Jurisdiction	Average Market Value (2020)	Potentially-Damaged Housing Units	Potential Dollar Losses		Total Potential Dollar Losses (Rounded to the Nearest Dollar)
			Structure	Content	
Danville[1,3]	$33,300	159	$1,058,940	$794,205	$1,853,145
Fairmount	$48,033	0	$0	$0	$0
Fithian	$64,716	0	$0	$0	$0
Georgetown	$35,961	0	$0	$0	$0
Hoopeston	$25,884	3	$15,530	$11,648	$27,178
Muncie	$57,303	0	$0	$0	$0
Oakwood	$51,516	17	$175,154	$131,366	$306,520
Rossville	$53,262	0	$0	$0	$0
Sidell[2]	$44,895	0	$0	$0	$0
Tilton	$27,531	6	$33,037	$24,778	$57,815

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center

Vulnerability of Infrastructure/Critical Facilities

The calculations presented above are meant to provide the reader with a sense of the scope or magnitude of a large riverine flood event in dollars. These calculations do not include the physical damages sustained by businesses or other infrastructure and critical facilities.

In terms of businesses, the impacts from a flood event can be physical and/or monetary. Monetary impacts can include loss of sales revenue either through temporary closure or loss of critical services (i.e., power, drinking water and sewer). Depending on the magnitude of the flood event, the damage sustained by infrastructure and critical facilities can be extensive in nature and expensive to repair. As a result, ***the cumulative monetary impacts to businesses and infrastructure can exceed the cumulative monetary impacts to residences.*** While average dollar amounts cannot be supplied for these items at this time, they should be taken into account when discussing the overall impacts that a large-scale riverine flood event could have on the participating jurisdictions.

In terms of specific infrastructure vulnerability, the following are located within a ***base floodplain***:

- *Danville*: wastewater treatment plant, a lift station, and a salt dome; and
- *Georgetown*: pollution control facility lagoons.

Considerations

While the potential dollar loss scenario was only for a riverine flood event, the participating jurisdictions have been made aware through the planning process of the impacts that can result from flash flood events. Vermilion County has experienced multiple events over the last 20 years as have adjoining and nearby counties. These events illustrate the need for officials to consider the overall monetary impacts of all forms of flooding on their communities. All participants should carefully consider the types of activities and projects that can be taken to minimize their vulnerability.

3.4 EXCESSIVE HEAT

HAZARD IDENTIFICATION

What is the definition of excessive heat?

Excessive heat is generally characterized by a prolonged period of summertime weather that is substantially hotter and more humid than the average for a location at that time of year. Excessive heat criteria typically shift by location and time of year. As a result, reliable fixed absolute criteria are not generally specified (i.e., a summer day with a maximum temperature of at least 90°F).

Excessive heat events are usually a result of both high temperatures and high relative humidity. (Relative humidity refers to the amount of moisture in the air.) The higher the relative humidity or the more moisture in the air, the less likely that evaporation will take place. This becomes significant when high relative humidity is coupled with soaring temperatures.

On hot days the human body relies on the evaporation of perspiration or sweat to cool and regulate the body's internal temperature. Sweating does nothing to cool the body unless the water is removed by evaporation. When the relative humidity is high, then the evaporation process is hindered, robbing the body of its ability to cool itself.

Excessive heat is a leading cause of weather-related fatalities in the U.S. According to the Centers for Disease Control and Prevention, a total of 7,415 people died from heat-related illnesses between 1999 and 2010, an average of 618 fatalities a year.

What is the Heat Index?

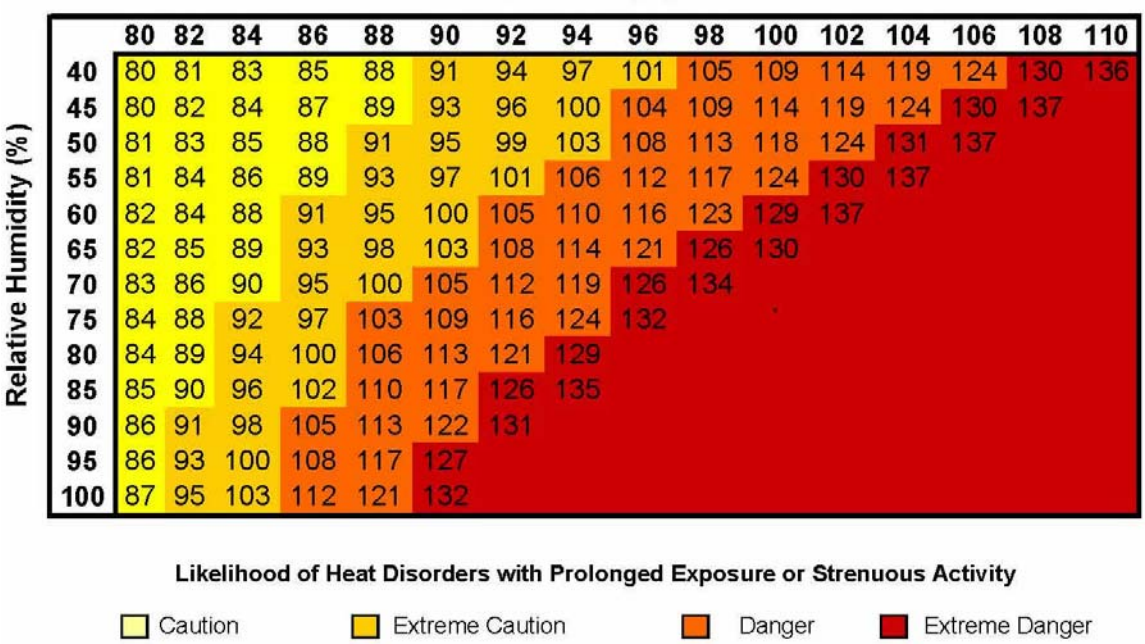
In an effort to raise the public's awareness of the hazards of excessive heat, the National Weather Service (NWS) devised the "Heat Index". The Heat Index, sometimes referred to as the "apparent temperature", is a measure of how hot it feels when relative humidity is added to the actual air temperature. **Figure EH-1** shows the Heat Index as it corresponds to various air temperatures and relative humidity.

As an example, if the air temperature is 96°F and the relative humidity is 65%, then the Heat Index would be 121°F. It should be noted that the Heat Index values were devised for shady, light wind conditions. Exposure to full sunshine can increase Heat Index values by up to 15°F. Also, strong winds, particularly with very hot, very dry air, can be extremely hazardous. When the Heat Index reaches 105°F or greater, there is an increased likelihood that continued exposure and/or physical activity will lead to individuals developing severe heat disorders.

What are heat disorders?

Heat disorders are a group of illnesses caused by prolonged exposure to hot temperatures and are characterized by the body's inability to shed excess heat. These disorders develop when the heat gain exceeds the level the body can remove or if the body cannot compensate for fluids and salt lost through perspiration. In either case the body loses its ability to regulate its internal temperature. All heat disorders share one common feature: the individual has been overexposed to heat, or over exercised for their age and physical condition on a hot day. The following describes the symptoms associated with the different heat disorders.

Figure EH-1
Heat Index



Source: NOAA, National Weather Service.

- **Heat Rash.** Heat rash is a skin irritation caused by excessive sweating during hot, humid weather and is characterized by red clusters of small blisters on the skin. It usually occurs on the neck, chest, groin or in elbow creases.
- **Sunburn.** Sunburn is characterized by redness and pain of skin exposed too long to the sun without proper protection. In severe cases it can cause swelling, blisters, fever and headaches and can significantly retard the skin's ability to shed excess heat.
- **Heat Cramps.** Heat cramps are characterized by heavy sweating and muscle pains or spasms, usually in the abdomen, arms or legs that during intense exercise. The loss of fluid through perspiration leaves the body dehydrated resulting in muscle cramps. This is usually the first sign that the body is experiencing trouble dealing with heat.
- **Heat Exhaustion.** Heat exhaustion is characterized by heavy sweating, muscle cramps, tiredness, weakness, dizziness, headache, nausea or vomiting and faintness. Breathing may become rapid and shallow and the pulse thready (weak). The skin may appear cool, moist and pale. If not treated, heat exhaustion may progress to heat stroke.
- **Heat Stroke (Sunstroke).** Heat stroke is a life-threatening condition characterized by a high body temperature (106°F or higher). The skin appears to be red, hot and dry with very little perspiration present. Other symptoms include a rapid and strong pulse, throbbing headache, dizziness, nausea and confusion. There is a possibility that the individual will become unconsciousness. If the body is not cooled quickly, then brain damage and death may result.

Studies indicate that, all things being equal, the severity of heat disorders tend to increase with age. Heat cramps in a 17-year-old may be heat exhaustion in someone 40 and heat stroke in a person over 60. Elderly persons, small children, chronic invalids, those on certain medications and persons with weight or alcohol problems are particularly susceptible to heat reactions.

Figure EH-2 below indicates the heat index at which individuals, particularly those in higher risk groups, might experience heat-related disorders. Generally, when the heat index is expected to exceed 105°F, the NWS will initiate excessive heat alert procedures.

Figure EH-2
Relationship between Heat Index and Heat Disorders

Heat Index (°F)	Heat Disorders
80°F – 90°F	Fatigue is possible with prolonged exposure and/or physical activity
90°F – 105°F	Heat cramps, heat exhaustion and heat stroke possible with prolonged exposure and/or physical activity
105°F – 130°F	Heat cramps, heat exhaustion and heat stroke likely; heat stroke possible with prolonged exposure and/or physical activity
130°F or Higher	Heat stroke highly likely with continued exposure

Source: NOAA, Heat Wave: A Major Summer Killer.

What is an excessive heat alert?

An excessive heat alert is an advisory or warning issued by the NWS when the Heat Index is expected to have a significant impact on public safety. The expected severity of the heat determines the type of alert issued. There are four types of alerts that can be issued for an excessive heat event. The following provides a brief description of each type of alert based on the **excessive *heat advisory/warning criteria*** established by NWS Weather Forecast Office in Lincoln, Illinois. The Lincoln Office is responsible for issuing alerts for Vermilion County.

- **Outlook.** An excessive heat outlook is issued when the potential exists for an excessive heat event to develop over the next three (3) to seven (7) days.
- **Watch.** An excessive heat watch is issued when conditions are favorable for an excessive heat event to occur within the next 24 to 72 hours.
- **Advisory.** An excessive heat advisory is issued within 12 hours of the onset of extremely dangerous heat conditions when the maximum heat index temperature is expected to be 100°F or higher for at least two (2) days and the nighttime air temperatures will not drop below 75°F.
- **Warning.** An excessive heat warning is issued within 12 hours of the onset of extremely dangerous heat conditions when the maximum heat index temperature is expected to be 105°F or higher for at least two (2) days and the nighttime air temperatures will not drop below 75°F.

HAZARD PROFILE

The following identifies past occurrences of excessive heat, details the severity or extent of each event (if known); identifies the locations potentially affected and estimates the likelihood of future occurrences.

When have excessive heat events occurred previously? What is the extent of these events?

Table 7, located in **Appendix J**, summarizes the previous occurrences as well as the extent or magnitude of excessive heat events recorded in Vermilion County. NOAA's Storm Events Database, Iowa State University's National Weather Service Watch, Warning, and Advisories database, Midwestern Regional Climate Center's cli-MATE database, and NWS's COOP Data records were used to document 81 occurrences of excessive heat in Vermilion County between 1995 and 2022.

Excessive Heat Fast Facts – Occurrences

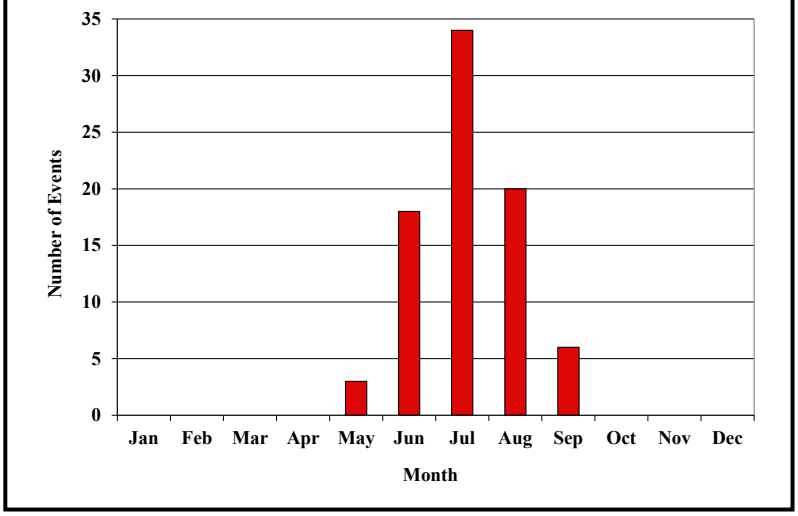
Number of Excessive Heat Events Reported (1995 – 2022): ***81***

Hottest Temperature Recorded in the County: ***112°F (July 14, 1936)***

Most Likely Month for Excessive Heat Events to Occur: ***July***

Figure EH-3 charts the reported occurrences of excessive heat by month. Thirty-four of the 81 events (42%) began in July making this the peak month for excessive heat events in Vermilion County. There were three events that spanned two months; however, for illustration purposes only the month the event started is graphed.

Figure EH-3
Excessive Heat by Month
1995 – 2022



According to the Midwestern Regional Climate Center, almost continuous temperature records for Vermilion County were kept from May 1895 to present by the Danville COOP Observation Station and from September 1887 to present at the Hoopeston COOP Station. **Figures EH-4** and **EH-5** list the hottest days recorded at these Stations. Based on the available records, the hottest

temperature recorded in the County was 112°F at the Danville COOP Observation station on July 14, 1936.

Figure EH-4
Hottest Days Recorded at the Danville NWS COOP Observation Station

	Date	Temperature		Date	Temperature
1	07/14/1936	112°F	6	07/13/1936	109°F
2	07/11/1936	111°F	7	07/23/1934	108°F
3	07/25/1934	110°F	8	07/08/1936	108°F
4	07/15/1936	110°F	9	08/05/1918	107°F
5	07/12/1936	109°F	10	07/07/1936	107°F

Source: Midwest Regional Climate Center cli-MATE

Figure EH-5
Hottest Days Recorded at the Hoopeston NWS COOP Observation Station

	Date	Temperature		Date	Temperature
1	07/14/1936	111°F	7	07/24/1934	108°F
2	07/13/1936	110°F	8	07/07/1936	108°F
3	07/23/1934	109°F	9	07/08/1936	108°F
4	07/25/1934	109°F	10	07/11/1936	108°F
5	07/15/1936	109°F	11	07/12/1936	108°F
6	07/21/1934	108°F	12	07/14/1954	108°F

Source: Midwest Regional Climate Center cli-MATE

What locations are affected by excessive heat?

Excessive heat affects the entire County. Excessive heat events, like drought and severe winter storms, generally extend across an entire region and affecting multiple counties.

Do any of the participating jurisdictions have designated cooling centers?

Yes. Two of the 12 participating municipalities, fire protection districts, and hospitals have designated cooling centers. A "designated" cooling center is identified as any facility that has been *formally* identified by the jurisdiction (through emergency planning, resolution, Memorandum of Agreement, etc.) as a location available for use by residents of the jurisdiction during excessive heat events.

Figure EH-6 identifies the location of each cooling center by jurisdiction. At this time Danville, Fairmount, Fithian, Georgetown, Muncie, Oakwood, Sidell, Tilton, OSF HealthCare Sacred Heart Medical Center, and Sidell Volunteer Fire Department District do not have any cooling centers designated. In addition, there are no State of Illinois-designated cooling centers in Vermilion County.

Figure EH-6 Designated Cooling Centers by Participating Jurisdiction	
Name/Address	**Name/Address**
Hoopeston	*Rossville*
City Hall, 301 W. Main St.	Village Office, 120 E. Attica St.
Civic Center, 1 McFerren Park Way	Rossville Fire Station, 617 N. Chicago St.
	Rossville Ambulance Building, 107 W. Attica St.
	Rossville Church of Christ, 514 E. Attica St.
	United Methodist Church, 116 Maple St.

What is the probability of future excessive heat events occurring based on historical data?

Vermilion County has experienced 81 verified occurrences of excessive heat between 1994 and 2022. With 81 occurrences over the past 28 years, Vermilion County should expect to experience approximately three excessive heat events a year. It is important to keep in mind that there are almost certainly gaps in the excessive heat data. More events have almost certainly occurred than are documented in this section, which means that the probability is almost certainly higher than reported.

There were 13 years over the last 28 years where multiple (three or more) excessive heat events occurred. This indicates that the probability that multiple excessive heat events may occur during any given year within the County is 46%.

What is the probability of future excessive heat events occurring based on modeled future conditions?

Temperature in Illinois has trended upwards over the last century, with average temperatures in Illinois having increased by 1°F to 2°F in the past 120 years according to the Illinois State Climatologist. This trend is likely to continue, with conservative long-term estimates placing average temperatures by the end of the 21st century between 4° and 9° F warmer than they are today.

With increasing temperatures comes the increasing risk of extreme heat events, which are projected to continue to become more frequent and more severe than they have been historically. This is due to increases in temperatures observed during summer months, where just a few degrees difference can turn a hot day into a dangerously hot day. The number of days greater than 95° F in Illinois are forecasted to increase in the coming decades, with conservative projections predicting that even northern Illinois will see a minimum of 10 extreme heat days per year by the end of the 21st century, compared with one or two extreme heat days per year today. Even just a few additional extreme heat days a year could prove very damaging, both in terms of human health and economic costs.

Figures EH-7, EH-8, and **EH-9** provide tabular and graphical projections for Vermilion County, showing estimations for annual high temperature extremes in the early, mid, and late 21st century with both low and high estimates for each time period. Most likely, the true value will fall between these two estimates. By midcentury, the average number of days per year exceeding 90° F in Vermilion County is forecasted to increase from around 18 today to between 57 and 67, and the

single hottest temperature recorded in a year is predicted to increase by 6°F to 7° F according to the Climate Mapping for Resilience and Adaptation's Assessment Tool.

Figure EH-7
Annual High Temperature Extreme Projections Table – Vermilion County

Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Temperature thresholds:							
Annual days with maximum temperature > 90°F	18 days 18 - 26	44 days 27 - 81	48 days 31 - 76	57 days 32 - 97	67 days 41 - 101	68 days 35 - 108	102 days 63 - 135
Annual days with maximum temperature > 95°F	4 days 3 - 5	15 days 5 - 43	18 days 7 - 42	24 days 7 - 62	32 days 13 - 73	33 days 11 - 79	66 days 25 - 111
Annual days with maximum temperature > 100°F	0 days 0 - 1	3 days 0 - 14	4 days 0 - 17	7 days 1 - 30	11 days 1 - 47	12 days 1 - 30	34 days 5 - 87
Annual days with maximum temperature > 105°F	0 days 0 - 0	0 days 0 - 3	0 days 0 - 2	1 days 0 - 8	2 days 0 - 14	2 days 0 - 14	13 days 0 - 63
Annual temperature:							
Annual single highest maximum temperature °F	97 °F 96 - 98	101 °F 97 - 110	101 °F 97 - 106	103 °F 98 - 114	104 °F 100 - 110	104 °F 100 - 115	109 °F 102 - 121
Annual highest maximum temperature averaged over a 5-day period °F	93 °F 92 - 93	96 °F 94 - 102	97 °F 94 - 101	98 °F 95 - 105	100 °F 96 - 106	100 °F 95 - 107	105 °F 99 - 112
Cooling degree days (CDD)	1050 degree-days 1006 - 1124	1,458 degree-days 1,197 - 1,862	1,508 degree-days 1,239 - 1,854	1,669 degree-days 1,298 - 2,221	1,855 degree-days 1,502 - 2,443	1,880 degree-days 1,378 - 2,676	2,600 degree-days 1,881 - 3,532

N/A = Data Not Available for the selected area

Figure EH-8
Number of Days with Maximum Temperature > 90°F Graph – Vermilion County

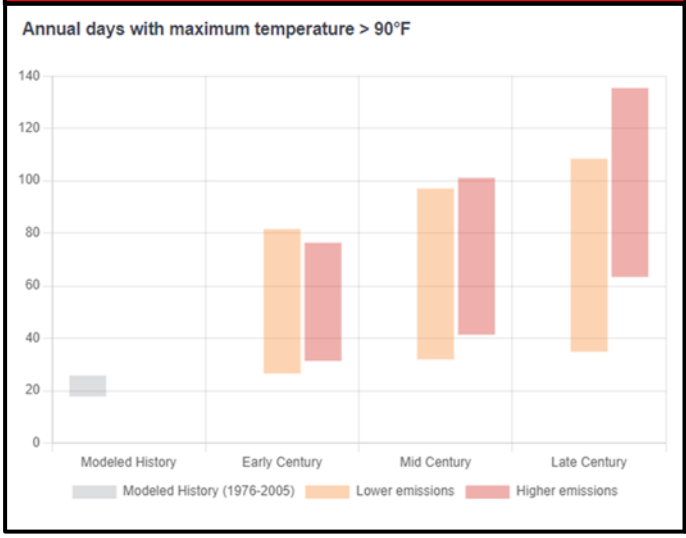
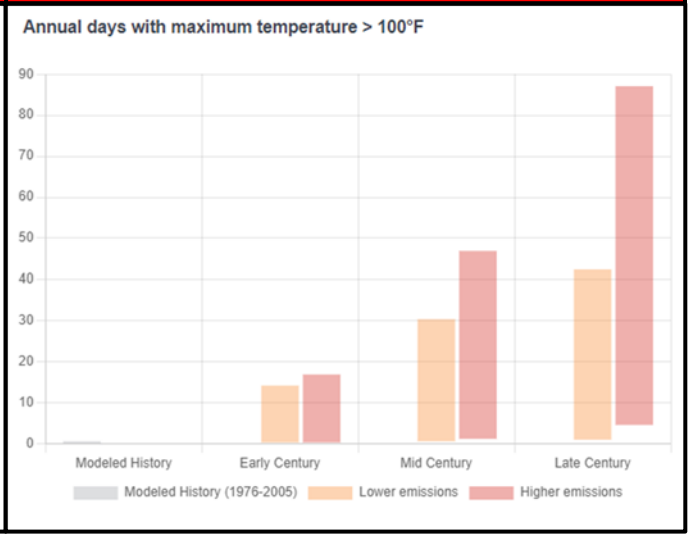


Figure EH-9
Number of Days with Maximum Temperature > 100°F Graph – Vermilion County



The Climate Explorer indicates that in Vermilion County, extreme temperatures on the hottest days of the year are projected to increase by 8°F. This is based on the findings of the 2018 National Climate Assessment and compares projections for the middle third of the century (2035-2064) with average conditions observed from 1961-1990.

Taken together, an increase in the number of days per year with temperatures greater than 90° F and an increase in extreme temperatures on the hottest days for Vermilion County indicates increased risk for extreme heat events.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from excessive heat.

Are the participating jurisdictions vulnerable to excessive heat?

Yes. All of Vermilion County, including the participating jurisdictions, is vulnerable to the dangers presented by excessive heat. Since 2013, the County has experienced 27 excessive heat events.

The *2023 Illinois Natural Hazard Mitigation Plan* prepared by IEMA-OHS classifies Vermilion County's hazard rating for heat wave as "medium." IEMA-OHS's overall hazard rating system has five levels: very low, low, medium, high, and very high.

For excessive heat, the FEMA's National Risk Index (NRI) rates the County as a whole as "relatively moderate". Thirteen of the 24 census tracts are rated "relatively high" for excessive heat and the remainder are rated "relatively moderate" or lower. **Table R-5** presents the overall NRI scores and ratings for each census tract as well as for the County as a whole.

Have any of the participating jurisdictions identified specific assets vulnerable to the impacts of excessive heat?

Yes. Based on responses to an Assets Vulnerability Survey distributed to the participating jurisdictions, the following jurisdictions considered specific assets within their jurisdiction vulnerable to excessive heat.

Vermilion County:

Functional needs populations are vulnerable to excessive heat events.

Danville:

- Underserved areas of the City are vulnerable to excessive heat events.
- Danville Mass Transit customers waiting outdoors for transportation are vulnerable to effects of excessive heat events.

Fairmount:

The Village does not have any designated cooling centers for residents' use and long-term power outages in the past during excessive heat events have had an impact on the elderly and those with special needs.

Oakwood:

The Village does not have any designated cooling centers for residents' use, especially the elderly.

What impacts resulted from the recorded excessive heat events?

Damage information was either unavailable or none was recorded for any of the excessive heat events. NOAA's Storm Events Database documented two fatalities as a result of two separate excessive heat events. During the July 26, 1997 excessive heat event a 64 year-old man died while working in farm fields near Danville while a 50 year-old woman died in her apartment due to the heat during the July 29, 1999 excessive heat event.

Excessive Heat Fast Facts – Impacts/Risk

Excessive Heat Impacts:

- Total Property Damage: ***n/a***
- Total Crop Damage: ***n/a***
- Injuries: ***n/a***
- Fatalities (2 events): ***2***

Excessive Heat Risk/Vulnerability:

- Public Health & Safety – General Population: ***Low***
- Public Health & Safety – Socially Vulnerable Populations: ***Medium***
- Buildings/Infrastructure/Critical Facilities: ***Low***

In comparison, Illinois averages 74 heat-related fatalities annually according to the Illinois State Water Survey's Climate Atlas of Illinois.

No other injuries or fatalities were reported as a result of excessive heat in Vermilion County. This does not mean however that no other occurred; it simply means that excessive heat was not identified as the primary cause. This is especially true for fatalities. Usually, heat is not listed as the primary cause of death, but rather an underlying cause. The heat indices were sufficiently high for all the excessive heat events to produce heat cramps or heat exhaustion with the possibility of heat stroke in cases of prolonged exposure or physical activity.

What other impacts can result from excessive heat events?

Other impacts of excessive heat include road buckling, power outages, stress on livestock, early school dismissals and school closings. In addition, excessive heat events can also lead to an increase in water usage and may result in municipalities imposing water use restrictions. In Vermilion County, excessive heat has the ability to impact those residents that have surface water as their primary water source. AQUA Illinois supplies water to approximately 47,000 Vermilion County residents from Lake Vermilion while Prairie Path Water Company supplies water to approximately 1,600 residents from Salt Fork and the Oakwood Reservoir. Additionally, excessive heat may impact residents in Muncie and unincorporated Vermilion County who rely on shallow private wells for their drinking water.

What is the level of vulnerability to public health and safety from excessive heat?

Even if injuries and fatalities due to excessive heat were under reported in Vermilion County, the level of risk or vulnerability posed by excessive heat to the public health and safety of the *general population* is considered to be ***low***. This assessment is based on the frequency with which excessive heat occurs within the County; the impacts associated with these events; the types of living conditions (such as older, poorly-ventilated high rise buildings and low-income neighborhoods) that tend to contribute to heat-related injuries and fatalities; as well as the fact that injuries and fatalities due to excessive heat may be under reported. For the purposes of this analysis, *general population* includes healthy, able-bodied individuals who should have the ability to physiologically acclimatize to hot conditions over a period of days to weeks.

The level of risk or vulnerability posed by excessive heat to the public health and safety of *socially vulnerable populations* is considered to be ***medium***. Socially vulnerable populations such as older adults (those 75 years of age and older) and small children (those younger than 5 years of age) are more susceptible to heat-related reactions and therefore their risk is elevated. **Figure EH-10** identifies the percent of socially vulnerable populations by participating municipality and the County based on the U.S. Census Bureau's 2017-2021 American Community Survey data. In addition, individuals with chronic conditions, those on certain medications, and persons with weight or alcohol problems are also considered sensitive populations. However, demographic information is not available for these segments of the population.

Figure EH-10
Sensitive Populations by Participating Jurisdictions

Participating Jurisdiction	% of Population 75 year of age & Older	% of Population Younger than 5 years of age	Total % of Sensitive Population
Danville[1,3]	7.9%	7.0%	14.9%
Fairmount	7.4%	4.0%	11.4%
Fithian	7.7%	2.0%	9.7%
Georgetown	9.1%	4.0%	13.1%
Hoopeston	7.1%	5.7%	12.8%
Muncie	3.5%	3.5%	7.0%
Oakwood	9.8%	9.2%	19.0%
Rossville	10.6%	7.2%	17.8%
Sidell[2]	17.9%	10.3%	28.2%
Tilton	11.1%	3.3%	14.4%
Unincorp. Vermilion County	7.2%	6.0%	13.2%
Vermilion County	8.1%	6.2%	14.3%
State of Illinois	6.4%	5.8%	12.4%

[1]Vermilion County Conservation District
[2]Sidell Volunteer Fire Department
[3]OSF Healthcare Sacred Heart Medical Center

Source: U.S. Census Bureau.

Are existing buildings, infrastructure, and critical facilities vulnerable to excessive heat?

No. In general, existing buildings, infrastructure and critical facilities located in the County and the participating jurisdictions are not vulnerable to excessive heat. The primary concern is for the health and safety of those living in the County (including all of the municipalities).

While buildings do not typically sustain damage from excessive heat, in rare cases infrastructure and critical facilities may be directly or indirectly damaged. While uncommon, excessive heat has been known to contribute to damage caused to roadways within Vermilion County. The combination of excessive heat and vehicle loads has caused pavement cracking and buckling.

Excessive heat has also been known to indirectly contribute to disruptions in the electrical grid. When the temperatures rise, the demand for energy also rises in order to operate air conditioners, fans, and other devices. This increase in demand places stress on the electrical grid components, increasing the likelihood of power outages. While not common in Vermilion County, there is the potential for this to occur. The potential may increase over the next two decades if new power

sources are not built to replace the state's aging nuclear power facilities that are expected to be decommissioned.

In general, the risk or vulnerability to buildings, infrastructure and critical facilities from excessive heat is considered ***low***, even taking into consideration the potential for damage to roadways and disruptions to the electrical grid.

Are future buildings, infrastructure, and critical facilities vulnerable to excessive heat?

No. Future buildings, infrastructure and critical facilities within the County and participating jurisdictions are no more vulnerable to excessive heat events than the existing building, infrastructure, and critical facilities. As discussed above, buildings do not typically sustain damage from excessive heat. Infrastructure and critical facilities may, in rare cases, be damaged by excessive heat, but very little can be done to prevent this.

What are the potential dollar losses to vulnerable structures from excessive heat?

Unlike other natural hazards there are no standard loss estimation models or methodologies for excessive heat. With none of the recorded events listing property damage figures, there is no way to accurately estimate future potential dollar losses from excessive heat. Since excessive heat typically does not cause structure damage, it is unlikely that future dollar losses will be extreme. The primary concern associated with excessive heat is the health and safety of those living in the County and municipalities, especially socially vulnerable populations such as the elderly, infants, young children, and those with medical conditions.

3.5 EXTREME COLD

HAZARD IDENTIFICATION

What is the definition of extreme cold?

Extreme cold is generally characterized by temperatures well below what is considered normal for an area during the winter months and is often accompanied or is left in the wake of a severe winter storm. Extreme cold criteria vary from region to region. As a result, reliable fixed absolute criteria are not generally specified (i.e., a winter day with a maximum temperature of 0°F).

Whenever the temperature drops below normal and the wind speeds increase, heat can leave the body more rapidly. This can lead to dangerous situations for susceptible individuals, such as those without shelter or who are stranded, or those who live in a home that is poorly insulated or without heat.

Extreme cold is a leading cause of weather-related fatalities in Illinois. According to a 2020 study published by the University of Illinois Chicago, 1,935 individuals died from cold-related illnesses between 2011 and 2018. This is 94% of all temperature-related fatalities recorded in the State during that time period.

Extreme cold can also cause infrastructure damage, especially to residential water pipes and water distribution lines and mains. According to State Farm, in 2020 Illinois was once again the national leader in losses related to frozen pipes.

What is wind chill?

Wind chill, or wind chill factor, is a measure of the rate of heat loss from exposed skin resulting from the combined effects of wind and temperature. As the wind increases, heat is carried away from the body at a faster rate, driving down both the skin temperature and eventually the internal body temperature.

The unit of measurement used to describe the wind chill factor is known as the wind chill temperature. The wind chill temperature is calculated using a formula. **Figure EC-1** identifies the formula and calculates the wind chill temperatures for certain air temperatures and wind speeds.

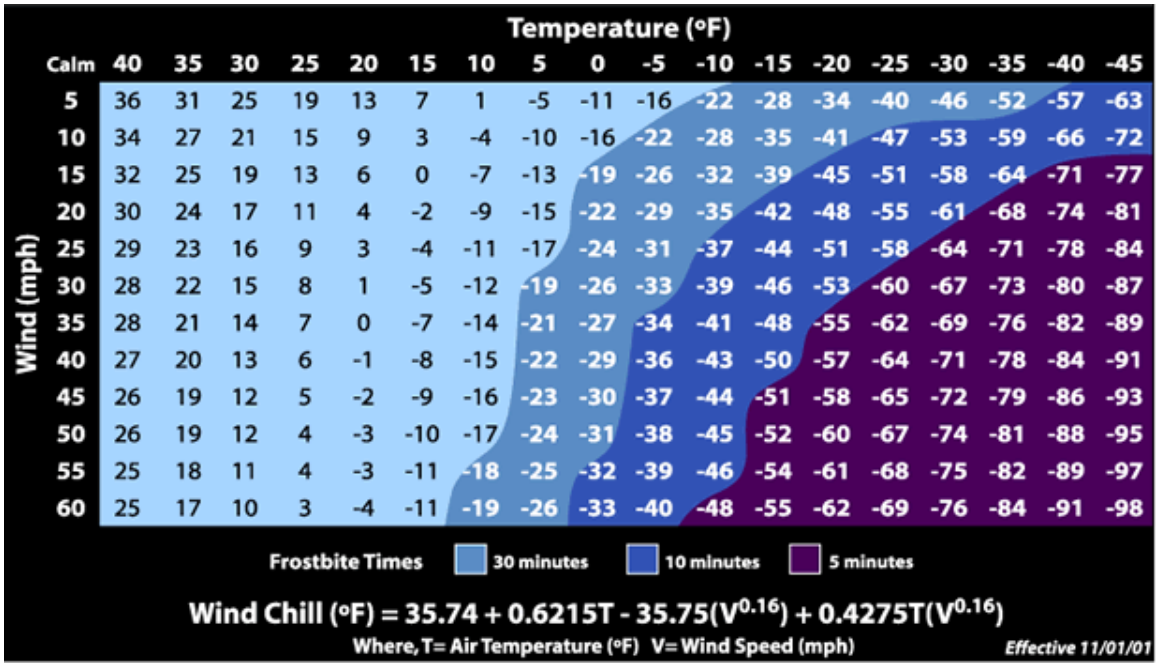
As an example, if the air temperature is 5°F and the wind speed is 20 miles per hour, then the wind chill temperature would be -15°F. The wind chill temperature is only defined for air temperatures at or below 50°F and wind speeds above three miles per hour. In addition, the wind chill temperature does not take into consideration the effects of bright sunlight which may increase the wind chill temperature by 10°F to 18°F.

Use of the current Wind Chill Temperature (WCT) index was implemented by the NWS on November 1, 2001. The new WCT index was designed to more accurately calculate how cold air feels on human skin. The new index uses advances in science, technology and computer modeling to provide an accurate, understandable and useful formula for calculating the dangers from winter

winds and freezing temperatures. The former index was based on research done in 1945 by Antarctic researchers Siple and Passel.

Exposure to extreme wind chills can be life threatening. As wind chills edge toward -19°F and below, there is an increased likelihood that exposure will lead to individuals developing cold-related illnesses.

Figure EC-1
Wind Chill Chart



Source: NOAA, National Weather Service.

What cold-related illnesses are associated with extreme cold?

Frostbite and hypothermia are both cold-related illnesses that can result when individuals are exposed to dangerously low temperatures and wind chills. The following provides a brief description of the symptoms associated with each.

- **Frostbite.** During exposure to extremely cold weather the body reduces circulation to the extremities (i.e., feet, hands, nose, cheeks, ears, etc.) in order to maintain its core temperature. If the extremities are exposed, then this reduction in circulation coupled with the cold temperatures can cause the tissue to freeze.

  Frostbite is characterized by a loss of feeling and a white or pale appearance. At a wind chill of -19°F, exposed skin can freeze in as little as 30 minutes. Seek medical attention immediately if frostbite is suspected. It can permanently damage tissue and in severe cases can lead to amputation.

- **Hypothermia.** Hypothermia occurs when the body's temperature begins to fall because it is losing heat faster than it can produce it. If an individual's body temperature falls below 95°F, then hypothermia has set in, and immediate medical attention should be sought.

  Hypothermia is characterized by uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness and exhaustion. Left untreated, hypothermia will lead to death. Hypothermia occurs most commonly at very cold temperatures but can occur at cool temperatures (above 40°F) if an individual isn't properly clothed or becomes chilled.

What is a wind chill alert?

A wind chill alert is an advisory or warning issued by the NWS when the wind chill is expected to have a significant impact on public safety. The expected severity of cold temperatures and wind speed determines the type of alert issued. There are three types of alerts that can be issued for an extreme cold event. The following provides a brief description of each type of alert based on the ***wind chill criteria*** established by the NWS Weather Forecast Office in Lincoln, Illinois. The Lincoln Office is responsible for issuing alerts for Vermilion County.

Yes. The NWS Weather Forecast Office in Lincoln, Illinois is responsible for issuing **wind chill advisories** and **warnings** for Vermilion County depending on the weather conditions. The following provides a brief description of each type of alert.

- **Wind Chill Watch.** A wind chill watch may be issued if conditions are favorable for wind chill temperatures to meet or exceed warning criteria but are not occurring or imminent.
- **Wind Chill Advisory.** A wind chill advisory is issued when wind chill values are expected to be between -15°F and -24°F.
- **Wind Chill Warning.** A wind chill warning is issued when wind chill values are expected to be -25°F or below.

HAZARD PROFILE

The following identifies past occurrences of extreme cold events; details the severity or extent of each event (if known); identifies the locations potentially affected; and estimates the likelihood of future occurrences.

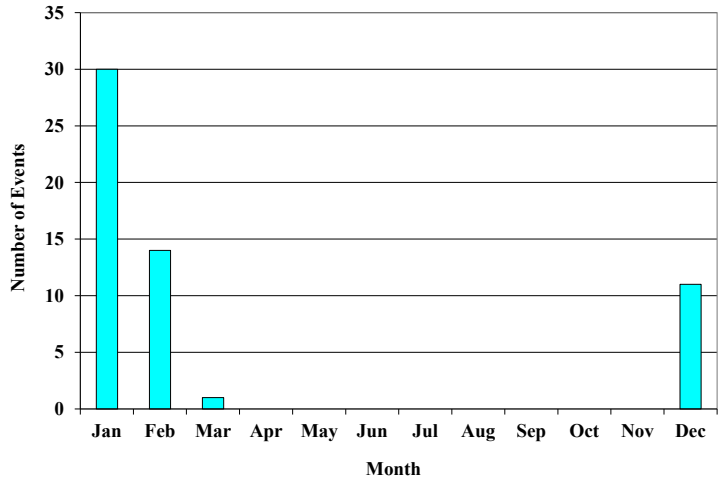
When have extreme cold events occurred previously? What is the extent of these events?
Table 8, located in **Appendix J**, summarize the previous occurrences as well as the extent or magnitude of extreme cold events recorded in Vermilion County. NOAA's Storm Events Database, Iowa State University's National Weather Service Watch, Warning, and Advisories database, Midwestern Regional Climate Center's cli-MATE database, and NWS's COOP Data records were used to document 56 occurrences of extreme cold in Vermilion County between 1995 and 2022.

Extreme Cold Fast Facts – Occurrences

Number of Extreme Cold Events Reported (1995 - 2022): ***56***
Coldest Temperature Recorded in the County: ***-26°F (January 17, 1982)***
Most Likely Months for Extreme Cold Events to Occur: ***January***

Figure EC-2 charts the reported occurrences of extreme cold by month. Thirty of the 56 events (54%) took place in January, making this the peak month for extreme cold events. There was one event that spanned two months; however, for illustration purposes only the month the event started in is graphed.

Figure EC-2
Extreme Cold by Month
1995 - 2022



According to the Midwestern Regional Climate Center, almost continuous temperature records for Vermilion County were kept from May 1895 to present by the Danville COOP Observation Station and from September 1887 to present at the Hoopeston COOP Station. **Figures EC-3** and **EC-4** list the coldest days recorded at these Stations. Based on the available records, the coldest temperature recorded in Vermilion County was -26°F at the Danville COOP Station on January 17, 1982.

Figure EC-3
Coldest Days Recorded at the Danville NWS COOP Observation Station

	Date	Temperature			Date	Temperature
1	01/17/1982	-26°F		7	01/21/1924	-23°F
2	01/19/1994	-26°F		8	12/28/1924	-23°F
3	01/28/1963	-25°F		9	01/18/1930	-22°F
4	12/22/1989	-25°F		10	02/27/1934	-22°F
5	01/17/1977	-24°F		11	01/16/1972	-22°F
6	01/05/1999	-24°F		12	02/10/1982	-22°F

Source: Midwest Regional Climate Center cli-MATE

What locations are affected by extreme cold?
Extreme cold affects the entire County. Extreme cold, like excessive heat and severe winter storms, generally extends across the entire County and affects multiple locations.

Figure EC-4
Coldest Days Recorded at the Hoopeston NWS COOP Observation Station

	Date	Temperature		Date	Temperature
1	02/13/1905	-25°F	6	01/15/1927	-21°F
2	01/20/1985	-24°F	7	01/23/1936	-21°F
3	12/28/1924	-22°F	8	12/22/1989	-21°F
4	01/18/1930	-22°F	9	01/30/2019	-21°F
5	01/12/1918	-21°F			

Source: Midwest Regional Climate Center cli-MATE

Do any of the participating jurisdictions have designated warming centers?

Yes. Three of the 12 participating municipalities, fire protection districts, and hospitals have designated warming centers. A "designated" warming center is identified as any facility that has been *formally* identified by the jurisdiction (through emergency planning, resolution, Memorandum of Agreement, etc.) as a location available for use by residents during severe winter storms and extreme cold events.

Figure EC-5 identifies the location of each warming center by jurisdiction. At this time Danville, Fairmount, Fithian, Georgetown, Muncie, Oakwood, Sidell, Sidell Volunteer Fire Department, and OSF HealthCare Sacred Heart Medical Center do not have any warming centers designated. In addition, there are no State of Illinois-designated warming centers in Vermilion County.

Figure EC-5
Designated Warming Centers by Participating Jurisdiction

Name/Address	Name/Address
Hoopeston	*Rossville*
City Hall, 301 W. Main St.	Rossville Village Office, 120 E. Attica St.
Civic Center, 1 McFerren Park Way	Rossville Fire Station, 617 N. Chicago St.
Tilton	Rossville Ambulance Building, 107 W. Attica St.
Tilton Community Center, 612 W. 5th St.	Rossville Church of Christ, 514 E. Attica St.
Tilton City Hall, 1001 Tilton Rd.	United Methodist, 116 Maple St.

What is the probability of future extreme cold events occurring based on historical data?

Vermilion County has experienced 56 verified occurrences of extreme cold between 1995 and 2022. With 56 occurrences over the past 28 years, Vermilion County should expect to experience at least two extreme cold events in any given year. It is important to keep in mind that there are almost certainly gaps in the early extreme cold data. More events have almost certainly occurred than are documented in this section, which means that the probability is almost certainly higher than reported.

There were 17 years over the last 28 years where multiple (two or more) extreme cold events occurred. This indicates that the probability that multiple extreme cold events may occur during any given year within the County is 61%.

What is the probability of future extreme cold events occurring based on modeled future conditions?

The warming trend observed in Illinois over the past century hasn't just meant increasingly hotter summers; it has meant milder winters. Over the past 120 years, average temperatures in Illinois have increased by 1°F to 2°F according to the Illinois State Climatologist, with the most prominent changes occurring in overnight temperatures and in increased winter and spring temperatures. As a result, extreme cold events are likely to continue to become less common and less intense than they were in the past. The number of days less than 32°F in Illinois are forecasted to decrease in the coming decades. Reductions in extreme cold events could prevent some of the damages associated with them, both in terms of human health costs and economic costs.

Figures EC-6, EC-7, and **EC-8** provide tabular and graphical projections for Vermilion County, showing estimations for number of days where high temperatures will not exceed 32°F in the early, mid, and late 21st century with both low and high estimates for each time period. Most likely, the true value will fall between these two estimates. By midcentury, the average number of days per year not exceeding 32°F in Vermilion County is forecasted to decrease from around 32 today to between 18 and 20 according to the Climate Mapping for Resilience and Adaptation's Assessment Tool.

Figure EC-6
Days with Maximum Temperature < 32°F Projection Table – Vermilion County

Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Annual days with:							
Days with maximum temperature below 32 °F	32 days 28 - 34	23 days 14 - 30	22 days 17 - 30	20 days 11 - 28	18 days 10 - 27	17 days 8 - 26	10 days 2 - 20

N/A = Data Not Available for the selected area

Figure EC-7
Number of Days with Maximum Temperature < 32°F Graph – Vermilion County

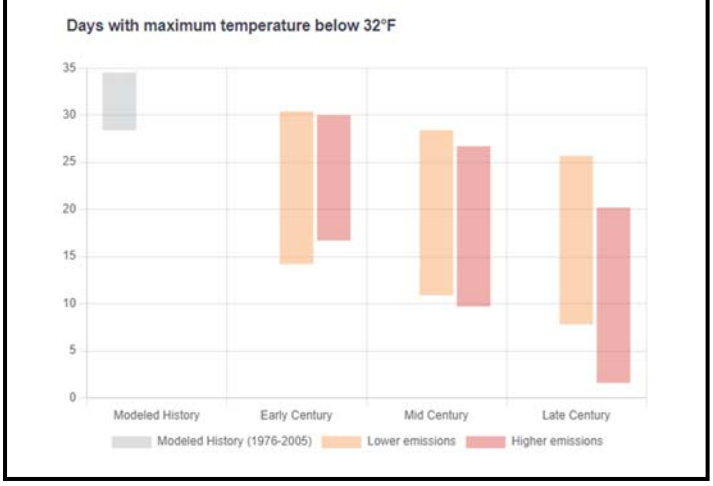
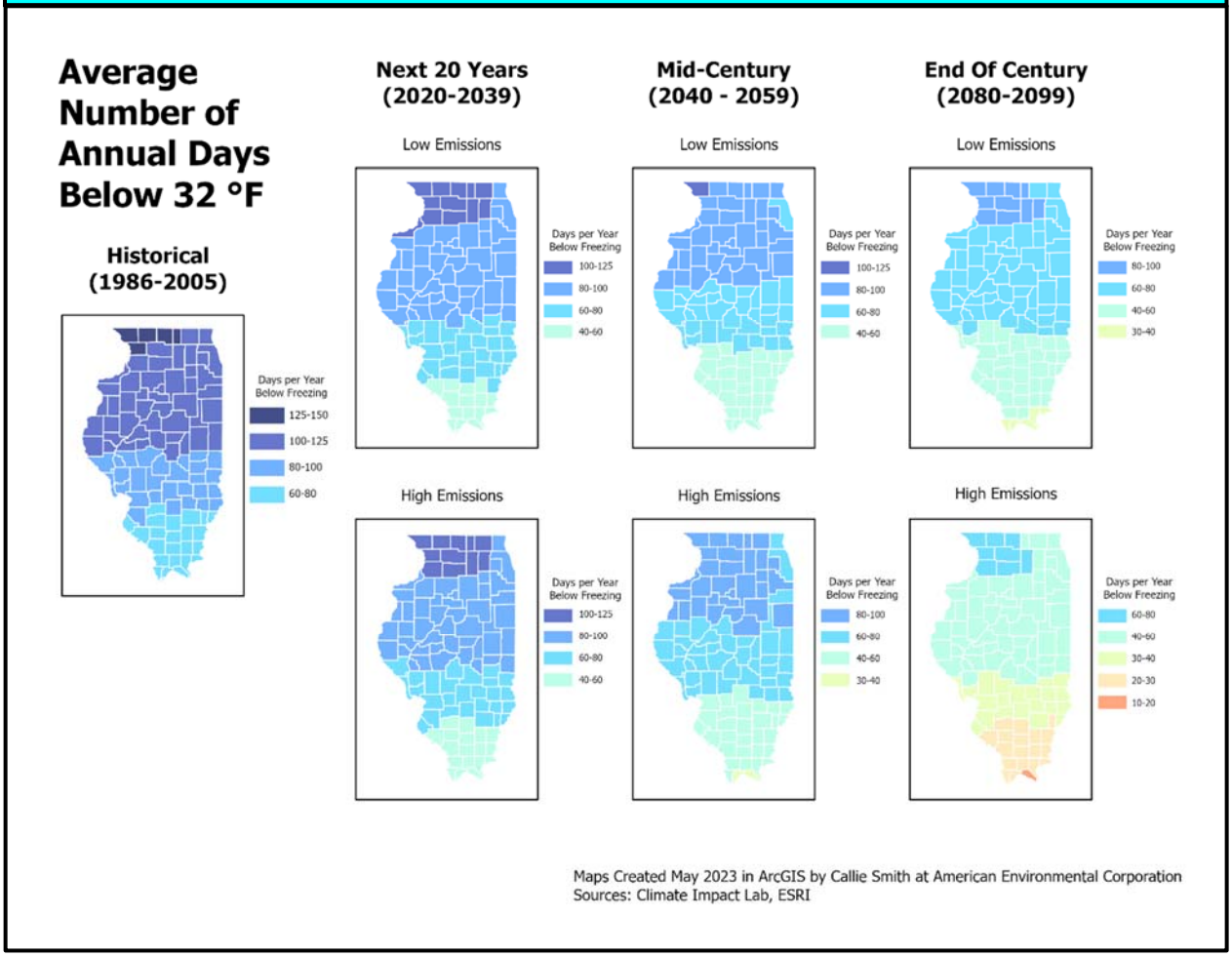


Figure EC-8
Average Number of Annual Days Below 32°F



By contrast, projections from Great Lakes Integrated Sciences + Assessments indicate that there is likely to be a change of 2 to 5 days in the number of days per year where temperatures will fall below 20° F by midcentury in Vermilion County.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from extreme cold.

Are the participating jurisdictions vulnerable to extreme cold?

Yes. All of Vermilion County, including the participating jurisdictions, is vulnerable to the dangers presented by extreme cold. Since 2013, Vermilion County has experienced 29 extreme cold events.

The *2023 Illinois Natural Hazard Mitigation Plan* prepared by IEMA-OHS classifies Vermilion County's hazard rating for cold wave as "medium". IEMA-OHS's overall hazard rating system has five levels: very low, low, medium, high, and very high.

For extreme cold, FEMA's National Risk Index (NRI) rates the County as a whole as "relatively high". For extreme cold, 22 of the 24 census tracts are rated "relatively high" and the remaining two are rated "relatively moderate". **Table R-5** presents the overall NRI scores and ratings for each census tract as well as for the County as a whole.

Have any of the participating jurisdictions identified specific assets vulnerable to the impacts of extreme cold?

Yes. Based on responses to an Assets Vulnerability Survey distributed to the participating jurisdictions, the following jurisdictions considered specific assets within their jurisdiction vulnerable to extreme cold.

Vermilion County:

Functional needs populations are vulnerable to extreme cold events.

Danville:

- Underserved areas of the City are vulnerable to extreme cold events.
- Danville Mass Transit customers waiting outdoors for transportation are vulnerable to effects of extreme cold events.

Fairmount:

The Village does not have any designated warming centers for residents' use and long-term power outages in the past during extreme cold events have had an impact on the elderly and those with special needs.

Oakwood:

- Extreme cold events have caused multiple water main breaks at the same time, causing the entire Village to be without water for multiple days.
- The Village does not have any designated warming centers for residents' use, especially the elderly.

What impacts resulted from the recorded extreme cold events?

Damage information was either unavailable or none was recorded, and no injuries or fatalities were reported as a result of any of the extreme cold events. In comparison, the State of Illinois averages 18 cold-related fatalities annually according to the Illinois State Water Survey's Climate Atlas of Illinois.

Extreme Cold Fast Facts – Impacts/Risk

Extreme Cold Impacts:

- Total Property Damage: ***n/a***
- Injuries: ***n/a***
- Fatalities: ***n/a***

Extreme Cold Risk/Vulnerability:

- Public Health & Safety – General Population: ***Low to Medium***
- Public Health & Safety – Socially Vulnerable Populations: ***Medium***
- Buildings/Infrastructure/Critical Facilities: ***Low***

What other impacts can result from extreme cold events?

Other impacts of extreme cold include early school dismissals and school closing, power outages and frozen and ruptured water pipes and water mains. Individuals who are outdoors during and

immediately following extreme cold events can experience health and safety problems. Frostbite to hands, feet, ears and nose and hypothermia are common injuries.

What is the level of risk/vulnerability to public health and safety from severe winter storms and extreme cold?

For Vermilion County the level of risk or vulnerability posed by extreme cold to public health and safety of the *general population* is considered to be ***low to medium.*** This assessment is based on the fact that while extreme cold events occur regularly, the number of injuries and fatalities reported is low and all but one of the participating municipalities have designated warming centers.

The level of risk or vulnerability posed by extreme cold to the public health and safety of *socially vulnerable populations* is considered to be ***medium***. Socially vulnerable populations such as individuals with dementia and access and functional needs populations may be more susceptible to cold-related exposures if they become disoriented outdoors during an event and therefore their risk is elevated. However, demographic information is not available for these segments of the population.

Are existing buildings, infrastructure, and critical facilities vulnerable to extreme cold?

Yes. All existing buildings, infrastructure and critical facilities located in Vermilion County and the participating jurisdictions are vulnerable to damage from extreme cold. Individual water pipes and distribution lines and mains are especially susceptible to freezing during extreme cold events. This freezing can lead to cracks or ruptures in the pipes in buildings as well as in buried service lines and mains. As a result, flooding can occur as well as disruptions in service. Since most buried service lines and water mains are located under local streets and roads, fixing a break requires portions of the street or road to be blocked off, excavated, and eventually repaired. These activities can be costly and must be carried out under less than ideal working conditions.

Based on the frequency with which extreme cold events have occurred in Vermilion County; the damages described; the amount of property damage previously reported; and the potential for disruptions to power distribution and communication; the risk or vulnerability to buildings, infrastructure and critical facilities from extreme cold events is ***low***.

Are future buildings, infrastructure, and critical facilities vulnerable to extreme cold?

Yes and No. While seven of the participating municipalities have building codes in place that will likely help lessen the vulnerability of new buildings and critical facilities to damage from extreme cold, the County and the remaining three participating municipalities do not. However, infrastructure such as residential water pipes will continue to be vulnerable as long as they are located in areas such as outside walls, attics and crawl spaces that do not contain proper insulation.

What are the potential dollar losses to vulnerable structures from extreme cold?

Unlike other natural hazards, such as tornadoes, there are no standard loss estimation models or methodologies for extreme cold events. With none of the recorded events listing property damage figures, there is no way to accurately estimate future potential dollar losses from extreme cold. However, according to the Vermilion County Clerk the total equalized assessed values of all residential, commercial, and industrial buildings in the planning area is $616,309,942. Since all of the structures in the planning area are vulnerable to damage, this total represents the countywide property exposure to extreme cold.

3.6 TORNADOES

HAZARD IDENTIFICATION

What is the definition of a tornado?

A tornado is a narrow violently rotating column of air, often visible as a funnel-shaped cloud that extends from the base of a thunderstorm cloud formation to the ground. The most violent tornadoes can have wind speeds of more than 300 miles per hour and can create damage paths in excess of one mile wide and 50 miles long.

Not all tornadoes have a visible funnel cloud. Some may appear nearly transparent until dust and debris are picked up or a cloud forms within the funnel. Generally, tornadoes move from southwest to northeast, but they have been known to travel in any direction, even backtracking. A typical tornado travels at around 10 to 20 mile per hour, but this may vary from almost stationary to 60 miles per hour. Tornadoes can occur at any time of the year and happen at any time of the day or night, although most occur between 4 p.m. and 9 p.m.

About 1,200 tornadoes hit the U.S. yearly, with an average 52 tornadoes occurring annually in Illinois. The destruction caused by a tornado may range from light to catastrophic depending on the intensity, size and duration of the storm. Tornadoes cause crop and property damage, power outages, environmental degradation, injuries and fatalities. Tornadoes are known to blow roofs off buildings, flip vehicles and demolish homes. Typically, tornadoes cause the greatest damage to structures of light construction, such as residential homes. On average, tornadoes cause 60 to 65 facilities and 1,500 injuries in the U.S. annually.

How are tornadoes rated?

Originally tornadoes were rated using the Fujita Scale (F-Scale), which related the degree of damage caused by a tornado to the intensity of the tornado's wind speed. The Scale identified six categories of damage, F0 through F5. **Figure T-1** gives a brief description of each category.

Use of the original Fujita Scale was discontinued on February 1, 2007 in favor of the Enhanced Fujita Scale. The original scale had several flaws including basing a tornado's intensity and damages on wind speeds that were never scientifically tested and proven. It also did not take into consideration that a multitude of factors (i.e., structure construction, wind direction and duration, flying debris, etc.) affect the damage caused by a tornado. In addition, the process of rating the damage itself was based on the judgment of the damage assessor. In many cases, meteorologists and engineers highly experienced in damage survey techniques often came up with different F-scale ratings for the same damage.

The Enhanced Fujita Scale (EF-Scale) was created to remedy the flaws in the original scale. It continues to use the F0 through F5 categories, but it incorporates 28 different damage indicators (mainly various building types, towers/poles and trees) as calibrated by engineers and meteorologists. For each damage indicator there are eight degrees of damage ranging from barely visible damage to complete destruction of the damage indicator. The wind speeds assigned to each category are estimates, not measurements, based on the damage assessment. **Figure T-1** identifies the Enhanced Fujita Scale.

Figure T-1 Fujita & Enhanced Fujita Tornado Measurement Scales				
F-Scale		**EF-Scale**		**Description**
Category	**Wind Speed (mph)**	**Category**	**Wind Speed (mph)**	
F0	40 – 72	EF0	65 – 85	Light damage – some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; damage to sign boards
F1	73 – 112	EF1	86 – 110	Moderate damage – peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads
F2	113 – 157	EF2	111 – 135	Considerable damage – roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground
F3	158 – 207	EF3	136 – 165	Severe damage – roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown
F4	208 – 260	EF4	166 – 200	Devastating damage – well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown, and large missiles generated
F5	261 – 318	EF5	Over 200	Incredible damage – strong frame houses lifted off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 yards; trees debarked; incredible phenomena will occur

Source: NOAA, Storm Prediction Center.

The idea behind the EF-Scale is that a tornado scale needs to take into account the typical strengths and weaknesses of different types of construction, instead of applying a "one size fits all" approach. This is due to the fact that the same wind speed can cause different degrees of damage to different kinds of structures. In a real-life application, the degree of damage to each of the 28 indicators can be mapped together to create a comprehensive damage analysis. As with the original scale, the EF-Scale rates the tornado as a whole based on the most intense damage within the tornado's path.

While the EF-Scale is currently in use, **the historical data presented in this report is based on the original F-Scale**. None of the tornadoes rated before February 1, 2007 will be re-evaluated using the EF-Scale.

Are alerts issued for tornadoes?

Yes. The National Weather Service Weather Forecast Office in Lincoln is responsible for issuing ***tornado watches*** and ***warnings*** for Vermilion County depending on the weather conditions. The following provides a brief description of each type of alert.

- **Watch.** A tornado watch is issued when tornadoes are possible in the area. Individuals need to be alert and prepared. Watches are typically large, covering numerous counties or even states.

- **Warning.** A tornado warning is issued when a tornado has been sighted or indicated by weather radar. Warnings indicate imminent danger to life and property for those who are in the path of the tornado. Individuals should see shelter immediately. Typically, warnings encompass a much smaller area, such as a city or small county.

HAZARD PROFILE

The following identifies past occurrences of tornadoes; details the severity or extent of each event (if known); identifies the locations potentially affected; and estimates the likelihood of future occurrences.

When have tornadoes occurred previously? What is the extent of these previous tornadoes?

Table 9, located in **Appendix J**, summarizes the previous occurrences as well as the extent or magnitude of tornado events recorded in Vermilion County. NOAA's Storm Events Database, Storm Data Publication and Storm Prediction Center have documented 64 occurrences of tornadoes in Vermilion County between 1950 and 2022. Included in the 64 occurrences of tornadoes are four events, April 1974 and November 2013, that contributed to two separate federally-declared disasters in Vermilion County. In comparison, there have been 2,745 tornadoes statewide between 1950 and 2021 according to NOAA's Storm Prediction Center.

Tornado Fast Facts – Occurrences

Number of Tornadoes Reported (1950 – 2022): ***64***

Highest F-Scale Rating Recorded: ***F4 (March 20, 1976)***

Most Likely Month for Tornadoes to Occur: ***May***

Average Length of a Tornado: ***2.5 miles***

Average Width of a Tornado: ***90 yards***

Average Damage Pathway of a Tornado: ***0.13 sq. mi.***

Longest Tornado Path in the County: ***22.2 miles (April 9, 1953)***

Widest Tornado Path in the County: ***800 yards (March 20, 1976)***

Number of Federal Disaster Declarations Related to Tornadoes: ***2 (1974 & 2013)***

Figure T-2 charts the reported occurrences of tornadoes by magnitude. Of the 64 reported occurrences there were: 1 – F4, 2 – F3s, 7 – F2s, 8 – F1s, 25 – F0s, 2 – EF2s, 6 – EF1s, and 13 – EF0s.

Figure T-3 charts the reported tornadoes by month. Of the 64 events, 35 (55%) took place in May, June, and July making this the peak period for tornadoes in Vermilion County. Of those 35 events, 14 (40%) occurred during May, making this the peak month for tornadoes. In comparison, 1,720 of the 2,745 tornadoes (63%) recorded in Illinois from 1950 through 2021 took place in April, May, and June.

Approximately 89% of all tornadoes in the County occurred during the p.m. hours, with 41 of the tornado events (64%) taking place between 2 p.m. and 8 p.m. In comparison, more than half of all Illinois tornadoes occur between 2 p.m. and 8 p.m.

The tornadoes that have impacted Vermilion County have varied from 0.06 miles (105 yards) to 19.7 miles in length and from 10 yards to 800 yards in width. The average length of a tornado in Vermilion County is 2.5 miles and the average width is 90 yards (0.051 miles).

Figure T-2
Tornadoes by Magnitude
1950 – 2022

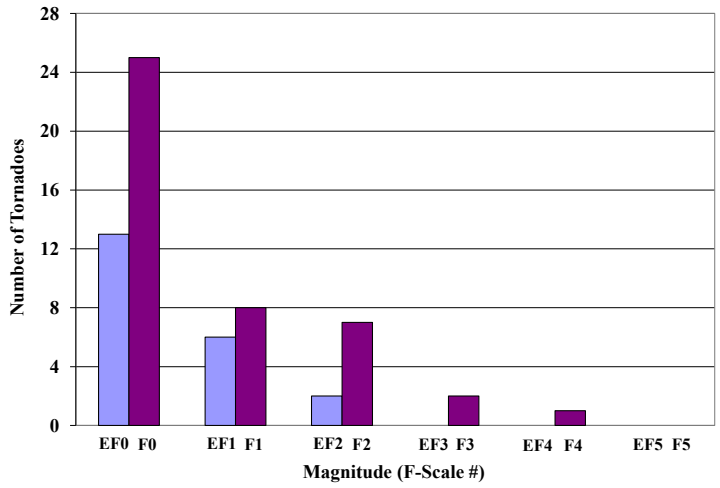
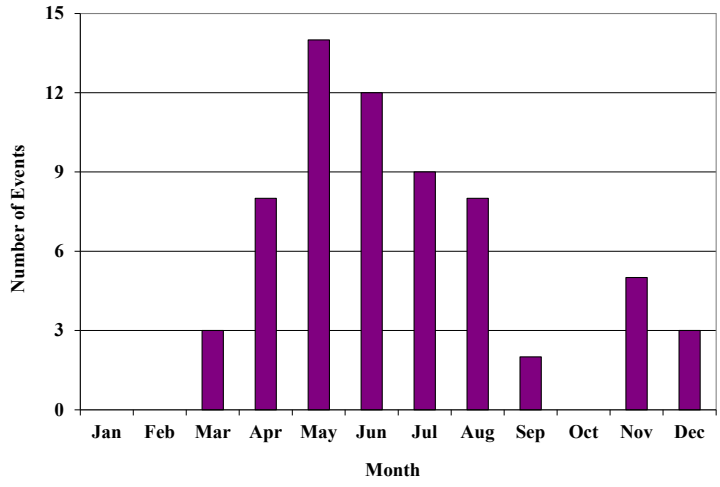


Figure T-3
Tornadoes by Month
1950 – 2022



Figures T-4 and **T-5** show the pathway of each reported tornado. The numbers by each tornado correspond with the tornado description in **Table 9** located in **Appendix J.** Records indicate that most of these tornadoes generally moved from southwest to northeast across the County. Unlike other natural hazards (i.e., severe winter storms, drought, and excessive heat), tornadoes impact a relatively small area. Typically, the area impacted by a tornado is less than four square miles. In Vermilion County, the average damage pathway or area impacted by a tornado is 0.13 square miles.

Figure T-4
F0/EF0 Tornado Pathways in Vermilion County

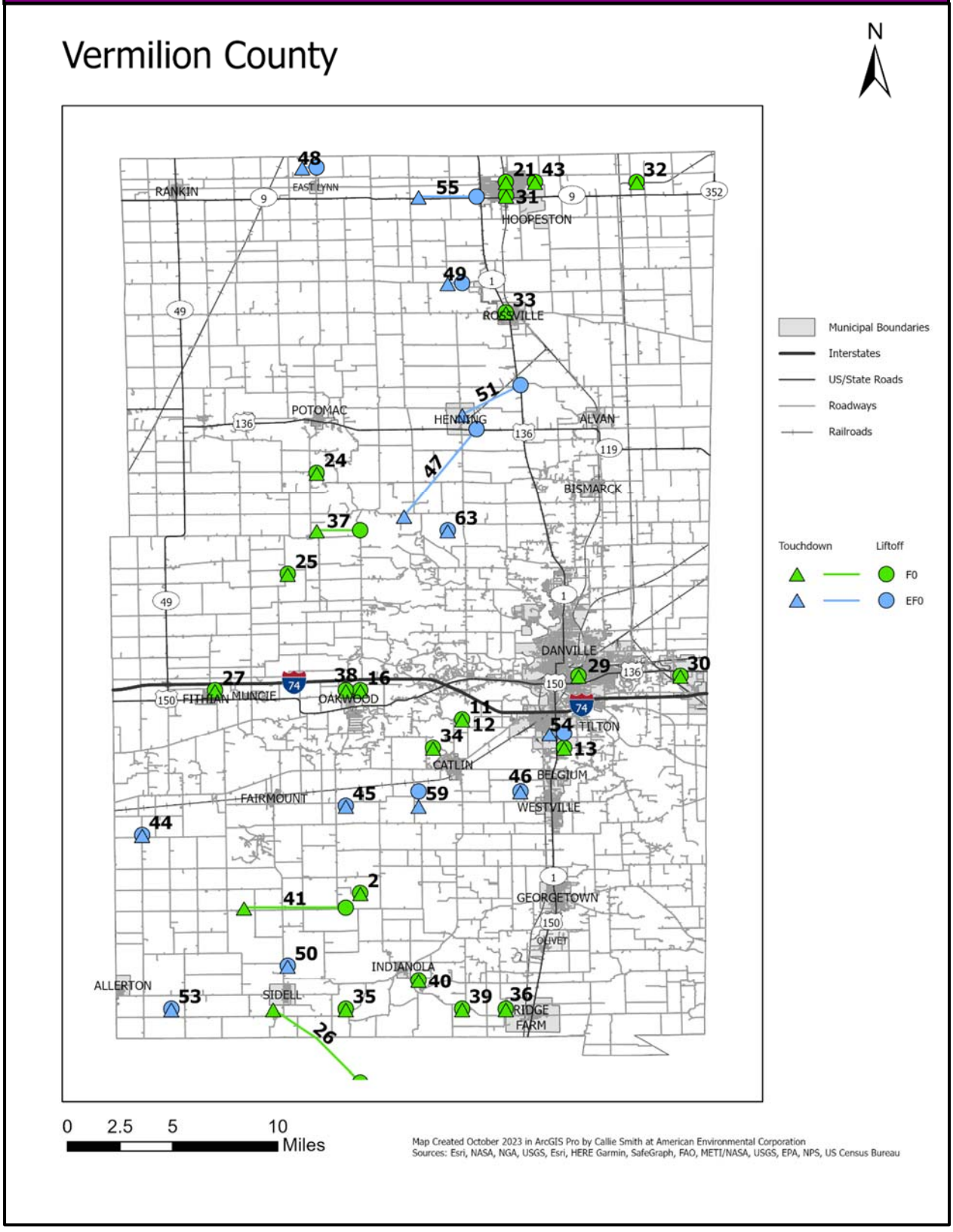
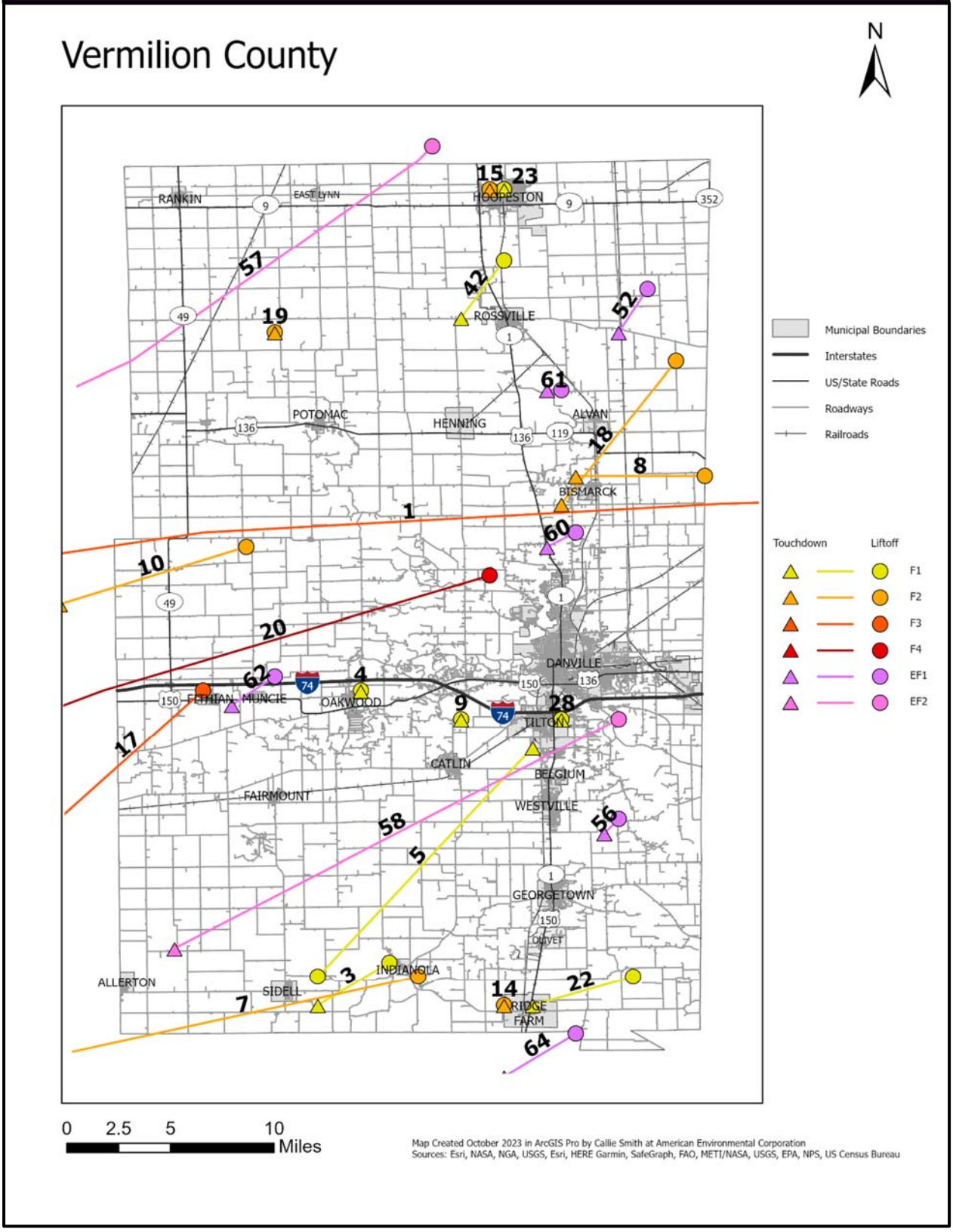


Figure T-5
F1 – F4 & EF1 – EF2 Tornado Pathways in Vermilion County



The longest tornado recorded in Vermilion County occurred on April 9, 1953. This F3 tornado, measuring 37.0 miles in length (22.2 miles in Vermilion County) and 750 yards wide, touched down in Champaign County north of Champaign and traveled east-northeast through Vermilion County before lifting off northeast of Williamsport in Warren County, Indiana. The damage pathway of this tornado covered approximately 15.8 square miles, 9.5 square miles in Vermilion County.

The widest tornado recorded in Vermilion County occurred on March 20, 1976. This F4 tornado, measuring 800 yards in width and 63.7 miles in length (14.9 miles in Vermilion County), touched down in Macon County southeast of Long Creek and traveled northeast through Piatt and Champaign Counties before lifting off northwest of Danville in Vermilion County. The damage pathway of this tornado covered approximately 29 square miles, 6.8 square miles in Vermilion County.

An EF 2 tornado on November 17, 2013 snapped power poles and damaged roofs.

Photograph courtesy of Russell Rudd, Vermilion County EMA Director

What locations are affected by tornadoes?

Tornadoes have the potential to affect the entire County. Eight of the ten participating municipalities have had reported occurrences of tornadoes within their corporate limits.

What is the probability of future tornadoes occurring based on historical data?

Vermilion County has had 64 verified occurrences of tornadoes between 1950 and 2022. With 64 tornadoes over the past 73 years, the probability or likelihood that a tornado will touchdown somewhere in the County in any given year is 88%. There were 18 years over the last 73 years where more than one tornado occurred. This indicates that the probability that more than one tornado may occur during any given year within the County is 25%.

What is the probability of future tornadoes occurring based on modeled future conditions?

Since tornadoes only occur when several conditions are met, predicting them is extremely difficult, even in the short-term future. Somewhat easier to predict are supercell formations, which are large and longer-lived storm systems that create conditions favorable to producing tornadoes, such as strong rotational winds and updrafts. These systems are fed by warm humid air, which means that a wetter and warmer climate could make them a more likely occurrence. Since future condition forecasts suggest a wetter and warmer Illinois as discussed in Section 3.1, it is likely that the conditions that create tornadoes will become more frequent as well, increasing their likelihood. **Figure SS-7,** located in Section 3.1, contains a series of maps that show how the number of supercell tracks is likely to change in the future. The analysis of this trend should be revisited in subsequent planning efforts as more data becomes available.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from tornadoes.

Are the participating jurisdictions vulnerable to tornadoes?

Yes. All of Vermilion County, including the participating jurisdictions, is vulnerable to the dangers presented by tornadoes. Since 2013, nine tornadoes have been recorded in Vermilion County.

Eight of the ten participating municipalities have had a tornado touch down or pass through their municipal boundaries. **Figure T-6** lists the verified tornadoes that have touched down in or near or passed through each participating municipality.

Figure T-6
Verified Tornadoes In or Near Participating Municipalities

Participating Municipality	Number of Verified Tornadoes	Year	
		Touched Down/Passed Through Municipality	Touched Down/Passed Near Municipality
Danville[1,3]	6	1991, 1993, 1993	1976, 2013, 2016
Fairmount	2	---	2009, 2009
Fithian	5	1974, 1988	1974, 1976, 1988
Georgetown	0	---	---
Hoopeston	7	1973, 1981, 1984, 1984, 1994, 2006	2012
Muncie	2	2019	2019
Oakwood	4	1958	1958, 1973, 2003
Rossville	4	1994	2006, 2010, 2011
Sidell[2]	8	1960, 1961	1957, 1958, 1961, 1987, 1998, 2010
Tilton	8	1969, 1991, 2012, 2013	1958, 1961, 1965, 1969

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center

Eleven tornadoes have touched down or passed through the Sidell Volunteer Fire Department while none have touched down or passed through the Vermilion County Conservation District. Unincorporated areas vulnerable to tornadoes include Collison which has had four tornadoes touch down in or near its vicinity. **Figure T-7** details the verified tornadoes that have touched down in or near unincorporated areas in Vermilion County.

The *2023 Illinois Natural Hazard Mitigation Plan* prepared by IEMA-OHS classifies Vermilion County's hazard rating for tornadoes as "very high." IEMA-OHS's overall hazard rating system has five levels: very low, low, medium, high, and very high.

For tornadoes FEMA's National Risk Index (NRI) rates the County as a whole as "relatively moderate". For tornadoes, out of the 24 census tracts, one tract is rated "relatively high", and the remainder are rated "relatively moderate" or lower. **Table R-5** presents the overall NRI scores and ratings for each census tract as well as for the County as a whole.

Have any of the participating jurisdictions identified specific assets vulnerable to the impacts of tornadoes?

Yes. Based on responses to an Assets Vulnerability Survey distributed to the participating jurisdictions, the following jurisdictions considered specific assets within their jurisdiction vulnerable to tornadoes.

Vermilion County:

- The electrical network in the County is vulnerable to tornadoes and the cascading effects from power disruption are a major impact on vulnerable assets including people, critical infrastructure and systems throughout the County.
- Utility poles and lines have been damaged during tornadoes impacting service to residents.

Figure T-7
Verified Tornadoes In or Near Unincorporated Areas of Vermilion County

Participating Municipality	Number of Verified Tornadoes	Year	
		Touched Down/Passed Through Municipality	Touched Down/Passed Near Municipality
Archie	1	---	1961
Cheneyville	1	1994	---
Collison	4	1998	1953, 1987, 1998,
East Lynn	2	2013	2010
Hope	3	1962	1953, 1962
Jamaica[2]	3	2013	1955, 2004
Jamesburg	3	---	1953, 2009, 2019

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center

Danville:

Tornadoes have the potential to disrupt emergency communication systems within the City, impacting emergency response services.

Fairmount:

- The Village's drinking water treatment plant, water tower, and well system do not have emergency backup power supplies so loss of power due to a tornado will affect service to residents.
- Tornadoes have the potential to down power lines causing service disruptions that affect critical services to residents.

Hoopeston:

The City does not have an adequate emergency shelter to use in the event a tornado causes extensive damage.

OSF HealthCare Sacred Heart Medical Center:

The Medical Center does not have a whole hospital generator so certain services will not be supported nor do the Center's outbuildings which put medications and normal business operations at risk if power outages are experienced as the result of a tornado.

Muncie:

- A recent tornado damaged structures, including homes where residents were taking shelter, and downed power lines causing widespread and lengthy power outages in the Village.
- Tornadoes have the potential to down power lines causing service disruptions that affect critical services to residents.

Oakwood
Both patrons of Oakwood's four truck stops, and residents of the Lake Bluff Mobile Home Park are vulnerable if a tornado touches down because there are no community safe rooms in the Village.

Rossville:
The Village's Thompson Street lift station does not have a backup power supply, so it is vulnerable to power outages caused by tornadoes.

Vermilion County Conservation District:
If a tornado were to touch down in any of the parks, visitors would be vulnerable because there a no community safe rooms to shelter in.

What impacts resulted from the recorded tornadoes?

Data obtained from NOAA's Storm Events Database, Storm Data Publications, Storm Prediction Center and Committee member records indicates that between 1950 and 2022, 37 of the 64 tornadoes caused $16,421,050 in property damages and $105,000 in crop damages. The two EF 2 tornadoes from November 17, 2013 caused $12 million in property damages alone. Property damage information was either unavailable or none was recorded for the remaining 27 reported occurrences.

Tornado Fast Facts – Impacts/Risk

Tornado Impacts:
- Total Property Damage (34 events): ***$16,421,050***
- Total Crop Damage (7 events): ***$105,000***
- Injuries (4 events): ***23***
- Fatalities (1 event): ***1***

Tornado Risk/Vulnerability:
- Public Health & Safety – Rural Areas: ***Low to Medium***
- Public Health & Safety – Municipalities: ***High***
- Buildings/Infrastructure/Critical Facilities – Rural Areas: ***Low to Medium***
- Buildings/Infrastructure/Critical Facilities – Municipalities/Populated Unincorp. Areas: ***High***

NOAA's Storm Events Database documented one fatality and 23 injuries as a result of four separate tornado events in Vermilion County. Detailed information was not available on the fatality and injuries sustained.

What other impacts can result from tornadoes?

In addition to causing damage to buildings and properties, tornadoes can damage infrastructure and critical facilities such as roads, bridges, railroad tracks, drinking water treatment facilities, water towers, communication towers, antennae, power substations, transformers, and poles. Depending on the damage done to the infrastructure and critical facilities, indirect impacts on individuals could range from inconvenient (i.e., adverse travel) to life-altering (i.e., loss of utilities for extended periods of time).

What is the level of risk/vulnerability to public health and safety from tornadoes?

For Vermilion County, the level of risk or vulnerability posed by tornadoes to public health and safety depends on not only frequency, but other factors as well including population distribution and density, the ratings and pathways of previously recorded tornadoes, the presence of high-risk living accommodations (such as high-rise buildings, mobile homes, etc.), and adequate access to health care for those injured following a tornado. All these must be examined when assessing vulnerability.

In terms of adequate access to health care, OSF HealthCare Sacred Heart Medical Center, Danville VA Medical Center, and Carle Hoopeston Regional Health Center as well as nearby hospitals in Urbana (Champaign County), Gibson City (Ford County), Watseka (Iroquois County), Paris (Edgar County), and Williamsport (Warren County, Indiana) are equipped to provide care and have sufficient capacity for the influx of additional patients from one or more counties.

Vermilion County/ Fire Protection Districts/Conservation District

For Vermilion County, including the Sidell Volunteer Fire Department and the Vermilion County Conservation District, the level of risk or vulnerability posed by tornadoes to public health and safety is considered to be ***low*** to ***medium***. This assessment is based on the fact that tornadoes do not occur frequently in the County and a large majority of the tornadoes that have impacted the County have touched down in rural areas away from concentrated populations. In addition, outside Danville, the County is not densely populated and there is not a large number of high-risk living accommodations present.

Participating Municipalities (including Healthcare Facilities)

In general, if a tornado were to touch down or pass through any of the participating municipalities the risk to the public health and safety would be considered ***high***. This is based on the fact that all of the participating jurisdictions have relatively dense and evenly distributed populations within their municipal boundaries. As a result, if a tornado were to touch down anywhere within the corporate limits of these municipalities it will have a greater likelihood of causing injuries or even fatalities.

Do any participating jurisdictions have community safe rooms?

No. As a result, if a tornado were to touch down or pass through any of the population centers in the County, then there would be a greater likelihood of injuries and fatalities due to the lack of structures specifically designed and constructed to provide life-safety protection. Each jurisdiction should consider whether the potential impacts to public health and safety from a tornado are considered great enough to warrant the consideration of community safe rooms as a mitigation action.

Are existing buildings, infrastructure, and critical facilities vulnerable to tornadoes?

Yes. All existing buildings, infrastructure, and critical facilities located within the County and participating municipalities are vulnerable to tornado damage. Buildings, infrastructure, and critical facilities located in the path of a tornado usually suffer extensive damage, if not complete destruction.

While some buildings adjacent to a tornado's path may remain standing with little or no damage, all are vulnerable to damage from flying debris. It is common for flying debris to cause damage to roofs, siding, and windows. In addition, mobile homes, homes on crawlspaces, and buildings with large spans (i.e., schools, barns, airport hangers, factories, etc.) are more likely to suffer damage. Most workplaces and many residential units do not provide sufficient protection from tornadoes.

The damages sustained by infrastructure and critical facilities during a tornado are similar to those experienced during a severe storm. There is a high probability that power, communication, and transportation will be disrupted in and around the affected area.

Assessing the Vulnerability of Existing Residential Structures

One way to assess the vulnerability of existing residential structures is to estimate the number of housing units that may be potentially damaged if a tornado were to touch down or pass through any of the participating municipalities, townships or the County. In order to accomplish this, a set of decisions/assumptions must be made regarding:

- the size (area impacted) by the tornado;
- the method used to estimate the area impacted by the tornado within each jurisdiction; and
- the method used to estimate the number of potentially-damaged housing units.

The following provides a brief discussion of each decision/assumption.

Assumption #1: Size of Tornado. To calculate the number of existing residential structures vulnerable to a tornado, the size (area impacted by) of the tornado must first be determined. There are several scenarios that can be used to calculate the size, including the worst case and the average. For this analysis, the area impacted by an average-sized tornado in Vermilion County will be used since it has a higher probability of recurring. In Vermilion County, the area impacted by an average-sized tornado is 0.13 square miles. This average is based on more than 70 years of data.

Assumption #1

Size of Tornado = 0.13 sq. miles

Assumption #2: Method for Estimating the Area Impacted. Next, a method for determining the area within each jurisdiction impacted by the average-sized tornado needs to be chosen. There are several methods that can be used including creating an outline of the area impacted by the average-sized tornado and overlaying it on a map of each jurisdiction (most notably the municipalities) to see if any portion of the area falls outside of the corporate limits (which would require additional calculations) or just assume that the entire area of the average-sized tornado falls within the limits of each jurisdiction. For this discussion, it is assumed that the entire area of the average-sized tornado will fall within the limits of the participating jurisdictions.

Assumption #2

The entire area impacted by the average-sized tornado falls within the limits of each participating jurisdiction.

This method is quicker, easier, and more likely to produce consistent results when the Plan is updated again. There is, however, a greater likelihood that the number of potentially-damaged housing units will be overestimated for those municipalities that have irregular shaped boundaries or occupy less than one square mile.

Assumption #3: Method for Estimating Potentially-Damaged Housing Units. With the size of the tornado selected and a method for estimating the area impacted chosen, a decision must be made on an approach for estimating the number of potentially-damaged housing units. There are several methods that can be used including overlaying the average-sized tornado on a map of each jurisdiction and counting the impacted housing units or calculating the average housing unit density to estimate the number of potentially-damaged housing units.

Assumption #3

The average housing unit density for each municipality will be used to determine the number of potentially-damaged housing units.

For this analysis, the average housing unit density will be used since it provides a realistic perspective on potential residential damages without conducting extensive counts. Using the average housing unit density also allows future updates to the Plan to be easily recalculated and provides an exact comparison to previous estimates.

Calculating Average Housing Unit Density

The average housing unit density can be calculated by taking the number of housing units in a jurisdiction and dividing that by the land area within the jurisdiction. **Figure T-8** provides a sample calculation.

Figure T-8
Calculation of Average Housing Unit Density – Vermilion County

Total Housing Units in the Jurisdiction ÷ Land Area within the Jurisdiction = Average Housing Unit Density
(Rounded Up to the Nearest Whole Number)

Vermilion County: 34,626 housing units ÷ 898.319 sq. miles = 38.545 housing units/sq. mile
(39 housing units)

Figure T-9 provides a breakdown of housing unit densities by participating municipality as well as for the unincorporated areas of the County and the County as a whole.

While the average housing unit density provides an adequate assessment of the number of housing units in areas where the housing density is fairly constant, such as municipalities, it does not provide a realistic assessment for those counties with large, sparsely populated rural areas such as Vermilion County.

In Vermilion County, as well as many other northwestern Illinois counties, there are pronounced differences in housing unit densities. . Approximately 87% of all housing units are located in seven of the County's 19 townships (Blount, Catlin, Danville, Georgetown, Grant, Newell, and Oakwood), while approximately 78% of all mobile homes are located in just three of the townships (Danville, Georgetown, and Oakwood). **Figure T-10** identifies the township boundaries. Tornado damage to buildings (especially mobile homes), infrastructure and critical facilities in these more densely populated townships is likely to be greater than in the rest of the County. While Hoopeston, Muncie, Oakwood, and Tilton have ordinances that require anchoring systems for

mobile home that would help limit the damage from lower rated tornadoes, the County and the remaining six participating municipalities do not.

Figure T-9
Average Housing Unit Density by Participating Jurisdiction

Participating Jurisdiction	Township Location	Total Housing Units (2017-2021)	Mobile Homes (2017-2021)	Land Area (Sq. Miles) (2020)	Average Housing Unit Density (Units/Sq. Mi.) (Raw)
Danville[1,3]	Blount, Danville, & Newell	13,905	223	17.856	778.730
Fairmount	Vance	255	17	1.391	183.321
Fithian	Oakwood	240	11	0.383	---
Georgetown	Georgetown	1,661	32	1.616	1027.847
Hoopeston	Grant	2,555	38	3.686	693.163
Muncie	Oakwood	60	5	0.179	---
Oakwood	Oakwood	635	158	0.928	---
Rossville	Grant & Ross	502	0	1.398	359.084
Sidell[2]	Sidell	204	11	0.927	---
Tilton	Catlin & Danville	1,255	122	3.788	331.309
Unincorp. County		5,343	911	844.926	6.324
County		34,626	1,806	898.319	38.545

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center
Source: U.S. Census Bureau.

This substantial difference in density skews the average *county* housing unit density in Vermilion County and is readily apparent when compared to the average housing unit densities for each of the townships within the County. **Figure T-11** provides a breakdown of housing unit densities by township and illustrates the differences between the various townships and the County as a whole.

For 16 of the 19 townships, the *average county* housing unit density is greater (in most cases considerably greater) than the *average township* housing unit densities. However, the *average county* housing unit density is considerably less than the housing unit densities for the three most populated townships.

Estimating the Number of Potentially-Damaged Housing Units

Before an estimate of the number of potentially-damaged housing units can be calculated for the participating municipalities, an additional factor needs to be taken into consideration: the presence of commercial/industrial developments and/or large tracts of undeveloped land. Occasionally villages and cities will annex large tracts of undeveloped land or have commercial/industrial parks/developments located within their corporate limits. In many cases these large tracts of land include very few residential structures. Consequently, including these tracts of land in the calculations to determine the number of potentially-damaged housing units skews the results, especially for very small municipalities. Therefore, to provide a more realistic assessment of the number of potentially-damaged housing units, these areas need to be subtracted from the land area figures obtained from the U.S. Census Bureau.

Figure T-10
Township Boundary Map

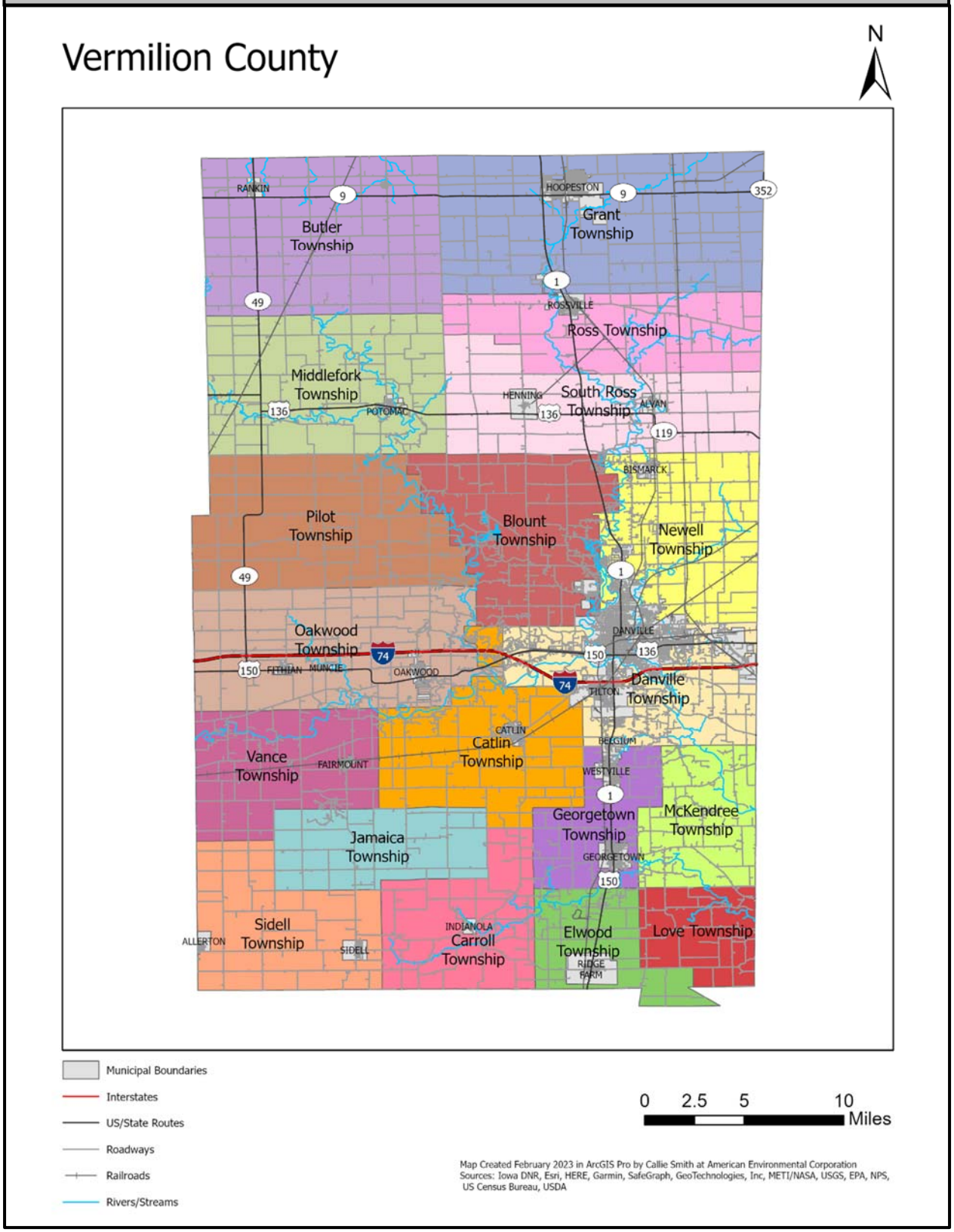


Figure T-11
Average Housing Unit Density by Township

Township	Incorporated Municipalities Located in Township	Total Housing Units (2017-2021)	Mobile Homes (2017-2021)	Land Area (Sq. Miles) (2020)	Average Housing Unit Density (Units/Sq. Mi.) (Raw)
Blount[1]	Danville	1,593	76	51.355	31.019
Butler	Rankin	490	61	71.892	6.816
Carroll	Indianola	227	32	37.294	6.087
Catlin	Catlin	1,341	12	49.789	26.934
Danville[1,3]	Belgium, Danville, Tilton, & Westville	12,609	930	49.429	255.093
Elwood	Ridge Farm	673	31	24.833	27.101
Georgetown	Belgium, Georgetown, & Westville	3,509	253	25.603	137.054
Grant	Hoopeston & Rossville	2,728	38	86.662	31.479
Jamaica[2]		28	0	31.078	0.901
Love		61	10	20.370	2.995
McKendree[1]		362	12	29.249	12.376
Middlefork	Potomac	620	27	63.654	9.740
Newell[1]	Bismarck & Danville	6,811	50	49.989	136.250
Oakwood	Fithian, Muncie, & Oakwood	1,439	224	64.357	22.360
Pilot		251	7	62.156	4.038
Ross	Rossville	553	5	43.508	12.710
Sidell[2]	Allerton & Sidell	344	17	43.382	7.930
South Ross	Alvin & Henning	489	4	53.771	9.094
Vance	Fairmount	498	17	39.949	12.466
Townships - 7 most populated		30,030	1,244	146.924	204.391
Townships - 12 least populated		4,596	562	751.396	6.117

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center
Source: U.S. Census Bureau.

In Vermilion County, all of the participating municipalities have large commercial/industrial and/or undeveloped land areas within their municipal boundaries. These areas account for approximately one-tenth to four-fifths of the land area in these municipalities. If these areas are subtracted from the U.S. Census Bureau land area figures, then the remaining land areas have fairly consistent housing unit densities and contain a majority of the housing units. **Figure T-12** provides a breakdown of the refined land area figures for the municipalities. These refined land area figures will be used to update the average housing unit density calculations for these municipalities.

With updated average housing unit densities calculated it is relatively simple to provide an estimate of the number of existing potentially-damaged housing units. This can be done by multiplying the average housing unit density by the area impacted by the average-sized Vermilion County tornado. **Figure T-13** provides a sample calculation.

Figure T-12
Refined Land Area Figures for Participating Municipalities with Large Tracts of Commercial/Industrial and Undeveloped Land Areas

Participating Jurisdiction	Land Area (Sq. Miles) (2020)	Estimated Open Land Area & Commercial/ Industrial Tracts (Sq. Miles)	Refined Land Area (Sq. Miles)
Danville[1,3]	17.856	8.460	9.396
Fairmount	1.391	0.110	1.281
Fithian	0.383	0.210	0.173
Georgetown	1.616	0.640	0.976
Hoopeston	3.686	1.570	2.116
Muncie	0.179	0.110	0.069
Oakwood	0.928	0.450	0.478
Rossville	1.398	0.910	0.488
Sidell[2]	0.927	0.730	0.197
Tilton	3.788	2.400	1.388

[1]Vermilion County Conservation District [3]OSF Healthcare Sacred Heart Medical Center
[2]Sidell Volunteer Fire Department

Figure T-13
Sample Calculation of Potentially-Damaged Housing Units – Vermilion County

Average Housing Unit Density x Area Impacted by the Average-Sized Vermilion County Tornado = Potentially-Damaged Housing Units (Rounded Up to the Nearest Whole Number)

Vermilion County: 38.545 housing units/sq. mile x 0.13 sq. miles = 5.01 housing units
(6 housing units)

For those municipalities that cover less than one square mile, the average housing unit density cannot be used to calculate the number of potentially-damaged housing units. The average housing unit density assumes that the land area within the municipality is at least one square mile and as a result distorts the number of potentially-damaged housing units for very small municipalities.

To calculate the number of potentially-damaged housing units for these municipalities, the area impacted by the averaged-sized Vermilion County tornado is divided by the land area within the municipality to get the impacted land area. The impacted land area is then multiplied by the total number of housing units within the municipality to get the number of potentially-damaged housing units. **Figure T-14** provides a sample calculation. Since the refined land areas in Muncie is less than the average area impacted, it is assumed that all of the housing units within the Village will be potentially damaged.

Figure T-14
Sample Calculation of Potentially-Damaged Housing Units for Municipalities Covering Less Than One Square Mile – Oakwood

Area Impacted by the Average-Sized Vermilion County Tornado ÷ Land Area within the Jurisdiction x Total Housing Units in the Jurisdiction = Potentially-Damaged Housing Units
(Rounded Up to the Nearest Whole Number)

Oakwood: 0.13 sq. mile ÷ 0.478 sq. miles x 635 housing units = 172.69
(173 housing units)

Figures T-15 and **T-16** provide a breakdown of the number of potentially-damaged housing units by participating municipality, as well as by township and for the unincorporated areas of the County and the County as a whole. It is important to note that for the most densely populated townships, the estimated number of potentially-damaged housing units would only be reached if a tornado's pathway included the major municipality within the township. If the tornado remained in the rural portion of the township, then the number of potentially-damaged housing units would be considerably lower.

Figure T-15
Estimated Number of Housing Units by Participating Jurisdiction Potentially Damaged by a Tornado

Participating Jurisdiction	Total Housing Units (2017-2021)	Land Area/Refined Land Area (Sq. Miles) (2020)	Average Housing Unit Density (Units/Sq. Mi.) (Raw)	Potentially-Damaged Housing Units (Units/0.13 Sq. Mi.) (Raw)	Potentially-Damaged Housing Units (Units/0.13 Sq. Mi.) (Rounded Up)
Danville[1,3]	13,905	9.396	1479.885	192.39	193
Fairmount	255	1.281	199.063	25.88	26
Fithian	240	0.173	---	180.35	181
Georgetown	1,661	0.976	---	221.24	222
Hoopeston	2,555	2.116	1207.467	156.97	157
Muncie	60	0.069	---	60	60
Oakwood	635	0.478	---	172.70	173
Rossville	502	0.488	---	133.73	134
Sidell[2]	204	0.197	---	134.62	135
Tilton	1,255	1.388	904.179	117.54	118
Unincorp. County	9,251	844.926	10.949	1.42	2
County	34,626	898.319	38.545	5.01	6

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center

Figure T-16
Estimated Number of Housing Units by Township Potentially Damaged by a Tornado

Township	Total Housing Units (2017-2021)	Land Area (Sq. Miles) (2020)	Average Housing Unit Density (Units/Sq. Mi.) (Raw)	Potentially-Damaged Housing Units (Units/0.13 Sq. Mi.) (Raw)	Potentially-Damaged Housing Units (Units/0.13 Sq. Mi.) (Rounded Up)
Blount[1]	1,593	51.355	31.019	4.03	5
Butler	490	71.892	6.816	0.89	1
Carroll	227	37.294	6.087	0.79	1
Catlin	1,341	49.789	26.934	3.50	4
Danville[1,3]	12,609	49.429	255.093	33.16	34
Elwood	673	24.833	27.101	3.52	4
Georgetown	3,509	25.603	137.054	17.82	18
Grant	2,728	86.662	31.479	4.09	5
Jamaica[2]	28	31.078	0.901	0.12	1
Love	61	20.370	2.995	0.39	1
McKendree[1]	362	29.249	12.376	1.61	2
Middlefork	620	63.654	9.740	1.27	2
Newell[1]	6,811	49.989	136.250	17.71	18
Oakwood	1,439	64.357	22.360	2.91	3
Pilot	251	62.156	4.038	0.52	1
Ross	553	43.508	12.710	1.65	2
Sidell[2]	344	43.382	7.930	1.03	2
South Ross	489	53.771	9.094	1.18	2
Vance	498	39.949	12.466	1.62	2
Townships - 7 most populated	30,030	146.924	204.391	26.57	27
Townships - 12 least populated	4,596	751.396	6.117	0.80	1

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center

What is the level of risk/vulnerability to existing buildings, infrastructure, and critical facilities vulnerable from tornadoes?

There are several factors that must be examined when assessing the vulnerability of existing buildings, infrastructure, and critical facilities to tornadoes. These factors include tornado frequency, population distribution and density, the ratings and pathways of previously recorded tornadoes, and the presence of high-risk living accommodations (such as high-rise buildings, mobile homes, etc.)

Unincorporated Vermilion County/Townships/Fire Protection Districts/Conservation Districts

For Vermilion County, including the fire protection districts and townships, the level of risk or vulnerability posed by tornadoes to existing buildings, infrastructure and critical facilities is considered to be ***low***. This assessment is based on the frequency with which tornadoes have occurred in the County, as well as the amount of damage that has been sustained tempered by the low population density throughout most the County and the relative absence of high risk living accommodations While previously recorded tornadoes have followed largely rural pathways, they have caused significant damage on several occasions.

Participating Municipalities (including Healthcare Facilities)

In general, if a tornado were to touch down or pass through any of the participating municipalities the risk to existing buildings, infrastructure, and critical facilities would be considered ***high***. This assessment is based on the population and housing unit distribution within the municipalities where wide expanses of open spaces do not generally exist. As a result, if a tornado were to touch down within any of the municipalities it would have a greater likelihood of causing substantial property damage.

Are future buildings, infrastructure, and critical facilities vulnerable to tornadoes?

Yes and No. While seven of the municipalities have building codes in place that will likely help lessen the vulnerability of new buildings and critical facilities to damage from tornadoes, the County and the three remaining municipalities do not. However, even new buildings and critical facilities built to code are vulnerable to the risks posed by a higher rated tornado.

Infrastructure such as new communication and power lines will continue to be vulnerable to tornadoes as long as they are located above ground. Flying debris can disrupt power and communication lines even if they are not directly in the path of the tornado. Steps to bury all new lines would eliminate the vulnerability, but this action would be cost prohibitive in most areas.

What are the potential dollar losses to vulnerable structures from tornadoes?

Unlike other hazards, such as flooding, there are no standard loss estimation models or methodologies for tornadoes. However, a rough estimate of potential dollar losses to the potentially-damaged housing units determined previously can be calculated if several additional decisions/assumptions are made regarding:

- the value of the potentially-damaged housing units; and
- the percent damage sustained by the potentially-damaged housing units (i.e., damage scenario).

These assumptions represent a ***probable scenario*** based on the reported historical occurrences of tornadoes in Vermilion County. The purpose of providing a rough estimate is to help residents and municipal/county officials make informed decisions to better protect themselves and their communities. These estimates are meant to provide a ***general idea*** of the magnitude of the potential damage that could occur. The following provides a brief discussion of each decision/assumption.

Assumption #4: Value of Potentially-Damaged Housing Units. In order to determine the potential dollar losses to the potentially-damaged housing units, the monetary value of the units must first be calculated. Typically, when damage estimates are prepared after a natural disaster such as a tornado, they are based on the market value of the structure. Since it would be impractical to determine the individual market value of each potentially-damaged housing unit, the average market value of residential structures in each jurisdiction will be used.

Assumption #4

The average market value for residential structures in each participating jurisdiction will be used to determine the value of potentially-damaged housing units.

To determine the average market value, the average assessed value must first be calculated. The average assessed value is calculated by taking the total assessed value of residential buildings within a jurisdiction and dividing that number by the total number of housing units within the jurisdiction. The average market value is then determined by taking the average assessed value and multiplying that number by three (the assessed value of a structure in Vermilion County is approximately one-third of the market value). **Figure T-17** provides a sample calculation. The total assessed value is based on 2021 tax assessment information provided by the Vermilion County Clerk.

Figure T-17
Sample Calculation of Average Assessed Value & Average Market Value – Oakwood

Average Assessed Value

Total Assessed Value of Residential Buildings in the Jurisdiction÷ Total Housing Units in the Jurisdiction = Average Assessed Value (Rounded to the Nearest Dollar)

Oakwood: $10,904,360 ÷ 635 housing units =$17,172

Average Market Value

Average Assessed Value x 3 = Average Market Value

Oakwood: $17,172 x 3 = $51,516

($51,516)

Figures T-18 and **T-19** provide the average assessed value and average market value for each participating municipality as well as by township and for the unincorporated areas of the County and the County as a whole.

Figure T-18
Average Market Value of Housing Units by Participating Jurisdiction

Participating Jurisdiction	Total Assessed Value of Residential Buildings (2021)	Total Housing Units (2017-2021)	Average Assessed Values	Average Market Value (2021)
Danville[1,3]	$154,352,003	13,905	$11,100	$33,300
Fairmount	$4,082,902	255	$16,011	$48,033
Fithian	$5,177,282	240	$21,572	$64,716
Georgetown	$19,909,986	1,661	$11,987	$35,961
Hoopeston	$22,044,883	2,555	$8,628	$25,884
Muncie	$1,146,031	60	$19,101	$57,303
Oakwood	$10,904,360	635	$17,172	$51,516
Rossville	$8,912,554	502	$17,754	$53,262
Sidell[2]	$3,052,766	204	$14,965	$44,895
Tilton	$11,516,512	1,255	$9,177	$27,531
Unincorp. County	$92,766,478	9,251	$10,028	$30,084
County	$402,273,201	34,626	$11,618	$34,854

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center
Source: Vermilion County Clerk

Figure T-19
Average Market Value of Housing Units by Township

Participating Jurisdiction	Total Assessed Value of Residential Buildings (2021)	Total Housing Units (2017-2021)	Average Assessed Values	Average Market Value (2021)
Blount[1]	$45,721,739	1,593	$ 28,702	$ 86,105
Butler	$ 5,079,876	490	$ 10,367	$ 31,101
Carroll	$ 2,775,582	227	$ 12,227	$ 36,682
Catlin	$37,753,042	1,341	$ 28,153	$ 84,459
Danville[1,3]	$91,787,770	12,609	$7,280	$ 21,839
Elwood	$ 8,418,692	673	$ 12,509	$ 37,528
Georgetown	$51,223,490	3,509	$ 14,598	$ 43,793
Grant	$28,242,467	2,728	$ 10,353	$ 31,058
Jamaica[2]	$1,324,206	28	$ 47,293	$141,879
Love	$1,156,827	61	$ 18,964	$ 56,893
McKendree[1]	$4,803,604	362	$ 13,270	$ 39,809
Middlefork	$9,146,327	620	$ 14,752	$ 44,256
Newell[1]	$128,372,572	6,811	$ 18,848	$ 56,543
Oakwood	$31,095,718	1,439	$ 21,609	$ 64,828
Pilot	$4,358,155	251	$ 17,363	$ 52,090
Ross	$10,729,622	553	$ 19,403	$ 58,208
Sidell[2]	$5,777,866	344	$ 16,796	$ 50,388
South Ross	$5,965,012	489	$ 12,198	$ 36,595
Vance	$7,944,784	498	$ 15,953	$ 47,860
Townships - 7 most populated	$414,196,798	30,030	$ 13,793	$ 41,378
Townships - 12 least populated	$67,480,553	4,596	$ 14,682	$ 44,047

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center

Assumption #5: Damage Scenario. Finally, a decision must be made regarding the percent damage sustained by the potentially-damaged housing units and their contents. For this scenario, the expected percent damage sustained by the structure and its contents is 100%; in other words, all of the potentially-damaged housing units would be completely destroyed. While it is highly unlikely that each and every housing unit would sustain the maximum percent damage, identifying and calculating different degrees of damage within the average area impacted is complex and provides an additional complication when updating the Plan.

Assumption #5

The tornado would completely destroy the potentially-damaged housing units.

Structural Damage = 100%
Content Damage = 100%

Calculating Potential Dollar Losses

With all the decisions and assumptions made, the potential dollar losses can now be calculated. First, the potential dollar losses to the ***structure*** of a potentially-damaged housing unit must be determined. This is done by taking the average market value for a residential structure and multiplying it by the percent damage (100%) to get the average structural damage per unit. Next the average structural damage per unit is multiplied by the number of potentially-damaged housing units. **Figure T-20** provides a sample calculation.

Figure T-20
***Structure:* Potential Dollar Loss Sample Calculation – Oakwood**

Average Market Value of a Housing Unit with the Jurisdiction x Percent Damage = Average Structural Damage per Housing Unit
Oakwood: $51,516 x 100% = $51,516 per housing unit

Average Structural Damage per Housing Unit x Number of Potentially-Damaged Housing Units within the Jurisdiction = *Structure* Potential Dollar Losses
Oakwood: $51,516 per housing unit x 160 housing units = $8,242,560
($8,242,560)

Next, the potential dollar losses to the ***content*** of a potentially-damaged housing unit must be determined. Based on FEMA guidance, the average value of a residential housing unit's content is approximately 50% of its market value. Therefore, start by taking one-half the average market value for a residential structure and multiply by the percent damage (100%) to get the average content damage per unit. Next the average content damage per unit is multiplied by the number of potentially-damaged housing units. **Figure T-21** provides a sample calculation.

Figure T-21
***Content:* Potential Dollar Loss Sample Calculation – Oakwood**

½ (Average Market Value of a Housing Unit) with the Jurisdiction x Percent Damage = Average Content Damage per Housing Unit
Oakwood: ½ ($51,516) x 100% =$25,758 per housing unit

Average Content Damage per Housing Unit x Number of Potentially-Damaged Housing Units within the Jurisdiction = *Content* Potential Dollar Losses
Oakwood: $25,758 per housing unit x 160 housing units = $4,121,280
($4,121,280)

Finally, the ***total potential dollar losses*** may be calculated by adding together the potential dollar losses to the structure and content. **Figures T-22** and **T-23** give a breakdown of the total potential dollar losses by municipality and township. For comparison, an estimate of potential dollar losses was calculated for the entire County, the unincorporated portions of the County, the seven most populated townships and the 12 least populated townships.

This assessment illustrates why potential residential dollar losses should be considered when jurisdictions are deciding which mitigation projects to pursue. ***Potential dollar losses caused by an average tornado in Vermilion County would be expected to exceed at least $4.8 million in any of the participating municipalities, with the exception of Fairmount.***

Potential dollar losses caused by an average tornado in Vermilion County townships would be expected to range from $46,652 in Butler Township to at least $1.5 million in Newell Township. As discussed previously, the estimate for the entire County is skewed because it does not take into consideration the differences in the housing density.

Potential dollar losses caused by an average tornado in Vermilion County townships would be expected to range from $46,652 in Butler Township to at least $1.5 million in Newell Township. As discussed previously, the estimate for the entire County is skewed because it does not take into consideration the differences in the housing density.

Figure T-22
Estimated Potential Dollar Losses to Potentially-Damaged Housing Units from a Tornado by Participating Jurisdiction

Participating Jurisdiction	Average Market Value (2021)	Potentially-Damaged Housing Units (Rounded Up)	Potential Dollar Losses		Total Potential Dollar Losses
			Structure	Content	
Danville[1,3]	$33,300	193	$6,426,900	$3,213,450	$9,640,350
Fairmount	$48,033	26	$1,248,858	$624,429	$1,873,287
Fithian	$64,716	181	$11,713,596	$5,856,798	$17,570,394
Georgetown	$35,961	222	$7,983,342	$3,991,671	$11,975,013
Hoopeston	$25,884	157	$4,063,788	$2,031,894	$6,095,682
Muncie	$57,303	60	$3,438,180	$1,719,090	$5,157,270
Oakwood	$51,516	173	$8,912,268	$4,456,134	$13,368,402
Rossville	$53,262	134	$7,137,108	$3,568,554	$10,705,662
Sidell[2]	$44,895	135	$6,060,825	$3,030,413	$9,091,238
Tilton	$27,531	118	$3,248,658	$1,624,329	$4,872,987
Unincorp. County	$30,084	2	$60,168	$30,084	$90,252
County	$34,854	6	$209,124	$104,562	$313,686

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center

Vulnerability of Commercial/Industrial Businesses and Infrastructure/Critical Facilities

The calculations presented above are meant to provide the reader with a sense of the scope or magnitude of an average-sized tornado in term of residential dollar losses. These calculations do not include damages sustained by businesses or other infrastructure and critical facilities within the participating jurisdictions.

In terms of businesses, the impacts from an average-sized tornado event can be physical and/or monetary. Monetary impacts can include loss of sales revenue either through temporary closure or loss of critical services (i.e., power, drinking water, and sewer). Depending on the magnitude of the event, the damage sustained by infrastructure and critical facilities can be extensive in nature and expensive to repair. As a result, the cumulative monetary impacts to businesses and infrastructure can exceed the cumulative monetary impacts to residences. ***While average dollar amounts cannot be supplied for these items at this time, they should be taken into account*** when discussing the impacts that an average-sized tornado could have on the participating jurisdictions.

Figure T-23
Estimated Potential Dollar Losses to Potentially-Damaged Housing Units from a Tornado by Township

Participating Jurisdiction	Average Market Value (2021)	Potentially-Damaged Housing Units (Rounded Up)	Potential Dollar Losses		Total Potential Dollar Losses
			Structure	Content	
Blount[1]	$86,105	5	$430,525	$215,263	$645,788
Butler	$31,101	1	$31,101	$15,551	$46,652
Carroll	$36,682	1	$36,682	$18,341	$55,023
Catlin	$84,459	4	$337,836	$168,918	$506,754
Danville[1,3]	$21,839	34	$742,526	$371,263	$1,113,789
Elwood	$37,528	4	$150,112	$75,056	$225,168
Georgetown	$43,793	18	$788,274	$394,137	$1,182,411
Grant	$31,058	5	$155,290	$77,645	$232,935
Jamaica[2]	$141,879	1	$141,879	$70,940	$212,819
Love	$56,893	1	$56,893	$28,447	$85,340
McKendree[1]	$39,809	2	$79,618	$39,809	$119,427
Middlefork	$44,256	2	$88,512	$44,256	$132,768
Newell[1]	$56,543	18	$1,017,774	$508,887	$1,526,661
Oakwood	$64,828	3	$194,484	$97,242	$291,726
Pilot	$52,090	1	$52,090	$26,045	$78,135
Ross	$58,208	2	$116,416	$58,208	$174,624
Sidell[2]	$50,388	2	$100,776	$50,388	$151,164
South Ross	$36,595	2	$73,190	$36,595	$109,785
Vance	$47,860	2	$95,720	$47,860	$143,580
Townships - 7 most populated	$41,378	27	$1,117,206	$558,603	$1,675,809
Townships - 12 least populated	$44,047	1	$44,047	$22,024	$66,071

[1]Vermilion County Conservation District [2]Sidell Volunteer Fire Department [3]OSF Healthcare Sacred Heart Medical Center

3.7 DROUGHTS

HAZARD IDENTIFICATION

What is the definition of a drought?

While difficult to define, the National Drought Mitigation Center (NDMC) considers "drought" in its most general sense to be a deficiency of precipitation over an extended period of time, usually a season or more, resulting in a water shortage.

Drought is a normal and recurrent feature of climate and can occur in all climate zones, though its characteristics and impacts vary significantly from one region to another. Unlike other natural hazards, drought does not have a clearly defined beginning or end. Droughts can be short, lasting just a few months, or they can persist for several years. There have been 28 drought events with losses exceeding $1 billion each (CPI-Adjusted) across the U.S. between 1980 and 2022. This is due in part to the sheer size of the areas affected.

What types of drought occur?

There are four main types of drought that occur: meteorological, agricultural, hydrological, and socioeconomic. They are differentiated based on the use and need for water. The following provides a brief description of each type.

- **Meteorological Drought.** Meteorological drought is defined by the degree of dryness or rainfall deficit and the duration of the dry period. Due to climate differences, what might be considered a drought in one location of the country may not be in another location.
- **Agricultural Drought.** An agricultural drought refers to a period when rainfall deficits, soil moisture deficits, reduced ground water or reservoir levels needed for irrigation impact crop development and yields.
- **Hydrological Drought.** Hydrological drought refers to a period when precipitation deficits (including snowfall) impact surface (stream flow, reservoir and lake levels) and subsurface (aquifers) water supply levels.
- **Socioeconomic Drought.** Socioeconomic drought refers to a period when the demand for an economic good (fruit, vegetables, grains, etc.) exceeds the supply as a result of weather-related shortfall in the water supply.

How are droughts measured?

There are numerous quantitative measures (indicators and indices) that have been developed to measure drought. How these indicators and indices measure drought depends on the discipline affected (i.e., agriculture, hydrology, meteorology, etc.) and the region being considered. There is no single index or indicator that can account for and be applied to all types of drought.

Although none of the major indices are inherently superior to the rest, some are better suited than others for certain uses. The first comprehensive drought index developed in the U.S. was the Palmer Drought Severity Index (PDSI). The PDSI is calculated based on precipitation and temperature data, as well as the local Available Water Content of the soil. It is most effective

measuring drought impacts on agriculture. For many years it was the only operational drought index, and it is still very popular around the world.

The Standardized Precipitation Index (SPI), developed in 1993, uses precipitation records for any location to develop a probability of precipitation for any time scale in order to reflect the impact of drought on the availability of different water resources (groundwater, reservoir storage, streamflow, snowpack, etc.) In 2009, the World Meteorological Organization recommended SPI as the main meteorological drought index that countries should use to monitor and follow drought conditions.

The first operational 'composite' approach applied in the U.S. was the U.S. Drought Monitor (USDM). The USDM utilizes five key indicators, numerous supplementary indicators, and local reports from expert observers around the country to produce a drought intensity rating that is ideal for monitoring droughts that have many impacts, especially on agriculture and water resources during all seasons over all climate types. NOAA's Storm Events Database records include USDM ratings and utilized them along with additional weather information to describe the severity of the drought conditions impacting affected counties. Therefore, this Plan will utilize USDM ratings to identify and describe previous drought events recorded within the County. The following provides a more detailed discussion of the USDM to aid the Plan's developers and the general public in understanding how droughts are identified and categorized.

U.S. Drought Monitor (USDM)

Established in 1999, the USDM is a relatively new index that combines quantitative measures with input from experts in the field. It is designed to provide the general public, media, government officials and others with an easily understandable "big picture" overview of drought conditions across the U.S. It is unique in that it combines a variety of numeric-based drought indices and indicators with local expert input to create a single composite drought indicator, the results of which are illustrated via a weekly map that depicts the current drought conditions across the U.S. The USDM is jointly produced by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the U.S. Department of Agriculture (USDA), and the National Oceanic and Atmospheric Administration (NOAA).

The USDM has a scale of five intensity categories, D0 through D4, that are utilized to identify areas of drought. **Figure DR-1** provides a brief description of each category.

Because the ranges of the various indicators often don't coincide, the final drought category tends to be based on what a majority of the indictors show and on local observations. The authors also weight the indices according to how well they perform in various parts of the country and at different times of the year. It is the combination of the best available data, location observations and experts' best judgment that make the U.S. Drought Monitor more versatile than other drought indices.

In addition to identifying and categorizing general areas of drought, the USDM also identifies whether a drought's impacts are short-term (typically less than 6 months – agriculture, grasslands) or long-term (typically more than 6 months – hydrology, ecology). **Figure DR-2** shows an

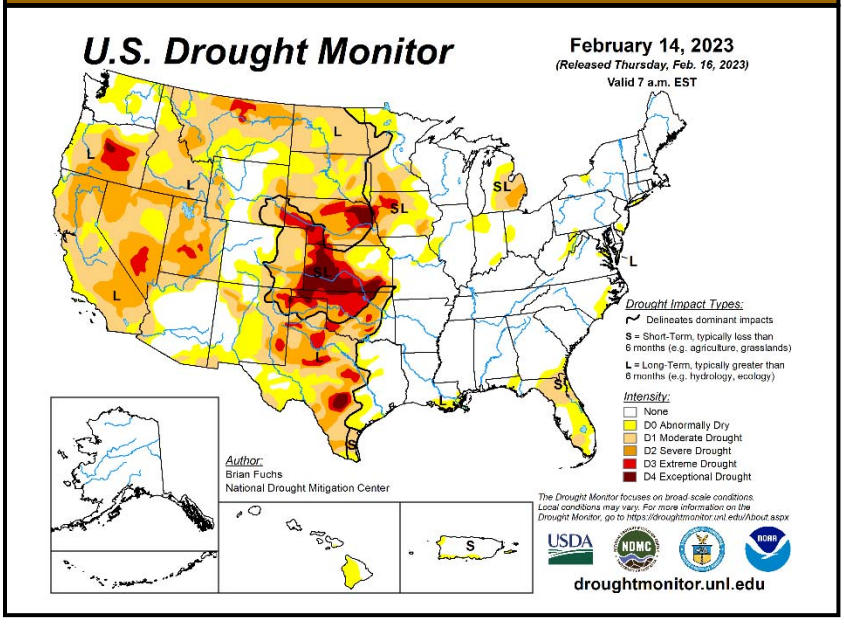
example of the USDM weekly map. The USDM is designed to provide a consistent big-picture look at drought conditions in the U.S. It is not designed to infer specifics about local conditions.

Figure DR-1
U.S. Drought Monitor – Drought Intensity Categories

Category	Possible Impacts
D0 (Abnormally Dry)	• Going into drought: - short-term dryness slowing planting, growth of crops or pastures. • Coming out of drought: - some lingering water deficits - pastures or crops not fully recovered
D1 (Moderate Drought)	• Some damage to crops, pastures • Streams, reservoirs, or wells low; some water shortages developing or imminent • Voluntary water-use restrictions requested
D2 (Severe Drought)	• Crop or pasture losses likely • Water shortages common • Water restrictions imposed
D3 (Extreme Drought)	• Major crop/pasture losses • Widespread water shortages or restrictions
D4 (Exceptional Drought)	• Exceptional and widespread crop/pasture losses • Shortages of water in reservoirs, streams, and wells creating water emergencies

Source: U.S. Drought Monitor.

Figure DR-2
U. S. Drought Monitor



The U.S. Drought Monitor is jointly produced by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the U.S. Department of Agriculture, and the National Oceanic and Atmospheric Administration. Map Courtesy of NDMC.

HAZARD PROFILE

The following identifies past occurrences of drought, details the severity or extent of each event (if known); identifies the locations potentially affected and estimates the likelihood of future occurrences.

When have droughts occurred previously? What is the extent of these previous droughts?

Drought Fast Facts – Occurrences

Number of Drought Events Reported (1980 – 2022): ***5***

Table 10, located in **Appendix J**, summarizes the previous occurrences as well as the extent or magnitude of the drought events recorded in Vermilion County. NOAA's Storm Events Database, the Illinois State Water Survey, the Illinois Emergency Management Agency (IEMA), the NDMC at the University of Nebraska-Lincoln, and the USDA have documented six official droughts for Vermilion County between 1980 and 2022.

The recorded drought events ranged in length from 3 to 16 months. Of the three drought events with a recorded starting month, two began in May, one began in June, and one began in August. Three of the drought events were assigned drought intensity category ratings by the USDM, with the 2012drought reaching D3, extreme drought.

The State of Illinois Drought Preparedness and Response Plan identified seven additional outstanding statewide droughts since 1900 based on statewide summer values of the PDSI provided by NOAA's National Center for Environmental Information. Those seven droughts occurred in 1902, 1915, 1931, 1934, 1936, 1954 and 1964; however, the extent to which Vermilion County was impacted was unavailable.

What locations are affected by drought?

Drought events affect the entire County. Droughts, like excessive heat and severe winter storms, tend to impact large areas, extending across an entire region and affecting multiple counties.

What is the probability of future drought events occurring based on historical data?

Vermilion County, including the participating jurisdictions, has experienced five droughts between 1980 and 2022. With five occurrences over 43 years, the probability or likelihood that the County may experience a drought in any given year is 11.6%. However, if earlier recorded droughts are factored in, then the probability that Vermilion County may experience a drought in any given year decreases to 9.9%.

What is the probability of future drought events occurring based on modeled future conditions?

Despite precipitation trending upwards in Illinois in recent decades, drought conditions are likely to be more problematic in the future than they have been in the recent past, due to a combination of changes in precipitation patterns and an increase in summer temperatures.

In terms of predicting the likelihood of drought conditions, the amount of precipitation received is important, but even more critical is the timing of precipitation events. More frequent precipitation events maintain soil in a spongy, porous state that readily absorbs moisture; alternatively, more

infrequent precipitation events tend to lead to dry, hardened earth, which is more effective at repelling water than absorbing it. When a precipitation event does occur over this drought-stricken soil, most of the water runs off and pools in bottomlands, leaving most land 'high and dry' while simultaneously flooding the lowest-lying areas.

Another factor making this outcome more likely is the trend of increasing temperatures in Illinois, particularly during the summer when rain events are already more sporadic. Over the past 120 years, average temperatures in Illinois have increased by 1°F and 2°F according to the Illinois State Climatologist, a trend that is likely to continue. In the future, hotter summer temperatures are likely to lead to more evaporation that will exacerbate dry conditions, causing droughts to intensify more rapidly and become more intense.

Figures SS-8 and **SS-9,** located in Section 3.1, and **Figures EH-7, EH-8,** and **EH-9,** located in Section 3.4, provide tabular and graphical projections for Vermilion County showing average annual estimates for temperature and precipitation in the early, mid, and late century, with both low and high estimates for each time period. Most likely, the true values will fall between these two estimates. According to the Climate Mapping for Resilience and Adaptation's Assessment Tool, the number of days exceeding 90°F in Vermilion County is projected to go from 18 today to between 57 and 67, while days exceeding 100°F are likely to increase from an average of about one a year today to 7 to 11 days by midcentury. It also forecasts that the average annual precipitation in Vermilion County is likely to increase by 1.7 to 2.1 inches per year, while the average number of days per year without precipitation is projected to increase by 3 to 4 days.

The Climate Explorer indicates that in Vermilion County, the average number of dry spells (a period of consecutive days without precipitation) is projected to increase by one. Extreme temperatures on the hottest days of the year are projected to increase by 8°F. This is based on the findings of the 2018 National Climate Assessment and compares projections for the middle third of the century (2035-2064) with average conditions observed from 1961-1990.

In combination, a decrease in the frequency of precipitation and a significant increase in the number of days with extreme heat in Vermilion County would create conditions that will be more likely to produce droughts than today.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from drought.

Are the participating jurisdictions vulnerable to drought?

Yes. All of Vermilion County, including the participating jurisdictions, is vulnerable to drought. Neither the amount nor the distribution of precipitation; soil types; topography; or water table conditions provides protection for any area within the County.

The *2023 Illinois Natural Hazard Mitigation Plan* prepared by IEMA-OHS classifies Vermilion County's hazard rating for drought as "medium". IEMA-OHS's overall hazard rating system has five levels: very low, low, medium, high, and very high.

For drought, FEMA's National Risk Index (NRI) rates the County as a whole as "relatively low". None of the 24 census tracts are rated higher than "relatively moderate" for drought. **Table R-5** presents the overall NRI scores and ratings for each census tract as well as for the County as a whole.

Have any of the participating jurisdictions identified specific assets vulnerable to the impacts of drought?

No. Based on responses to an Assets Vulnerability Survey distributed to the participating jurisdictions, none of the participating jurisdictions consider specific assets within their jurisdictions vulnerable to drought.

What impacts resulted from the recorded drought events?

Damage information was only available for one of the five drought events experienced between 1980 and 2022. According to NOAA's Storm Events Database, the 2012 drought caused an estimated $29.2 million in damages to the corn crop in Vermilion County. Damage information was either unavailable or none was recorded for the remaining four reported occurrences.

Of the five drought events, disaster relief payment information was only available for one of the events. In 1988, landowners and farmers in Illinois were paid in excess of $382 million in relief payments; however, a breakdown by county was unavailable.

Drought Fast Facts – Impacts/Risk

Drought Impacts:
- Total Property Damage: ***n/a***
- Total Crop Damage: ***$29.2 million (corn crop damage only – 2012 drought)***

Drought Risk/Vulnerability:
- Public Health & Safety: ***Low***
- Buildings/Infrastructure/Critical Facilities: ***Low***

What other impacts can result from drought events?

Based on statewide drought records available from the Illinois State Water Survey, the most common impacts that result from drought events in Illinois include reductions in crop yields and drinking water shortages.

Crop Yield Reductions

Agriculture is an important industry in Vermilion County. Farmland accounts for approximately 82% of all the land in the County. According to the 2017 Census of Agriculture, there were 1,049 farms in Vermilion County occupying 471,468 acres. Approximately 0.2% of the land in crop production is irrigated. In comparison, there were 954 farms occupying 75.3% (432,540 acres) of the total land area in the County in 2012. Of the land in farms in 2017, 90% or approximately 426,123 acres were in crop production.

According to the 2017 Census of Agriculture, total crop and livestock sales accounted for $283.0 million in revenue. This is a 0.2% decrease in revenue from the 2012 Census of Agriculture when total crop and livestock sales accounted for $283.6 million. Vermilion County ranks 9th in Illinois in crop cash receipts and 66th in Illinois for livestock cash receipts. A severe drought would

have a major financial impact on the large agricultural community, particularly if it occurred during the growing season. Dry weather conditions, particularly when accompanied by excessive heat, can result in diminished crop yields and place stress on livestock.

A reduction in crop yields was seen as a result of the 1983, 1988, 2005, 2011,and 2012 droughts. **Figure DR-3** illustrates the reduction yields seen for corn and soybeans during the recorded drought events. The USDA's National Agricultural Statistics Service records show that yield reductions for corn and soybeans were most severe for the 1988 drought when there was a 45.0% reduction in corn yields and a 35.0% reduction in soybean yields.

Figure DR-3
Crop Yield Reductions Due to Drought – Vermilion County

Year	Corn		Soybeans	
	Yield (bushel)	% Reduction Previous Year	Yield (bushel)	% Reduction Previous Year
1982	136.0	--	41.0	--
1983	**90.0**	**33.8%**	**37.5**	**8.5%**
1984	128.0	--	35.0	--
1987	149.0	--	40.0	--
1988	**82.0**	**45.0%**	**26.0**	**35.0%**
1989	131.0	--	39.5	--
2004	167.0	--	52.0	--
2005	**165.0**	**1.2%**	**51.0**	**1.9%**
2006	173.0	--	54.0	--
2010	166.3	--	55.2	--
2011	**148.1**	**10.9%**	**44.9**	**18.7%**
2012	**100.1**	**32.4%**	46.6	--
2013	176.9	--	54.2	--

Source: USDA, National Agricultural Statistics Service.

Drinking Water Shortages

Municipalities that rely on surface water sources for their drinking water supplies are more vulnerable to shortages as a result of drought. In Vermilion County, ***three of the ten participating municipalities rely exclusively on surface water sources*** for their drinking water supply including Danville, Oakwood, and Tilton. Danville and Tilton obtain their drinking water from Aqua Illinois which obtains its water from Lake Vermilion. Oakwood obtains its water from Prairie Path Water Company which obtains its water from Salt Fork and the Oakwood Reservoir.

According to Illinois State Water Survey's *Drought Risk Analysis Tool for Illinois' Community Surface Water Systems*, both Aqua Illinois and Prairie Path Water Company's water supplies are classified as "Adequate". The ISWS indicates that for a system to be considered adequate, it should with 90% confidence be able to fulfill the community's water demand through a severe drought similar to the historical drought of record.

The remaining participating municipalities, with the exception of Muncie, obtain their water from community water supplies that draw water from wells drilled into sand and gravel aquifers.

Fairmount and Sidell have the shallowest wells with depths ranging from 28 feet to 72 feet, making them potentially vulnerable to the effects of a prolonged drought. Residents of Muncie do not have a community water supply and instead rely on private wells of varying depth in the shallow sand and gravel aquifers for their drinking water.

While some of the participating municipalities are less vulnerable to drinking water shortages, a prolonged drought or a series of droughts in close succession do have the potential to impact water levels in aquifers used for individual drinking water wells in rural areas. This is because individual (private) water wells tend to be shallower than community (public) water wells.

What is the level of vulnerability to public health and safety from drought?

Unlike other natural hazards that affect the County, drought events do not typically cause injuries or fatalities. The primary concern centers on the financial impacts that result from loss of crop yields and livestock and potential drinking water shortages. Even taking into consideration the potential impacts that a water shortage may have on the general public, the risk or vulnerability to public health and safety from drought is ***low***.

Are existing buildings, infrastructure, and critical facilities vulnerable to drought?

No. In general, existing buildings, infrastructure and critical facilities located in Vermilion County and the participating jurisdictions are not vulnerable to drought. The primary concern centers on the financial impacts that result from loss of crop yields and livestock.

While buildings do not typically sustain damage from drought events, in rare cases infrastructure and critical facilities may be directly or indirectly impacted. While uncommon, droughts can contribute to roadway damage. Severe soil shrinkage can compromise the foundation of a roadway and lead to cracking and buckling.

Prolonged heat associated with drought can also increase the demand for energy to operate air conditioners, fans, and other devices. This increase in demand places stress on the electrical grid, which increases the likelihood of power outages.

Additionally, droughts have impacted drinking water supplies. Reductions in aquifer water levels can cause water shortages that jeopardize the supply of water needed to provide drinking water and fight fires. While water use restrictions can be enacted in an effort to maintain a sufficient supply of water, they are only temporary and do not address long-term viability issues. Drinking water supplies vulnerable to drought, such as those that rely solely on surface water or shallow wells, need to consider mitigation measures that will provide long-term stability before a severe drought, or a series of droughts occur. Effective mitigation measures include drilling additional wells, preferably deep wells, securing agreements with alternative water sources and constructing water lines to provide a backup water supply.

In general, the risk or vulnerability to buildings, infrastructure and critical facilities from drought is ***low***, even taking into consideration the potential impact a drought may have on drinking water supplies and the stress that prolonged heat may place on the electrical grid.

Are future buildings, infrastructure, and critical facilities vulnerable to drought?

No. Future buildings, infrastructure and critical facilities within the County are no more vulnerable to drought than the existing building, infrastructure, and critical facilities. As discussed above, buildings do not typically sustain damage from drought. Infrastructure and critical facilities may, in rare cases, be damaged by drought, but very little can be done to prevent this damage.

What are the potential dollar losses to vulnerable structures from drought?

Unlike other natural hazards there are no standard loss estimation models or methodologies for drought. Since drought typically does not cause structure damage, it is unlikely that future dollar losses will be excessive. The primary concern associated with drought is the financial impacts that result from loss of crop yields and the potential impacts to drinking water supplies. Since a large part of the County is involved in farming activities, it is likely that there will be future dollar losses to drought. In addition, reduced water levels and the water conservation measures that typically accompany a drought will most likely impact consumers as well as businesses and industries that are water-dependent (i.e., car washes, landscapers, etc.).

3.8 EARTHQUAKES

HAZARD IDENTIFICATION

What is the definition of an earthquake?

An earthquake is a sudden shaking of the ground caused when rocks forming the earth's crust slip or move past each other along a fault (a fracture in the rocks). Most earthquakes occur along the boundaries of the earth's tectonic plates. These slow-moving plates are being pulled and dragged in different directions, sliding over, under and past each other. Occasionally, as the plates move past each other, their jagged edges will catch or stick causing a gradual buildup of pressure (energy).

Eventually, the force exerted by the moving plates overcomes the resistance at the edges and the plates snap into a new position. This abrupt shift releases the pent-up energy, producing vibrations or seismic waves that travel outward from the earthquake's point of origin. The location below the earth's surface where the earthquake starts is known as the hypocenter or focus. The point on the earth's surface directly above the focus is the epicenter.

The destruction caused by an earthquake may range from light to catastrophic depending on a number of factors including the magnitude of the earthquake, the distance from the epicenter, the local geologic conditions as well as construction standards and time of day (i.e., rush hour). Earthquake damage may include power outages, general property damage, road, and bridge failure, collapsed buildings and utility damage (ruptured gas lines, broken water mains, etc.).

Most of the damage done by an earthquake is caused by its secondary or indirect effects. These secondary effects result from the seismic waves released by the earthquake and include ground shaking, surface faulting, liquefaction, landslides and, in rare cases, tsunamis.

According to the U.S. Geological Survey, more than 143 million Americans in the contiguous U.S. are exposed to potentially damaging ground shaking from earthquakes. More than 44 million of those Americans, located in 18 states, are exposed to very strong ground shaking from earthquakes. Illinois ranks 10th in terms of the number of individuals exposed to very strong ground shaking. The Federal Emergency Management Agency's Hazus analysis indicates that the annualized earthquake losses to the national building stock is $6.1 billion per year. A majority of the average annual loss is concentrated in California ($3.7 million). The central U.S. (including Illinois) ranks third in annualized earthquake losses at $480 billion, behind the pacific northwest (Washington and Oregon) with annualized earthquake losses at $710 billion.

What is a fault?

A fault is a fracture or zone of fractures in the earth's crust between two blocks of rock. They may range in length from a few millimeters to thousands of kilometers. Many faults form along tectonic plate boundaries. Faults are classified based on the angle of the fault with respect to the surface (known as the dip) and the direction of slip or movement along the fault. There are three main groups of faults: normal, reverse (thrust) and strike-slip (lateral).

Normal faults occur in response to pulling or tension along the two blocks of rock causing the overlying block to move down the dip of the fault plane. Most of the faults in Illinois are normal faults. Reverse or thrust faults occur in response to squeezing or compression of the two blocks of rock causing the overlying block to move up the dip of the fault plane. Strike-slip or lateral faults can occur in response to either pulling/tension or squeezing/compression causing the blocks to move horizontally past each other.

Geologists have found that earthquakes tend to recur along faults, which reflect zones of weakness in the earth's crust. Even if a fault zone has recently experienced an earthquake, there is no guarantee that all the stress has been relieved. Another earthquake could still occur.

What are tectonic plates?

Tectonic plates are large, irregularly-shaped, relatively rigid sections of the earth's crust that float on the top, fluid layer of the earth's mantle. There are about a dozen tectonic plates that make up the surface of the planet. These plates are approximately 50 to 60 miles thick and the largest are millions of square miles in size.

How are earthquakes measured?

The severity of an earthquake is measured in terms of its magnitude and intensity. A brief description of both terms and the scales used to measure each are provided below.

Magnitude

Magnitude refers to the amount of seismic energy released at the hypocenter of an earthquake. The magnitude of an earthquake is determined from measurements of ground vibrations recorded by seismographs. As a result, magnitude is represented as a single, instrumentally determined value. A loose network of seismographs has been installed all over the world to help record and verify earthquake events.

There are several scales that measure the magnitude of an earthquake. The most well-known is the Richter Scale. This logarithmic scale provides a numeric representation of the magnitude of an earthquake through the use of whole numbers and decimal fractions. Because of the logarithmic basis of the scale, each whole number increase in magnitude represents a tenfold increase in ground vibrations measured. In addition, each whole number increase corresponds to the release of about 31 times more energy than the amount associated with the preceding whole number. It is important to note that the Richter Scale is used only to determine the magnitude of an earthquake, it does not assess the damage that results.

Once an earthquake's magnitude has been confirmed, it can be classified. **Figure EQ-1** categorizes earthquakes by class based on their magnitude (i.e., Richter Scale value). Any earthquake with a magnitude less than 3.0 on the Richter Scale is classified as a micro earthquake while any earthquake with a magnitude of 8.0 or greater on the Richter Scale is considered a "great" earthquake. Earthquakes with a magnitude of 2.0 or less are not commonly felt by individuals. The largest earthquake to occur in the U.S. since 1900 took place off the coast of Alaska in Prince William Sound on March 28, 1964 and registered a 9.2 on the Richter Scale.

Intensity

Intensity refers to the effect an earthquake has on a particular location. The intensity of an earthquake is determined from observations made of the damage inflicted on individuals, structures, and the environment. As a result, intensity does not have a mathematical basis; instead, it is an arbitrary ranking of observed effects. In addition, intensity generally diminishes with distance. There may be multiple intensity recordings for a region depending on a location's distance from the epicenter.

Figure EQ-1
Earthquake Magnitude Classes

Class	Magnitude (Richter Scale)
micro	smaller than 3.0
minor	3.0 – 3.9
light	4.0 – 4.9
moderate	5.0 – 5.9
strong	6.0 – 6.9
major	7.0 – 7.9
great	8.0 or larger

Source: Michigan Technological University, UPSeis

Although numerous intensity scales have been developed over the years, the one currently used in the U.S. is the Modified Mercalli Intensity Scale. This scale, composed of 12 increasing levels of intensity that range from imperceptible shaking to catastrophic destruction, is designated by Roman numerals. The lower numbers of the intensity scale are based on human observations (i.e., felt only by a few people at rest, felt quite noticeably by persons indoors, etc.).

The higher numbers of the scale are based on observed structural damage (i.e., broken windows, general damage to foundations etc.). Structural engineers usually contribute information when assigning intensity values of VIII or greater. **Figure EQ-2** provides a description of the damages associated with each level of intensity as well as comparing Richter Scales values to Modified Mercalli Intensity Scale values.

Generally, the Modified Mercalli Intensity value assigned to a specific site after an earthquake is a more meaningful measure of severity to the general public than magnitude because intensity refers to the effects actually experienced at that location.

When and where do earthquakes occur?

Earthquakes can strike any location at any time. However, history has shown that most earthquakes occur in the same general areas year after year, principally in three large zones around the globe. The world's greatest earthquake belt, the circum-Pacific seismic belt (nicknamed the "Ring of Fire"), is found along the rim of the Pacific Ocean, where about 81 percent of the world's largest earthquakes occur.

The second prominent belt is the Alpide, which extends from Java to Sumatra and through the Himalayan Mountains, the Mediterranean Sea and out into the Atlantic Ocean. It accounts for about 17 percent of the world's largest earthquakes, including those in Iran, Turkey, and Pakistan. The third belt follows the submerged mid-Atlantic Ridge, the longest mountain range in the world, nearly splitting the entire Atlantic Ocean north to south.

While most earthquakes occur along plate boundaries some are known to occur within the interior of a plate. (As the plates continue to move and plate boundaries change over time, weakened

of weakness within a plate in response to stresses that originate at the edges of the plate or from deep within the earth's crust. The New Madrid earthquakes of 1811 and 1812 occurred within the North American plate.

Figure EQ-2
Comparison of Richter Scale and Modified Mercalli Intensity Scale

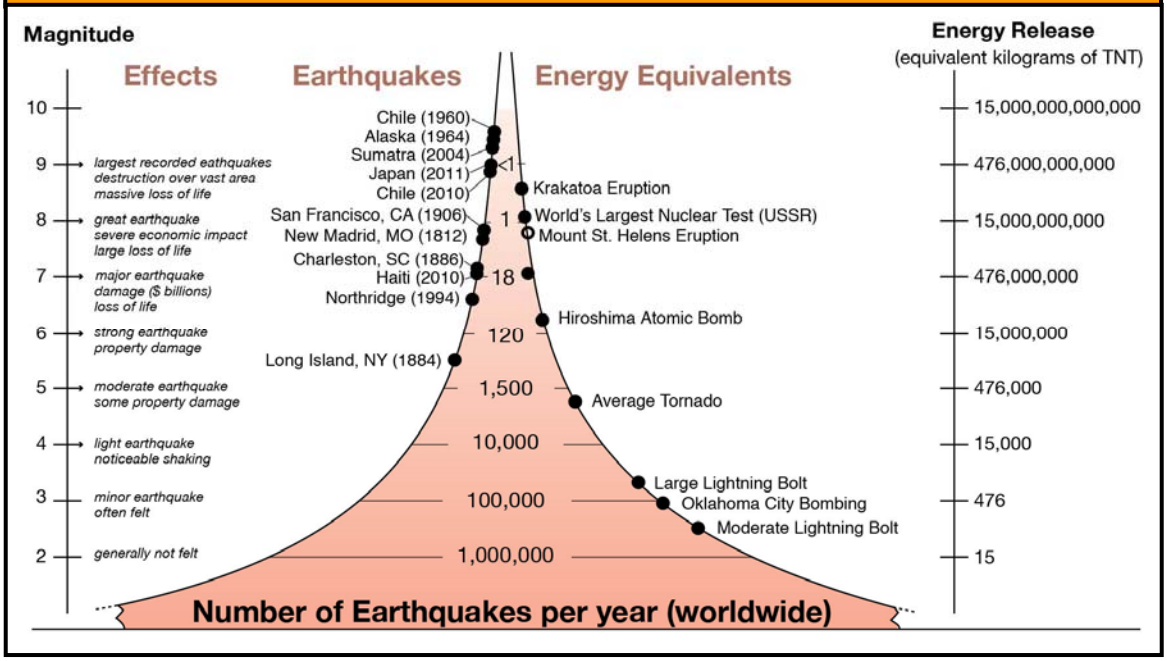
Richter Scale	Modified Mercalli Scale	Observations
1.0 – 1.9	I	Felt by very few people; barely noticeable. No damage.
2.0 – 2.9	II	Felt by a few people, especially on the upper floors of buildings. No damage.
3.0 – 3.9	III	Noticeable indoors, especially on the upper floors of buildings, but may not be recognized as an earthquake. Standing cars may rock slightly; vibrations similar to the passing of a truck. No damage.
4.0	IV	Felt by many indoors and a few outdoors. Dishes, windows, and doors disturbed. Standing cars rocked noticeably. No damage.
4.1 – 4.9	V	Felt by nearly everyone. Small, unstable objects displaced or upset; some dishes and glassware broken. Negligible damage.
5.0 – 5.9	VI	Felt by everyone. Difficult to stand. Some heavy furniture moved. Weak plaster may fall and some masonry, such as chimneys, may be slightly damaged. Slight damage.
6.0	VII	Slight to moderate damage to well-built ordinary structures. Considerable damage to poorly-built structures. Some chimneys may break. Some walls may fall.
6.1 – 6.9	VIII	Considerable damage to ordinary buildings. Severe damage to poorly built buildings. Some walls collapse. Chimneys, monuments, factory stacks, columns fall.
7.0	IX	Severe structural damage in substantial buildings, with partial collapses. Buildings shifted off foundations. Ground cracks noticeable.
7.1 – 7.9	X	Most masonry and frame structures and their foundations destroyed. Some well-built wooden structures destroyed. Train tracks bent. Ground badly cracked. Landslides.
8.0	XI	Few, if any structures remain standing. Bridges destroyed. Wide cracks in ground. Train tracks bent greatly. Wholesale destruction.
> 8.0	XII	Total damage. Lines of sight and level are distorted. Waves seen on the ground. Objects thrown up into the air.

Sources: Michigan Technological University, Department of Geological and Mining Engineering and Sciences, UPSeis.
U.S. Geological Survey.

How often do earthquakes occur?

Earthquakes occur every day. Magnitude 2 and smaller earthquakes occur several hundred times a day worldwide. These earthquakes are known as micro earthquakes and are generally not felt by humans. Major earthquakes, greater than magnitude 7, generally occur at least once a month. **Figure EQ-3** illustrates the approximate number of earthquakes that occur worldwide per year based on magnitude. This figure also identifies manmade and natural events that release approximately the same amount of energy for comparison.

Figure EQ-3
Approximate Number of Earthquakes Recorded Annually



Source: Incorporated Research Institutions for Seismology, Education and Outreach Series, "How Often Do Earthquakes Occur?"

HAZARD PROFILE

The following details the location of known fault zones and geologic structures, identifies past occurrences of earthquakes, details the severity or extent of each event (if known); identifies the locations potentially affected and estimates the likelihood of future occurrences.

Are there any faults located within the County?

No, there are no known faults located in Vermilion County. However, there are two geological structures, the Edgar Monocline and the Marshall-Sidell Syncline, which run through the County. The following provides s brief description of each. **Figure EQ-4** illustrates the location of these geologic structures.

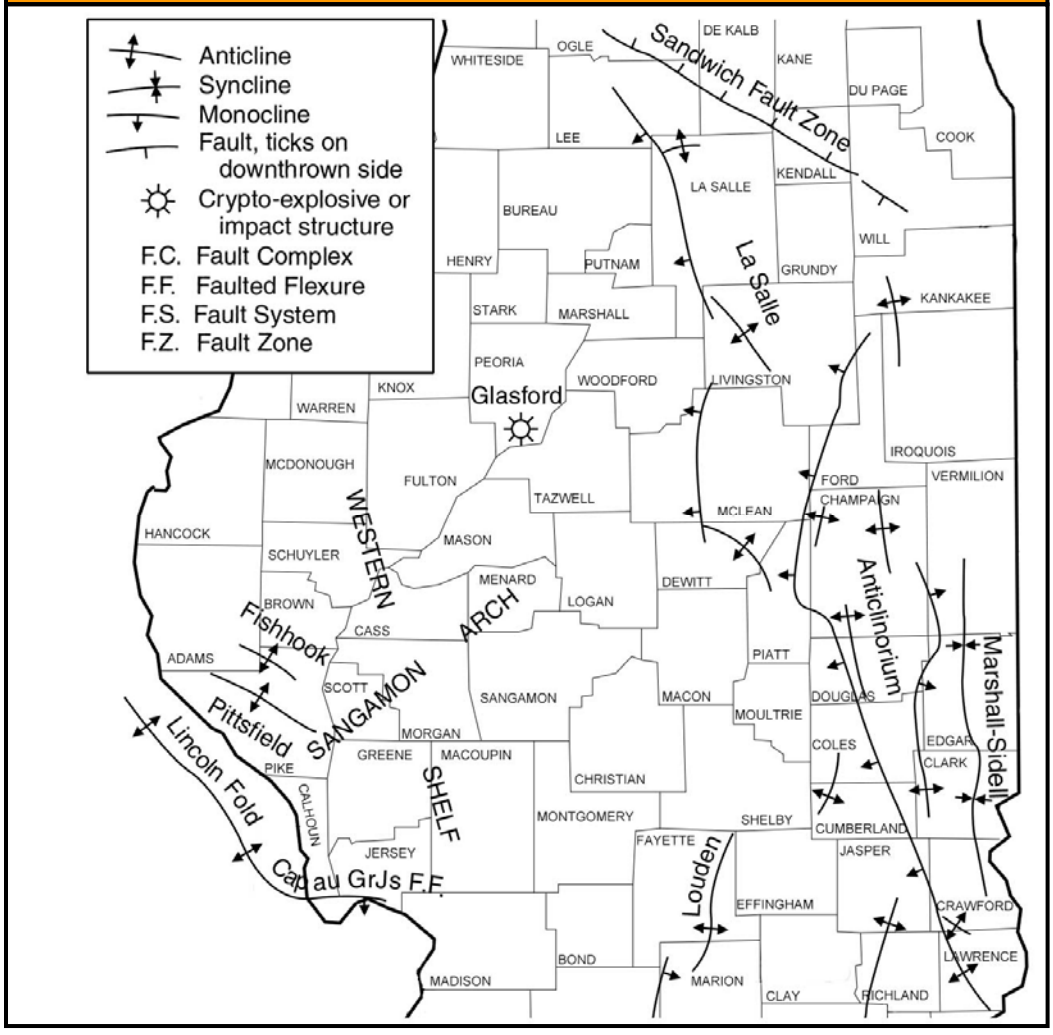
Earthquake Fast Facts – Occurrences

Earthquakes Originating in the County (1795 – 2022): ***None***
Fault Zones Located within the County: ***None***
Geological Structures Located within the County: ***2***
Earthquakes Originating in Adjacent Counties (1795-2022): ***2***
Fault Zones Located in Nearby Counties: ***None***
Geologic Structures Located in Adjacent Counties: ***5***

- *Marshall-Sidell Syncline:* The Marshall-Sidell Syncline runs from north to south through the center of Edgar County. It is an elongated, north-trending depression between the La Salle Anticlinorium and the east flank of the Illinois Basin. This syncline begins in central Vermilion County and extends to east-central Crawford County. It has relatively steep but irregular dips on the west and gentle dips on the east.

❖ *Edgar Monocline:* The Edgar Monocline is a large monocline that defines the east margin of the La Salle Anticlinorium and separate the anticlinorium from the Marshall-Sidell Syncline on the east. This monocline begins in southwestern Vermilion County and runs mostly north to south along the western border of Edgar County extending into northwestern Crawford County and is approximately 60 miles in length. The La Salle Anticlinorium itself is more than 200 miles long and stretches from Lee County in northern Illinois to Lawrence County in southeastern Illinois. It is composed of a group of closely related anticlines, domes, monoclines, and synclines, several of which, like the Edgar Monocline, are individually named.

Figure EQ-4
Geological Structures in Central Illinois



Source: Illinois State Geological Survey.

When have earthquakes occurred previously? What is the extent of these previous quakes?

According to the Illinois State Geological Survey, the U.S. Geological Survey, and Center for Earthquake Research and Information (CERI) at the University of Memphis, no earthquakes have originated in Vermilion County during the last 200 years. While no earthquakes have originated in the County, residents have felt ground shaking caused by earthquakes that have originated

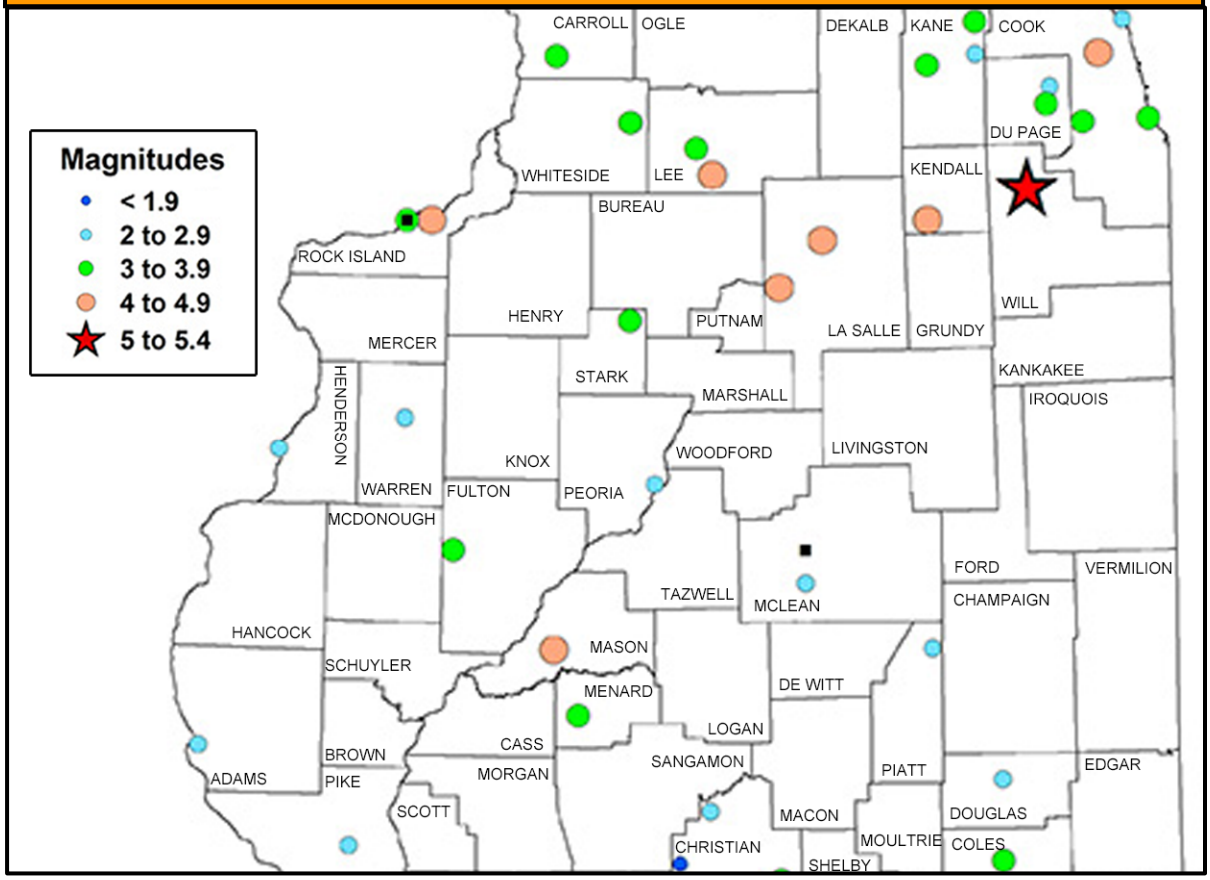
outside of the County. The following provides a brief description, by region, of these events while **Figure EQ-5** illustrates the epicenters of nearby earthquakes.

East-Central Illinois

Two earthquakes have originated in nearby Champaign, and Douglas Counties. The following provides a brief description of each.

- On February 16, 1978 a magnitude 2.4 earthquake originated approximately 2.5 miles east of Tuscola in Douglas County.
- A magnitude 2.4 earthquake originated in near Pesotum in Champaign County on November 6, 2020. This earthquake had an estimated intensity of II on the Modified Mercalli Scale.

Figure EQ-5
Earthquakes Originating in Vermilion Illinois



Source: Illinois State Geological Survey.

Southern Illinois

In addition to the above referenced events, Vermilion County residents also felt ground shaking caused by several earthquakes that have originated in southern Illinois. The following provides a brief description of a few of the larger events that have occurred.

- On April 18, 2008, a magnitude 5.2 earthquake was reported in southeastern Illinois near Bellmont in Wabash County. The earthquake was located along the Wabash Valley seismic

zone. Minor structural damage was reported in several towns in Illinois and Kentucky. Ground shaking was felt over all or parts of 18 states in the central U.S. and southern Ontario, Canada.

- A magnitude 5.2 earthquake took place on June 10, 1987, in southeastern Illinois near Olney in Richland County. This earthquake was also located along the Wabash Valley seismic zone. Only minor structural damage was reported in several towns in Illinois and Indiana. Ground shaking was felt over all or parts of 17 states in the central and eastern U.S. and southern Ontario, Canada.
- The strongest earthquake in the central U.S. during the 20th century occurred along the Wabash Valley seismic zone in southeastern Illinois near Dale in Hamilton County. This magnitude 5.4 earthquake occurred on November 9, 1968, with an intensity estimated at VII for the area surrounding the epicenter. Moderate structural damage was reported in several towns in south-central Illinois, southwest Indiana, and northwest Kentucky. Ground shaking was felt over all or parts of 23 states in the central and eastern U.S. and southern Ontario, Canada.

Three of the ten largest earthquakes ever recorded within the continental U.S. took place in 1811 and 1812 along the New Madrid seismic zone. This zone lies within the central Mississippi Valley and extends from northeast Arkansas through southeast Missouri, western Tennessee, western Kentucky, and southern Illinois. These magnitude 7.5 and 7.3 major earthquakes were centered near the town of New Madrid, Missouri and caused widespread devastation to the surrounding region and were felt by people in cities as far away as Pittsburgh, Pennsylvania and Norfolk, Virginia.

The quakes locally changed the course of the Mississippi River creating Reelfoot Lake in northwestern Tennessee. These earthquakes were not an isolated incident. The New Madrid seismic zone is one of the most seismically active areas of the U.S. east of the Rockies. Since 1974 more than 4,000 earthquakes have been recorded within this seismic zone, most of which were too small to be felt.

What locations are affected by earthquakes? What is the extent of future potential earthquakes?

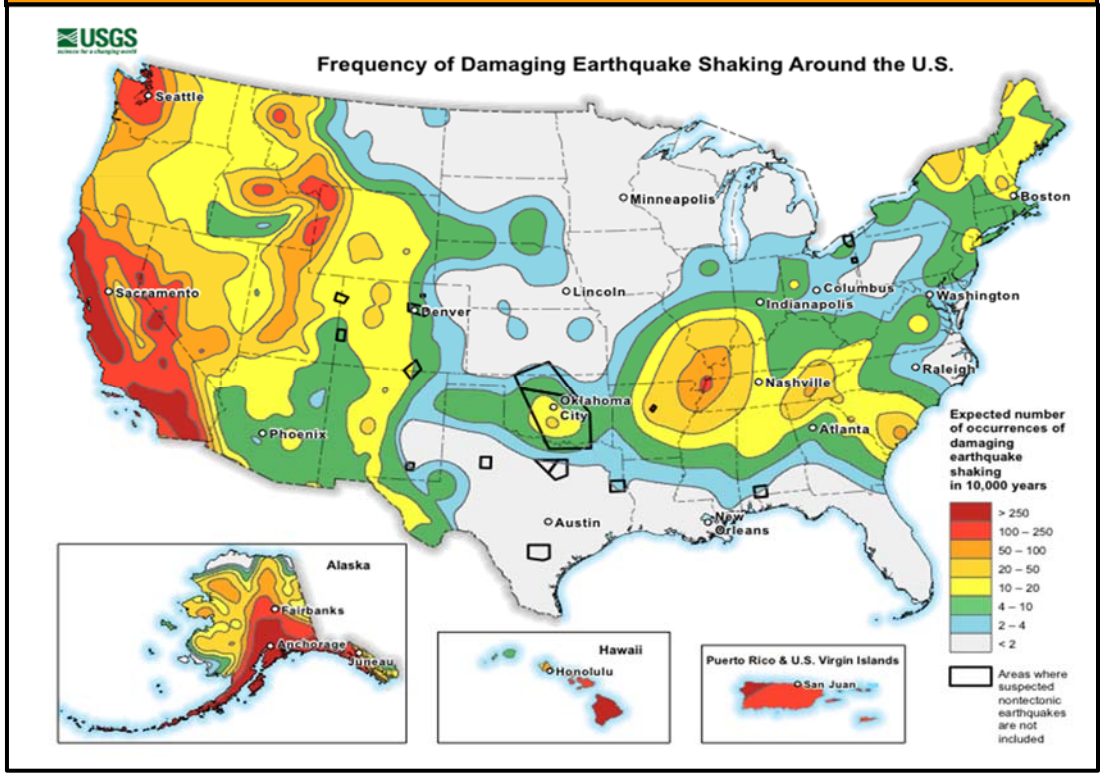
Earthquake events generally affect the entire County. Earthquakes, like drought, impact large areas extending across an entire region and affecting multiple counties. Vermilion County's proximity to multiple fault zones, both large and small, makes the entire area likely to be affected by an earthquake if these faults become seismically active.

According to the USGS, Vermilion County can expect 4 to 20 occurrences of damaging earthquake shaking over a 10,000-year period. **Figure EQ-6** illustrates the frequency of damaging earthquake shaking around the U.S.

What is the probability of future earthquake events occurring based on modeled conditions?

As with flooding, calculating the probability of future earthquakes changes depending on the magnitude of the event. According to the ISGS, Illinois is expected to experience a magnitude 3.0 earthquake every year, a magnitude 4.0 earthquake every four years and a magnitude 5.0 earthquake every 20 years. The likelihood of an earthquake with a magnitude of 6.3 or greater occurring somewhere in the central U.S. within the next 50 years is between 86% and 97%.

Figure EQ-6
Frequency of Damaging Earthquake Shaking Around the U.S.



Source: U.S. Geological Survey.

While the major earthquakes of 1811 and 1812 do not occur often along the New Madrid fault, they are not isolated events. In recent decades, scientists have collected evidence that earthquakes similar in size and location to those felt in 1811 and 1812 have occurred several times before within the central Mississippi Valley around 1450 A.D., 900 A.D. and 2350 B.C.

The general consensus among scientists is that earthquakes similar to the 1811-1812 earthquakes are expected to recur on average every 500 years. The U.S. Geological Survey and the Center for Earthquake Research and Information (CERI) at the University of Memphis estimates that for a 50-year period the probability of a repeat of the 1811-1812 earthquakes is between 7% and 10% and the probability of an earthquake with a magnitude of 6.0 or larger is between 25% and 40%.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from earthquakes.

Are the participating jurisdictions vulnerable to earthquakes?

Yes. All of Vermilion County is vulnerable to earthquakes. The unique geological formations topped with glacial drift soils found in the central U.S. conduct an earthquake's energy farther than in other parts of the Nation. Consequently, earthquakes that originate in the Midwest tend to be felt at greater distances than earthquakes with similar magnitudes that originate on the West Coast.

Earthquake Fast Facts – Risk

Earthquake Risk/Vulnerability:

- Public Health & Safety – Light/Moderate Quake within the County or immediate region: ***Low***
- Public Health & Safety – Major Quake in the region: ***Low to Medium***
- Buildings/Infrastructure/Critical Facilities – Light/ Moderate Quake within the County or immediate region: ***Low***
- Buildings/Infrastructure/Critical Facilities – Major Quake in the region: ***Low to Medium***

This vulnerability, found throughout most of Illinois and all of Vermilion County, is compounded by relatively high water tables within the region. When earthquake shaking mixes the groundwater and soil, ground support is further weakened thus adding to the potential structural damages experienced by buildings, roads, bridges, electrical lines, and natural gas pipelines.

The *Projected Earthquake Intensities Map* prepared by the Missouri State Emergency Management Agency predicts that if a magnitude 6.7 earthquake were to take place anywhere along the New Madrid seismic zone, then the highest projected intensity felt in Vermilion County would be a V on the Modified Mercalli Intensity Scale. If a magnitude 8.6 earthquake were to occur, then the highest projected intensity felt would be a VII.

The infrequency of major earthquakes, coupled with relatively low magnitude/intensity of past events, has led the public to perceive that Vermilion County is not vulnerable to damaging earthquakes. This perception has allowed the County and participating municipalities to develop largely without regard to earthquake safety.

The *2023 Illinois Natural Hazard Mitigation Plan* prepared by IEMA-OHS classifies Vermilion County's hazard rating for earthquake as "low". IEMA-OHS's overall hazard rating system has five levels: very low, low, medium, high, and very high.

For earthquakes, FEMA's National Risk Index (NRI) rates the County as a whole as "relatively low". None of the 24 census tracts are rated higher than "relatively moderate" for earthquakes. **Table R-5** presents the overall NRI scores and ratings for each census tract as well as for the County as a whole.

Have any of the participating jurisdictions identified specific assets vulnerable to the impacts of earthquakes?

No. Based on responses to an Assets Vulnerability Survey distributed to the participating jurisdictions, none of the participating jurisdictions consider specific assets within their jurisdictions vulnerable to earthquakes.

What impacts resulted from the recorded earthquake events?

While Vermilion County residents felt the earthquakes that have occurred in Illinois, no damages were reported as a result of these events. Given the magnitude of the great earthquakes of 1811 and 1812, it is almost certain that individuals in what is now Vermilion County felt those quakes; however, historical records do not indicate the intensity or impacts that these quakes had on the County.

What other impacts can result from earthquakes?

Earthquakes can impact human life, health, and public safety. **Figure EQ-7** details the potential impacts that may be experienced by the County should a magnitude 6.0 or greater earthquake occur in the region.

Figure EQ-7
Potential Earthquake Impacts

Direct	Indirect
Buildings • Temporary displacement of businesses, households, schools, and other critical services where heat, water and power are disrupted • Long-term displacement of businesses, households, schools, and other critical services due to structural damage or fires *Transportation* • Damages to bridges (i.e., cracking of abutments, subsidence of piers/supports, etc.) • Cracks in the pavement of critical roadways • Increased traffic on Interstate, U.S., and State Routes (especially if the quake originates along the Wabash Valley or New Madrid fault zones) as residents move out of the area to seek shelter and medical care and as emergency response, support services and supplies move south to aid in recovery • Misalignment of rail lines due to landslides (most likely near stream crossings), fissures and/or heaving *Utilities* • Downed power and communication lines • Breaks in drinking water and sanitary sewer lines resulting in the temporary loss of service • Disruptions in the supply of natural gas due to cracking and breaking of pipelines *Health* • Injuries/deaths due to falling debris and fires *Other* • Cracks in the earthen dams of the lakes and reservoirs within the County which could lead to dam failures	*Health* • Use of County health facilities (especially if the quake originates along the New Madrid Fault) to treat individuals injured closer to the epicenter • Emergency services (ambulance, fire, law enforcement) may be needed to provide aid in areas where damage was greater *Other* • Disruptions in land line telephone service throughout an entire region (i.e., central and southern Illinois) • Depending on the seasonal conditions present, more displacements may be expected as those who may not have enough water and food supplies seek alternate shelter due to temperature extremes that make their current housing uninhabitable

What is the level of vulnerability to public health and safety from earthquakes?

The risk or vulnerability to public health and safety from an earthquake is dependent on the intensity and location of the event. Since there are no known faults in Vermilion County, the likelihood that an earthquake will originate in the County is very small, decreasing the changes for catastrophic damages. However, if a light earthquake originates within the County or from the structures in the immediate region, the risk or vulnerability to public health and safety is considered ***low***. This risk is elevated to ***low to medium*** for a major earthquake originating along seismic zones in the region (i.e., Wabash Valley or New Madrid).

Are existing buildings, infrastructure, and critical facilities vulnerable to earthquakes?

Yes. All existing buildings, infrastructure and critical facilities located in Vermilion County and the participating jurisdictions are vulnerable to damage from earthquakes. However, given the County's size (about 75,000 individuals), its population density, the fact that there are few buildings higher than two stories (with the exception of grain elevators and several multi-story buildings in Danville) tempered by the low potential for magnitude 5.0 and above earthquakes to occur in the immediate region, the damage is anticipated to be slight to considerable for well-built ordinary structures and considerable to severe for poorly-built structures.

If a strong earthquake (6.0 – 6.9) were to occur in the region, then unreinforced masonry buildings are most at risk during an earthquake because the walls are prone to collapse outward. Steel and wood buildings have more ability to absorb the energy from an earthquake while wood buildings with proper foundation ties have rarely collapsed in earthquakes. In this scenario building damage in Vermilion County would range from moderate to considerable for well-built ordinary structures and considerable to severe for poorly-built structures. **Figure EQ-8**, located at the end of this section, identifies the number of unreinforced masonry buildings that serve as critical facilities within the participating jurisdictions.

If the epicenter of a magnitude 7.6 earthquake were to originate anywhere along the New Madrid seismic zone, the highest projected Modified Mercalli intensity felt in Vermilion County would be a VI based on the *Projected Earthquake Intensities Map* prepared by the Missouri State Emergency Management Agency.

An earthquake also has the ability to damage infrastructure and critical facilities such as roads and utilities. In the event of a major earthquake, bridges are expected to experience moderate damage such as cracking in the abutments and subsidence of piers and supports. The structural integrity may be compromised to the degree where safe passage is not possible, resulting in adverse travel times as alternate routes are taken. Some rural families may become isolated where alternate paved routes do not exist. In addition, cracks may form in the pavement of key roadways. **Figure R-6** lists the number of each type of critical infrastructure by jurisdiction.

An earthquake may also down overhead power and communication lines causing power outages and disruptions in communications. Cracks or breaks may form in natural gas pipelines and drinking water and sewage lines resulting in temporary loss of service. In addition, an earthquake could cause cracks to form in the earthen dams located within the County, increasing the likelihood of a dam failure.

As with public health and safety, the risk or vulnerability to buildings, infrastructure and critical facilities is dependent on the intensity and location of the event. The risk to buildings, infrastructure and critical facilities is considered to be ***low*** for a light to moderate earthquake that originates within the County or immediate region. This risk is elevated to ***low to medium*** for a major earthquake originating along seismic zones in the region (i.e., Wabash Valley or New Madrid).

Are future buildings, infrastructure, and critical facilities vulnerable to earthquakes?

Yes. All future buildings, infrastructure and critical facilities located in Vermilion County and the participating jurisdictions are vulnerable to damage from earthquakes. While seven of the participating municipalities have building codes in place, these codes do not contain seismic provisions that address structural vulnerability for earthquakes. As a result, there is the potential for future buildings, infrastructure, and critical facilities to face the same vulnerabilities as those of existing buildings, infrastructure, and critical facilities described previously.

What are the potential dollar losses to vulnerable structures from earthquakes?

Since property damage information was either unavailable or none was recorded for the documented earthquakes that impacted Vermilion County, there is no way to accurately estimate future potential dollar losses to vulnerable structures. However, according to the Vermilion County Clerk the total equalized assessed values of all residential, commercial, and industrial buildings in the planning area is $616,309,942. Since all of the structures in the planning area are susceptible to earthquake impacts to varying degrees, this total represents the countywide property exposure to earthquake events.

Given Vermilion County's proximity to geologic structures and fault zones, both large and small, and the fact that all structures within the County are vulnerable to damage, it is likely that there will be future dollar losses from any earthquake ranging from strong to great. As a result, participating jurisdictions were asked to consider mitigation projects that could provide wide ranging benefits for reducing the impacts or damages associated with earthquakes.

Figure EQ-8
Number of Unreinforced Masonry Buildings Serving as Critical Facilities by Jurisdiction

Participating Jurisdiction	Government[1]	Law Enforcement	Fire Stations	Ambulance Service	Schools	Drinking Water	Wastewater Treatment	Medical[2]	Healthcare Facilities[3]
Vermilion County	1	---	---	---	---	---	---	3	---
Danville	1	1	3	---	---	---	---	2	---
Fairmount	1	1	---	---	---	---	---	---	---
Fithian	---	---	---	---	---	---	---	---	---
Georgetown	---	1	1	---	---	---	---	---	---
Hoopeston	2	---	---	---	---	---	---	---	---
Muncie	---	---	---	---	---	---	---	---	---
Oakwood	2	1	---	---	1	---	---	---	---
Rossville	2	1	---	---	2	---	1	---	---
Sidell	1	---	---	---	---	---	---	---	---
Tilton	---	---	---	---	---	---	---	---	---
Sidell Volunteer Fire Department	---	---	---	---	---	---	---	---	---
OSF Sacred Heart Medical Center	---	---	---	---	---	---	---	---	---
Vermilion County Conservation District	---	---	---	---	---	---	---	---	---

[1] Government includes: courthouses, city/village halls, township buildings, highway/road maintenance centers, etc.
[2] Medical includes: public health departments, hospitals, urgent/prompt care, and medical clinics.
[3] Healthcare Facilities include: nursing homes, skilled care facilities, memory care facilities, residential group homes, etc.
--- Indicates jurisdiction does not own/maintain any critical facilities within that category.

3.9 MINE SUBSIDENCE

HAZARD IDENTIFICATION

What is a mine?

A mine is a pit or excavation made in the earth for the purpose of extracting minerals or ore. Mines were developed in Illinois to extract coal, clay, shale, limestone, dolomite, silica sand, tripoli, peat, ganister, lead, zinc, and fluorite.

What is mining?

Mining is the process of extracting minerals or ore from a mine. There are two common mining methods: surface mining and sub-surface (underground) mining. This section focuses on underground mining practices conducted in Vermilion County.

Mining has long figured prominently into Illinois' history. According to the National Mining Association, Illinois has the second largest recoverable reserves of coal in the country, behind only Montana. Coal deposits can be found under 86 of the 102 counties in Illinois and underground mining operations have been conducted in at least 72 counties. **Figure MS-1** shows the extent of coal deposits (Pennsylvanian rocks) present in Illinois and the mined-out areas from surface and underground coal mining. In 2018, Illinois ranked fourth in the U.S. in coal production according to the National Mining Association.

The first commercial coal mine in Illinois is thought have started in Jackson County about 1810. Since that time, there have been more than 3,800 underground coal mines and 363 underground metal and industrial mineral mines operated in Illinois. Almost all of these mines have been abandoned over the years. According to ISGS, there were nine active underground coal mines in Illinois in 2021. The U.S. Geological Survey identified nine active metal and industrial mineral underground mines in Illinois in their most recent Mineral Industry Survey.

What methods are used in underground mining?

Much of Illinois coal lies too deep for surface mining and requires extraction using underground mining methods. There are three main methods of underground mining that have been used in Illinois over the years: room-and-pillar, high-extraction retreat and longwall. The following provides a brief description of each.

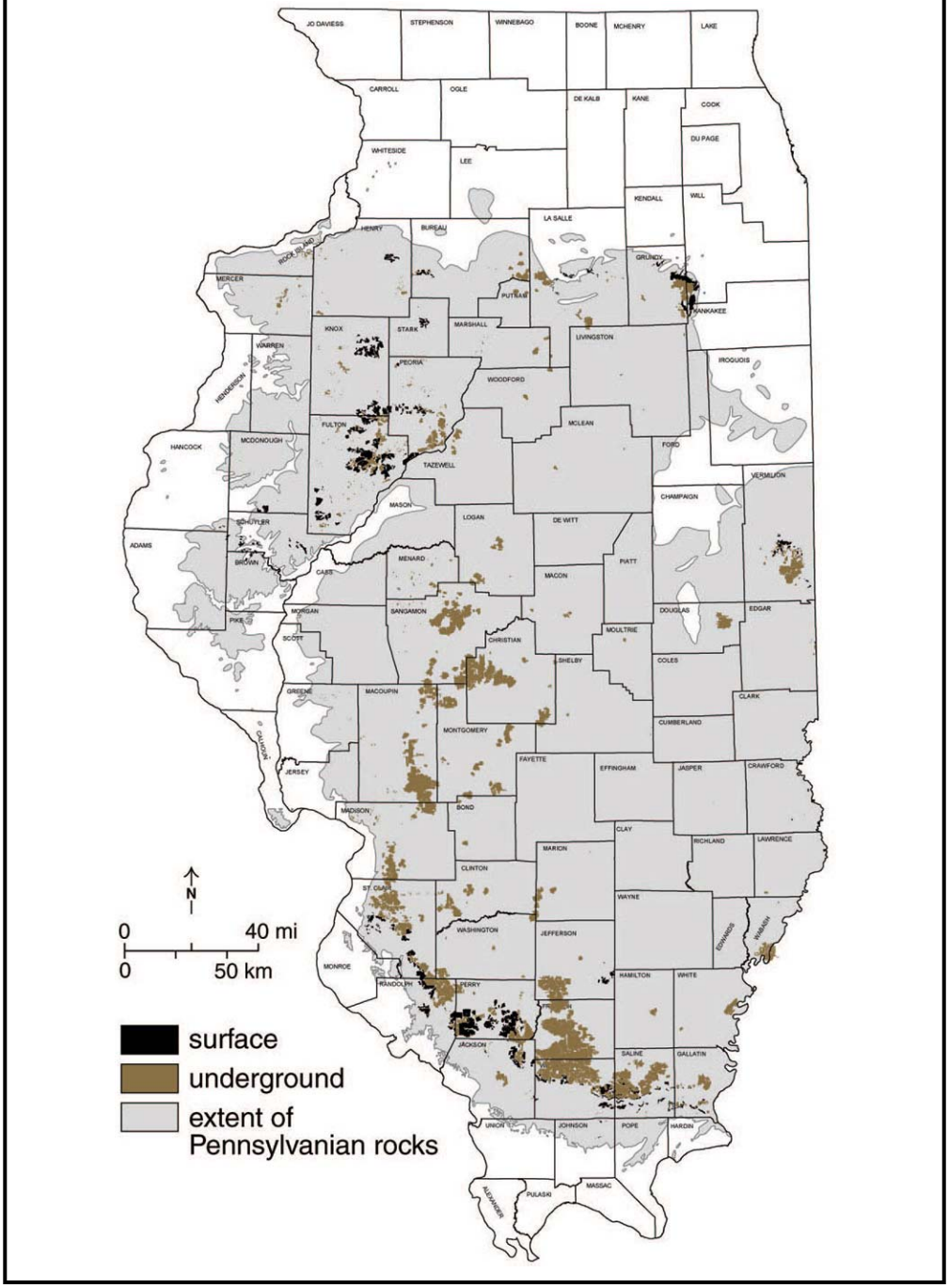
Room-and-Pillar

In the room-and-pillar system, the areas where coal is removed are referred to as "rooms" and the blocks of coal left in place to support the mine's roof and surface are referred to as "pillars". A "panel" refers to a group of rooms isolated from other room groups by surrounding pillars and generally accessed from only one entryway. The room-and-pillar method that was generally used before the early 1900s was characterized by rooms that varied considerably in length, width and sometimes direction, forming irregular mining patterns.

Modern room-and-pillar mines have a regular configuration of production areas (panels) and entryways, and the rooms and entries range from 18 to 24 feet, which is considerably narrower than in older mines. Generally, modern room-and-pillar mining methods recover less than 50% to

60% of the coal in a panel. Most underground mines in Illinois have used a type of room-and-pillar pattern.

Figure MS-1
Coal Mine Deposits & Mined Areas in Illinois



Source: Illinois Department of Natural Resources & Illinois State Geological Survey.

High-Extraction Retreat

High-extraction retreat mining operations first develop a room-and-pillar production area (panel). The miners then systematically begin taking additional coal from the pillars that are left behind. The secondary extraction occurs in a retreating fashion, working from the outer edges of the panel to the main entries. Most of the coal pillars which support the roof are removed shortly after a few rows of rooms and pillars have been formed, leaving only small pillars.

The size and number of pillars left to maintain worker safety varies depending on underground geologic conditions. Roof collapses are controlled by the use of temporary roof supports and planned subsidence of the surface is initiated immediately. Since planned subsidence is part of this operation, this method requires the legal rights to the ground surface. High-extraction retreat methods recover up to 80% to 90% of the coal in a panel. No Illinois mines currently use high-extraction retreat mining, but from the 1940s to 2002, this method was used in the State.

Longwall

Modern longwall mining methods remove coal along a straight working face within defined panels (in this case a solid block of coal), up to 1 to 2 miles long and about 1,000 feet wide. Room-and-pillar methods must be used in conjunction with longwall mining. Like high-extraction retreat, longwall mining begins at the outer edges and works toward the main entries. This fully-mechanized method uses a rotating cutting drum or shearer that works back and forth across the coal face. The coal falls onto a conveyer below the cutting machine and is transported out of the mine.

All of this is performed under a canopy of steel supports that sustains the weight of the roof along the mining surface. As the coal is mined the steel supports advance. The mine roof immediately collapses behind the moving supports, causing 4 to 6 feet of maximum settling of the ground surface over the panel. Since planned subsidence is part of this operation, this method requires the legal rights to the ground surface. Longwall mining methods recover 100% of the coal in a panel.

What is mine subsidence?

Mine subsidence is the sinking or shifting of the ground surface resulting from the collapse of an underground mine. Subsidence is possible in any area where minerals or ore have been undermined. Most of the mine subsidence in Illinois is related to coal mining, which represents the largest volume extracted and area undermined of any solid commodity in the State.

Mine subsidence can be planned, as with modern high-extraction retreat and longwall mining techniques, or it can occur as the result of age and instability. For many years, underground mining was not tightly regulated and not much thought was given to the long-term stability of the mines since most of the land over the mine was sparsely populated. Once mining operations were complete, the mine was abandoned. As cities and towns grew up around the mines, many urban and residential areas were built over or near undermined areas.

ISGS estimates that approximately 333,000 housing units are located in close proximity to underground mines and may potentially be exposed to mine subsidence while approximately 201,000 acres of urban and developed land overlie or are immediately adjacent to underground

mines. Most experts agree that room-and-pillar mines will eventually experience some degree of subsidence, but currently there is no way to know when or exactly where it will occur.

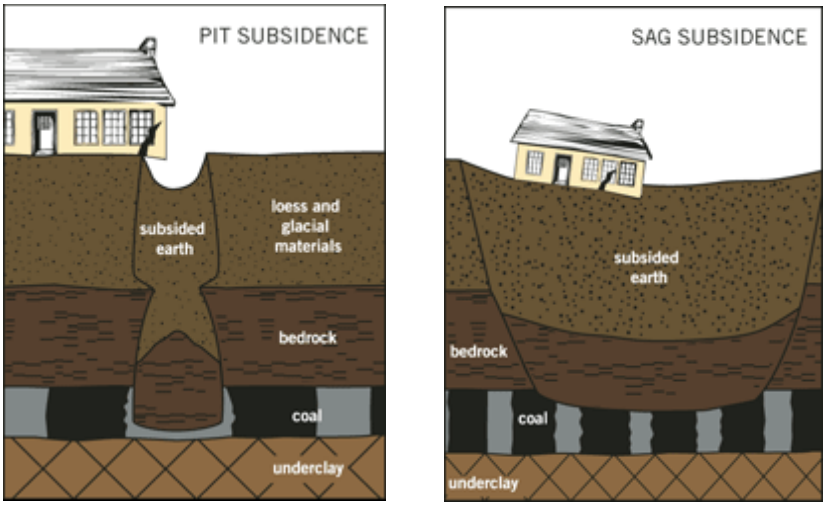
What types of mine subsidence can occur in Illinois?

In Illinois mine subsidence typically takes one of two forms: pit subsidence or sag (trough) subsidence. The following provides a brief description of each.

Pit Subsidence

Pit subsidence generally occurs when the roof of a shallow mine (less than 100 feet deep) collapses and forms a bell-shaped hole at the ground's surface, 6 to 8 feet deep and 2 to 40 feet across. **Figure MS-2** provides an illustration of pit subsidence. This type of subsidence forms very quickly causing sudden and swift ground movement. While the probability of a structure being damaged by pit subsidence is generally low since most pits are relatively small, structural damage can occur if pit subsidence develops under the corner of a building, the support posts of a foundation or another critical spot.

Figure MS-2
Types of Mine Subsidence



Source: Illinois Mine Subsidence Insurance Fund.

Sag (Trough) Subsidence

Sag or trough subsidence generally forms a gentle depression in the ground's surface that can spread over an entire mine panel and affect several acres of land. A major sag can develop suddenly within a few hours or days, or gradually over years. This type of subsidence may originate over places in the mine where pillars have disintegrated and collapsed or where pillars are being pushed into the relatively soft underclay that forms the floor of most mines. **Figure MS-2** illustrates sag subsidence. This is the most common type of mine subsidence and can develop over mines of any depth. Given the relatively large area covered by sag subsidence, buildings, roads, driveways, sidewalks, sewer and water pipes and other utilities may experience damage.

What is the Illinois Mine Subsidence Insurance Fund?

Prior to 1979, traditional property owner's insurance did not cover mine subsidence nor was mine subsidence coverage available for purchase in Illinois. Since many mining companies in Illinois ceased operations long before mine subsidence occurred and insurance did not cover such damage, property owner who experienced subsidence damage had no recourse. Several high-profile incidents in the Metro East St. Louis area ultimately led to the passage of the Mine Subsidence Insurance Act in 1979. The Statute required insurers to make mine subsidence insurance available to Illinois homeowners and established the Illinois Mine Subsidence Insurance Fund (IMSIF). Later amendments to the Act gave the Fund the authority, with approval from the Director of Insurance, to set the maximum limits for mine subsidence coverage.

The IMSIF is a taxable enterprise created by Statute to operate as a private solution to a public problem. The purpose of the Fund is to assure financial resources are available to owners of property damaged by mine subsidence. The Fund fills a gap in the insurance market for the benefit of Illinois property owners at risk of experiencing mine subsidence damage.

All insurance companies authorized to write basic property insurance in Illinois are required to enter into a Reinsurance Agreement with the Fund and offer mine subsidence insurance coverage. Mine subsidence insurance covers damage caused by underground mining of any solid mineral resource. In the 34 counties where, underground mining has been most prevalent, the Statute requires mine subsidence coverage be automatically included in both residential and commercial property policies. Coverage may be rejected in writing by the insured. **Figure MS-3** identifies the 34 counties where mine subsidence insurance is automatically included in property insurance policies.

In addition to providing reinsurance to insurers, the Fund also is responsible for conducting geotechnical investigations to determine if mine subsidence caused the damage, establishing rates and rating schedules, providing underwriting guidance to insurers, supporting and sponsoring mine subsidence related research and initiatives consistent with the public interest and educating the public about mine subsidence issues.

HAZARD PROFILE

The following details the location of underground mines, identifies past occurrences of mine subsidence, details the severity or extent of each event (if known); identifies the locations potentially affected and estimates the likelihood of future occurrences.

Are there any underground mines located in the County?

Yes. According to the Illinois State Geological Survey's Directory of Coal Mines for Vermilion County, there are 327 documented underground mines located in the County. A copy of the Directory for Vermilion County is included in **Appendix L. Figures MS-4** and **MS-5,** located at the end of this section, illustrate the locations of these mines.

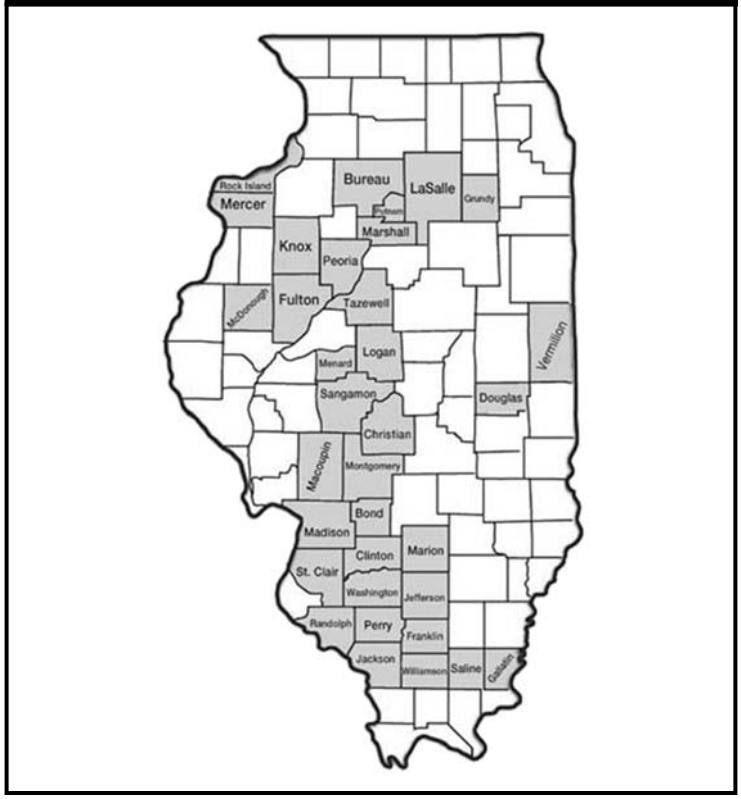
Mine Subsidence Fast Facts – Occurrences

Number of Underground Mines Located within the County: ***327***

Number of Mine Subsidence Events Reported ***1***

Probability of Future Mine Subsidence Events: ***Low to Medium***

Figure MS-3
Counties Required to include Mine Subsidence Coverage in Property Insurance



Source: Illinois Mine Subsidence Insurance Fund.

When has mine subsidence occurred previously? What is the extent of these previous occurrences?

No comprehensive, publicly-accessible database detailing mine subsidence occurrences currently exists in Illinois. A review of local news articles and discussions with Committee members identified one confirmed mine subsidence event in Vermilion County since 2015. An 8-foot by 10-foot sinkhole that was four feet deep opened up at a residential property on Oakwood Avenue in Danville at the beginning of December. The Illinois Department of Natural Resources confirmed it to be pit subsidence from an underlying mine.

According to the Illinois Mine Subsidence Insurance Fund (IMSIF), there were 155 mine subsidence claims submitted to the IMSIF for Vermilion County between 1980 and 2022. However, detailed information about the locations and damages sustained by claim were not made available. **Figure MS-6** provides a breakdown by year of the claims confirmed to have damage caused by mine subsidence.

Figure MS-6
Illinois Mine Subsidence Insurance Fund Claims by Year – Vermilion County

Year	No. of Claims	Year	No. of Claims	Year	No. of Claims	Year	No. of Claims
1980	2	1991	11	2002	5	2013	1
1981	3	1992	5	2003	5	2014	3
1982	11	1993	2	2004	3	2015	0
1983	5	1994	4	2005	2	2016	6
1984	2	1995	2	2006	2	2017	5
1985	2	1996	8	2007	4	2018	4
1986	2	1997	4	2008	4	2019	2
1987	5	1998	1	2009	1	2020	5
1988	4	1999	3	2010	2	2021	3
1989	6	2000	4	2011	1	2022	2
1990	1	2001	4	2012	4		

What locations are affected by mine subsidence?

According to the Illinois State Geological Survey's (ISGS) *Proximity of Underground Mines to Urban and Developed Lands in Illinois* study published in 2009, there are:

- Approximately 32,284 acres (5.7% of the land area) and 4,535 housing units (12.6% of the total housing units) in Vermilion County are located in Zone 1, land over or adjacent to mapped mines.
- An additional 22,235 acres (3.9% of the land area) and 3,737 housing units (10.4% of the total housing units) in the County are located in Zone 2, land surrounding Zone 1 that could be affected if the mine boundaries are inaccurate or uncertain.

Figure MS-7, located at the end of this section, identifies the location of the Zone 1 and 2 areas in Vermilion County. Based on this mapping, mine subsidence has the potential to impact parts of unincorporated Vermilion County as well as Belgium, Catlin, Danville, Fairmount, Georgetown, Muncie, Oakwood, Tilton, and Westville.

What is the probability of future mine subsidence events occurring?

There are many variables that must be considered when calculating the probability of future mine subsidence events including whether subsidence has occurred previously in an area, the size, depth and age of the mine, the magnitude or extent of the failure as well as soil and weather conditions. The extent of future potential mine subsidence events is also a function of where current development is located relative to areas of past and present underground mining. According to the IMSIF, most experts agree that room and pillar mines will eventually experience some degree of collapse, but currently there is no way to know when or exactly where mine subsidence will occur.

Given the unpredictability of mine subsidence events, the variables involved and the lack of data available for Vermilion County, it is difficult to specifically establish the probability of future mine subsidence events without extensive research.

However, given the mining methods used, the age and location of the mines and the number of housing units located over or adjacent to undermined areas in the County, the probability that unincorporated Vermilion County, Belgium, Catlin, Danville, Fairmount, Georgetown, Muncie, Oakwood, Tilton, and Westville will experience future mine subsidence events is estimated to be ***low*** to ***medium*** and ***unlikely*** for the remaining participating jurisdictions and most of unincorporated Vermilion County. For the purposes of this analysis "unlikely" is defined as having a less than 2% chance of occurring in any given year, "low" is defined as having a less than a 10% chance of occurring in any given year and "medium" is defined as having up to a 50% chance of occurring in any given year.

What is the probability of future mine subsidence events occurring based on modeled future conditions?

No data was available to accurately predict the impacts of future conditions on the frequency and severity of mine subsidence events in this region of the U.S.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from mine subsidence.

Are the participating jurisdictions vulnerable to mine subsidence?

Yes. Danville, Fairmount, Georgetown, Muncie, Oakwood, Tilton and parts of unincorporated Vermilion County are vulnerable to mine subsidence. None of the other participating jurisdictions or the remainder of the County are considered vulnerable. According to ISGS, approximately 32,284 acres (5.7% of the land area) of Vermilion County are over or adjacent to mapped mines and vulnerable to mine subsidence while an additional 22,235 acres (3.9% of the land area) could be affected by mine subsidence if the mine boundaries are inaccurate or uncertain.

The *2023 Illinois Natural Hazard Mitigation Plan* prepared by IEMA-OHS classifies Vermilion County's hazard rating for mine subsidence as "medium". IEMA-OHS's overall hazard rating system has five levels: very low, low, medium, high, and very high. FEMA's National Risk Index does not currently rate mine subsidence hazard.

Do any of the participating jurisdictions consider mine subsidence to be among their community's greatest vulnerabilities?

No. Based on responses to an Assets Vulnerability Survey distributed to the participating jurisdictions, none of the participating jurisdictions consider specific assets within their jurisdictions vulnerable to mine subsidence.

What impacts resulted from the recorded mine subsidence events?

No property damages or injuries and fatalities were recorded as a result of the 2015 mine subsidence event in Vermilion County.

However, according to the IMSIF, $643,616 in claims for confirmed damages were reimbursed in Vermilion County between 1980 and 2022. However, detailed breakdowns by claim and location

were unavailable. **Figure MS-8** provides a breakdown by year of the reimbursements paid for mine subsidence damage in Vermilion County.

Figure MS-8
Illinois Mine Subsidence Insurance Fund Claim Reimbursements by Year – Vermilion County

Year	Amount	Year	Amount	Year	Amount	Year	Amount
1980	$0	1991	$10,140	2002	$0	2013	$0
1981	$1,001	1992	$0	2003	$0	2014	$0
1982	$1,556	1993	$48,419	2004	$162,904	2015	$1,350
1983	$2,100	1994	$0	2005	$53,113	2016	$5,593
1984	$59	1995	$0	2006	$118,020	2017	$0
1985	$0	1996	$0	2007	$0	2018	$0
1986	$5,256	1997	$4,117	2008	$0	2019	$0
1987	$23,500	1998	$0	2009	$165,514	2020	$0
1988	$26,761	1999	$0	2010	$0	2021	$0
1989	$3,377	2000	$0	2011	$10,836	2022	$0
1990	$0	2001	$0	2012	$0		

What other impacts can result from mine subsidence events?

The initial damage to a property from mine subsidence may appear suddenly or occur gradually over many years. Damage to structures can include:

- cracked, broken or damaged foundations
- cracks in the basement walls, ceilings, garage floors, driveways, sidewalks, or roadways
- jammed or broken doors and windows
- unlevel or tilted walls or floors
- doors that swing open or closed
- chimney, porch, or steps that separate from the rest of the structure
- in extreme cases, ruptured water, sewer, or gas lines

A structure need not lie directly over a mine to be affected by mine subsidence. It is extremely difficult to accurately gauge how far a property must be from a mine to ensure that it will be unaffected by mine subsidence. Each subsidence is unique and influenced by multiple factors.

What is the level of vulnerability to public health and safety from mine subsidence?

Mine Subsidence Fast Facts – Risk

Mine Subsidence Risk/Vulnerability:

- Public Health & Safety – Zones 1 & 2: ***Low***
- Public Health & Safety – Areas Outside Zones 1 & 2: ***Low***
- Buildings/Infrastructure/Critical Facilities – Zones 1 & 2: ***Medium to Low***
- Buildings/Infrastructure/Critical Facilities – Areas Outside Zones 1 & 2: ***Low***

In terms of the risk or vulnerability to public health and safety from a mine subsidence event, there are several factors that must be taken into consideration including the age, size, and depth of the mine; the mining method employed; the extent of the development and infrastructure in the vicinity of the mine; and soil and weather conditions. When all of the factors are taken into consideration, the overall risk to public health and safety posed by a mine subsidence event in Vermilion County is considered to be ***low*** for both Zones 1 and 2 and all other portions of the County.

Are existing buildings, infrastructure, and critical facilities vulnerable to mine subsidence?

Yes. Buildings, infrastructure, and critical facilities located within Zones 1 and 2 are vulnerable to mine subsidence. According to ISGS, approximately 4,535 housing units (12.6% of the total housing units in the County) are located over or adjacent to mapped mines and vulnerable to mine subsidence while an additional 3,737 housing units (10.4% of the total housing units) could be affected by mine subsidence if the mine boundaries are inaccurate or uncertain. **Figure MS-9** identifies the number of critical facilities located within Zones 1 and 2 for the County, Danville, Fairmount, Georgetown, Muncie, Oakwood, and Tilton for select categories.

In addition to impacting structures, mine subsidence can damage roads, bridges, and utilities. Roadways, culverts, and bridges can be weakened by mine subsidence and even destroyed if the subsidence occurs directly underneath of them. Water, sewer, power, and communication lines, both above and below ground, are also vulnerable to mine subsidence. Depending on the location of the subsidence, water, sewer, and power lines can experience ruptures causing major disruptions to vital services.

As with public health and safety, the risk or vulnerability to buildings, infrastructure and critical facilities is dependent on several factors including the age, size, and depth of the mine; the mining method employed; the extent of the development and infrastructure in the vicinity of the mine; and soil and weather conditions. When these factors are taken into consideration, the overall risk posed by mine subsidence to vulnerability to buildings, infrastructure and critical facilities in Vermilion County is considered to be ***medium to low*** for Zone 1 and ***low*** for Zone 2 and all other portions of the County.

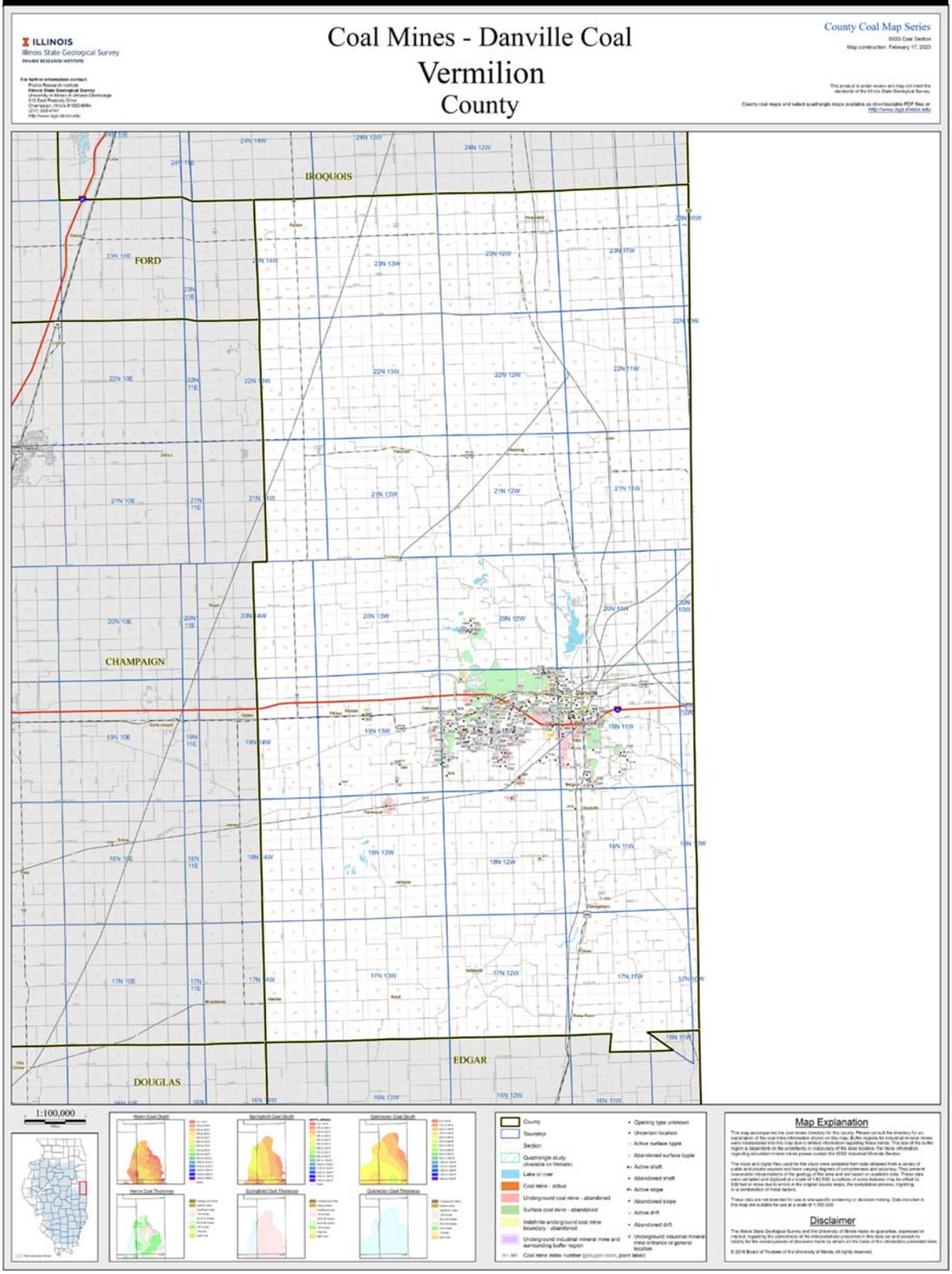
Are future buildings, infrastructure, and critical facilities vulnerable to mine subsidence?

Yes. Any future buildings, infrastructure and critical facilities located within Zones 1 and 2 are vulnerable to mine subsidence. As a result, future buildings, infrastructure, and critical facilities face the same vulnerabilities as those of existing buildings, infrastructure and critical facilities described previously.

What are the potential dollar losses to vulnerable structures from mine subsidence?

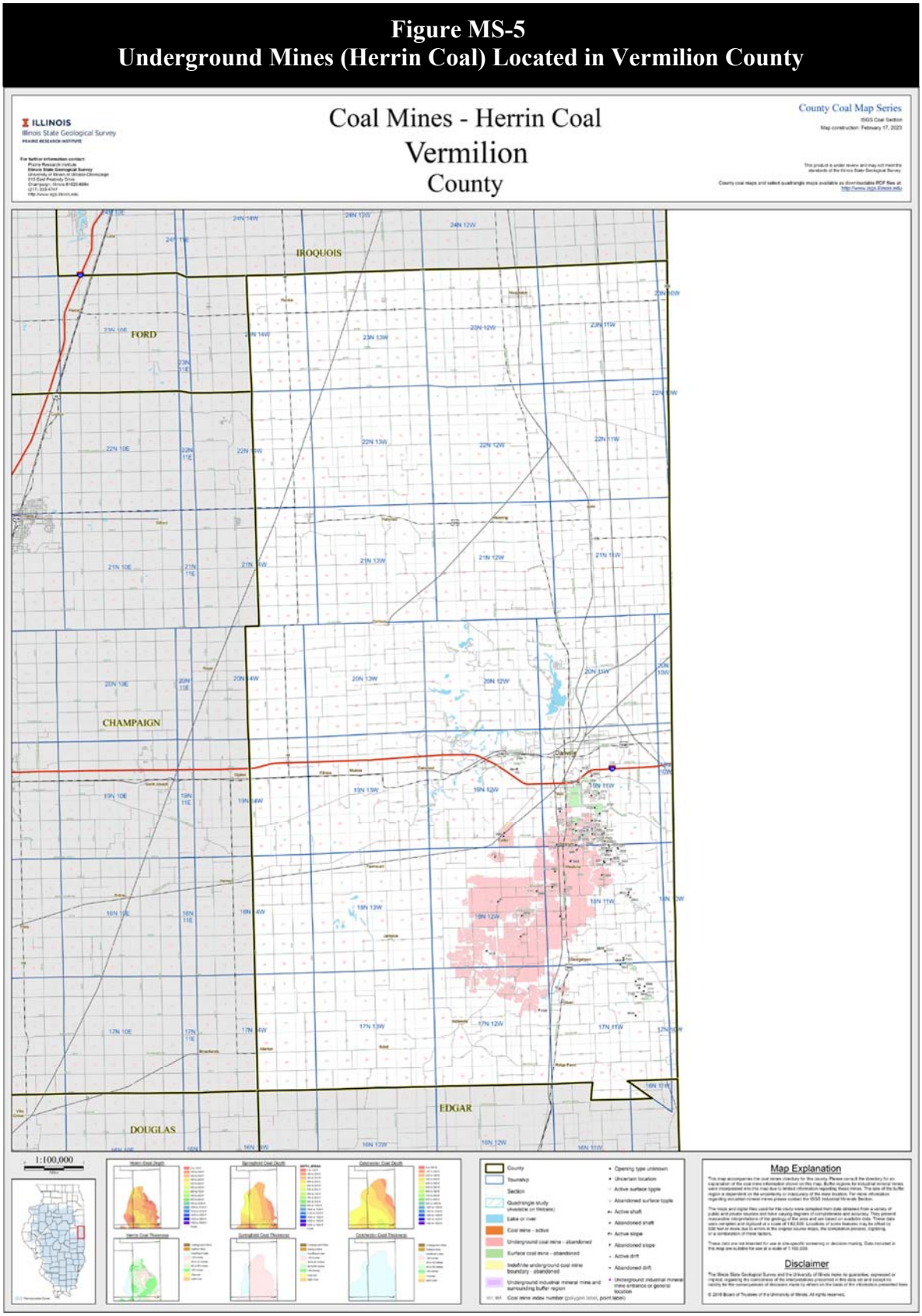
Unlike other hazards, there are no standard loss estimation models or methodologies for mine subsidence. Given the lack of recorded events and unpredictability of mine subsidence, sufficient information was not available to prepare a reasonable estimate of future potential dollar losses to vulnerable structure from mine subsidence. Still, those housing units that reside in Zone 1 have the potential to experience future dollar losses from mine subsidence.

Figure MS-4
Underground Mines (Danville Coal) Located in Vermilion County



Source: Illinois State Geological Survey.

Figure MS-5
Underground Mines (Herrin Coal) Located in Vermilion County



Source: Illinois State Geological Survey.

Figure MS-7
Areas Potentially Impacted by Mine Subsidence in Vermilion County

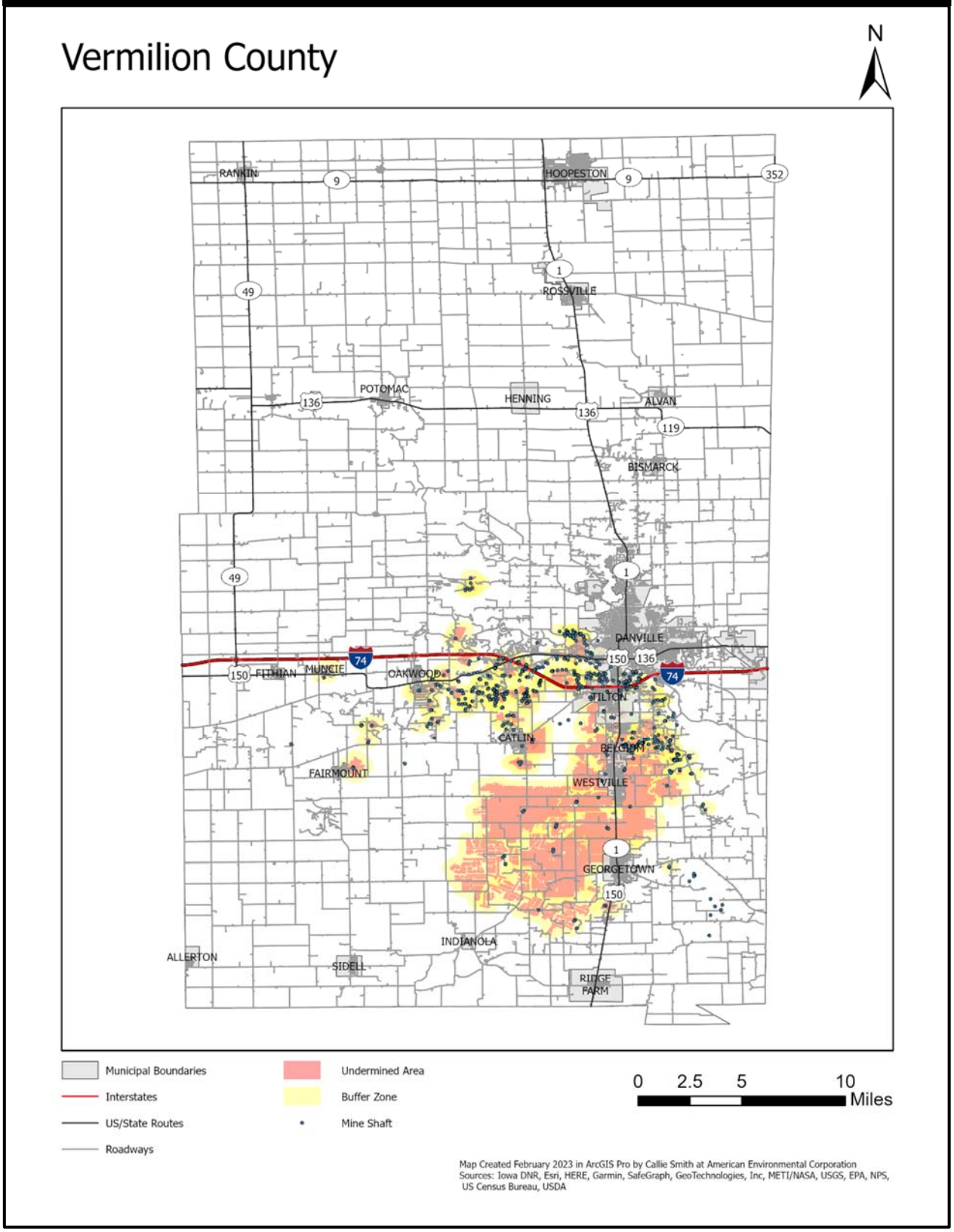


Figure MS-9
Critical Facilities Located in Zones 1 and 2 by Jurisdiction

Participating Jurisdiction	Government[1]	Law Enforcement	Fire Stations	Ambulance Service	Schools	Drinking Water	Wastewater Treatment	Medical[2]	Healthcare Facilities[3]
Vermilion County	---	---	---	---	---	---	---	---	---
Danville	---	---	---	---	---	---	---	---	---
Fairmount	1	---	1	---	---	2	---	---	---
Georgetown	---	---	---	---	---	---	---	---	---
Muncie	1	---	---	---	---	---	---	---	---
Oakwood	---	---	1	1	---	---	---	---	---
Tilton	2	1	1	1	1	---	1	1-	---

[1] Government includes: courthouses, city/village halls, township buildings, highway/road maintenance centers, etc.
[2] Medical includes: public health departments, hospitals, urgent/prompt care and medical clinics.
[3] Healthcare Facilities include: nursing homes, skilled care facilities, memory care facilities, residential group homes, etc.
--- Indicates the jurisdiction does not own/maintain any critical facilities within that category.

3.10 DAM FAILURES

HAZARD IDENTIFICATION

What is the definition of a dam?

A dam is an artificial barrier constructed across a stream channel or a man-made basin for the purpose of storing, controlling or diverting water. Dams typically are constructed of earth, rock, concrete or mine tailings. The area directly behind the dam where water is impounded or stored is referred to as a reservoir.

According to the U.S. Army Corps of Engineers' National Inventory of Dams (NID), there are approximately 91,785 dams in the U.S. and Puerto Rico, with 1,639 dams located in Illinois. (The NID is maintained by the U.S. Army Corps of Engineers and is updated approximately every two years.) Of the 1,639 dams in Illinois, approximately 93.5% are constructed of earth.

What is the definition of a dam failure?

A dam failure is the partial or total collapse, breach or other failure of a dam that causes flooding downstream. In the event of a dam failure, the people, property and infrastructure downstream could be subject to devastating damages. The potential severity of a full or partial dam failure is influenced by two factors:

- the capacity of the reservoir and
- the density, type and value of development/infrastructure located downstream.

There are two categories of dam failures, "flood" or "rainy day" failures and "sunny day" failures. A "flood" or "rainy day" failure usually results when excess precipitation and runoff cause overtopping or a buildup of pressure behind a dam which leads to a breach. Even normal storm events can lead to "flood" failures if debris plugs the water outlets. Given the conditions that lead to a "flood" failure (i.e., rainfall over a period of hours or days), there is usually a sufficient amount of time to warn and evacuate residents downstream.

Unlike a "flood" failure, there is generally no warning associated with a "sunny day" failure. A "sunny day" failure is usually the result of improper or poor dam maintenance, internal erosion, vandalism or an earthquake. This unexpected failure can be catastrophic because it may not allow enough time to warn and evacuate residents downstream.

No one knows precisely how many dam failures have occurred in the U.S.; however, it's estimated that hundreds have taken place over the last century. Some of the worst failures have caused catastrophic property and environmental damage and have taken hundreds of lives. The worst dam failure in the last 50 years occurred on February 26, 1972 in Buffalo Creek, West Virginia. A tailings dam owned by the Buffalo Mining Company failed, taking 125 lives, injuring 1,100 individuals, destroying approximately 550 homes and causing property damage in excess of $50 million (approximately $298.6 million in 2017 based on the Bureau of Labor Statistics Consumer Price Index Inflation Calculator.)

Dam failures have been documented in every state, including Illinois. According to the Dam Incident Database compiled by the National Performance of Dams Program, there have been 10 reported dam failures with uncontrolled releases of the reservoir in Illinois since 1950.

What causes a dam failure?

Dam failures can result from one or more of the following:

- ***prolonged periods of rainfall and flooding*** (the cause of most failures);
- ***inadequate spillway capacity*** resulting in excess flow overtopping the dam;
- ***internal erosion*** caused by embankment or foundation leakage;
- ***improper maintenance*** (including failure to remove trees, repair internal seepage problems, maintain gates, valves and other operational components, etc.);
- ***improper design*** (including use of improper construction materials and practices);
- ***negligent operation*** (including failure to remove or open gates or valves during high flow periods);
- ***failure of an upstream dam on the same waterway***;
- ***landslides into reservoirs*** which cause surges that result in overtopping of the dam;
- ***high winds*** which can cause significant wave action and result in substantial erosion; and
- ***earthquakes*** which can cause longitudinal cracks at the tops of embankments that can weaken entire structures.

How are dams classified?

Each dam listed on the National Inventory of Dams is assigned a hazard potential classification rating per the "Federal Guidelines for Dam Safety: Hazard Potential Classification System for Dams." The classification system is based on the potential for loss of life and damage to property in the event of a dam failure. There are three classifications: High, Significant and Low. **Figure DF-1** provides a brief description of each hazard potential classification. It is important to note that the hazard potential classification assigned is not an indicator of the adequacy of the dam or its physical integrity and in no way reflects the current condition of the dam.

Figure DF-1
Dam Hazard Classification System

Hazard Potential Classification	Description
High	Those dams where failure or mis-operation result in probable loss of human life, regardless of the magnitude of other losses. The probable loss of human life is defined to signify one or more lives lost.
Significant	Those dams where failure or mis-operation result in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities or can impact other concerns. Significant hazard potential classification dams are often located in predominately rural or agricultural areas but could be located in areas with population and significant infrastructure.
Low	Those dams where failure or mis-operation results in no probable loss of human life and low economic and/or or environmental losses. Losses are principally limited to the dam owner's property.

Sources: Federal Emergency Management Agency
U.S. Army Corps of Engineers

HAZARD PROFILE

According to the USACE National Inventory of Dams, there are nine classified dams located in Vermilion County. Of those nine dams, one has a hazard potential classification of "High", two have a hazard potential classification of "Significant" and the remaining six dams have a hazard potential classification of "Low". These do not have reservoirs with immense storage capacities and are not located in densely populated areas. Due to the limited impacts on the population, land use and infrastructure associated with a majority of the classified dams, only those dams that have "High" or "Significant" hazard potential classification will be analyzed as part of this Plan update.

The following details the location of "High" and "Significant" hazard classified dams, identifies past occurrences of dam failures, details the severity or extent of future potential failures (if known); identifies the locations potentially affected and estimates the likelihood of future occurrences.

Do any of the participating jurisdictions own "High" or "Significant" hazard classified dams?

Yes. The Village of Georgetown owns the Georgetown Dam while the Vermilion County Conservation District owns Lakes Mingo Dam. **Figure DF-2** provides a brief description of each dam.

Dam Failure Fast Facts – Occurrences

Number of "High" and "Significant" Hazard Classified Dams Located in the County: ***3***

Number of "High" and "Significant" Hazard Dams owned by Participating Jurisdictions: ***1***

Number of Dam Failures Reported: ***1***

Probability of Future Dam Failure Events: ***Low***

Are there any other publicly or privately-owned "High" or "Significant" hazard dams within the County?

Yes. The Aqua Illinois, Inc. owns the Lake Vermilion Dam on the North Fork Vermilion River. **Figure DF-2** provides a brief description of this dam. There are no other "High" or "Significant" hazard publicly or privately-owned dams within the County.

When have dam failures occurred previously? What is the extent of these previous dam failures?

According to data from Stanford University's National Performance of Dams Incident Database there has been one recorded dam failure in Vermilion County. The Lake Vermilion Dam experienced a dam failure due to an inflow flood event on May 21, 1930. Information on the inundation area and extent or magnitude of the failure was not available. No other known recorded dam failures have been reported according to discussion with Committee members and the Vermilion County Emergency Management Agency Director.

What is the extent of future potential dam failures?

An Emergency Action Plan (EAP) defining the extent or magnitude of a potential dam failure (water depth, area of impact) were developed for the Lake Mingo Dam and Lake Vermilion Dam and made available to the Vermilion County Emergency Management Agency. An EAP has not been developed for the Georgetown Dam. A review of the EAP for the Lake Mingo Dam found it did not contain a detailed breach analysis. As a result, data deficiencies exist in terms of defining the extent or magnitude of future potential dam failures for two of the dams.

Figure DF-2
Select Classified Dams Located in Vermilion County

Dam Name	Hazard Classification	Associated Waterway	Owner	Type	Primary Purpose	Completion Year	Height (feet)	Length (feet)	Maximum Storage (acre-feet)	Impoundment Surface Area (acres)	Drainage Area (square miles)	Emergency Action Plan
Publicly-Owned												
Georgetown Dam	Significant	Little Vermilion River	Georgetown, Village of	Earthen	Recreation, Water Supply	1937	14	272	126	---	---	No
Lake Mingo Dam	Significant	Windfall Creek	Vermilion County Conservation District	Earthen	Recreation	1981	47	920	4,340	628	34.8	Yes
Privately-Owned												
Lake Vermilion Dam	High	North Fork Vermilion River	Aqua Illinois, Inc.	Concrete/ Gravity	Water Supply	1925	45	645	15,352	608	320	Yes

Sources: Stanford University, National Performance of Dams Program, NPDP Dams Database.
U.S. Army Corps of Engineers, National Inventory of Dams Interactive Report.

Figure DF-3 details the estimated inundation time and depths based on distance downstream for a Sunny Day and Probable Maximum Flood (PMF) breach events. The PMF is a rainy-day failure scenario that refers to the flood magnitude that may be expected from the worst combination of meteorological and hydrologic conditions for a watershed. A Sunny Day failure results from a structural breach at a time when the reservoir is near normal pool level with less water entering the reservoir and therefore a smaller amount of water is being released at a lesser velocity than would occur during a PMF.

Based on the analysis, three bridges, a park, a golf course, an inn, and residences at four separate locations will be flooded/overtopped by a Sunny Day breach while all but the park club house/maintenance sheds, a mobile home park, and the wastewater treatment plant will be flooded/overtopped *prior* to a PMF. Only a portion of the Big Rock Mobile Home Community will be flooded/overtopped due to the PMF. Neither the park club house/maintenance sheds nor the wastewater treatment plant will not be overtopped in either scenario.

Figure DF-3
Lake Vermilion Dam – Water Depth and Speed of Onset Estimates for Sunny Day & Probable Maximum Flood

Location	Distance Downstream from Dam (miles)	Water Entry Elevation Estimate – Approximate Finish Floor (feet)	Sunny Day			Probable Maximum Flood (PMF)		
			Speed of Onset – Time to Rapid Rise (hr:mm)	Water Elevation without Breach (feet)	Water Elevation with Breach (feet)	Speed of Onset – Time to Rapid Rise (hr:mm)	Water Elevation without Breach (feet)	Water Elevation with Breach (feet)
North Fork Vermilion Creek								
Harrison Park Golf Course (north end)	0.7	550	0:05	545	568	0:05	568	576
Harrison Park Club House & Maintenance Sheds	1.1	590 – 630	0:07	543	567	0:07	566	575
Harrison Park Golf Course Bridges	1.4	552	0:10	542	567	0:10	566	574
Water Plant Residence	2.7	555	0:15	540	555	0:15	564	570
Water Plant Warehouse	2.7	558	0:15	540	555	0:15	564	570
Black Bear Inn (Morin's Addition)	2.9	549	0:16	533	555	0:15	564	570
Williams St. Residences north of Hungry Hollow Bridge	2.9	546 – 554	0:17	533	555	0:15	564	570
Hungry Hollow Bridge	3.0	548 ± low steel	0:17	532	554	0:15	564	570
Morin's Addition Residences	3.0	544 – 548	0:17	533	555	0:15	564	570
Hampton Rd. Residences	3.1	546 – 588	0:20	532	554	0:15	564	570
Big Rock Mobile Home Community (W. Williams St.)	3.1	565	0:20	530	551	0:15	563	569
Ellsworth Park & Pedestrian Bridge	4.8	533	0:40	526	540	0:30	549	550
S. Logan Ave. Residences (near confluence of North Fork & Vermilion Rivers)	5.0	538 – 542	0:40	520	535	0:30	549	550
Vermilion River								
Shangri-la Estates	11.2	550	---	532	533	---	552	552
Commercial Buildings (S. Washington)	6.5	535 & 545	0:50	518	530	0:25	547	547
Wastewater Treatment Plant Bridget	8..7	535 low steel	1:05	511	524	0:35	539	539
Wastewater Treatment Plant	8.7	540	1:05	511	524	0:35	539	539
Residence southwest of Red Bridge	10.2	525	1:15	508	518	0:45	531	532

= Structure flooded/overtopped by dam breach

= Structure flooded/overtopped prior to dam breach

What locations are affected by dam failure?

Figure DF-4 shows the locations of the classified dams in Vermilion County. Dam failures have the potential to impact the following municipalities/unincorporated areas:

- ❖ developed areas in Danville along the North Fork Vermilion and Vermilion Rivers;
- ❖ a small portion of the Middle Fork State Fish and Wildlife Area and wooded/agricultural land along the Middle Fork Vermilion River just west of Kennekuk County Park in unincorporated Vermilion County; and
- ❖ wooded/agricultural land along the Little Vermilion River approximately one mile south-southwest of Georgetown (Old Dam Road).

What is the probability of future dam failure events occurring based on historical data?

There are several factors that must be considered when calculating the probability of future dam failures including whether a failure has occurred previously, the age and current conditions of the dams, whether proper maintenance is ongoing, precipitation, and the magnitude of a potential event. Since only one of the three "High" and "Significant" hazard classified dams has experienced a failure, it difficult to specifically establish the probability of a future failure associated with these dams; however, based on the data available, it is estimated to be ***low***. For the purposes of this analysis "low" is defined as having a less than 10% chance of occurring in any given year.

What is the probability of future levee breach events occurring based on modeled future conditions?

Dam failures are caused by a combination of multiple factors, including construction practices, soil permeability and conditions, wave erosion, precipitation, and most importantly maintenance. Although there are not yet sufficient studies exploring the possible relationship between dam failures and trends in temperature and precipitation changes in the U.S., it can be reasonably inferred that increases in heavy rain events could potentially increase the probability of dam failures. Since future condition forecasts suggest an increase in total annual precipitation in Illinois as discussed in Section 3.1, it is possible that one of the factors that contributes to dam failures will become more frequent. It is impossible to say how much of an impact, if any, this will have on any given dam, but this increased level of uncertainty should be taken into account in planning for the future. This analysis should be revisited in subsequent planning efforts as more data becomes available.

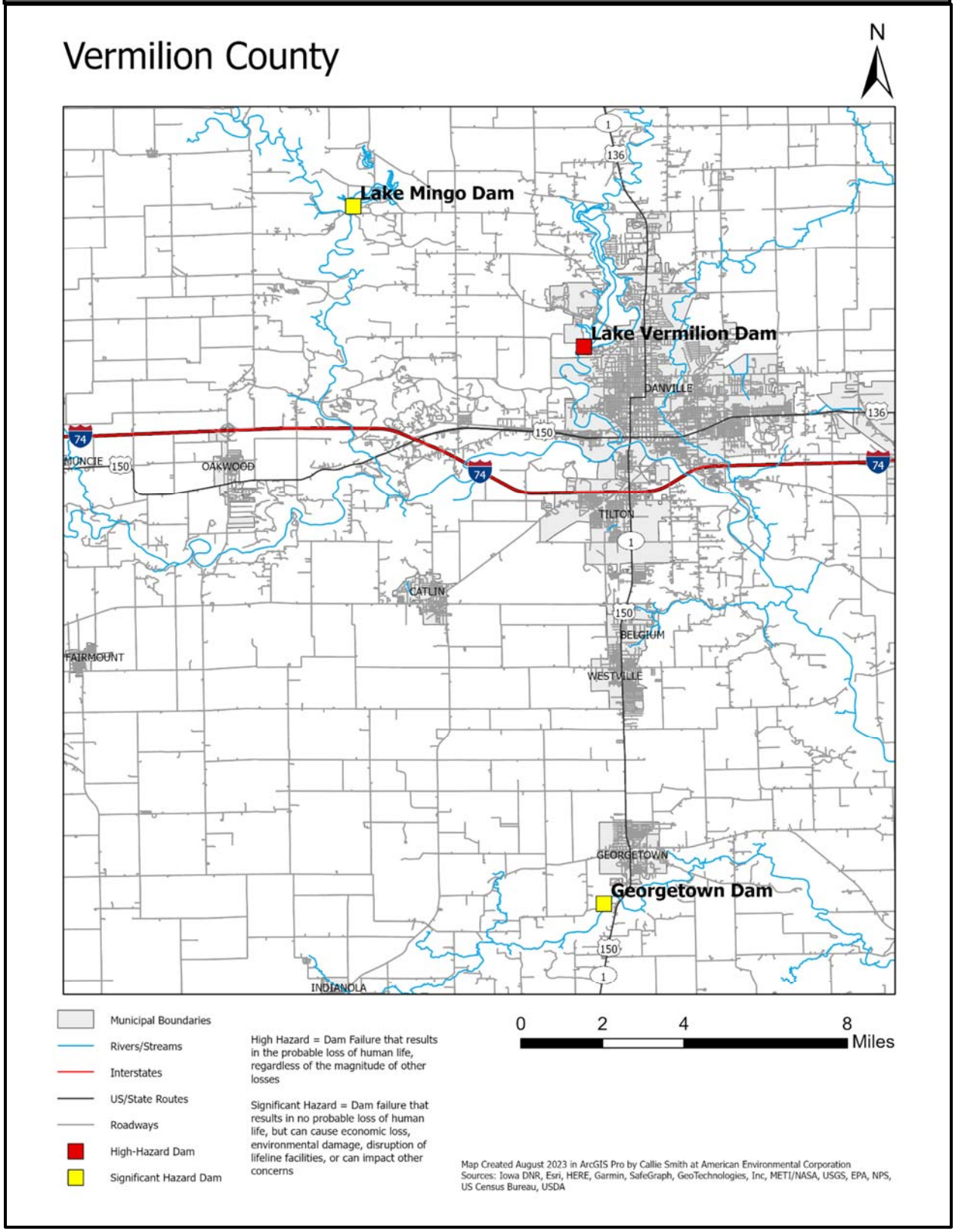
HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from dam failures.

Are the participating jurisdictions vulnerable to dam failures?

Yes. Danville and unincorporated areas of Vermilion are vulnerable to the dangers presented by dam failures. While these areas are vulnerable, most residents would not be impacted by a dam failure. None of the rest of the participating jurisdictions or the remainder of the County are considered vulnerable.

Figure DF-4
Location of Select Classified Dams in Vermilion County



Have any of the participating jurisdictions identified specific assets vulnerable to the impacts of dam failures?

No. Based on responses to an Assets Vulnerability Survey distributed to the participating jurisdictions, none of the participating jurisdictions considered specific assets within their jurisdiction vulnerable to dam failures.

What impacts resulted from the recorded dam failures?

Damage information was either unavailable or none was record as a result of the dam failure at the Lake Vermilion Dam in 1930. In addition, no injuries or fatalities were reported as a result of the event.

What other impacts can result from dam failures?

Dam Failure Fast Facts – Risk

Dam Failure Risk/Vulnerability:

- Public Health & Safety: "High" & "Significant" – ***Low to Medium***
- Public Health & Safety: "Low" Hazard Classification Dams – ***Low***
- Buildings/Infrastructure/Critical Facilities: "High" & "Significant" Hazard Classification Dams – ***Low to Medium***
- Buildings/Infrastructure/Critical Facilities: "Low" Hazard Classification Dams – ***Low***

The impacts from a dam failure are similar to those of a flood. There is the potential for injuries, loss of life, property damage, and crop damage. Depending on the type of dam failure, there may be little, if any warning that an event is about to occur, similar to flash flooding. As a result, one of the primary threats to individuals is from drowning. Motorists who choose to drive over flooded roadways run the risk of having their vehicles swept off the road and downstream. Flooding of roadways is also a major concern for emergency response personnel who would have to find alternative routes around any section of road that becomes flooded due to a dam failure.

In addition to concerns about injuries and death, the water released by a dam failure poses the same biological and chemical risks to public health as floodwaters. The flooding that results from a dam failure has the potential to force untreated sewage to mix with floodwaters. The polluted floodwaters then transport the biological contaminants into buildings and basements and onto roads and public areas. If left untreated, the floodwaters can serve as breeding grounds for bacteria and other disease-causing agents. Even if floodwaters are not contaminated with biological material, basements and buildings that are not properly cleaned can grow mold and mildew, which can pose a health hazard, especially for small children, the elderly, and those with specific allergies.

Flooding from dam failures also can cause chemical contaminants such as gasoline and oil to enter floodwaters if underground storage tanks or pipelines crack and begin leaking during a dam failure event. Depending on the time of year, the water released by a dam failure also may carry away agricultural chemicals that have been applied to farm fields and cause damage to or loss of crops.

What is the level of vulnerability to public health and safety from dam failures?

In terms of the risk or vulnerability to public health and safety from a dam failure, there are several factors that must be taken into consideration including the severity of the event, the capacity of the reservoir and the extent and type of development and infrastructure located downstream. When these factors are taken into consideration, the overall risk to public health and safety posed by a

dam failure at the Lake Vermilion Dam is considered to be ***low to medium*** while the overall risk to public health and safety posed by a dam failure at Georgetown Dam and Lake Mingo Dam is considered to be ***low***.

Are existing buildings, infrastructure, and critical facilities vulnerable to dam failures?

Yes. **Figure DF-5**, located at the end of this section, provides a ***rough estimate*** of the buildings, infrastructure, and critical facilities vulnerable to a dam failure from "High" and "Significant" hazard classified dams in Vermilion County.

The EPA for Lake Vermilion Dam included inundation maps, figures and narrative that identified potentially-impacted structures and public facilities, as well as time of onset and flood wave depth. **Figure D-6** provides a breakdown of the buildings and infrastructure vulnerable to a dam failure based on each scenario.

Figure DF-6
Lake Vermilion Dam – Buildings and Infrastructure Vulnerable to a Dam Failure

Scenario	Number of Impacted Buildings/Infrastructure			
	Residential		Commercial	Roadways / Bridges
	Houses	Mobile Homes		
Sunny Day	8	11	2	9
Probable Maximum Flood (PMF)	39	23	4	14

As discussed previously, the EAP for Lake Mingo Dam did not include either inundation maps and/or narrative that identified potentially-impacted buildings and infrastructure and an EAP has not been developed for Georgetown Dam. As a result, a data deficiency exists in terms of comprehensively identifying existing buildings, infrastructure, and critical facilities vulnerable to dam failures for these dams. While detailed information was not available for either Georgetown Dam or Lake Mingo Dam, the Consultant conducted a visual inspection of the areas surrounding both in order to provide an estimate of the number of potentially-impacted buildings, infrastructure, and critical facilities that are vulnerable to a dam failure.

Depending on whether there is a full or partial dam failure, all of the vulnerable buildings, infrastructure, and critical facilities may be inundated by water and structural damage may result. Because some reservoirs are not immense in size, the damage sustained from dam failure flooding may not be to the structure, but to the contents of the buildings or nearby infrastructure and critical facilities.

A majority of the existing buildings, infrastructure, and critical facilities vulnerable to a dam failure from the Lake Vermilion Dam are the same existing buildings, infrastructure, and critical buildings located in the floodway/base floodplain of North Fork Vermilion and Vermilion Rivers, and thus vulnerable to riverine flood events as well. Therefore, existing buildings are required to have flood insurance and any improvements must comply with Danville's flood ordinance.

In addition to impacting structures, a dam failure can damage roads and utilities. Roadways, culverts, and bridges can be weakened by dam failure floodwaters and may collapse under the weight of a vehicle. According to the inundation mapping for the Lake Vermilion Dam, ***four bridges and ten roadways would be overtopped by the PMF***.

Power and communication lines, both above and below ground, are also vulnerable to dam failure flooding. Depending on their location and the velocity of the water as it escapes the dam, power poles may be snapped causing disruptions to power and communication. Water may also get into any buried lines causing damage and disruptions.

As with public health and safety, the risk or vulnerability to buildings, infrastructure, and critical facilities is dependent on several factors including the severity of the event, the capacity of the reservoir, and the extent and type of development and infrastructure located downstream. When these factors are taken into consideration, the overall risk to existing buildings, infrastructure, and critical facilities posed by a dam failure in Vermilion County is considered to be ***low*** to ***medium*** for Lake Vermilion Dam and ***low*** for Georgetown Dam and Lake Mingo Dam.

Are future buildings, infrastructure, and critical facilities vulnerable to dam failures?

Yes. Any future buildings, infrastructure, and critical facilities located within the flood path of any of the studied dams are vulnerable to damage from a dam failure. As a result, future buildings, infrastructure, and critical facilities face the same vulnerabilities as those of existing buildings, infrastructure, and critical facilities described previously.

What are the potential dollar losses to vulnerable structures from dam failures?

Unlike other hazards, there are no standard loss estimation models or methodologies for dam failures. Given that there has been only one recorded dam failure in Vermilion County, sufficient information was not available to prepare a reasonable estimate of future potential dollar losses to vulnerable structure from a dam failure.

Figure DF-5
Buildings, Infrastructure & Critical Facilities Vulnerable to a Dam Failure from High & Significant Hazard Classified Dams

Dam Name	Location	Number of Vulnerable Buildings/Infrastructure			
		Residential	Commercial	Infrastructure	Critical Facilities
Publicly-Owned					
Georgetown Dam	Little Vermilion River Unincorp. Vermilion County 1 mile southwest of Georgetown (Old Dam Road)	---	---	- Old Dam Rd.	---
Lake Mingo Dam	Kennekuk County Park Unincorp. Vermilion County 6 miles northwest of Danville	---	---	- 2250 N	- Middle Fork State Fish & Wildlife Area - River Bluff Trail – Kennekuk County Park
Privately-Owned					
Lake Vermilion Dam	Danville	19 – Sunny Day 52 – PMF	2 – Sunny Day 4 – PMF	- Harrison Park Golf Course bridges - Hungry Hollow bridge - Ellsworth Park bridge - Williams St. - Vance Ln. (PMF only) - Woodbury Hill (PMF only) - Hungry Hollow Rd. (PMF only) - Morin Ave. - Hampton Rd. - Ellsworth St. - Logan Ave. - Hawbuck Rd. (PMF only) - Twin Hills Rd. (PMF only)	- Ellsworth Park - Water Treatment Plant structures (PMF only)

3.11 MAN-MADE HAZARDS

While the focus of this Plan update is on natural hazards, an ***overview of selected man-made hazards*** has been included. The Planning Committee recognizes that man-made hazards can also pose risks to public health and property. The extent and magnitude of the impacts that result from man-made hazard events can be influenced by natural hazard events. For example, severe winter storms can cause accidents involving trucks transporting hazardous substances. These accidents may lead to the release of these substances, which can result in injury and potential contamination of the natural environment.

Consequently, the Planning Committee decided to summarize the more prominent man-made hazards in Vermilion County. The man-made hazards profiled in this Plan update include:

- Hazardous Substances
  - Generation
  - Transportation
  - Storage/Handling
- Waste Disposal
- Hazardous Material Incidents
- Hazardous Waste Remediation
- Nuclear Incidents
- Terrorism

While the man-made hazards risk assessment does not have the same depth as the natural hazards risk assessment, it does provide useful information that places the various man-made hazards in perspective.

3.11.1 Hazardous Substances

Hazardous substances broadly include any flammable, explosive, biological, chemical, or physical material that has the potential to harm public health or the environment. For the purposes of this Plan, the term hazardous substance includes hazardous product and hazardous waste. A hazardous waste is defined as the byproduct of a manufacturing process that is either listed or has the characteristics of ignitability, corrosivity, reactivity, or toxicity and cannot be reused. A hazardous product is all other hazardous material.

Hazardous substances can pose a public health threat to individuals at their workplace and where they reside. The type and quantity of the substance, the pathway of exposure (inhalation, ingestion, dermal, etc.), and the frequency of exposure are factors that will determine the risk of adverse health effects experienced by individuals. Impacts can range from minor, short-term health issues to chronic, long-term illnesses.

In addition to impacting public health, hazardous substances can also cause damage to buildings, infrastructure, and the environment. Incidents involving hazardous substances can range from minor (scarring on building floors and walls) to catastrophic (i.e., destruction of entire buildings, structural damage to roadways, etc.) and lead to injuries and fatalities. The number of incidents involving hazardous substances in Illinois and across the U.S. every year underscores the need for trained and equipped emergency responders to minimize damages.

Since 1970, significant changes have occurred in regard to how hazardous substances are transported and disposed. Comprehensive regulations and improved safety and industrial hygiene practices have reduced the frequency of incidents involving hazardous substances. Based on the

small number of facilities in Vermilion County that generate and use hazardous substances, the population size, transportation patterns, and land use, the probability of a release occurring in Vermilion County should remain relatively higher compared to other counties in Illinois. The relatively low numbers of transportation incidents should not diminish municipal or county commitment to emergency management.

HAZARD PROFILE – HAZARDOUS SUBSTANCES

The following subsections identify the general pathways – generation, transportation, and storage/handling – by which hazardous substances pose a risk to public health and the environment in Vermilion County.

Hazardous Substances Fast Facts - Occurrences

Generation
Number of Facilities that Generate Reportable Quantities of Hazardous Substances (2021): ***8***

Transportation
Number of Roadway Incidents Involving Hazardous Substance Shipments (2013 - 2022): ***35***

Number of Railway Accidents/Incidents Involving Hazardous Substance Shipments (2012 - 2021): ***15***

Number of Pipeline Incidents Involving Hazardous Substances (2011 - 2020): ***None***

Storage/Handling
Number of Facilities that Store/Handle Hazardous Substances (2021): ***96***

Number of Facilities that Store/Handle Extremely Hazardous Substances (2021): ***31***

3.11.1.1 Generation

Vermilion County has eight facilities that generate reportable quantities of hazardous substances as a result of their operations according to the U.S. Environmental Protection Agency (USEPA) Toxic Release Inventory. **Figure MMH-1**, located at the end of this section, identifies the hazardous substance generators located in Vermilion County and summarizes the substances generated.

3.11.1.2 Transportation

Roadways

Illinois has the nation's third largest interstate system and third largest inventory of bridges. According to the Illinois Department of Transportation, there were just over 147,000 miles of highways and streets in Illinois in 2021. Most of the truck traffic in Vermilion County is carried on Interstate 74. Other major roadways that carry truck traffic include U.S. Route 136, U.S. Route 150, Illinois Route 1, Illinois Route 9, Illinois Route 49, and Illinois Route 119. While this modern roadway system provides convenience and efficiency for commuters, it also aids inter-state and intra-state commerce which includes the transportation of hazardous substances. A Commodity Flow Study to gauge chemical transport has not been conducted for Vermilion County.

According to records obtained from the Illinois Emergency Management Agency (IEMA), there were 35 recorded roadway incidents involving the shipment of hazardous substances in Vermilion County between 2013 through 2022. **Figure MMH-2**, located at the end of this section, provides information on these incidents.

Railways

Illinois' rail system is the country's second largest, with the East St. Louis and Chicago terminals being two of the busiest in the nation. In Vermilion County there are three Class I rail lines

operated by CSX, Norfolk Southern Railway, and Union Pacific Railroad. According to the Association of American Railroads, 3,796,300 carloads (125.9 million tons) of freight originated in Illinois in 2019 (the latest year for which data is available). Chemicals accounted for 101,100 carloads (9.7 million tons) or 2.8% of the total freight handled. In comparison, 27,549,000 carloads of freight originated in the U.S. in 2019 with approximately 2,014,000 carloads (7.1%) involved in the transport of chemicals.

The Illinois Commerce Commission (ICC) is required to maintain records on railway accidents/incidents that involve hazardous substances. Their records are divided into three categories. These three categories are described in **Figure MMH-3**.

Figure MMH-3
ICC Hazardous Substances Railroad Accident/Incidents Classification Categories

Category	Description
A	railroad derailments resulting in the release of the hazards substance(s) being transported
B	railroad derailments where hazards substance(s) were being transported but no release occurred
C	releases of hazardous substance(s)s from railroad equipment occurred; however, no railroad derailment was involved

Since 2012, there have been 10 rail accidents involving hazardous substances in Vermilion County according to the ICC. In comparison, ICC records indicate that since 2011 the annual number of railway accidents in Illinois involving hazardous substances has ranged between 45 and 122. **Figure MMH-4**, located at the end of this section, provides a breakdown by category of the ICC-recorded railway accidents/incidents involving hazardous substances. Included is a comparison of the number of accidents/incidents in Vermilion County to those in Cook and the Collar Counties as well as the rest of Illinois.

According IEMA's hazardous materials incident records for 2013 through 2022, there were an additional five rail accidents/incidents involving the release of hazardous substances. **Figure MMH 5** provides information on these incidents by rail line. No derailments were associated with any of these accidents/incidents.

Figure MMH-5
IEMA Recorded Railway Accidents/Incidents Involving Hazardous Substances
2013 - 2022

Date	Area	Location	Hazardous Substance Released	Quantity Released
Norfolk Southern				
6/27/2013	Ryan	1 mile east of 800 East Road	Herbicide #27	1 gallon
1/11/2014	Danville	Rail MP D311	Engine oil	2 pints
11/19/2015	Tilton	Rail MP 303	Limestone	4 gallons
4/17/2018	Bismarck	Rail MP D298.8	Lubricating Oil	15 gallons
CSX				
1/20/2015	Rossville	MP OZA109	Lubricating Oil	Unknown

^ Accident/incident verified in the vicinity of this area.

Source: Illinois Emergency Management Agency, Hazardous Materials Incident Reports.

The top 20 hazardous substances moved by rail through Illinois include: sodium hydroxide, petroleum gases (liquefied), sulfuric acid, anhydrous ammonia, chlorine, sulfur, vinyl chloride, propane, fuel oil, denatured alcohol, methanol, gasoline, phosphoric acid, hydrochloric acid, styrene monomer, carbon dioxide (refrigerated liquid), ammonium nitrate, sodium chlorate, and diesel fuel.

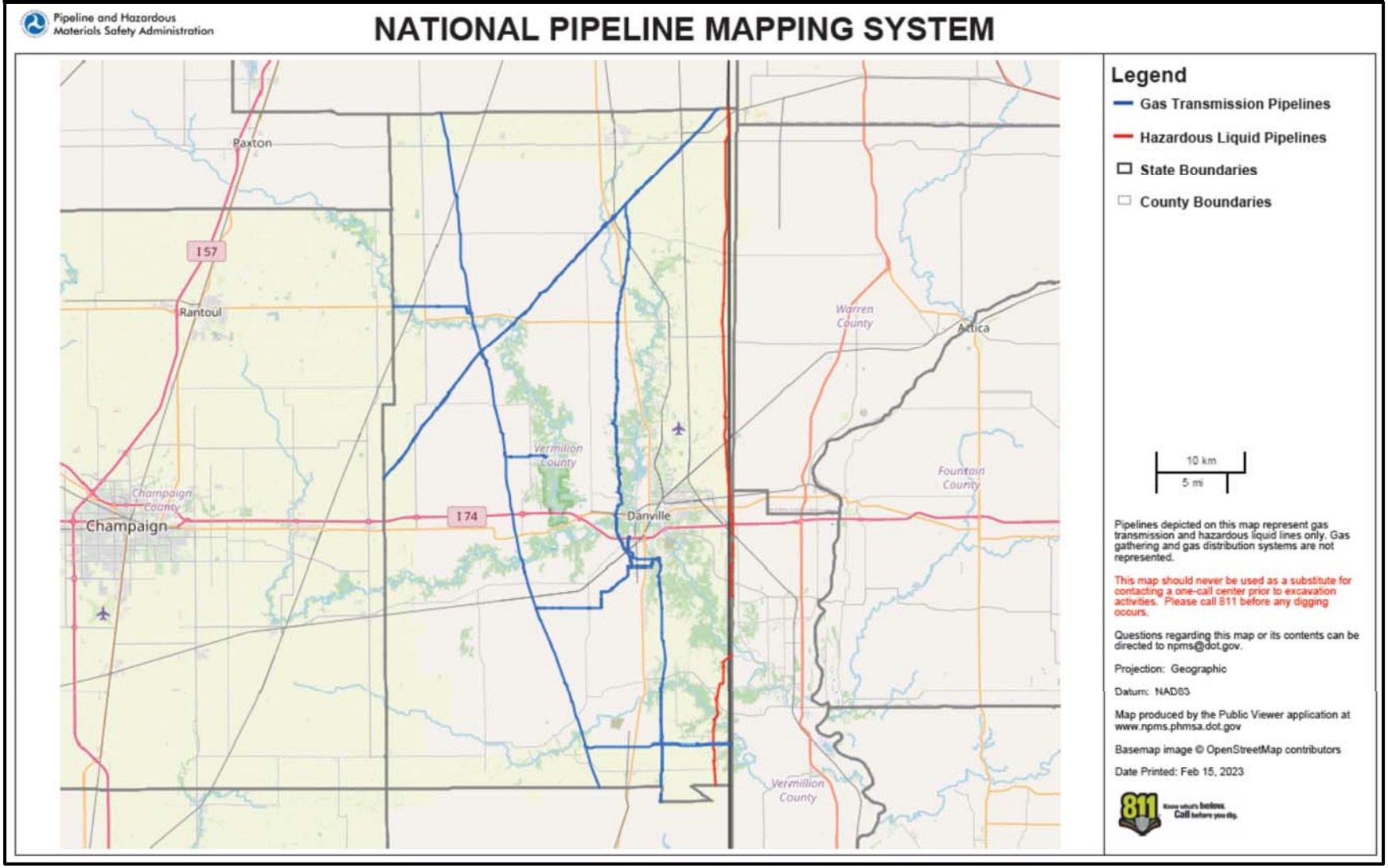
Pipelines

Energy gases (natural gas and liquefied petroleum gas), petroleum liquids (crude oil and gasoline), and liquid and gas products used in industrial processes are carried in above-ground and buried pipelines across Illinois. . In Vermilion County, there are eight major pipelines that carry natural gas, two operated by Panhandle Eastern, two operated by Trunkline Gas Company, and one each operated by Ameren, Midwestern Gas Transmission, Northern Illinois Gas Company, and Texas Eastern Transmission. There also is one major pipeline for carrying crude oil, gasoline, or hazardous liquids crossing the County from north to south along the Illinois-Indiana border operated by BP North America. ***No pipeline releases occurred in Vermilion County during a 10-year period from 2013 through 2022.*** **Figure MMH-6** shows the pipelines in Vermilion County.

There have been several high-profile incidents across the U.S., including one in Illinois, that have raised public concerns about our aging pipeline infrastructure. The following provides a brief description of each incident.

- On July 26, 2010, a 30-inch liquid product pipeline rupture near Marshall, Michigan and released at least 840,000 gallons of oil into a creek that led to the Kalamazoo River, a tributary of Lake Michigan.
- On September 9, 2010, another pipeline release received national attention. A 34-inch liquid product pipeline in the Chicago suburb of Romeoville, Illinois released more than 360,000 gallons of crude oil that flowed through sewers and into a retention pond narrowly avoiding the Des Plaines River. This release triggered numerous odor complaints from residents in the adjacent municipalities of Lemont and Bolingbrook. The property damage/cleanup costs were estimated at $46.6 million.
- Also, on September 9, 2010, a 30-inch-high pressure natural gas pipeline ruptured in the San Francisco suburb of San Bruno, California that resulted in an explosion that killed
- eight people, injured 51, destroyed over 30 homes and damaged an entire neighborhood. The property damage was estimated at around $55 million.
- On March 12, 2014, a gas main rupture in Manhattan, New York resulted in an explosion that killed eight people and leveled two multi-use, five story buildings.
- On May 19, 2015, a 24-inch liquid product pipeline ruptured near Refugio State Beach in Santa Barbara County, California and released approximately 100,000 gallons of crude oil. The release occurred along a rustic stretch of coastline that forms the northern boundary of the Santa Barbara Channel, home to a rich array of sea life. Oil ran down a ravine and entered the Pacific Ocean, blackening area beaches, creating a 9-mile oil slick and impacting birds, marine mammals, fish, and coastal and subtidal habitats.

Figure MMH-6
Pipeline Location Map



Continual monitoring and maintenance of these pipelines is necessary to prevent malfunctions from corrosion, aging, or other factors that could lead to a release. In addition to normal wear and tear experienced by pipelines, the possibility of sabotage and seismic activity triggering a release must be considered when contemplating emergency response scenarios.

3.11.1.3 Storage/Handling

Beyond knowing where hazardous substances are generated and the methods and routes used to transport them, it is important to identify where hazardous substances are handled and stored. This information will help government officials and emergency management professionals make informed choices on how to better protect human health, property and the environment and what resources are needed should an incident take place.

Records obtained from IEMA-OHS's Tier II database were used to gather information on the facilities that generate, use and store chemicals in excess of reportable threshold quantities within Vermilion County. The Tier II information was then compared with USEPA's Toxic Release Inventory (TRI) and information from Illinois Environmental Protection Agency (IEPA) databases. This review identified 96 facilities within Vermilion County in 2021 that store and handle hazardous substances

Of these 96 facilities, 31 reported the presence of Extremely Hazardous Substances (EHSs) at their facilities. An EHS is any USEPA-identified chemical that could cause serious, irreversible health effects from an accidental release. There are approximately 400 chemicals identified as EHSs. Stationary sources that possess one or more of these substances at or above threshold reporting quantities are required to notify IEMA.

3.11.2 Waste Disposal

Waste disposal has caused surface water and ground water contamination in Illinois and across the U.S. Beginning in the late 1970s substantial regulatory changes strengthened the design, operating and monitoring requirements for landfills where the majority of waste is disposed. These regulatory changes have helped reduce the public health threat posed by landfills.

HAZARD PROFILE – WASTE DISPOSAL

The following subsections identify the general pathways – solid, medical, and hazardous – by which waste disposal poses a risk to public health and the environment in Vermilion County.

Waste Disposal Fast Facts - Occurrences

Solid Waste

Number of Solid Waste Landfills Operating in Vermilion County (2022): ***2***

Number of Landfills Serving Vermilion and adjacent counties (2021): ***2***

Potentially-Infectious Medical Waste (PIMW)

Number of Facilities within the County Permitted to Handle PIMW: ***None***

Hazardous Waste

Number of Commercial Off-Site Hazardous Waste Treatment or Disposal Facilities located in the County: ***None***

3.11.2.1 Solid Waste

While recycling activities have reduced the amount of solid waste (waste generated in households), the majority continues to be disposed of in landfills. As of 2021, there were 36 landfills operating in Illinois.

According IEPA's Annual Landfill Capacity Report issued in July 2022, there are two commercial landfills that operate in Vermilion County, Brickyard Disposal and Recycling near Danville and Illinois Landfill near Hoopeston. No additional landfills serve Vermilion and the adjacent counties.

3.11.2.2 Potentially- Infectious Medical Waste

Potentially-Infectious Medical Waste (PIMW) is generated in connection with medical research; biological testing; and the diagnosis, treatment or immunization of human beings or animals. PIMW is typically generated at hospitals, nursing homes, medical or veterinary clinics, dental offices, clinical or pharmaceutical laboratories, and research facilities. According to IEPA's list of permitted PIMW Facilities, there are no facilities permitted to accept medical waste for disposal in Vermilion County.

3.11.2.3 Hazardous Waste

A hazardous waste is defined as the byproduct of a manufacturing process that is either listed or has the characteristics of ignitability, corrosivity, reactivity, or toxicity and cannot be reused. According to IEPA's Storage, Treatment, Recycling, Incinerating, Transfer Stations, and Processing list, there are currently no off-site hazardous waste treatment or disposal facilities located in Vermilion County.

3.11.3 Hazardous Material Incidents

A hazardous material or hazmat incident refers to any accident involving the release of hazardous substances, which broadly include any flammable, explosive, biological, chemical, or physical material that has the potential to harm public health or the environment. These incidents can take place where the substances are used, generated, or stored or while they are being transported. In addition, hazmat incidents also include the release of hazardous substances, such as fuel, used to operate vehicles. These releases can be the result of an accident or a leak.

HAZARD PROFILE – HAZARDOUS MATERIALS INCIDENTS

From 2013 to 2022, there were 145 hazmat incidents recorded in Vermilion County. Of these incidents, 50 (34%) involved transportation incidents/accidents while 95 (66%) occurred at fixed facilities. Thirty-seven (37) of the 50 (74%) transportation incidents/accidents involved petroleum-based products.

Hazmat Incident Fast Facts - Occurrences

Number of Hazardous Material Incidents in Vermilion County (2013 - 2022): ***145***

Number of Transportation-Related Incidents/Accidents: ***50***

Number of Fixed Facility-Related Incidents/Accidents: ***95***

Average Number of Hazardous Material Incidents Experienced Annually: ***14***

Based on the recorded incidents, Vermilion County experienced an average of 14.5 hazmat incidents annually from 2013 through 2022. The types of existing industries; the major transportation corridors through the County, which include interstate and Illinois highways, rail, and pipeline; and chemical use within and adjacent to the County suggest that hazmat incidents are likely to continue to take place at the rate reflected in the 10-year study period. Constant

vigilance, proper training and equipment, and prompt response are needed to minimize the potential impacts of each incident.

3.11.4 Waste Remediation

The improper disposal or containment of special and hazardous waste through the years has led to soil, groundwater, and surface water contamination of sites across the U.S. In order to safeguard human health and the environment, these contaminants must be removed or neutralized so they cannot cause harm. This process is known as waste remediation.

HAZARD PROFILE – WASTE REMEDIATION

In Illinois, waste remediation is handled through several programs including the federal Superfund program, the State Response Action Program, the state Site Remediation Program, and the Leaking Underground Storage Tanks Program. The following provides a brief description of each.

Waste Remediation Fast Facts - Occurrences

Superfund
Number of Superfund Sites in the County: ***1***

Illinois Site Response Action Program
Number of SRAP Sites in the County: ***10***

Illinois Site Remediation Program
Number of SRP Sites in the County: ***33***

Number of SRP Sites with NFR/4Y Letters: ***28***

Illinois Leaking Underground Storage Tanks Program
Number of LUST Sites in County: ***250***

Number of LUST Sites with NFR/Non-LUST/4Y Letters: ***169***

Superfund (CERLCA) Program/ National Priorities List
Superfund is a USEPA-led program to clean up sites within the U.S. contaminated by hazardous waste that has been dumped, left out in the open, or otherwise improperly managed and which pose a risk to human health and/or the environment. Sites of national priority among the known or threatened releases of hazardous substances, pollutants or contaminants throughout the U.S. and its territories are identified on the National Priorities List (NPL). Those sites that pose the largest threat to public health and the environment are typically found on the NPL.

According to the NPL database, there are 45 Superfund sites in Illinois. There is one Superfund site in Vermilion County, the Hegeler Zinc Site in Danville, which was placed on the NPL in April 2005, and is being managed through the Superfund Program.

State Response Action Program (SRAP)
The main objective of the State Response Action Program (SRAP) is to clean up hazardous substances at sites that present an imminent and substantial threat to human health and the environment, but which may not be addressed by other federal or state cleanup programs. The sites handled by the SRAP include abandoned landfills, old manufacturing plants, former waste oil recycling operations, contaminated agrichemical facilities, and other areas where surface water, groundwater, soil, and air may be contaminated with hazardous substances. Since the mid-1980s, cleanup activities have been conducted at more than 500 sites in Illinois through this Program. Once the threat to human health and the environment has been mitigated, some sites are transferred to other state cleanup programs to complete remediation activities.

There are 10 SRAP sites in Vermilion County, six of which (60%) have completed the Program.

Illinois Site Remediation Program (SRP)
The Site Remediation Program (SRP) is a voluntary cleanup program that provides applicants the opportunity to receive technical assistance in determining what course of action is needed to remediate sites where hazardous substances, pesticides, or petroleum may be present. The goal of the SRP is to receive a no further remediation determination from IEPA. Most site remediation in Illinois is handled through this Program. Since the mid-1980s, remediation activities have been conducted and monitored at approximately 5,800 sites in Illinois. Properties that satisfy respective IEPA laws and regulations can receive a No Further Remediation (NFR) letter. They must demonstrate, through proper investigation and, when warranted, remedial action, that environmental conditions at their remediation site do not present a significant risk to human health or the environment. This letter describes what remediation activities have been taken and whether any portion of the property, based on future property use, might need additional remediation.

There are 33 SRP sites in Vermilion County. Twenty-eight of the 33 SRP sites (85%) have received NFR or 4Y letters. The remaining five sites do not pose an immediate threat to public health or the environment.

Leaking Underground Storage Tank Program (LUST)
The Leaking Underground Storage Tanks Program (LUST) oversees remedial activities associated with petroleum product releases from underground storage tanks (UST). This program began in the late 1980s as a result of the threats posed by vapors in homes and businesses, contaminated groundwater, and contaminated soil. In Illinois, more than 14,500 acres of soil contaminated by leaking underground tanks have been remediated between 1988 and 2010 (the most recent year for which data was available).

In Vermilion County, there are 250 sites involving the remediation of petroleum product releases from underground storage tanks. Of the 250 LUST sites, 169 (68%) have received NFR letters, other clearance letters, or remediation is virtually complete.

3.11.5 Nuclear Incidents

The term "nuclear incident" refers to the release of significant levels of radioactive material or exposure of the general public to radiation. This section does not address the intentional or malicious release of radioactive materials as a result of a terrorism activity. Exposure to dangerous levels of radiation can have varying health effects on people and animals. Impacts range from minor health issues to fatal illnesses.

HAZARD PROFILE – NUCLEAR INCIDENTS

In Vermilion County, residents could be exposed to radioactive material and/or radiation from a nuclear incident that occurs:

- at the Clinton Generating Station located in DeWitt County; or
- as spent nuclear fuel rods are being transported by railway through the County.

There have been no nuclear incidents and therefore no injuries or damages associated with the nuclear power facility or the transportation of spent nuclear fuel rods through Vermilion County.

Nuclear Incidents Fast Facts - Occurrences

Number of Nuclear Power Facilities in the County: ***None***

Number of Nuclear Power Facilities near the County: ***1***

Emergency Planning Zones

Are there Areas in the County within the 10-mile Critical Risk Zone of any Nuclear Power Facilities? ***No***

Are there Areas in the County within the 50-mile Pathway Zone of any Nuclear Power Facilities? ***Yes (a small portion along the western border of the County)***

Number of Incidents Impacting the County: ***None***

3.11.5.1 Power Facilities

Commercial nuclear facilities constructed in the U.S. should withstand most natural hazards such as tornadoes and severe storms that frequently occur in Illinois. Nonetheless, IEMA-OHS has developed a Radiological Emergency Response Plan in cooperation with other state and local governments. Procedures are in place and exercises are conducted with state and local officials to protect the public in the unlikely event of a nuclear emergency. There is one nuclear generating station relatively close to Vermilion County operated by Constellation Energy. **Figure MMH-7** identifies the facility, its location, and its respective distance to the Vermilion County border.

Figure MMH-7
Nuclear Generating Stations Near Vermilion County

Nuclear Generating Station Name	Location	Distance to Vermilion County Border
Clinton Generating Station	6 miles east-northeast of Clinton DeWitt County	49.2 miles

An Emergency Planning Zone (EPZ) around each nuclear facility is assessed to estimate potential damages to the public and critical infrastructure. EPZs typically include a 10-mile Critical Risk Zone and a 50-mile Ingestion Pathway Zone. Ingestion refers to radiation that might enter a person's body. While none of Vermilion County falls within the 10-mile Critical Risk Zone for the Clinton Generating Station, portions do fall within the 50-mile Ingestion Pathway Zone for this Station. **Figure MMH-8** identifies the locations that fall within these zones.

Figure MMH-8
Locations within Emergency Planning Zones

Nuclear Generating Station Name	Areas within 10-Mile Critical Risk Zone	Areas within 50-Mile Ingestion Pathway Zone
Clinton Generating Station	none	Portions of Butler, Middlefork, Pilot, Oakwood, Vance, and Sidell Townships

The consequences associated with a release at any nuclear power facility would depend on the magnitude of the accident and the prevailing weather conditions. A significant incident might require individuals to stay indoors or to evacuate to temporary relocation centers. Temporary relocation centers have been established for Vermilion County residents should a significant event requiring evacuation occur at the nearby nuclear power facility.

To protect the food supply, persons owning livestock may be advised to remove all livestock from pasture, shelter if possible, and provide them with stored feed and protected water. The American Nuclear Insurers (ANI) Company provides insurance to cover the Exelon Corporation's legal liability up to the limits imposed by the Price-Anderson Act, for bodily injury and property damage such as the loss of livestock and crops caused by a nuclear energy incident at the Clinton Generator Station.

No nuclear power facilities have had any incidents that have impacted Vermilion County. The probability of an incident causing off-site impacts appears low.

3.11.5.2 Transportation of Spent Nuclear Fuel Rods by Railway

The protocol for moving spent nuclear fuel rods from nuclear power plants requires that the train be stopped and inspected before moving through Illinois and that it be escorted as it moves through the State. Inspection of the track ahead of the train is also required to reduce the risk of derailment.

While movement of nuclear material has been minimal as the U.S. grapples with the issue of developing national or regional repositories, more rail movement is anticipated in the future. At the present time, the nuclear power facility previously mentioned is storing spent fuel rods on-site. If a national or regional repository is established, then the spent fuel rods will be moved off-site. According to the Illinois Commerce Commission, there has never been a railway transportation accident resulting in the release of radioactive material; however, widespread concern remains regarding its safe transportation.

3.11.6 Terrorism

Terrorism has different definitions across the globe. For the purpose of this Plan, terrorism will be defined as any event that includes violent acts which threaten, or harm lives, health or property conducted by domestic or foreign individuals or groups aimed at civilians, the federal government or symbolic locations intended to cause widespread fear.

HAZARD PROFILE – TERRORISM

The attack on the World Trade Center and the Pentagon on September 11, 2001 by foreign terrorists galvanized national action against terrorism and resulted in the creation of the U.S. Department of Homeland Security. While the number of terrorist activities garnering national attention in the U.S. has been relatively small, approximately 201,183 terrorist events have occurred worldwide between 1970 and 2019, according to the National Consortium for the Study of Terrorism and Responses to Terrorism (the Consortium). During this same time span, the Consortium documented 3,004 terrorist events within the U.S.

Terrorism Fast Facts – Occurrences*

Number of Recorded Terrorism Events Worldwide (1970 – 2019): ***201,183***

Number of Recorded Terrorism Events in the U.S. (1970 – 2019): ***3,004***

Number of Recorded Terrorism Events in Illinois (1970 – 2019): ***117***

* Based on data from the National Consortium for the Study of Terrorism and Responses to Terrorism (START) Global Terrorism Database.

Acts of terrorism have resulted in fatalities and injuries as a result of kidnappings, hijackings, bombings,

and the use of chemical and biological weapons. The Global Terrorism Database has documented 3,633 American fatalities in the U.S. between 1995 and 2019 from terrorist attacks. The attacks on September 11, 2001 account for 3,001of the 3,633 fatalities. A search of the Global Terrorism Database identified 117 incidents of terrorism in Illinois between 1970 and 2019. These incidents resulted in six fatalities and 38 injuries.

The Federal Bureau of Investigation's (FBI) provides supporting documentation on domestic terrorist attacks in a series of reports on terrorism. These reports provide a chronological summary of terrorist incidents in the U.S. with detailed information on attacks between 1980 and 2005. During this time period, 192 incidents were documented within the U.S. Six of these incidents occurred in Illinois; five in the Chicago area and one downstate.

Not included in either the Consortium or FBI data sets are the Vermilion County bombings of 1997 and 1998. On December 30, 1997 a pipe bomb placed by a domestic terrorist outside Oakwood United Methodist Church detonated killing a church volunteer and causing damage to the church property. On May 24, 1998, a second pipe bomb placed by the same individual detonated during worship at the Danville First Assembly of God Church, injuring 34 persons, most of them youth of the church. As the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) closed in on the perpetrator, he blew up himself, his dog, and his Danville garage laboratory.

Other more recent events in Illinois occurred on September 24, 2009 when a single individual from Macon County sought to carry out his anger at the federal government by detonating a van filled with explosive outside of the Federal Courthouse in Springfield. This attempt was thwarted by the FBI.

On May 16, 2018 at around 8:00 a.m., 19-year-old boy, armed with a 9-mm semi-automatic rifle, fired several shots near the Dixon High School Gymnasium where approximately 180 students were practicing for graduation. The school's resource officer confronted the shooter, who fled from the school on foot. The shooter fired several shots at the resource officer, who returned fire, wounding the shooter in the shoulder. The gunman suffered non-life threatening injuries. No students or staff were injured in the incident. Faculty and staff barricaded doors and took cover as the incident unfolded.

More recently an active shooter incident occurred at the Highland Park Independence Day parade on July 4, 2022. A 22-year-old man, armed with a semi-automatic rifle, gained access to the roof of a building along the parade route and opened fire on spectators and those in the parade killing seven individuals and wounding an additional 48 individuals. The shooter evaded immediate capture and fled the scene but was apprehended later the same day. He confessed to the shooting and is being held without bail as he awaits trial.

It is impossible to predict with any reasonable degree of accuracy how many terrorism events might be expected to occur in Vermilion County or elsewhere in Illinois. Although targets for terrorist activity are more likely centered in larger urban areas, recruitment, training, and other support activities, such as the ones described above, have occurred in rural areas.

The economic resources available to some terrorist groups coupled with the combination of global tensions, economic uncertainty and frustration towards government appear to have recently raised the frequency of attempts. Enhanced efforts by law enforcement officials and civilian vigilance for unusual activity or behavior will be needed to repel terrorists whether they are domestic or foreign in origin.

Figure MMH-1
Generators of Solid & Liquid Hazardous Substances – 2021

Name	Hazardous Substances Generated	Amount Generated (Pounds)
Danville		
Brainerd Chemical Midwest, LLC	Hydrogen fluoride	0
	Peracetic acid	250
	Total:	*250*
Fiberteq, LLC	Formaldehyde	17,326
	Methanol	15,966
	Total:	*33,292*
Lebanon Seaboard Corp.	2,4-D	0
	2,4-D 2-ethylhexyl ester	0
	Dicamba	0
	Mecoprop	0
	Trifluralin	19
	Total:	*19*
Reg Danville, LLC	Methanol	11,632
	Total:	*11,632*
Thyssenkrupp Crankshaft Co, LLC (1200 International Place)	Chromium	26,921
	Lead	441
	Manganese	23,691
	Nickel	21,538
	Total:	*72,591*
Thyssenkrupp Crankshaft Co, LLC (1000 Lynch Road)	Chromium	2,281
	Lead	46
	Manganese	2,008
	Nickel	1,827
	Total:	*6,163*
Viscofan USA, Inc	Ammonia	149,711
	Carbon disulfide	3,005,818
	Hydrogen sulfide	54,920
	Total:	*3,334,396*
Watch Fire	Lead	0
	Total:	*0*

Source: U.S. Environmental Protection Agency, TRI Explorer, Releases: Facility Report.

Figure MMH-2
Roadway Incidents* Involving Shipments of Hazardous Substances
2013 – 2022
(Sheet 1 of 2)

Date	Area	Location	Hazardous Product Released	Quantity Released
4/9/2013	Danville	3401 Lynch Creek Drive	Diesel fuel	10-20 gallons
4/10/2013	Penfield[^]	2550 N 170 East Road	Potash (Phosphate, 50%)	25,000 pounds
6/11/2013	Rossville[^]	IL Route 1 & E 3800 North Road	Diesel fuel	Unknown
6/19/2013	Danville	I-74, eastbound MP 215	Diesel fuel	50 gallons
11/19/2013	Danville	I-74, East of Griffin St. Bridge, near MP 216	Diesel fuel	>100 gallons
11/19/2013	Danville[^]	I-74, MP 217	Diesel fuel	175 gallons
7/5/2014	Danville[^]	I-74, eastbound MP 209	Diesel fuel	>25 gallons
8/1/2014	Danville[^]	I-74, eastbound MP 212.5	Diesel fuel	>250 gallons
1/20/2015	Danville[^]	I-74, eastbound MP 213	Diesel fuel	200 gallons
1/20/2015	Tilton	I-74, eastbound MP 214	Diesel fuel	10 gallons
4/30/2015	Rossville[^]	3550 North at 1950 East Road	Roundup (glyphosate)	100 gallons
8/25/2015	Danville[^]	IL Route 49 & 2600 East Road	Diesel Fuel	Unknown
1/4/2016	Danville[^]	I-74, westbound MP 207	Diesel Fuel	200 gallons
4/21/2016	East Lynn[^]	N 570 East Road & E 4200 North Road	Anhydrous ammonia	2,500 to 3,000 pounds
12/16/2016	Oakwood[^]	I-74 westbound MP 205	Diesel Fuel	1 cup
4/6/2017	Oakwood[^]	I-74 westbound MP 208	Motor Oil	Unknown
4/24/2017	Rankin[^]	IL Route 49, 0.75 mi. north of Rankin	Anhydrous ammonia	50 to 100 gallons
5/22/2017	Oakwood[^]	I-74 westbound MP 205	Diesel Fuel	100 gallons
6/30/2017	Fithian[^]	Eastbound ramp from I-74 to IL Route 49	Diesel fuel	Unknown
11/20/2017	Fithian[^]	3449 East Lincoln Trail Road	Anhydrous ammonia	200 gallons
5/23/2018	Danville	Multiple streets (not reported)	Diesel Fuel	Unknown
9/28/2018	Armstrong[^]	US Route 136 & IL Route 49	Livestock Waste	Unknown
4/27/2019	Danville	400 Ash Street	Vehicle Fluids	Unknown
6/12/2019	Bismarck[^]	27393 North 1950 East Road	Anhydrous ammonia	800 gallons
7/30/2019	Catlin	Intersection of Center Street & N Sandusky Street	Hydraulic Oil	35 gallons
10/14/2019	Danville	3650 Southgate Drive	Hydraulic Fluid	Unknown

* For the purposes of this report a roadway incident is generally defined as an accident/incident that occurs while in the process of transporting a hazardous substance(s) on a highway, roadway, access drive, field entrance, rest area or parking lot. Vehicles that experience a release while refueling are not considered roadway incidents but are instead considered fixed facility incidents.

[^] Accident verified in the vicinity of this area.

Figure MMH-2
Roadway Incidents* Involving Shipments of Hazardous Substances
2013 – 2022
(Sheet 2 of 2)

Date	Area	Location	Hazardous Product Released	Quantity Released
4/13/2020	Hoopeston	1699 E Wyman Avenue	Hydraulic Oil	30 gallons
4/14/2020	Hoopeston	300 E Maple Street	Hydraulic Oil	30 gallons
4/27/2020	Potomac[^]	Near 840 East Road & 3280 North Road	Anhydrous ammonia	500 pounds
5/5/2020	Hoopeston	300 E Maple Street	Hydraulic Oil	30 gallons
6/12/2020	Oakwood	408 S. Scott Street	Hydraulic Fluid	30 gallons
7/31/2020	Oakwood[^]	Near Kickapoo State Park	NoTrack Emulsified Asphalt	50 gallons
1/8/2021	Hoopeston	Intersection of W Penn Street & 7th Avenue	Hydraulic Fluid	15 to 20 gallons
2/23/2022	Oakwood[^]	I-74	Diesel Fuel	150 gallons
5/26/2022	Alvin	203 W Railroad Street	Hydraulic Fluid	15 to 20 gallons

* For the purposes of this report a roadway incident is generally defined as an accident/incident that occurs while in the process of transporting a hazardous substance(s) on a highway, roadway, access drive, field entrance, rest area or parking lot. Vehicles that experience a release while refueling are not considered roadway incidents but are instead considered fixed facility incidents.

[^] Accident verified in the vicinity of this area.

Source: Illinois Emergency Management Agency, Hazardous Materials Incident Reports

Figure MMH-4
ICC Recorded Railway Accidents/Incidents Involving Hazardous Substances
2012 – 2021

Year	Category	Accident/Incident Location			
		Illinois	Vermilion County	Cook & Collar Counties	All Other Counties
2012	A	4	0	2	2
	B	13	0	11	2
	C	73	0	42	31
2013	A	5	0	3	2
	B	23	0	16	7
	C	82	2	51	29
2014	A	2	0	2	0
	B	36	0	22	14
	C	84	1	40	43
2015	A	4	0	3	1
	B	27	0	15	12
	C	69	2	36	31
2016	A	4	0	1	3
	B	14	0	6	8
	C	65	3	33	29
2017	A	2	0	1	1
	B	14	0	9	5
	C	69	2	34	33
2018	A	1	0	0	1
	B	8	0	4	4
	C	55	0	24	31
2019	A	6	0	4	2
	B	6	0	4	2
	C	33	0	12	21
2020	A	4	0	2	2
	B	7	0	5	2
	C	46	0	30	16
2021	A	4	0	2	2
	B	31	0	16	15
	C	29	0	13	16

Source: Illinois Commerce Commission

4.0 MITIGATION STRATEGY

The mitigation strategy identifies how participating jurisdictions are going to reduce or eliminate the potential loss of life and property damage that results from the natural hazards identified in the Risk Assessment section of this Plan. The strategy includes:

- Reviewing, re-evaluating, and updating the mitigation goals. Mitigation goals describe the objective(s) or desired outcome(s) that the participants would like to accomplish in terms of hazard and loss prevention. These goals are intended to reduce or eliminate long-term vulnerabilities to natural hazards.
- Evaluating the status of the existing mitigation actions and identifying a comprehensive range of jurisdiction-specific mitigation actions including those related to continued compliance with the National Flood Insurance Program (NFIP). Mitigation actions are projects, plans, activities, or programs that achieve at least one of the mitigation goals identified.
- Analyzing the existing and new mitigation actions identified for each jurisdiction. This analysis ensures each action will reduce or eliminate future losses associated with the hazards identified in the Risk Assessment section.
- Reviewing, re-evaluating, and updating the mitigation actions prioritization methodology. The prioritization methodology outlines the approach used to prioritize the implementation of each identified mitigation action.
- Identifying the entity(s) responsible for implementation and administration. For each mitigation action, the entity(s) responsible for implementing and administering that action is identified as well as the timeframes for completing the actions and potential funding sources.
- Conducting a preliminary cost/benefit analysis of each mitigation action. The qualitative cost/benefit analysis provides participants a general idea of which actions are likely to provide the greatest benefit based on the financial cost and staffing efforts needed.

As part of the Plan update, the mitigation strategy was reviewed and revised. A detailed discussion of each aspect of the mitigation strategy and any updates made is provided below.

4.1 MITIGATION GOALS REVIEW

As part of the Plan update process, the mitigation goals from the previous Plan were reviewed and re-evaluated. The previous list of mitigation goals was distributed to the Committee members at the first meeting on October 27, 2022. Members were asked to review the list before the second meeting and consider whether any changes needed to be made or if additional goals should be included. At the Committee's February 23, 2023 meeting the group discussed the previous list of goals and approved them with no changes. **Figure MIT-1** lists the approved mitigation goals.

Figure MIT-1 Mitigation Goals	
Goal 1	Lessen the impacts of hazards on new and existing infrastructure (buildings, roads, bridges, utilities, water supplies, sanitary sewer systems, etc.) in order to promote hazard-resistant communities.
Goal 2	Incorporate hazard mitigation strategies into existing and new community plans and regulations.
Goal 3	Develop long-term strategies to educate residents and businesses about the hazards affecting the County and the actions they can take before a hazard event occurs to protect themselves, as well as their households, homes, and businesses in an effort to encourage hazard resilience.
Goal 4	Protect the lives, health, safety, and welfare of the individuals living in the County from the dangers caused by natural and man-made hazards.
Goal 5	Place a priority on protecting community lifelines (i.e., safety and security; food, water, and shelter; health and medical; energy; communication; and transportation), public services, and schools.
Goal 6	Preserve and protect the rivers, streams, and floodplains in the County.
Goal 7	Ensure future development does not increase the vulnerability of hazard-prone areas within the County or create unintended exposures to natural and man-made hazards.
Goal 8	Protect historic, cultural, and natural resources from the effects of natural and man-made hazards.

4.2 EXISTING MITIGATION ACTIONS REVIEW

The Plan update process included a review and evaluation of the ***existing hazard mitigation actions*** listed in the original Plan. A copy of these original actions is included in **Appendix M**. A review of the existing hazard mitigation actions revealed the following shortcomings:

- ❖ Detailed descriptions of the actions to be implemented were not provided. Most of the actions identified did not have adequate project/activity descriptions and therefore failed to effectively communicate the solution to the problem of reducing future losses to those tasked with implementing the actions.
- ❖ Actions did not identify the specific entity(s) responsible for implementation. This created a situation in which the participating jurisdictions did not have a clear understanding of which department within their own jurisdiction was tasked with implementing the action and therefore no sense of responsibility or ownership of the action was taken.
- ❖ Actions were applied to non-participating jurisdictions. A few of the actions covered jurisdictions (such as local school districts) that did not participate in the development of the original Plan Update, and therefore should not have been assigned responsibility for implementation of mitigation actions. As a result, actions 125 through 131 and 136 through 138 were eliminated.
- ❖ Actions were not jurisdiction-specific. Actions for the County were adopted by several of the municipalities, including Fairmount, Georgetown, Oakwood, Rossville, and Tilton, no matter their level of interest, ability to implement or relevance to their jurisdiction.
- ❖ Actions already completed were included in the mitigation strategy. Several of the actions identified were already implemented prior to the completion and adoption of the Plan and therefore were eliminated. As a result, actions 119 and 120 were eliminated.

- ❖ Actions focused on emergency preparedness, response, or maintenance and not mitigation. Multiple actions identified were aimed at addressing emergency preparedness or response and not mitigation needs. As a result, actions 2, 6, 7, 9, 10, 11, 22, 47, 50, 52, 53, 55, 59, 88, 89, 93, 96, 97, 118, 122, 124, and 134 were eliminated.

The remaining existing mitigation actions were evaluated, assigned to the appropriate participating jurisdiction(s), and presented to the Planning Committee members for their review and evaluation at the second meeting held on February 23, 2023. Each participating jurisdiction was asked to identify those actions that were either in progress or that had been completed since the original Plan was prepared in 2014. They were also given the opportunity to eliminate any action on their specific list that they did not deem viable and/or practical for implementation.

Figures MIT-2 through **MIT-12**, located at the end of this section, summarize the results of this evaluation by jurisdiction. None of the participants identified changes in priorities since the previous Plan was approved. OSF HealthCare Sacred Heart Medical Center, Sidell Volunteer Fire Department, and Vermilion County Conservation District did not participate in the original Plan and therefore are not included in the summary. While Bismarck, Catlin, Hoopeston, Indianola, and Ridge Farm participated in the original Plan, they chose not to participate in the Plan update process and are not included in the summary.

4.3 NEW MITIGATION ACTION IDENTIFICATION

Following the review and evaluation of the existing mitigation actions, the Committee members were asked to consult with their respective jurisdictions to identify ***new, jurisdiction-specific mitigation actions***. Instead of focusing on all-inclusive actions covering multiple jurisdictions, participants were asked to identify mitigation actions that met the specific needs and risks associated with their jurisdiction.

Representatives of Vermilion County, Danville, Fairmount, Georgetown, Hoopeston, Muncie, and Oakwood were also asked to identify mitigation actions that would ensure their continued compliance with the National Flood Insurance Program. The compiled lists of new mitigation actions were then reviewed to assure the appropriateness and suitability of each action. Those actions that were not deemed appropriate and/or suitable were either reworded or eliminated.

4.4 MITIGATION ACTION ANALYSIS

Next, those existing mitigation actions retained, and the new mitigation actions identified were assigned to one of four broad mitigation activity categories that allowed Committee members to compare and consolidate similar actions. **Figure MIT-13** identifies each mitigation activity category and provides a brief description.

Each mitigation action was then analyzed to determine:

- ➢ the hazard or hazards being mitigated;
- ➢ the general size of the population affected (i.e., small, medium, or large), the participant's Social Vulnerability Index (SVI) ranking, status as a disadvantaged community per the Climate and Economic Justice Screening Tool (CEJST), as well as the participant's status as an Economically Disadvantaged Rural Community (EDRC);

- the goal or goals fulfilled;
- whether the action would reduce the effects on new or existing buildings and infrastructure; and
- whether the action would ensure continued compliance with the National Flood Insurance Program.

Figure MIT-13
Types of Mitigation Activities

Category	Description
Local Plans & Regulations (LP&R)	Local Plans & Regulations include actions that influence the way land and buildings are being developed and built. Examples include stormwater management plans, floodplain regulations, capital improvement projects, participation in the NFIP Community Rating System, comprehensive plans, and local ordinances (i.e., building codes, etc.)
Structure & Infrastructure Projects (S&IP)	Structure & Infrastructure Projects include actions that protect infrastructure and structures from a hazard or remove them from a hazard area. Examples include acquisition and elevation of structures in flood prone areas, burying utility lines to critical facilities, construction of community safe rooms, install "hardening" materials (i.e., impact resistant window film, hail resistant shingles/doors, etc.) and detention/retention structures.
Natural System Protection (NSP)	Natural System Protection includes actions that minimize damage and losses and also preserve or restore natural systems. Examples include sediment and erosion control, stream restoration and watershed management.
Education & Awareness Programs (E&A)	Education & Awareness Programs include actions to inform and educate citizens, elected officials and property owners about hazards and the potential ways to mitigate them. Examples include outreach/school programs, brochures, and handout materials, becoming a StormReady community, evacuation planning and drills, and volunteer activities (i.e., culvert cleanout days, initiatives to check in on the elderly/disabled during hazard events such as storms and extreme heat events, etc.)

Each mitigation action was also evaluated to determine whether it would mitigate risk to one or more of FEMA's seven Community Lifelines. Community Lifelines are the most fundamental services in the community that, when stabilized, enable all aspects of society to function. These fundamental services enable the continuous operation of critical government and business functions essential to human health and safety or economic security. The Community Lifelines include Safety & Security; Food, Water, Shelter; Health & Medical; Energy (Power & Fuel); Communications; Transportation; and Hazardous Materials. **Figure MIT-14** provides a brief description of each Community Lifeline.

4.5 MITIGATION ACTION PRIORITIZATION METHODOLOGY & COST/BENEFIT ANALYSIS REVIEW

The methodology applied to prioritize mitigation actions in the original Plan was reviewed by the Planning Committee as part of the Plan update process. The original prioritization methodology was based on the STAPLE+E planning factors (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) and applied a rating of high, medium, or low to each mitigation action.

Figure MIT-14 Community Lifelines	
Category	**Components/Subcomponents**
Safety & Security	- Law Enforcement/Security (police stations, law enforcement, site security, correctional facilities) - Fire Service (fire stations, firefighting resources) - Search & Rescue (local search & rescue) - Government Service (emergency operation centers, essential government functions, government offices, schools, public records, historic/cultural resources) - Community Safety (flood control, other hazards, protective actions)
Food, Water, Shelter	- Food [commercial food distribution, commercial food supply chain, food distribution programs (e.g., food banks)] - Water [drinking water utilities (intake, treatment, storage & distribution), wastewater systems, commercial water supply chain]; - Shelter [housing (e.g., homes, shelters), commercial facilities (e.g., hotels)]; - Agriculture (animals & agriculture)
Health & Medical	- Medical Care (hospitals, dialysis, pharmacies, long-term care facilities, VA health system, veterinary services, home care) - Patient Movement (emergency medical services) - Fatality Management (mortuary and post-mortuary services) - Public Health (epidemiological surveillance, laboratory, clinical guidance, assessment/interventions/treatments, human services, behavioral health) - Medical Supply Chain [blood/blood products, manufacturing (e.g., pharmaceutical, device, medical gases), distribution, critical clinical research, sterilization, raw materials]
Energy	- Power Grid (generation systems, transmission systems, distribution systems) - Fuel [refineries/fuel processing, fuel storage, pipelines, fuel distribution (e.g., gas stations, fuel points), off-shore oil platforms]
Communications	- Infrastructure [wireless, cable systems and wireline, broadcast (e.g., TV and radio), satellite, data centers/internet] - Alerts, Warnings, & Messages (local alert/warning ability, access to IPAWS, NAWAS terminals) - 911 & Dispatch (public safety answering points, dispatch) - Responder Communications (LMR networks) - Finance (banking services, electronic payment processing)
Transportation	- Highway/Roadway/Motor Vehicle (roads, bridges) - Mass Transit (bus, rail, ferry) - Railway (freight, passenger) - Aviation [commercial (e.g., cargo/passenger), general, military] - Maritime (waterways, ports and port facilities)
Hazardous Materials	- Facilities [oil/hazmat facilities (e.g., chemical, nuclear), oil/hazmat/toxic incidents from facilities] - Hazmat, Pollutants, Contaminants (oil/hazmat/toxic incidents from non-fixed facilities, radiological or nuclear incidents)

Taking into account the number and types of factors assessed and the complexity associated with the STAPLE+E analysis, the Planning Committee decided to replace the original prioritization methodology with one focused on key factors such as frequency of the hazard, degree of mitigation, cost/benefit utilization, and risk reduction to community lifelines. This updated prioritization methodology was presented to the Planning Committee members at the third meeting

held on May 18, 2023. The group reviewed and discussed the methodology and chose to approve it with no changes.

Figure MIT-15 identifies and describes the four-tiered prioritization methodology adopted by the Planning Committee. This methodology identifies which projects and activities maximize benefits and have a greater likelihood of reducing the long-term vulnerabilities associated with the most frequently-occurring natural hazards.

Figure MIT-15
Mitigation Action Prioritization Methodology

P1 High Priority	P2 Significant Priority	P3 Moderate Priority	P4 Important
- Mitigates risk to the most frequently occurring hazards (i.e., severe storms, severe winter storms, floods, excessive heat) - Action has the potential to virtually eliminate or significantly reduce hazard impacts - Mitigates risk to at least one community lifeline - Benefits exceed cost - Action meets multiple plan goals and/or projects life & health	- Mitigates risk to the most frequently occurring hazards (i.e., severe storms, severe winter storms, floods, excessive heat) - Action has the potential to reduce hazard impacts - May mitigate risk to a community lifeline - Benefit is equal to or exceeds cost - Action meets at least one plan goal	- Mitigates risk to the less frequently occurring hazards (i.e., extreme cold, tornadoes, drought, earthquakes, mine subsidence, dam failures) - Action has the potential to virtually eliminate or significantly reduce hazard impacts - Mitigates risk to at least one community lifeline - Benefits exceed cost - Action meets multiple plan goals and/or projects life & health	- Mitigates risk to the less frequently occurring hazards (i.e., extreme cold, tornadoes, drought, earthquakes, mine subsidence, dam failures) - Action has the potential to reduce hazard impacts - May mitigate risk to a community lifeline - Benefit is equal to or exceeds cost - Action meets at least one plan goal

While prioritizing the actions is useful and provides participants with additional information, it is important to keep in mind that implementing any the mitigation actions is desirable regardless of which prioritization category an action falls under.

In addition to weighing the cost of an action versus the benefits the action will produce as part of the prioritization methodology, a preliminary qualitative cost/benefit analysis was conducted on each mitigation action to demonstrate its monetary and non-monetary benefits and provide additional information that can be considered in each participant's decision-making process. The costs and benefits were analyzed in terms of the general overall cost to complete an action as well as the staffing efforted needed and the action's likelihood of virtually eliminating or significantly reducing the risk associated with a specific hazard. The general descriptors of high, medium, and low were used. These terms are not meant to translate into a specific dollar amount, but rather to provide a relative comparison between the actions identified by each jurisdiction.

This analysis is only meant to give the participants a starting point to compare which actions are likely to provide the greatest benefit. It was repeatedly communicated to the Planning Committee

members that when a grant application is submitted to IEMA/FEMA for a specific action, a detailed cost/benefit analysis will be required to receive funding.

4.6 MITIGATION ACTION IMPLEMENTATION & ADMINISTRATION

Finally, each participating jurisdiction was asked to identify how the mitigation actions will be implemented and administered. This included:

- identifying the party or parties responsible for oversight and administration;
- determining what funding source(s) are available or will be pursued; and
- describing the time frame for completion.

Oversight & Administration

It is important to keep in mind that some of the participating jurisdictions have limited capabilities related to organization and staffing for oversight and administration of the identified mitigation actions. Six of the ten participating municipalities are small in size, with populations of less than 1,500 individuals. In most cases these jurisdictions have minimal staff. Their organizational structure is such that most have very few offices and/or departments, generally limited to public works and water/sewer. Those in charge of the offices/departments often lack the technical expertise needed to individually oversee and administer the identified mitigation actions. As a result, most of the participating jurisdictions identified their governing body (i.e., village board, city council or board of trustees) as the entity responsible for oversight and administration simply because it is the only practical option given their organizational constraints. Other participants felt that oversight and administration fell under the purview of the entity's governing body (board/council) and not individual departments.

Funding Sources

While the Champaign County Regional Planning Commission has the ability to provide grant writing services to Vermilion County, most of the participants do not have staff with grant writing capabilities. As a result, assistance was needed in identifying possible funding sources for the identified mitigation actions. The consultant provided written information to the participants about FEMA and non-FEMA funding opportunities that have been used previously to finance mitigation actions. In addition, funding information was discussed with participants during Committee meetings and in one-on-one contacts so that an appropriate funding source could be identified for each mitigation action.

A handout was prepared and distributed that provided specific information on the non-FEMA grant sources available including the grant name, the government agency responsible for administering the grant, grant ceiling, contact person, and application period among other key points. Specific grants from the following agencies were identified: U.S. Department of Agricultural – Rural Development (USDA – RD), Illinois Department of Agriculture (IDOA), Illinois Department of Commerce and Economic Opportunity (DCEO), Illinois Environmental Protection Agency (IEPA), Illinois Department of Natural Resources (IDNR) and Illinois Department of Transportation (IDOT).

The funding source identified for each action is the most likely source to be pursued; however, if grant funding is unavailable through the most likely or other suggested sources, then implementation of medium and large-scale projects and activities is unlikely due to the budgetary

constraints experienced by most, if not all, of the participants due to their size, projected population growth and limited revenue streams. It is important to remember that the population for the entire County is approximately 75,000 individuals. Six of the ten participating municipalities are small in size, with populations of less than 1,500 individuals. Some of the jurisdictions struggle to maintain and provide the most critical of services to their residents. Additional funding is necessary if implementation is to be achieved.

Time Frame for Completion

The time frame for completion identified for each action is the timespan in which participants would like to see the action successfully completed. In most cases, the time frame identified is dependent on obtaining the necessary funding. As a result, a time range has been identified for many of the mitigation actions to allow for unpredictability in securing funds.

4.7 RESULTS OF MITIGATION STRATEGY

Figures MIT-16 through **MIT-29**, located at the end of this section, summarize the results of the mitigation strategy. The mitigation actions are arranged alphabetically by participating jurisdiction following the County and include both existing and new actions.

Figure MIT-2
Vermilion County – Status of Existing Mitigation Actions
(Sheet 1 of 5)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Back-up Generators Obtain emergency backup generators for the Courthouse, Administration Building, and other county-owned critical facilities and government buildings. (Mitigation Strategy No. 1)		✓				✓	
Procure a Back-up Water Supply Identify alternate water supply options for county residents. (Mitigation Strategy No. 3)	✓					✓	
Develop Alternate Traffic Routes Study and develop alternate traffic routes for choke points in the County such as Georgetown Road in the event of a HAZMAT incident. (Mitigation Strategy No. 4)	✓					✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the County's vulnerability nor did the County identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Vermilion County has two administrative activities in progress that have the potential to decrease the vulnerability of hazard prone areas to flooding. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The County also has one infrastructure project and five administrative activities completed or in progress. None of these projects or activities however will significantly change the vulnerability of hazard prone areas within the County.

Figure MIT-2
Vermilion County – Status of Existing Mitigation Actions
(Sheet 2 of 5)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Public Education/Awareness Raise public awareness of the risks to life and property associated with the natural and man-made hazards that impact the County and the proactive actions that can be taken to reduce risk through a Facebook page, local television channel and local radio. (Mitigation Strategy No. 5)		✓				✓	
Data Acquisition Implement a plan to gather damage information to ensure damage assessments are completed in a timely manner. (Mitigation Strategy No. 8)			✓	2022	EMA has implemented a new damage assessment protocol using iPads and software to send information straight to the State. Drone now available for damage assessments.		✓
Burn Ordinances Review and update current county-wide burn ordinance. (Mitigation Strategy No. 12)	✓						✓
Evaluate Water Source Sustainability Evaluate surface water levels and water quality trends in order to evaluate future water source sustainability. (Mitigation Strategy No. 13)	✓						✓

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the County's vulnerability nor did the County identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Vermilion County has two administrative activities in progress that have the potential to decrease the vulnerability of hazard prone areas to flooding. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The County also has one infrastructure project and five administrative activities completed or in progress. None of these projects or activities however will significantly change the vulnerability of hazard prone areas within the County.

Figure MIT-2
Vermilion County – Status of Existing Mitigation Actions
(Sheet 3 of 5)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Emergency Shelters Improve the County's emergency sheltering capabilities and capacity. (Mitigation Strategy No. 14)	✓					✓	
Institute a buy-out plan for repetitive loss properties Assist Danville in a buyout program at the Morin Addition and investigate the possibility of purchasing lowlands adjacent to the state and county parks to create a flood basin. (Mitigation Strategy No. 15)	✓						✓
Participate in the NFIP Continue to participate and meet all administrative requirements of the National Flood Insurance Program (NFIP). Hire part-time or full-time personnel to train county board members and other elected officials about the NFIP and how it affects the County. (Mitigation Strategy No. 16)	✓	✓				✓	✓
Floodplain Ordinance Review current floodplain ordinance to ensure it satisfies all requirements of the NFIP. (Mitigation Strategy No. 17)		✓				✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the County's vulnerability nor did the County identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Vermilion County has two administrative activities in progress that have the potential to decrease the vulnerability of hazard prone areas to flooding. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The County also has one infrastructure project and five administrative activities completed or in progress. None of these projects or activities however will significantly change the vulnerability of hazard prone areas within the County.

Figure MIT-2
Vermilion County – Status of Existing Mitigation Actions
(Sheet 4 of 5)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Update Countywide GIS Capabilities Upgrade GIS data layers to identify flood-prone areas and enhance floodplain management within the County. (Mitigation Strategy No. 18)			✓	2019	GIS consulting firm added the current NFIP map layer to our current GIS data layers for quick and accessible access to location and their relation to the floodplain.		✓
Flood Monitoring Install new stream gauge along the Little Vermilion River in Georgetown to enhance flood monitoring. (Mitigation Strategy No. 19)	✓						✓
Elevate Low-lying Roads Elevate low lying roads to lessen impacts from flooding. (Mitigation Strategy No. 20)	✓					✓	
Evaluate the Feasibility of Joining CRS Evaluate the feasibility of joining the NFIP Community Rating System program. The County wishes to help residents understand flood risk, improve flood maps and regulations to ensure safer development, protect existing development form flood damage, and prepare for floods with plans and warning systems. (Mitigation Strategy No. 21)	✓						✓

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the County's vulnerability nor did the County identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Vermilion County has two administrative activities in progress that have the potential to decrease the vulnerability of hazard prone areas to flooding. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The County also has one infrastructure project and five administrative activities completed or in progress. None of these projects or activities however will significantly change the vulnerability of hazard prone areas within the County.

Figure MIT-2
Vermilion County – Status of Existing Mitigation Actions
(Sheet 5 of 5)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Public Education/Awareness Continue Health Department's ongoing public education and awareness program to educate the public and disseminates information regarding all hazards. Information is provided to local and public radio and television regarding emergency warning and public service announcements. (Mitigation Strategy No. 132)		✓				✓	
NOAA Weather Radios Encourage use of NOAA all hazards radios in residences and businesses throughout unincorporated Vermilion County. (Mitigation Strategy No. 133)		✓				✓	
Special Needs Population List Create a database of access and functional needs individuals within the County. (Mitigation Strategy No. 135)			✓	2021	Database has been completed and available through MARPLOT mapping software. Additional address advisories for residents placed in 911 database for 911 operators.		✓

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the County's vulnerability nor did the County identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Vermilion County has two administrative activities in progress that have the potential to decrease the vulnerability of hazard prone areas to flooding. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The County also has one infrastructure project and five administrative activities completed or in progress. None of these projects or activities however will significantly change the vulnerability of hazard prone areas within the County.

Figure MIT-3
Danville – Status of Existing Mitigation Actions
(Sheet 1 of 2)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Backup Generators Purchase and install emergency backup generators at city-owned critical facilities and infrastructure. (Mitigation Strategy No. 41)		✓				✓	
Mutual Aid Agreements Develop mutual aid agreements with neighboring communities and fire/police departments to improve coordination and enhance mitigation activities within the City. (Mitigation Strategy No. 42)	✓					✓	
Cooling/Warming Shelters Increase warming/cooling sheltering capabilities and capacities in the City. Currently the City Hall and the fire stations are used as warming & cooling centers. (Mitigation Strategy No. 43)	✓					✓	
Property Acquisitions (buyouts) Acquire properties in flood-prone areas, such as Morin Addition, and remove any existing structures. (Mitigation Strategy No. 44)		✓				✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the City's vulnerability nor did the City identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Danville has one infrastructure project and one administrative activity in progress or completed that have the potential to decrease vulnerability of hazard prone areas to flooding. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The City also has an additional infrastructure project in progress that will not significantly change the vulnerability of hazard prone areas within the City.

Figure MIT-3
Danville – Status of Existing Mitigation Actions
(Sheet 2 of 2)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Floodplain Ordinance Review and update current floodplain ordinance to ensure it satisfies all requirements of the NFIP and helps mitigation against flood damages in new development. (Mitigation Strategy No. 45)		✓				✓	
Identification of Floodplain Structures Create a comprehensive list of flood-prone structures within the City. (Mitigation Strategy No. 46)	✓					✓	
Provide & Publicize Locations of Safe Rooms and/or Shelters Publicize the location of warming/cooling centers and emergency shelters to residents. (Mitigation Strategy No. 48)	✓					✓	
Install Tornado Safe Room Install community safe rooms within the City for use by area residents. (Mitigation Strategy No. 49)	✓					✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the City's vulnerability nor did the City identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Danville has one infrastructure project and one administrative activity in progress or completed that have the potential to decrease vulnerability of hazard prone areas to flooding. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The City also has an additional infrastructure project in progress that will not significantly change the vulnerability of hazard prone areas within the City.

Figure MIT-4
Fairmount – Status of Existing Mitigation Actions
(Sheet 1 of 2)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Back-up Generators Purchase and install emergency backup generators at village-owned critical facilities and infrastructure. (Mitigation Strategy No. 1)	✓					✓	
Procure a Back-up Water Supply Identify alternate water supply options for the Village. (Mitigation Strategy No. 3)	✓					✓	
Public Education/Awareness Raise public awareness of the risks to life and property associated with the natural and man-made hazards that impact the Village and the proactive actions that can be taken to reduce risk through a Facebook page, local television channel and local radio. (Mitigation Strategy No. 5)	✓					✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Fairmount has two administrative activities in progress that have the potential to decrease vulnerability of hazard prone areas to flooding. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions.

Figure MIT-4
Fairmount – Status of Existing Mitigation Actions
(Sheet 2 of 2)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Participate in the NFIP Continue to participate and meet all administrative requirements of the National Flood Insurance Program (NFIP). (Mitigation Strategy No. 16)		✓				✓	
Floodplain Ordinance Review current floodplain ordinance to ensure it satisfies all requirements of the NFIP. (Mitigation Strategy No. 17)		✓				✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Fairmount has two administrative activities in progress that have the potential to decrease vulnerability of hazard prone areas to flooding. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions.

Figure MIT-5
Fithian – Status of Existing Mitigation Actions
(Sheet 1 of 2)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Backup Generators Purchase and install emergency backup generators at the Village's drinking water and wastewater treatment plants. (Mitigation Strategy No. 51)	✓					✓	
Special Needs Population List Create a list of access and functional needs individuals within the Village. (Mitigation Strategy No. 54)	✓					✓	
Harden Existing Infrastructure Harden essential key infrastructure such as drinking water wells, the wastewater treatment plant, and lift stations to increase community resilience to natural hazard events and maintain continuity of government/operations. (Mitigation Strategy No. 56)	✓					✓	
Burn Ordinance Explore the possibility of adopting a burn ordinance. (Mitigation Strategy No. 57)	✓					✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Fithian has one infrastructure project progress that has the potential to decrease vulnerability of hazard prone areas with the Village. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions.

Figure MIT-5
Fithian – Status of Existing Mitigation Actions
(Sheet 2 of 2)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Cooling/Warming Shelters Increase warming/cooling sheltering capabilities and capacities in the Village. (Mitigation Strategy No. 58)	✓					✓	
Provide & Publicize Locations of Safe Rooms and/or Shelters Install community safe rooms within the Village for use by area residents. (Mitigation Strategy No. 60)	✓					✓	
Tree Management/Trimming Plan Trim and manage trees to minimize the number and duration of service disruptions and improve community resilience. (Mitigation Strategy No. 61)		✓			As budget allows, each year a number of trees are evaluated to trim or cut down due to being dead.	✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Fithian has one infrastructure project progress that has the potential to decrease vulnerability of hazard prone areas with the Village. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions.

Figure MIT-6
Georgetown – Status of Existing Mitigation Actions
(Sheet 1 of 2)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Back-up Generators Purchase and install emergency backup generators at village-owned critical facilities and infrastructure. (Mitigation Strategy No. 1)	✓						✓
Procure a Back-up Water Supply Identify alternate water supply options for the City. (Mitigation Strategy No. 3)	✓						✓
Public Education/Awareness Raise public awareness of the risks to life and property associated with the natural and man-made hazards that impact the City and the proactive actions that can be taken to reduce risk through a Facebook page, local television channel and local radio. (Mitigation Strategy No. 5)	✓						✓

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Georgetown has two administrative activities in progress that have the potential to decrease vulnerability of hazard prone areas to flooding. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions.

Figure MIT-6
Georgetown – Status of Existing Mitigation Actions
(Sheet 2 of 2)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Participate in the NFIP Continue to participate and meet all administrative requirements of the National Flood Insurance Program (NFIP). (Mitigation Strategy No. 16)		✓				✓	
Floodplain Ordinance Review current floodplain ordinance to ensure it satisfies all requirements of the NFIP. (Mitigation Strategy No. 17)		✓				✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Georgetown has two administrative activities in progress that have the potential to decrease vulnerability of hazard prone areas to flooding. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions.

Figure MIT-7
Hoopeston – Status of Existing Mitigation Actions
(Sheet 1 of 3)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Backup Generators Purchase and install emergency backup generators at city-owned critical facilities and infrastructure. (Mitigation Strategy No. 62)	✓					✓	
Mutual Aid Agreements Develop mutual aid agreements with neighboring communities and fire/police departments to improve coordination and enhance mitigation activities within the City. (Mitigation Strategy No. 63)			✓	2021	Completed a mutual aid agreement with Ford County.		✓
NOAA Weather Radios Purchase and distribute NOAA weather radios to residents. (Mitigation Strategy No. 64)	✓					✓	
Public Education/Awareness Form a committee to oversee the implementation of the City's mitigation actions. (Mitigation Strategy No. 65)	✓					✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the City's vulnerability nor did the City identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Hoopeston has two infrastructure projects and one administrative activity in progress or completed that have the potential to decrease vulnerability of hazard prone areas with the City. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions.

Figure MIT-7
Hoopeston – Status of Existing Mitigation Actions
(Sheet 2 of 3)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Special Needs Population List Create a list of access and functional needs individuals within the City. (Mitigation Strategy No. 66)	✓					✓	
Property Acquisitions Acquire properties in flood-prone areas and remove any existing structures. (Mitigation Strategy No. 67)		✓				✓	
Develop education materials on the benefits of the NFIP Distribute education materials on the National Flood Insurance Program and the benefits of participating to City residents. (Mitigation Strategy No. 68)	✓					✓	
Provide & Publicize Locations of Safe Rooms and/or Shelters Publicize the locations of community safe rooms and emergency shelters within the City. (Mitigation Strategy No. 69)	✓					✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the City's vulnerability nor did the City identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Hoopeston has two infrastructure projects and one administrative activity in progress or completed that have the potential to decrease vulnerability of hazard prone areas with the City. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions.

Figure MIT-7
Hoopeston – Status of Existing Mitigation Actions
(Sheet 3 of 3)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Tree Management/Trimming Plan Trim and manage trees to minimize the number and duration of service disruptions and improve community resilience. (Mitigation Strategy No. 70)		✓			Several trees have been trimmed or removed but additional trees are still needing to be remediated.	✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the City's vulnerability nor did the City identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Hoopeston has two infrastructure projects and one administrative activity in progress or completed that have the potential to decrease vulnerability of hazard prone areas with the City. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions.

Figure MIT-8
Muncie – Status of Existing Mitigation Actions
(Sheet 1 of 5)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Participate in the NFIP Continue to participate and meet all administrative requirements of the National Flood Insurance Program (NFIP). (Mitigation Strategy No. 71)		✓				✓	
Property Acquisitions Acquire properties in flood-prone areas and remove any existing structures. (Mitigation Strategy No. 72)	✓					✓	
Floodplain Ordinance Review and update current floodplain ordinance to ensure it satisfies all requirements of the NFIP. (Mitigation Strategy No. 73)		✓				✓	
Stormwater Management Upgrade the storm sewer system to increase storage and drainage capacity, better manage stormwater runoff, and ensure system resilience and functionality. (Mitigation Strategy No. 74)		✓				✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Muncie has two infrastructure projects and two administrative activities in progress that have the potential to decrease vulnerability of hazard prone areas with the Village. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The Village also has an additional infrastructure project and administrative activity in progress or completed that will not significantly change the vulnerability of hazard prone areas within the Village.

Figure MIT-8
Muncie – Status of Existing Mitigation Actions
(Sheet 2 of 5)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Stormwater Management Make improvements to the waterway located in south Muncie to divert water away from the middle of the Village, better manage stormwater runoff, and alleviate drainage/flooding problems. (Mitigation Strategy No. 75)	✓					✓	
Elevate Low-lying Roads Elevate low lying roads to prevent roadway overtopping and washouts from flooding. (Mitigation Strategy No. 76)	✓					✓	
Installation of Pumping Stations Install pumping stations near the railroad tracks to alleviate drainage/flooding problems. (Mitigation Strategy No. 77)	✓					✓	
Culvert Replacement in Floodplains Replace/upsize select culverts as needed to increase carrying capacity to alleviate recurring drainage problems and ensure system resilience. (Mitigation Strategy No. 78)	✓					✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Muncie has two infrastructure projects and two administrative activities in progress that have the potential to decrease vulnerability of hazard prone areas with the Village. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The Village also has an additional infrastructure project and administrative activity in progress or completed that will not significantly change the vulnerability of hazard prone areas within the Village.

Figure MIT-8
Muncie – Status of Existing Mitigation Actions
(Sheet 3 of 5)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Harden Existing Infrastructure Install a community safe room at the Village Hall for use by area residents. (Mitigation Strategy No. 79)	✓					✓	
Bury Power Lines Bury power lines within the Village to establish a resilient and reliable power supply and limit service disruptions. (Mitigation Strategy No. 80)	✓					✓	
Provide & Publicize Locations of Safe Rooms and/or Shelters Publicize the locations of community safe rooms within the Village as well as other locations within the County. (Mitigation Strategy No. 81)	✓					✓	
Backup Generators Purchase and install emergency backup generator at Village Hall. (Mitigation Strategy No. 82)	✓					✓	
Ordinance for Higher Construction Standards/ Techniques Develop an ordinance to implement higher construction standards for new development. (Mitigation Strategy No. 83)	✓					✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Muncie has two infrastructure projects and two administrative activities in progress that have the potential to decrease vulnerability of hazard prone areas with the Village. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The Village also has an additional infrastructure project and administrative activity in progress or completed that will not significantly change the vulnerability of hazard prone areas within the Village.

Figure MIT-8
Muncie – Status of Existing Mitigation Actions
(Sheet 4 of 5)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Tree Management Install landscape barriers along the southside of the Village to create a wind break to maintain access and ease hazardous driving conditions. (Mitigation Strategy No. 84)		✓				✓	
Emergency Alert System - Sirens Purchase and install a tornado siren. (Mitigation Strategy No. 85)		✓					✓
Install Snow Fences Install landscape barriers (living snow fences) along the south and west sides of the Village to limit blowing and drifting snow, maintain access and ease hazardous driving conditions. (Mitigation Strategy No. 86)	✓					✓	
Cooling/Warming Shelters Designate a warming/cooling center within the Village for use by area residents. (Mitigation Strategy No. 87)	✓					✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Muncie has two infrastructure projects and two administrative activities in progress that have the potential to decrease vulnerability of hazard prone areas with the Village. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The Village also has an additional infrastructure project and administrative activity in progress or completed that will not significantly change the vulnerability of hazard prone areas within the Village.

Figure MIT-8
Muncie – Status of Existing Mitigation Actions
(Sheet 5 of 5)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Burn Ordinance Develop and adopt a burn ordinance to prevent fires during dry conditions. (Mitigation Strategy No. 90)	✓					✓	
Mutual Aid Agreements Develop mutual aid agreements with neighboring communities and fire/police departments to improve coordination and enhance mitigation activities within the Village. (Mitigation Strategy No. 91)		✓				✓	
NOAA Weather Radios Purchase and distribute NOAA weather radios to residents. (Mitigation Strategy No. 92)	✓					✓	
Backup Water Source Construct public drinking water supply system, including water tower, for the Village to ensure community resilience to drought, alleviate public health concerns stemming from floodwater contamination of private wells and aid in fire suppression during natural hazard events. (Mitigation Strategy No. 94)	✓					✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Muncie has two infrastructure projects and two administrative activities in progress that have the potential to decrease vulnerability of hazard prone areas with the Village. It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The Village also has an additional infrastructure project and administrative activity in progress or completed that will not significantly change the vulnerability of hazard prone areas within the Village.

Figure MIT-9
Oakwood – Status of Existing Mitigation Actions
(Sheet 1 of 2)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Back-up Generators Purchase and install emergency backup generators at village-owned critical facilities and infrastructure. (Mitigation Strategy No. 1)		✓			Backup generator for the Village Hall was awarded to Glesco at the June 2023 board meeting. Work should be starting once all material has arrived.	✓	
Procure a Back-up Water Supply Identify alternate water supply options for the Village. (Mitigation Strategy No. 3)	✓						✓
Public Education/Awareness Raise public awareness of the risks to life and property associated with the natural and man-made hazards that impact the Village and the proactive actions that can be taken to reduce risk through a Facebook page, local television channel and local radio. (Mitigation Strategy No. 5)		✓			Facebook page has been setup and in use. The new website will launch shortly. Added a digital sign in middle of town that displays important information.	✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Oakwood has three administrative activities in progress that have the potential to decrease vulnerability of hazard prone areas with the Village (two of these activities would decrease vulnerability to flooding). It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The Village also has an additional infrastructure project and administrative activity in progress that will not significantly change the vulnerability of hazard prone areas within the Village.

Figure MIT-9
Oakwood – Status of Existing Mitigation Actions
(Sheet 2 of 2)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Evaluate Water Source Sustainability Evaluate surface water levels and water quality trends in order to evaluate future water source sustainability. (Mitigation Strategy No. 13)	✓				The Village no longer has any control over water. Prairie Path now owns the water and sewer in the Village.		✓
Participate in the NFIP Continue to participate and meet all administrative requirements of the National Flood Insurance Program (NFIP). (Mitigation Strategy No. 16)		✓				✓	
Floodplain Ordinance Review current floodplain ordinance to ensure it satisfies all requirements of the NFIP. (Mitigation Strategy No. 17)		✓				✓	
Develop Alternate Traffic Routes Study and develop alternate traffic routes to better manage started motorist and large trucks during severe winter storms. (Mitigation Strategy No. 95)		✓				✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Oakwood has three administrative activities in progress that have the potential to decrease vulnerability of hazard prone areas with the Village (two of these activities would decrease vulnerability to flooding). It is still too early to tell the degree of reduction that will be experienced from the implementation of these actions. The Village also has an additional infrastructure project and administrative activity in progress that will not significantly change the vulnerability of hazard prone areas within the Village.

Figure MIT-10
Rossville – Status of Existing Mitigation Actions

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Back-up Generators Purchase and install emergency backup generators at village-owned critical facilities and infrastructure. (Mitigation Strategy No. 1)		✓				✓	
Procure a Back-up Water Supply Identify alternate water supply options for the Village. (Mitigation Strategy No. 3)	✓					✓	
Public Education/Awareness Raise public awareness of the risks to life and property associated with the natural and man-made hazards that impact the Village and the proactive actions that can be taken to reduce risk through a Facebook page, local television channel and local radio. (Mitigation Strategy No. 5)	✓					✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Rossville has one infrastructure project in progress that will not significantly change the vulnerability of hazard prone areas within the Village.

Figure MIT-11
Sidell – Status of Existing Mitigation Actions
(Sheet 1 of 3)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Public Education/Awareness Distribute public information materials that inform residents about the risks to life and property associated with natural and man-made hazards and the proactive actions they can take to reduce their risk. (Mitigation Strategy No. 109)	✓						✓
Participate in the NFIP Research participation in the National Flood Insurance Program to explore the benefits and costs. (Mitigation Strategy No. 110)	✓					✓	
Stormwater Management Ordinances Develop and adopt a stormwater ordinance. (Mitigation Strategy No. 111)	✓					✓	
Floodplain Ordinance Develop and adopt a floodplain ordinance. (Mitigation Strategy No. 112)	✓						✓

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Sidell has completed one infrastructure project that will not significantly change the vulnerability of hazard prone areas within the Village.

Figure MIT-11
Sidell – Status of Existing Mitigation Actions
(Sheet 2 of 3)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Anchoring of Manufactured Homes & Exterior Attachments Develop and adopt an ordinance requiring all manufactured homes and trailers to have tie downs and work to enforce the ordinance. (Mitigation Strategy No. 113)	✓					✓	
Bury Power Lines Develop and adopt an ordinance requiring new construction to bury power lines to establish a resilient and reliable power supply and limit service disruptions. (Mitigation Strategy No. 114)	✓					✓	
Provide & Publicize Locations of Safe Rooms and/or Shelters Publicize the location of warming/cooling centers, community safe rooms and emergency shelters to Village residents. (Mitigation Strategy No. 115)	✓					✓	
Backup Generators Purchase and install emergency backup generators at village-owned critical facilities and infrastructure. (Mitigation Strategy No. 116)			✓	2016/2017	Generators were installed at Village Hall, Water Filtration Plant and all 3 wells		✓

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Sidell has completed one infrastructure project that will not significantly change the vulnerability of hazard prone areas within the Village.

Figure MIT-11
Sidell – Status of Existing Mitigation Actions
(Sheet 3 of 3)

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Cooling/Warming Shelters Designate additional warming/cooling centers to increase sheltering capabilities and capacities in the Village. (Mitigation Strategy No. 117)	✓					✓	
Mutual Aid Agreements Develop mutual aid agreements with neighboring communities to improve coordination and enhance mitigation activities within the Village. (Mitigation Strategy No. 121)	✓					✓	
Procure Backup Water Supply Identify alternate/backup drinking water supply options for the Village. (Mitigation Strategy No. 123)	✓					✓	

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Sidell has completed one infrastructure project that will not significantly change the vulnerability of hazard prone areas within the Village.

Figure MIT-12
Tilton – Status of Existing Mitigation Actions

Mitigation Action Description	Status of Mitigation Action			Year Completed	Summary/Details of Completed Action (i.e., location, scope, etc.)	Status of No/In Progress Actions	
	No Progress (✓)	In Progress (✓)	Completed (✓)			Included in Updated Action Plan (✓)	No Longer Relevant (✓)
Back-up Generators Purchase and install emergency backup generators at village-owned critical facilities and infrastructure. (Mitigation Strategy No. 1)			✓	2015	Generators at all buildings.		✓
Procure a Back-up Water Supply Identify alternate water supply options for the Village. (Mitigation Strategy No. 3)		✓				✓	
Public Education/Awareness Raise public awareness of the risks to life and property associated with the natural and man-made hazards that impact the Village and the proactive actions that can be taken to reduce risk through a Facebook page, local television channel and local radio. (Mitigation Strategy No. 5)			✓	Ongoing	We have automatic texts going out. We have webpage, Facebook, etc.		✓

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix M.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability nor did the Village identify any changes in priorities since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Tilton has one infrastructure project and one administrative activity in progress or completed that will not significantly change the vulnerability of hazard prone areas within the Village.

Figure MIT-16
Vermilion County Hazard Mitigation Actions
(Sheet 1 of 9)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Design and construct a new, electro-magnetic pulse-proof, multi-use facility to house the County's primary Emergency Operations Center (EOC), alternate 911 answering facility, resident emergency shelter, and EMA offices with its own redundant and backup power supply sources (i.e., generator, solar, etc.). This facility would serve as the central command and control facility for carrying out emergency management and ensuring the continuity of government/operations for the County during hazard events.	DF, EC, EH, EQ, F, MMH, MS, SS, SWS, T	C S&S	S&IP	Medium County SVI: 0.6582	Yes	---	1, 4, 5	P1/P3	High/High	County Board Chair County Board / EMA Director	5 years	County	New
Design and construct a community safe room (built to high wind standards and equipped with an emergency backup generator and HVAC system) that can also serve as warming/cooling centers for staff/park visitors at Forest Glen Preserve.	EC, EH, SS, T	FWS	S&IP	Medium County SVI: 0.6582	Yes	---	4	P1/P3	Medium/High	EMA Director / Vermilion County Conservation District Executive Director / Board of Trustees	5 years	County / District / FEMA HMGP BRIC / USDA – RD Critical Facilities Programs	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (approx. 21,400 individuals in unincorporated areas), projected population growth, and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-16
Vermilion County Hazard Mitigation Actions
(Sheet 2 of 9)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Secure a Memorandum of Agreement with the Vermilion County Conservation District to install storm warning sirens within their parks to establish Community Lifelines essential to human health and safety.	SS, T	---	LP&R	Small County SVI: 0.6582	---	---	4	P2/P4	Low/Medium	EMA Director / Vermilion County Conservation District Executive Director / Board of Trustees	3-5 years	County / District	New
Purchase and install storm warning sirens at Vermilion County Conservation District parks to establish Community Lifelines essential to human health and safety.	SS, T	---	S&IP E&A	Small County SVI: 0.6582	---	---	4	P1/P3	Medium/High	EMA Director / Vermilion County Conservation District Executive Director / Board of Trustees	5 years	County / District / FEMA BRIC HMGP / USDA – RD Critical Facilities Programs	New
Engage in a public awareness campaign to promote participation in the County's Everbridge SMS automated emergency notification system.	DF, EC, EH, EQ, F, MMH, MS, SS, SWS, T	C	E&A	Large County SVI: 0.6582	---	---	4	P2/P4	Low/High	EMA Director / ETSB Board	5 years	County	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (approx. 21,400 individuals in unincorporated areas), projected population growth, and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-16
Vermilion County Hazard Mitigation Actions
(Sheet 3 of 9)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Subscribe to an automated emergency notification system (i.e., reverse 911) to establish a Communications Community Lifeline.	DF, EC, EH, EQ, F, MMH, MS, SS, SWS, T	C	E&A	Large County SVI: 0.6582	---	---	4	P2/P4	Low/High	EMA Director / ETSB Board	5 years	County	New
Partner with Georgetown Lake Dam owner to develop an Emergency Action Plan (EAP) that identifies the extent (water depth, speed of onset, warning times, etc.) and location (inundation areas) of a potential dam failure to address data deficiencies.	DF	S&S	LP&R	Small County SVI: 0.6582	---	---	4	P4	Low/Medium	EMA Director	5 years	County / Dam Owner	New
Purchase portable, trailer-mounted message boards to alert the public of hazardous conditions associated with natural and man-made hazard events.	DF, EC, EH, EQ, F, MMH, MS, SS, SWS, T	C	E&A	Large County SVI: 0.6582	---	---	4	P2/P4	Medium/Medium	County Highway Engineer	2-5 years	County	New
Purchase additional road signage and barricades to alert motorists of hazardous conditions, detours, etc. associated with natural and man-made hazard events.	DF, EC, EH, EQ, F, MMH, MS, SS, SWS, T	C	E&A	Large County SVI: 0.6582	---	---	4	P2/P4	Medium/Medium	County Highway Engineer	2-5 years	County	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (approx. 21,400 individuals in unincorporated areas), projected population growth, and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-16
Vermilion County Hazard Mitigation Actions
(Sheet 4 of 9)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Purchase additional right-of-way at various locations within the County as needed to reshape ditches and waterways to alleviate drainage problems, improve carrying capacity, and ensure continued functionality of Community Lifelines.	F, SS	T	S&IP	Small County SVI: 0.6582	---	Yes	1, 5	P1	Medium/High	County Highway Engineer	2-5 years	County / Township / IDOT Local Roads	New
Upsize select crossroad culverts to increase carrying capacity, alleviate recurring drainage/flooding problems, and ensure system resilience and functionality.	F, SS	T	S&IP	Medium County SVI: 0.6582	---	Yes	1, 5	P2	Medium/High	County Highway Engineer	5-10 years	County / Township / IDOT Local Roads	New
Clean brush and debris out of ditches and culverts at various locations to maximize carrying/storage capacity, reduce/prevent drainage problems, and mitigate risk to Transportation Community Lifelines.	F, SS	T	S&IP	Medium County SVI: 0.6582	---	Yes	1, 5	P2	Low/Medium	County Highway Engineer	5-10 years	County	New
Coordinate with townships to address recurring flood problems within the County.	F, SS	T	E&A	Medium County SVI: 0.6582	---	---	1, 5	P2	Low/Medium	County Highway Engineer	5-10 years	County	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (approx. 21,400 individuals in unincorporated areas), projected population growth, and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-16
Vermilion County Hazard Mitigation Actions
(Sheet 5 of 9)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Develop a mobile app that provides County residents pertinent information on such topics as warming/cooling center and emergency shelter locations, tips on how to reduce the risk to life and property associated with the natural and man-made hazards that impact the County, and mapping of current and future hazard event risks in the County.	DR, DF, EC, EH, EQ, F, MMH, MS, SS, SWS, T	---	E&A	Large County SVI: 0.6582	---	---	4	P2/P4	Low/Medium	County Board Chair County Board / EMA Director / ETSB Board	5 years	County	New
Purchase and install outdoor warning sirens throughout the County to maximize the system's effectiveness and establish Community Lifelines essential to human health and safety. The sirens should be solar powered and include satellite connections to activation points. The system should include automated activation programming suitable for interface with the NWS for weather warnings.	SS, T	C	S&IP E&A	Large County SVI: 0.6582	---	---	4	P1/P3	Medium/High	County Board Chair County Board / EMA Director / ETSB Board	5 years	County / FEMA BRIC HMGP	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (approx. 21,400 individuals in unincorporated areas), projected population growth, and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-16
Vermilion County Hazard Mitigation Actions
(Sheet 6 of 9)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Purchase and install emergency backup generators at all towers on which County public safety radio antennas, repeaters, and enhancers are located to establish resilient and reliable power supplies, maintain continuity of operations, ensure system functionality, and mitigate risk to Community Lifelines.	EC, EH, EQ, F, MMH, MS, SS, SWS,T	C S&S	S&IP	Large County SVI: 0.6582	---	Yes	1, 5	P1/P3	Medium/High	County Board Chair County Board / EMA Director / ETSB Board	5 years	County / FEMA BRIC HMGP	New
Elevate major detour and evacuation routes above the base flood elevation to ensure continued functionality of Community Lifelines during heavy rain/flood events.	F, SS	T	S&IP	Small County SVI: 0.6582	---	Yes	1, 4, 5	P1	High/High	County Highway Engineer	5-10 years	County / FHWA PROTECT / FEMA FMA BRIC	Existing (2014) No. 20
Purchase and install emergency backup generators at the Courthouse, Administration Building, and other county-owned critical facilities and government buildings to establish resilient and reliable power supplies, maintain continuity of government/operations, and mitigate risk to Community Lifelines.	EC, EH, EQ, F, SS, SWS, T	C S&S T	S&IP	Medium County SVI: 0.6582	---	Yes	1, 5	P1/P3	Medium/High	County Board Chair County Board / EMA Director	5 years	County / FEMA HMGP BRIC	Existing (2014) No. 1

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (approx. 21,400 individuals in unincorporated areas), projected population growth, and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-16
Vermilion County Hazard Mitigation Actions
(Sheet 7 of 9)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Identify alternate/backup drinking water supply options for County residents to establish a constant and reliable supply of water for residents, ensure community resilience to drought, and alleviate public health concerns stemming from floodwater contamination of private wells.	DR, EQ, F, MMH, MS	FWS	E&A	Medium County SVI: 0.6582	---	---	1, 4, 5	P2/P4	Low/High	County Board Chair / County Board	5-10 years	County	Existing (2014) No. 3
Study and establish alternate emergency traffic routes for choke points in the County, such as Georgetown Road, to ensure functionality of Community Lifelines in the event of a hazardous materials incident.	MMH	S&S T	LP&R	Medium County SVI: 0.6582	---	Yes	2, 4, 5	P3	Low/High	EMA Director / County Highway Engineer	3-5 years	County	Existing (2014) No. 4
Raise public awareness of the risks to life and property associated with the natural and man-made hazards that impact the County and the proactive actions that can be taken to reduce risk through various media outlets, including Facebook, local television, and local radio.	DR, DF, EC, EH, EQ, F, MMH, MS, SS, SWS, T	---	E&A	Large County SVI: 0.6582	---	---	3, 4	P2/P4	Low/Medium	EMA Director / Public Health Administrator	2-5 years	County	Existing (2014) No. 5 / No. 132

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (approx. 21,400 individuals in unincorporated areas), projected population growth, and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-16
Vermilion County Hazard Mitigation Actions
(Sheet 8 of 9)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Coordinate with American Red Cross and local officials to improve the County's warming/cooling center capabilities and capacity.	EC, EH	FWS	LP&R	Small County SVI: 0.6582	---	---	4	P2/P4	Low/High	EMA Director	2-5 years	County	Existing (2014) No. 14
Encourage residences and businesses throughout unincorporated Vermilion County to use NOAA all hazards radios.	EC, EH, EQ, F, MMH, SS, SWS, T	C	E&A	Large County SVI: 0.6582	---	---	4	P1/P3	Low/High	Public Health Administrator	1-5 years	County	Existing (2014) No. 133
Continue to participate and meet all administrative requirements of the National Flood Insurance Program (NFIP).*	F	S&S	LP&R	Small County SVI: 0.6582	Yes	Yes	1, 4, 5, 6, 7	P1	Low/High	EMA Director / County Board	1-5 years	County	Existing (2014) No. 16

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (approx. 21,400 individuals in unincorporated areas), projected population growth, and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-16
Vermilion County Hazard Mitigation Actions
(Sheet 9 of 9)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Review new Flood Insurance Rate Maps (FIRMs) when they become available. Update the flood ordinance to exceed federal standards and reflect the revised FIRMs and present both for adoption. Enforce flood ordinance to ensure new development does not increase flood vulnerability or create unintended exposures to flooding.*	F	S&S	LP&R	Small County SVI: 0.6582	Yes	Yes	3, 4, 6, 7	P1	Low/High	EMA Director / County Board	1-5 years	County	Existing (2014) No. 17
Continue to make the most recent Flood Insurance Rate Maps available at the Emergency Management Agency's office to assist the public in considering where to construct new buildings.*	F	S&S	E&A	Small County SVI: 0.6582	Yes	---	3, 4, 6, 7	P2	Low/Medium	EMA Director	1-5 years	County	New
Continue to make County officials aware of the most recent Flood Insurance Rate Maps and issues related to construction in a floodplain.*	F	S&S	E&A	Small County SVI: 0.6582	Yes	---	3	P2	Low/Medium	EMA Director	1-5 years	County	New

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* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-17
Danville Hazard Mitigation Actions
(Sheet 1 of 11)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Designate the David S. Palmer Arena as a warming/cooling center for use by City residents to establish a Shelter Community Lifeline.	EC, EH	---	LP&R	Small SVI: 0.9248 CEJST: Yes EDRC: No	---	---	4	P2/P4	Low/High	Mayor / City Council	1 year	City	New
Purchase and install emergency backup generator at the David S. Palmer Arena, a designated warming/cooling center, to establish a resilient and reliable power supply, maintain operations during extended power outages, and mitigate risk to a Community Lifeline.	EC, EH	FWS	S&IP	Small SVI: 0.9248 CEJST: Yes EDRC: No	---	Yes	1, 4, 5	P1/P3	Medium/High	Mayor / City Council	1-2 years	City / FEMA HMGP BRIC	New
Purchase and install emergency backup generator at Danville Mass Transit Facility to establish a resilient and reliable power supply, maintain operations during extended power outages, and mitigate risk to a Community Lifeline.	EC, EH, EQ, F, MMH, SS, SWS, T	S&S	S&IP	Medium SVI: 0.9248 CEJST: Yes EDRC: No	---	Yes	1, 4, 5	P1/P3	Medium/High	Mass Transit Director	2 years	City / FEMA HMGP BRIC	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 29,500 individuals). The City works hard to maintain critical services to residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-17
Danville Hazard Mitigation Actions
(Sheet 2 of 11)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Review and update the City's stormwater master plan to reflect completed projects and identify future potential projects for flood mitigation.	F, SS	FWS S&S	LP&R	Medium SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	---	2, 5	P2	Low/Medium	Public Works Director	2-5 years	City	New
Construct the appropriate improvement(s)/ remedy(s) identified in updated stormwater master plan to alleviate drainage/flood problems, better manage stormwater runoff, and ensure overall system resilience and functionality.	F, SS	FWS S&S	S&IP NSP	Medium SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	Yes	Yes	1, 5	P1	High/High	Public Works Director	5-10 years	City / FEMA FMA BRIC / IEPA SRF – WPCLP	New
Remove debris/obstructions from bridge structures along Stoney Creek and Lick Creek within the City to maximize flow/carrying capacity, better manage stormwater runoff, and reduce/prevent drainage problems.	F, SS	T	S&IP	Small SVI: 0.5080 – 0.8879 CEJST: Yes EDRC: No	---	Yes	5, 6, 8	P2	Low/Medium	Public Works Director	5-7 years	City	New

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-17
Danville Hazard Mitigation Actions
(Sheet 3 of 11)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Install erosion control measures along slopes/abutments of select structures/roadways along Stoney Creek and Lick Creek within the City to address erosion and scour damage caused by repeated flood events and prevent future damage.	F, SS	T	S&IP	Small SVI: 0.5080 – 0.8879 CEJST: Yes EDRC: No	---	Yes	1, 5	P1	Medium/High	Public Works Director	5-7 years	City / IDOT Local Roads	New
Remove debris, vegetative overgrowth, and brush from Stoney Creek within the City to maximize flow/carrying capacity, better manage stormwater runoff, and reduce/prevent drainage problems.	F, SS	S&S	S&IP	Small SVI: 0.5080 – 0.7675 CEJST: Yes EDRC: No	---	Yes	5, 6, 8	P2	Low/Medium	Public Works Director	5-7 years	City	New
Install erosion protection measures/implement streambank stabilization techniques along Stoney Creek to mitigate bank erosion and scour, prevent future damage from occurring, and ensure the welfare and safety for potential trailway projects. Replace storm water outlets/outfalls as needed and install appropriately-sized riprap or boulders adjacent to discharge points to prevent additional scour.	F, SS	S&S	NSP S&IP	Small SVI: 0.5080 – 0.7675 CEJST: Yes EDRC: No	---	Yes	5, 6, 8	P1	Medium/Medium	Public Works Director	5-7 years	City / IDOA Stream Bank Stabilization & Restoration Program / FEMA FMA BRIC	New

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-17
Danville Hazard Mitigation Actions
(Sheet 4 of 11)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Remove debris, vegetative overgrowth, and brush from Lick Creek within the City to maximize flow/carrying capacity, better manage stormwater runoff, and reduce/prevent drainage problems.	F, SS	S&S	S&IP	Small SVI: 0.5080 – 0.8879 CEJST: Yes EDRC: No	---	Yes	5, 6, 8	P2	Low/Medium	Public Works Director	5-7 years	City	New
Install erosion protection measures/implement streambank stabilization techniques along Lick Creek to mitigate bank erosion and scour, prevent future damage from occurring, and ensure the welfare and safety for potential trailway projects. Replace storm water outlets/outfalls as needed and install appropriately-sized riprap or boulders adjacent to discharge points to prevent additional scour.	F, SS	S&S	NSP S&IP	Small SVI: 0.5080 – 0.8879 CEJST: Yes EDRC: No	---	Yes	5, 6, 8	P1	Medium/Medium	Public Works Director	5-7 years	City / IDOA Stream Bank Stabilization & Restoration Program / FEMA FMA BRIC	New
Remove Mill Street Bridge over North Fork Vermilion River at Ellsworth Park from the base floodplain to improve water conveyance and reduce potential flooding.	F, SS	S&S	NSP S&IP	Small SVI: 0.3928 CEJST: Yes EDRC: No o	---	Yes	6, 8	P1	Medium/High	Public Works Director	5 years	City / FEMA FMA	New

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-17
Danville Hazard Mitigation Actions
(Sheet 5 of 11)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Remove North Street Bridge over Stoney Creek from the base floodplain to improve water conveyance and reduce potential flooding.	F, SS	S&S	NSP S&IP	Small SVI: 0.7010 CEJST: Yes EDRC: No	---	Yes	6, 8	P1	Medium/High	Public Works Director	5 years	City / FEMA FMA	New
Conduct sanitary sewer evaluation survey on remaining uninspected sewer infrastructure locations to identify and eliminate sanitary and storm sewer cross connections.	F, SS	FWS	LP&R	Small SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	---	1, 5	P2	Medium/Medium	Public Works Director	5 years	City	New
Raise or remove all pump stations located within flood-prone areas to improve system resilience and ensure continued functionality of a Community Lifeline.	F, SS	FWS	S&IP	Medium SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	Yes	Yes	1, 5	P1	Medium/High	Public Works Director	5 years	City / FEMA FMA / IEPA SRF – PWSLP	New

§ Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 29,500 individuals). The City works hard to maintain critical services to residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
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F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
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HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-17
Danville Hazard Mitigation Actions
(Sheet 6 of 11)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Provide crossing protection (i.e., riprap, caging, etc.) for sanitary sewer infrastructure crossings that lie within creeks, ravines and roadways.	F, SS	FWS	S&IP	Small SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	Yes	1, 5	P1	Medium/High	Public Works Director	5 years	City / IEPA SRF – WPCLP	New
Review and update current Lift Station Contingency Plan to reflect updated lift station projects and provide updated technology to each system.	DR, EC, EH, EQ, F, MMH, MS, SS, SWS, T	FWS	LP&R S&IP	Medium SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	Yes	1, 5	P1/P3	Medium/Medium	Public Works Director	2-3 years	City	New
Conduct complete sanitary sewer system investigation, mapping, and assessment to identify locations where storm water infiltrates the system, obstructions or pipe failures have occurred, and infrastructure is under-sized to mitigate risk to a Community Lifeline.	F, SS	FWS	LP&R	Medium SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	---	1, 5	P2	Medium/Medium	Public Works Director	5-10 years	City	New

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-17
Danville Hazard Mitigation Actions
(Sheet 7 of 11)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Re-line/replace sanitary sewer line sections & mains to eliminate stormwater infiltration, prevent sewer overflows, and improve capacity, function, and reliability of the City's sewer system.	F, SS	FWS	S&IP	Medium SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	Yes	Yes	1, 5	P1	High/High	Public Works Director	5-10 years	City / IEPA SRF – WPCLP	New
Purchase P25-compliant interoperable land mobile radio system to allow City personnel to exchange critical communications across departments, agencies, and jurisdictions to maintain continuity of government/operations and ensure system resilience and functionality of a Community Lifeline.	DF, EC, EH, EQ, F, MMH, MS, SS, SWS, T	C	S&IP	Large SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	Yes	---	1, 4, 5	P1/P3	Medium/High	Fire Chief	1-3 years	City / FEMA BRIC HMGP	New
Coordinate with local food pantry(s) officials to designate specific food pantry(s) within the City that will endeavor to operate during prolonged power outages to increase food distribution capabilities and capacities and serve households experiencing food insecurity as the result of a hazard event.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	FWS	LP&R	Medium SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	---	1, 2, 4, 5	P2/P4	Low/Medium	Mayor / City Council	1-3 years	City	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 29,500 individuals). The City works hard to maintain critical services to residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-17
Danville Hazard Mitigation Actions
(Sheet 8 of 11)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Secure a Memorandum of Understanding with designated food panty(s) in the City to install electrical hookups (pigtails) and/or transfer switches for use with a portable emergency backup generator to ensure continued operations of a Community Lifeline during prolonged power outages.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	FWS	S&IP	Small SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	Yes	1, 4, 5	P1/P3	Low/High	Mayor / City Council	1-3 years	City	New
Purchase and install electrical hookups (pigtails) and/or transfer switches at designated food pantry(s) for use with a portable emergency backup generator to ensure continued operations of a Community Lifeline during prolonged power outages.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	FWS	S&IP	Small SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	Yes	1, 4, 5	P1/P3	Low/High	Mayor / City Council	2-5 years	City FEMA BRIC HMGP	New
Purchase and install emergency backup generators at city-owned critical facilities and infrastructure systems to establish resilient and reliable power supplies, maintain continuity of government/operations, and mitigate risk to Community Lifelines.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	C S&S T	S&IP	Medium SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	Yes	1, 5	P1/P3	Medium/High	Public Works Director	5 years	City / FEMA HMGP BRIC	Existing (20140 No. 41

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† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 29,500 individuals). The City works hard to maintain critical services to residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-17
Danville Hazard Mitigation Actions
(Sheet 9 of 11)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Develop mutual aid agreements with neighboring communities and fire/police departments to improve coordination and enhance mitigation activities within the City.	DF, EC, EH, EQ, F, MMH, MS, SS, SWS, T	S&S	LP&R	Large SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	Yes	Yes	1, 2, 4, 5	P1/P3	Low/Medium	Mayor City Council / Police Chief / Fire Chief	2-5 years	City	Existing (20140 No. 42
Increase warming/cooling sheltering capabilities and capacities in the City. Currently only City Hall and the fire stations are used as warming & cooling centers.	EC, EH	FWS	LP&R	Medium SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	---	4	P1/P3	Low/High	Mayor / City Council	5 years	City	Existing (20140 No. 43
Publicize the location of warming/cooling centers and emergency shelters.	DF, EC, EH, EQ, F, MMH, MS, SS, SWS, T	---	E&A	Large SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	---	4	P1/P3	Low/Medium	Mayor / City Council	1-5 years	City	Existing (20140 No. 48

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† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 29,500 individuals). The City works hard to maintain critical services to residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-17
Danville Hazard Mitigation Actions
(Sheet 10 of 11)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Retrofit existing city-owned buildings and/or construct new stand-alone structures to serve as community safe rooms for use by City residents to establish Community Lifelines.	SS, T	FWS	S&IP	Small SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	Yes	Yes	4	P1/P3	High/High	Mayor City Council / Public Works Director	5-10 years	City / FEMA HMGP BRIC	Existing (20140 No. 49
Create a comprehensive list of flood-prone structures within the City.*	F	S&S	E&A	Small SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	Yes	3, 4	P2	Low/Medium	Community Development Director / Public Works Director	2-5 years	City	Existing (20140 No. 46
Acquire properties in flood-prone areas, such as Morin Addition, and remove any existing structures.*	F	S&S	S&IP NSP	Small SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	---	Yes	2, 4, 6	P1	Medium/High	Mayor City Council / Public Works Director	5-10 years	City / FEMA FMA BRIC	Existing (20140 No. 44

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† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 29,500 individuals). The City works hard to maintain critical services to residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-17
Danville Hazard Mitigation Actions
(Sheet 11 of 11)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Review new Flood Insurance Rate Maps (FIRMs) when they become available. Update the flood ordinance to exceed federal standards and reflect the revised FIRMs and present both for adoption. Enforce flood ordinance to ensure new development does not increase flood vulnerability or create unintended exposures to flooding.*	F	S&S	LP&R	Small SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	Yes	Yes	3, 4, 6, 7	P1	Low/High	Mayor City Council / Community Development Director	1-5 years	City	Existing (2014) No. 45
Continue to make the most recent Flood Insurance Rate Maps available at the Planning & Zoning Division's office to assist the public in considering where to construct new buildings.*	F	S&S	E&A	Small SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	Yes	---	3, 4, 6, 7	P2	Low/Medium	Community Development Director	1-5 years	City	New
Continue to make City officials aware of the most recent Flood Insurance Rate Maps and issues related to construction in a floodplain.*	F	S&S	E&A	Small SVI: 0.0684 – 0.9248 CEJST: Yes EDRC: No	Yes	---	3	P2	Low/Medium	Community Development Director	1-5 years	City	New

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* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-18
Fairmount Hazard Mitigation Actions
(Sheet 1 of 5)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Purchase and install a 3-phase stand-alone emergency backup generator at the drinking water treatment plant to operate the entire treatment facility and well pump #1 to establish a resilient and reliable power supply, maintain continuity of operations, and mitigate risk to a Community Lifeline.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	FWS	S&IP	Small SVI: 0.1679 CEJST: No EDRC: Yes	---	Yes	1, 4, 5	P1/P3	High/High	President Village Board / Public Works Superintendent	2-5 years	Village / FEMA HMGP BRIC / USDA – RD Critical Facilities Programs	New
Purchase a portable gasoline-powered emergency backup generator for use at well pump #2, located west of the Village, to establish a resilient and reliable power supply, maintain continuity of operations, and mitigate risk to a Community Lifeline.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	FWS	S&IP	Small SVI: 0.1679 CEJST: No EDRC: Yes	---	Yes	1, 4, 5	P1/P3	Medium/High	President Village Board / Public Works Superintendent	2-5 years	Village / FEMA HMGP BRIC / USDA – RD Critical Facilities Programs	New

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-18
Fairmount Hazard Mitigation Actions
(Sheet 2 of 5)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Upgrade drinking water system (water lines, mains, hydrants, pumping system, etc.) within the Village to increase system resilience, ensure a constant supply of water for residents, and aid in fire suppression during hazard events.	EC, EH, EQ, F, MMH, SS, SWS, T	FWS	S&IP	Large SVI: 0.1679 CEJST: No EDRC: Yes	Yes	Yes	1, 4, 5	P1/P3	High/High	President Village Board / Public Works Supervisor / FD Chief	1-5 years	Village / USDA – RD Water & Waste Disposal Program / IEPA SRF – PWSLP	New
Harden essential key infrastructure such as drinking water wells, the wastewater treatment plant, and lift stations to increase system resilience, maintain continuity of government/operations, and mitigate risk to Community Lifelines.	EC, EH, EQ, F, MMH, SS, SWS, T	FWS	S&IP	Large SVI: 0.1679 CEJST: No EDRC: Yes	--	Yes	1, 5	P1/P4	High/High	President Village Board / Public Works Supervisor	1-5 years	Village / FEMA HMGP BRIC / USDA – RD Water & Waste Disposal Program	New

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
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EQ	Earthquake	SWS	Severe Winter Storm
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Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-18
Fairmount Hazard Mitigation Actions
(Sheet 3 of 5)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Purchase and install emergency backup generators at village-owned critical facilities and infrastructure systems to establish resilient and reliable power supplies, maintain continuity of government/operations, and mitigate risk to Community Lifelines.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	C S&S T	S&IP	Small SVI: 0.1679 CEJST: No EDRC: Yes	---	Yes	1, 5	P1	Medium/High	President Village Board / Public Works Superintendent	5 years	Village / FEMA HMGP BRIC / USDA – RD Critical Facilities Programs	Existing (2014) No. 1
Identify an alternate/backup drinking water supply option for the Village to establish a constant and reliable supply of water for residents, ensure community resilience to drought, and aid in fire suppression during hazard events.	DR, EC, EH, EQ, F, MMH, MS, SS, SWS, T	FWS	LP&R	Large SVI: 0.1679 CEJST: No EDRC: Yes	---	---	1, 4, 5	P2	Low/High	President Village Board / Public Works Superintendent	5-10 years	Village	Existing (2014) No. 3
Raise public awareness of the risks to life and property associated with the natural and man-made hazards that impact the Village and the proactive actions that can be taken to reduce risk through various media outlets, including Facebook, local television, and local radio.	DR, EC, EH, EQ, F, MMH, MS, SS, SWS, T	---	E&A	Small SVI: 0.1679 CEJST: No EDRC: Yes	---	---	3, 4	P2	Low/Medium	President / Village Board	2-5 years	Village	Existing (2014) No. 5

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-18
Fairmount Hazard Mitigation Actions
(Sheet 4 of 5)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Continue to participate and meet all administrative requirements of the National Flood Insurance Program (NFIP).*	F	S&S	LP&R	Small SVI: 0.1679 CEJST: No EDRC: Yes	Yes	Yes	1, 4, 5, 6, 7	P1	Low/Medium	President / Village Board	1-5 years	Village	Existing (2014) No. 16
Review new Flood Insurance Rate Maps (FIRMs) when they become available. Update the flood ordinance to exceed federal standards and reflect the revised FIRMs and present both for adoption. Enforce flood ordinance to ensure new development does not increase flood vulnerability or create unintended exposures to flooding.*	F	S&S	LP&R	Small SVI: 0.1679 CEJST: No EDRC: Yes	Yes	Yes	3, 4, 6, 7	P1	Low/Medium	President / Village Board	1-5 years	Village	Existing (2014) No. 17
Continue to make the most recent Flood Insurance Rate Maps available at the Village Clerk's Office to assist the public in considering where to construct new buildings.*	F	S&S	E&A	Small SVI: 0.1679 EDRC: Yes	Yes	---	3, 4, 6, 7	P2	Low/Low	President / Village Clerk	1-5 years	Village	New

§ Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 630 individuals). The Village works hard to provide even the most critical of services to its residents, but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-18
Fairmount Hazard Mitigation Actions
(Sheet 5 of 5)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Continue to make Village officials aware of the most recent Flood Insurance Rate Maps and issues related to construction in a floodplain.*	F	S&S	E&A	Small SVI: 0.1679 CEJST: No EDRC: Yes	Yes	---	3	P2	Low/Low	President / Village Clerk	1-5 years	Village	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 630 individuals). The Village works hard to provide even the most critical of services to its residents, but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-19
Fithian Hazard Mitigation Actions
(Sheet 1 of 4)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Upgrade the storm sewer system to eliminate stormwater infiltration, increase storage and draining capacity, ensure system resilience and functionality, and better manage stormwater runoff in an effort to address recurring heavy rain/flood events that overwhelm the system.	F, SS	FWS	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 5	P1	High/High	President Village Board / Water/Sewer Superintendent	5 years	Village / IEPA SRF – WPCLP / USDA – RD Water & Waste Disposal Program	New
Conduct sanitary sewer line reconnaissance study to identify locations where storm water infiltrates the system and mitigate risk to a Community Lifeline.	F, SS	FWS	LP&R	Medium SVI: 0.4034 CEJST: No EDRC: No	---	---	1, 5	P2	Medium/Medium	President Village Board / Water/Sewer Superintendent	2-4 years	Village	New

§ Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 550 individuals). The Village works hard to provide even the most critical of services to its residents, but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

EC	Extreme Cold	MMH	Man-Made Hazard
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-19
Fithian Hazard Mitigation Actions
(Sheet 2 of 4)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Upgrade drinking water system (water lines, mains, hydrants, pumping system, etc.) within the Village to increase system resilience, ensure a constant supply of water for residents, and aid in fire suppression during hazard events.	EC, EH, EQ, F, MMH, SS, SWS, T	FWS	S&IP	Large SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 4, 5	P1/P3	High/High	President Village Board / Water/Sewer Superintendent	1-5 years	Village / USDA – RD Water & Waste Disposal Program / IEPA SRF – PWSLP	New
Designate warming/cooling centers within the Village to increase sheltering capabilities and capacities.	EC, EH	---	LP&R	Medium SVI: 0.4034 CEJST: No EDRC: No	---	---	4	P2/P4	Low/High	President / Village Board	2-4 years	Village	New

§ Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 550 individuals). The Village works hard to provide even the most critical of services to its residents, but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

EC	Extreme Cold	MMH	Man-Made Hazard
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-19
Fithian Hazard Mitigation Actions
(Sheet 3 of 4)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Purchase and install emergency backup generators at the Village's drinking water and wastewater treatment plants to establish resilient and reliable power supplies, maintain continuity of government/operations, and mitigate risk to Community Lifelines.	EC, EH, EQ, F, MMH, SS, SWS, T	FWS	S&IP	Small SVI: 0.4034 CEJST: No EDRC: No	--	Yes	1, 5	P1/P3	Medium/High	President Village Board / Water/Sewer Superintendent	5 years	Village / FEMA HMGP BRIC / USDA – RD Critical Facilities Programs	Existing (2014) No. 51
Develop a list of access and functional needs populations within the Village in order to identify the best method(s) to alert these individuals of hazard events.	EC, EH, EQ, F, MMH, SS, SWS, T	C	E&A LP&R	Small SVI: 0.4034 CEJST: No EDRC: No	---	---	4	P2/P4	Low/High	President / Village Board	2-5 years	Village	Existing (2014) No. 54
Harden essential key infrastructure such as drinking water wells, the wastewater treatment plant, and lift stations to increase system resilience, maintain continuity of government/operations, and mitigate risk to Community Lifelines.	EC, EH, EQ, F, MMH, SS, SWS, T	FWS	S&IP	Large SVI: 0.4034 CEJST: No EDRC: No	--	Yes	1, 5	P1/P4	High/High	President Village Board / Water/Sewer Superintendent	5-10 years	Village / FEMA HMGP BRIC / USDA – RD Water & Waste Disposal Program	Existing (2014) No. 56

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 550 individuals). The Village works hard to provide even the most critical of services to its residents, but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

EC	Extreme Cold	MMH	Man-Made Hazard
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-19
Fithian Hazard Mitigation Actions
(Sheet 4 of 4)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Explore the possibility of developing and adopting a burn ordinance.	DR	S&S	LP&R	Large SVI: 0.4034 CEJST: No EDRC: No	---	---	2	P4	Low/Medium	President / Village Board	2-5 years	Village	Existing (2014) No. 57
Increase warming/cooling sheltering capabilities and capacities in the Village.	EC, EH	FWS	LP&R	Medium SVI: 0.4034 CEJST: No EDRC: No	---	---	4	P1/P3	Low/High	President / Village Board	2-5 years	Village	Existing (2014) No. 58
Retrofit an existing Village-owned building and/or construct a new stand-alone structure to serve as community safe room for use by Village residents to establish a Community Lifeline.	SS, T	FWS	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	4	P1/P3	High/High	President / Village Board	5-10 years	Village / FEMA HMGP BRIC	Existing (2014) No. 60
Trim and manage trees to minimize the number and duration of service disruptions, improve community resilience, and mitigate risk to Community Lifelines.	SS, SWS, T	C E T	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 4, 5	P1/P3	Medium/Medium	President / Village Board	1-5 years	Village	Existing (2014) No. 61

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 550 individuals). The Village works hard to provide even the most critical of services to its residents, but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

EC	Extreme Cold	MMH	Man-Made Hazard
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-20
Georgetown Hazard Mitigation Actions
(Sheet 1 of 3)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Purchase and install additional storm warning sirens in areas without alert coverage to maximize the system's effectiveness and establish Community Lifelines essential to human health and safety.	SS, T	C	S&IP E&A	Medium SVI: 0.2890 CEJST: Yes EDRC: No	---	---	4	P1/P3	Medium/High	Mayor City Council / City Superintendent	1-2 years	City / FEMA BRIC HMGP / USDA – RD Critical Facilities Program	New
Harden the drinking water pump station to increase system resilience, maintain continuity of operations, and ensure continued functionality of a Community Lifeline.	MMH	FWS	S&IP	Large SVI: 0.2890 CEJST: Yes EDRC: No	---	Yes	1, 4, 5	P3	Medium/Medium	Mayor City Council / City Superintendent	1 year	City / USDA – RD Critical Facilities Program / FEMA HMGP	New
Make public information materials available to residents that detail the risk to life and property associated with the natural and man-made hazards that impact the City and the proactive approaches they can take to reduce their risk.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	---	E&A	Large SVI: 0.2890 CEJST: Yes EDRC: No	---	---	3, 4	P2/P4	Low/Medium	Mayor City Council / City Superintendent	1-5 years	City	New

§ Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 3,200 individuals). The City works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado
MMH	Man-Made Hazard		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-20
Georgetown Hazard Mitigation Actions
(Sheet 2 of 3)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Continue to participate and meet all administrative requirements of the National Flood Insurance Program (NFIP).*	F	S&S	LP&R	Small SVI: 0.2890 CEJST: Yes EDRC: No	Yes	Yes	1, 4, 5, 6, 7	P1	Low/Medium	Mayor City Council / Building Inspector	1-5 years	City	Existing (2014) No. 16
Review new Flood Insurance Rate Maps (FIRMs) when they become available. Update the flood ordinance to exceed federal standards and reflect the revised FIRMs and present both for adoption. Enforce flood ordinance to ensure new development does not increase flood vulnerability or create unintended exposures to flooding.*	F	S&S	LP&R	Small SVI: 0.2890 CEJST: Yes EDRC: No	Yes	Yes	3, 4, 6, 7	P1	Low/Medium	Mayor City Council / Building Inspector	1-5 years	City	Existing (2014) No. 17
Continue to make the most recent Flood Insurance Rate Maps available at the Building Permits & Inspections Department's office to assist the public in considering where to construct new buildings.*	F	S&S	E&A	Small SVI: 0.2890 CEJST: Yes EDRC: No	Yes	---	3, 4, 6, 7	P2	Low/Low	Building Inspector	1-5 years	City	New

§ Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 3,200 individuals). The City works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado
MMH	Man-Made Hazard		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-20
Georgetown Hazard Mitigation Actions
(Sheet 3 of 3)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Continue to make City officials aware of the most recent Flood Insurance Rate Maps and issues related to construction in a floodplain.*	F	S&S	E&A	Small SVI: 0.2890 CEJST: Yes EDRC: No	Yes	---	3	P2	Low/Low	Building Inspector	1-5 years	City	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

[†] Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 3,200 individuals). The City works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado
MMH	Man-Made Hazard		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-21
Hoopeston Hazard Mitigation Actions
(Sheet 1 of 4)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Install a new storm warning siren and additional sirens in underserved areas to maximize the system's effectiveness and establish/ensure continued operation of a Community Lifeline essential to human health and safety.	SS, T	C	S&IP E&A	Large SVI: 0.8322 CEJST: Yes EDRC: No	---	---	4	P3	Medium/High	EMA Director	1 year	City / FEMA BRIC HMGP / USDA – RD Critical Facilities Program	New
Purchase and install an automatic emergency backup generator at the City-designated emergency shelter to establish a resilient and reliable power supply, ensure continuity of operations and mitigate risk to a Community Lifeline.	EC, EH, EQ, F, MMH, SS, SWS, T	FWS	S&IP	Small SVI: 0.8322 CEJST: Yes EDRC: No	---	Yes	1, 4, 5	P1	Medium/High	EMA Director / Parks Superintendent	2-5 years	City / USDA – RD Critical Facilities Program	New
Purchase and install emergency backup generators at City-owned critical facilities and infrastructure systems to establish resilient and reliable power supplies, maintain continuity of government/operations, and mitigate risk to Community Lifelines.	EC, EH, EQ, F, MMH, SS, SWS, T	C S&S T	S&IP	Small SVI: 0.8322 CEJST: Yes EDRC: No	---	Yes	1, 5	P1	Medium/High	Mayor City Council / EMA Director	5 years	City / FEMA HMGP BRIC	Existing (2014) No. 62

§ Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 5,200 individuals). The City works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

EC	Extreme Cold	MMH	Man-Made Hazard
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-21
Hoopeston Hazard Mitigation Actions
(Sheet 2 of 4)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Purchase and distribute NOAA weather radios to City residents to establish a Communications Community Lifeline.	EC, EH, EQ, F, MMH, SS, SWS, T	---	E&A	Medium SVI: 0.8322 CEJST: Yes EDRC: No	---	---	4	P2	Low/High	EMA Director	2-5 years	City	Existing (2014) No. 64
Form a committee to oversee the implementation of the City's mitigation actions.	EC, EH, EQ, F, MMH, SS, SWS, T	---	LP&R	Medium SVI: 0.8322 CEJST: Yes EDRC: No	---	---	1, 2, 5, 6	P2	Low/Medium	Mayor City Council / EMA Director	1-3 years	City	Existing (2014) No. 65
Develop a list of access and functional needs populations within the City in order to identify the best method(s) to alert these individuals of hazard events.	EC, EH, EQ, F, MMH, SS, SWS, T	S&S	E&A LP&R	Small SVI: 0.8322 CEJST: Yes EDRC: No	---	---	4	P2	Low/High	EMA Director	2-5 years	City	Existing (2014) No. 66

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† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 5,200 individuals). The City works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

EC	Extreme Cold	MMH	Man-Made Hazard
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-21
Hoopeston Hazard Mitigation Actions
(Sheet 3 of 4)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Publicize the locations of community safe rooms, warming/cooling centers, and emergency shelters within the City.	EC, EH, EQ, F, MMH, SS, SWS, T	---	E&A	Large SVI: 0.8322 CEJST: Yes EDRC: No	---	---	4	P1	Low/Medium	EMA Director	1-5 years	City	Existing (2014) No. 69
Trim and manage trees to minimize the number and duration of service disruptions, improve community resilience, and mitigate risk to Community Lifelines.	SS, SWS, T	C E T	S&IP	Medium SVI: 0.8322 CEJST: Yes EDRC: No	Yes	Yes	1, 4, 5	P1	Medium/Medium	Mayor / City Council	1-5 years	City	Existing (2014) No. 70
Acquire properties in flood-prone areas and remove any existing structures.*	F	S&S	S&IP NSP	Small SVI: 0.8322 CEJST: Yes EDRC: No	---	Yes	2, 4, 6	P1	Medium/High	Mayor City Council / EMA Director	5-10 years	City / FEMA FMA BRIC	Existing (2014) No. 67
Distribute education materials to City residents on the benefits of participating in National Flood Insurance Program.*	F	S&S	E&A	Small SVI: 0.8322 CEJST: Yes EDRC: No	Yes	Yes	3	P2	Low/Low	Building Inspector	1-5 years	City	Existing (2014) No. 68

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* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

EC	Extreme Cold	MMH	Man-Made Hazard
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-21
Hoopeston Hazard Mitigation Actions
(Sheet 4 of 4)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Review new Flood Insurance Rate Maps (FIRMs) when they become available. Update the flood ordinance to exceed federal standards and reflect the revised FIRMs and present both for adoption. Enforce flood ordinance to ensure new development does not increase flood vulnerability or create unintended exposures to flooding.*	F	S&S	LP&R	Small SVI: 0.8322 CEJST: Yes EDRC: No	Yes	Yes	3, 4, 6, 7	P1	Low/Medium	Mayor City Council / Building Inspector	1-5 years	City	New
Continue to make the most recent Flood Insurance Rate Maps available at the City Clerk's Office to assist the public in considering where to construct new buildings.*	F	S&S	E&A	Small SVI: 0.8322 CEJST: Yes EDRC: No	Yes	---	3, 4, 6, 7	P2	Low/Low	Building Inspector	1-5 years	City	New
Continue to make City officials aware of the most recent Flood Insurance Rate Maps and issues related to construction in a floodplain.*	F	S&S	E&A	Small SVI: 0.8322 CEJST: Yes EDRC: No	Yes	---	3	P2	Low/Low	Building Inspector	1-5 years	City	New

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* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

EC	Extreme Cold	MMH	Man-Made Hazard
EH	Excessive Heat	SS	Severe Storms
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F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-22
Muncie Hazard Mitigation Actions
(Sheet 1 of 7)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Trim and manage trees to minimize the number and duration of service disruptions, improve community resilience, and mitigate risk to Community Lifelines.	SS, SWS, T	C E T	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 4, 5	P1/P3	Medium/Medium	President / Village Board	1-5 years	Village	New
Designate the Village Hall as a warming/cooling center and emergency shelter for use by Village residents.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	---	LP&R	Small SVI: 0.4034 CEJST: No EDRC: No	---	---	4	P2/P4	Low/High	President / Village Board	1-2 years	Village	Existing (2014) No. 87
Purchase and install emergency backup generator at Village Hall, a designated warming/cooling center and emergency shelter, to establish a resilient and reliable power supply, maintain operations during extended power outages, and mitigate risk to a Community Lifeline.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	C FWS S&S	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	---	Yes	1, 4, 5	P1/P3	High/High	President / Village Board	2-5 years	Village / FEMA HMGP BRIC / USDA – RD Critical Facilities Programs	Existing (2014) No. 82

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-22
Muncie Hazard Mitigation Actions
(Sheet 2 of 7)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Upgrade the storm sewer system to eliminate stormwater infiltration, increase storage and drainage capacity, better manage stormwater runoff, and ensure system resilience and functionality in an effort to address recurring heavy rain events that overwhelm the system.	F, SS	FWS	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 5	P1	High/High	President / Village Board	5-10 years	Village / USDA – RD Water & Waste Disposal Program / IEPA SRF – WPCLP	Existing (2014) No. 74
Make improvements to the waterway located in south Muncie to divert water away from the middle of the Village alleviating drainage/flooding problems and better manage stormwater runoff.	F, SS	S&S	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 5	P1	High/High	President / Village Board	5-10 years	Village / FEMA FMA	Existing (2014) No. 75
Elevate low lying roads above the base flood elevation to prevent roadway overtopping and washouts and ensure continued functionality of Community Lifelines during heavy rain/flood events.	F, SS	T	S&IP	Small SVI: 0.4034 CEJST: No EDRC: No	---	Yes	1, 4, 5	P1	High/High	President / Village Board	5-10 years	Village / FHWA PROTECT / FEMA FMA BRIC	Existing (2014) No. 76

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-22
Muncie Hazard Mitigation Actions
(Sheet 3 of 7)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Install stormwater pumping stations near the railroad tracks within the Village to alleviate recurring drainage/flooding problems caused by heavy rains, better manage stormwater runoff, and ensure continued functionality of Community Lifelines.	F, SS	FWS S&S T	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 5	P1	High/High	President / Village Board	5 years	Village / FEMA FMA BRIC / USDA – RD Water & Waste Disposal Program	Existing (2014) No. 77
Upsize select culverts at various locations to increase carrying capacity, better manage stormwater runoff, alleviate recurring drainage/flood problems, and ensure system resilience and functionality.	F, SS	T	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 5	P1	Medium/High	President / Village Board	1-5 years	Village / IDOT Local Roads	Existing (2014) No. 78
Retrofit Village Hall to include a community safe room, equipped with emergency backup generator and HVAC units) for use by Village residents to establish a Community Lifeline.	SS, T	FWS	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	---	Yes	4	P1/P3	High/High	President / Village Board	2-5 years	Village / FEMA HMGP BRIC	Existing (2014) No. 79

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Acronyms

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EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
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Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-22
Muncie Hazard Mitigation Actions
(Sheet 4 of 7)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Bury power lines to critical infrastructure within the Village to establish a resilient and reliable power supply, limit service disruptions, and mitigate risk to Community Lifelines.	EQ, F, MMH, SS, SWS, T	FWS S&S	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	---	Yes	1, 4, 5	P1/P3	High/High	President / Village Board	5-10 years	Village / FEMA HMGP BRIC	Existing (2014) No. 80
Develop and adopt an ordinance to implement higher construction standards for new development within the Village.	EC, EQ, F, SS, SWS, T	---	LP&R	Large SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 4, 7	P2/P4	Low/Medium	President / Village Board	2-5 years	Village	Existing (2014) No. 83
Install landscape barriers (living snow fences) along the south and west sides of the Village to limit blowing and drifting snow, maintain access to critical facilities/infrastructure, and ease hazardous driving conditions.	SWS	T	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	---	Yes	1, 4, 5	P1	Medium/High	President / Village Board	2-5 years	Village	Existing (2014) No. 84 / No. 86

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Acronyms

Hazard(s) to be Mitigated:

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EC	Extreme Cold	MS	Mine Subsidence
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Community Lifelines to be Mitigated:

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HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-22
Muncie Hazard Mitigation Actions
(Sheet 5 of 7)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Develop and adopt a burn ordinance.	DR	S&S	LP&R	Large SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 4, 5, 8	P3	Low/High	President / Village Board	1 year	Village	Existing (2014) No. 90
Develop mutual aid agreements with neighboring communities and fire protection districts to improve coordination and enhance mitigation activities within the Village.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	S&S	LP&R	Large SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 2, 4, 5	P1/P3	Low/Medium	President / Village Board	2-5 years	Village	Existing (2014) No. 91
Purchase and distribute NOAA weather radios to Village residents to establish a Communications Community Lifeline.	EC, EH, EQ, F, MMH, SS, SWS, T	---	E&A	Medium SVI: 0.4034 CEJST: No EDRC: No	---	---	4	P2/P4	Low/High	President / Village Board	2-5 years	Village	Existing (2014) No. 92

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
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Community Lifelines to be Mitigated:

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FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-22
Muncie Hazard Mitigation Actions
(Sheet 6 of 7)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Construct public drinking water supply system, including water tower, for the Village to ensure community resilience to drought, alleviate public health concerns stemming from floodwater contamination of private wells, and aid in fire suppression during natural hazard events.	DR, F, SS	---	S&IP	Large SVI: 0.4034 CEJST: No EDRC: No	---	---	1, 4, 5	P1/P3	High/High	President / Village Board	5-10 years	Village / USDA – RD Water & Waste Disposal Program / IEPA SRF – PWSLP	Existing (2014) No. 94
Acquire properties in flood-prone areas and remove any existing structures.*	F	S&S	S&IP NSP	Small SVI: 0.4034 CEJST: No EDRC: No	---	Yes	2, 4, 6	P1	High/High	President / Village Board	5 years	Village / FEMA FMA BRIC	Existing (2014) No. 72
Continue to participate and meet all administrative requirements of the National Flood Insurance Program (NFIP).*	F	S&S	LP&R	Small SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 4, 5, 6, 7	P1	Low/Medium	President / Village Board	1-5 years	Village	Existing (2014) No. 71

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† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 115 individuals). The Village struggles to provide even the most critical of services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-22
Muncie Hazard Mitigation Actions
(Sheet 7 of 7)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Review new Flood Insurance Rate Maps (FIRMs) when they become available. Update the flood ordinance to exceed federal standards and reflect the revised FIRMs and present both for adoption. Enforce flood ordinance to ensure new development does not increase flood vulnerability or create unintended exposures to flooding.*	F	S&S	LP&R	Small SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	3, 4, 6, 7	P1	Low/Medium	President / Village Board	1-5 years	Village	Existing (2014) No. 73
Continue to make the most recent Flood Insurance Rate Maps available at the Village Clerk's Office to assist the public in considering where to construct new buildings.*	F	S&S	E&A	Small SVI: 0.4034 CEJST: No EDRC: No	Yes	---	3, 4, 6, 7	P2	Low/Low	President / Village Clerk	1-5 years	Village	New
Continue to make Village officials aware of the most recent Flood Insurance Rate Maps and issues related to construction in a floodplain.*	F	S&S	E&A	Small SVI: 0.4034 CEJST: No EDRC: No	Yes	---	3	P2	Low/Low	President / Village Clerk	1-5 years	Village	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 115 individuals). The Village struggles to provide even the most critical of services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-23
Oakwood Hazard Mitigation Actions
(Sheet 1 of 6)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Secure a Memorandum of Agreement with fuel station to install a stand-alone emergency backup generator to maintain fueling operations for critical government operations during prolonged power outages.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	FWS S&S T	LP&R	Medium SVI: 0.4034 CEJST: No EDRC: No	---	---	1, 2, 5	P2/P4	Low/Medium	Public Works Superintendent	2-5 years	Village	New
Purchase and install a stand-alone emergency backup generator at fueling station to establish a resilient and reliable power supply, maintain continuity of operations, and mitigate risk to a Community Lifeline. The fueling station would provide fuel to maintain continuity of government/operations (Public Works, Police, EMS, Fire, etc.) as well as fuel generators at the warming/cooling centers and emergency shelters.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	FWS S&S T	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	---	Yes	1, 4, 5	P1/P3	Medium/High	Public Works Superintendent	1-3 years	Village / USDA – RD Critical Facilities Programs	New
Prepare and Emergency Operations Plan for the Village.	DR, EC, EH, EQ, F, MMH, MS, SS, SWS, T	S&S	LP&R E&A	Large SVI: 0.4034 CEJST: No EDRC: No	---	---	2, 4, 5	P2/P4	Low/High	Public Works Superintendent / Police Chief / EMS Coordinator / FPD Chief	1-2 years	Village	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 1,400 individuals). The Village works hard to provide critical of services to its residents, but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-23
Oakwood Hazard Mitigation Actions
(Sheet 2 of 6)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Upsize roadway culverts and bridges at various locations, to increase carrying capacity, better manage stormwater runoff, alleviate recurring drainage/flood problems, and ensure system resilience and functionality.	F, SS	T	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 5	P1	Medium/High	Public Works Superintendent	2-5 years	Village / FHWA PROTECT	New
Upgrade the existing storm sewer system and/or construct additions to the system to increase storage and draining capacity, ensure system resilience and functionality, and better manage stormwater runoff in an effort to address recurring heavy rain/flood events that overwhelm the system.	F, SS	FWS	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 5	P1	High/High	Public Works Superintendent	2-5 years	Village / IEPA SRF – WPCLP / USDA – RD Water & Waste Disposal Program	New
Clean debris/obstructions out of culverts to maximize flow/carrying capacity, reduce/prevent drainage problems, and ensure system resilience and functionality.	F, SS	T	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	---	Yes	1, 5	P1	Low/Medium	Public Works Superintendent	2-5 years	Village	New

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
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F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-23
Oakwood Hazard Mitigation Actions
(Sheet 3 of 6)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Trim and manage trees to minimize the number and duration of service disruptions, improve community resilience, and mitigate risk to Community Lifelines.	SS, SWS, T	C E T	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 4, 5	P1/P3	Medium/Medium	Public Works Superintendent	1-3 years	Village	New
Acquire properties in flood-prone areas and remove any existing structures.*	F	S&S	S&IP NSP	Small SVI: 0.4034 CEJST: No EDRC: No	---	Yes	2, 4, 6	P1	High/High	President Village Board / Public Works Superintendent	2-10 years	Village / FEMA FMA BRIC	New
Bury power lines to critical infrastructure within the Village to establish a resilient and reliable power supply, limit service disruptions, and mitigate risk to Community Lifelines.	EQ, F, MMH, SS, SWS, T	FWS S&S	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	---	Yes	1, 4, 5	P1/P3	High/High	Public Works Superintendent	5-10 years	Village / FEMA HMGP BRIC	New

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* Mitigation action to ensure continued compliance with NFIP.

Acronyms

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Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-23
Oakwood Hazard Mitigation Actions
(Sheet 4 of 6)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Purchase and install emergency backup generators at village-owned critical facilities and infrastructure systems to establish resilient and reliable power supplies, maintain continuity of government/operations, and mitigate risk to Community Lifelines.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	C S&S T	S&IP	Medium SVI: 0.4034 CEJST: No EDRC: No	---	Yes	1, 5	P1/P3	Medium/High	President Village Board / Public Works Superintendent	5 years	Village / FEMA HMGP BRIC / USDA – RD Critical Facilities Programs	Existing (2014) No. 1
Raise public awareness of the risks to life and property associated with the natural and man-made hazards that impact the Village and the proactive actions that can be taken to reduce risk through various media outlets, including Facebook, local television, and local radio.	DR, EC, EH, EQ, F, MMH, MS, SS, SWS, T	---	E&A	Large SVI: 0.4034 CEJST: No EDRC: No	---	---	3, 4	P2/P4	Low/Medium	President / Village Board	2-5 years	Village	Existing (2014) No. 5
Study and establish emergency traffic routes through the Village to better manage stranded motorist and large trucks during severe winter storms.	SWS	T	LP&R	Medium SVI: 0.4034 CEJST: No EDRC: No	---	Yes	2, 5	P2	Low/Medium	President / Village Board	1-3 years	Village	Existing (2014) No. 95

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-23
Oakwood Hazard Mitigation Actions
(Sheet 5 of 6)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Continue to participate and meet all administrative requirements of the National Flood Insurance Program (NFIP).*	F	S&S	LP&R	Small SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	1, 4, 5, 6, 7	P1	Low/Medium	President / Village Board	1-5 years	Village	Existing (2014) No. 16
Review new Flood Insurance Rate Maps (FIRMs) when they become available. Update the flood ordinance to exceed federal standards and reflect the revised FIRMs and present both for adoption. Enforce flood ordinance to ensure new development does not increase flood vulnerability or create unintended exposures to flooding.*	F	S&S	LP&R	Small SVI: 0.4034 CEJST: No EDRC: No	Yes	Yes	3, 4, 6, 7	P1	Low/Medium	President / Village Board	1-5 years	Village	Existing (2014) No. 17
Continue to make the most recent Flood Insurance Rate Maps available at the Village Clerk's Office to assist the public in considering where to construct new buildings.*	F	S&S	E&A	Small SVI: 0.4034 CEJST: No EDRC: No	Yes	---	3, 4, 6, 7	P2	Low/Low	President / Village Clerk	1-5 years	Village	New

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* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-23
Oakwood Hazard Mitigation Actions
(Sheet 6 of 6)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Continue to make Village officials aware of the most recent Flood Insurance Rate Maps and issues related to construction in a floodplain.*	F	S&S	E&A	Small SVI: 0.4034 CEJST: No EDRC: No	Yes	---	3	P2	Low/Low	President / Village Clerk	1-5 years	Village	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

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* Mitigation action to ensure continued compliance with NFIP.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-24
OSF HealthCare Sacred Heart Medical Center Hazard Mitigation Actions

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Purchase and install a backup generator set that can accommodate the entire Danville Campus to ensure a resilient and reliable power supply in order to maintain continuity of operations and mitigate risk to a Community Lifeline.	EC, EH, EQ, F, MMH, SS, SWS, T	H&M	S&IP	Large County SVI: 0.6582 CEJST: Yes	---	Yes	1, 4, 5	P1/P3	Medium/High	Board of Directors / Facilities Management	2-5 years	OSF Healthcare / FEMA HMGP BRIC	New
Construct a self-contained outdoor decontamination facility equipped with dual showers and an independent water supply to ensure functionality of a Community Lifeline in the event of a hazardous materials incident.	MMH	H&M	S&IP	Large County SVI: 0.6582 CEJST: Yes	Yes	---	1, 4, 5	P3	Medium/High	Board of Directors / Facilities Management / Region 6 Coalition for Emergency Preparedness	1-2 years	OSF Healthcare	New
Educate staff about the water conservation measures that can be taken to reduce drought impacts.	DR	---	E&A	Large County SVI: 0.6582 CEJST: Yes	---	---	3	P4	Low/Low	Board of Directors / Emergency Preparedness Committee	1-5 years	OSF Healthcare	New

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Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-25
Rossville Hazard Mitigation Actions

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Purchase and install emergency backup generators at village-owned critical facilities and infrastructure systems (i.e., drinking water treatment facility, drinking water wells, water tower, etc.) to establish resilient and reliable power supplies, maintain continuity of government/operations, and mitigate risk to Community Lifelines.	EC, EH, EQ, F, MMH, SS, SWS, T	FWS S&S	S&IP	Large SVI: 0.1431 – 0.3615 CEJST: No EDRC: Yes	---	Yes	1, 5	P1/P3	Medium/High	President / Village Board	5-10 years	Village / FEMA HMGP BRIC / USDA – RD Critical Facilities Programs	Existing (2014) No. 1
Identify an alternate/backup drinking water supply option for the Village to establish a constant and reliable supply of water for residents, ensure community resilience to drought, and aid in fire suppression during hazard events.	DR	FWS	LP&R	Large SVI: 0.1431 – 0.3615 CEJST: No EDRC: Yes	---	---	1, 4, 5	P4	Low/High	President / Village Board	5-10 years	Village	Existing (2014) No. 3
Raise public awareness of the risks to life and property associated with the natural and man-made hazards that impact the Village and the proactive actions that can be taken to reduce risk.	DR, EC, EH, EQ, F, MMH, SS, SWS, T	---	E&A	Large SVI: 0.4034 EDRC: No	---	---	3, 4	P2/P4	Low/Medium	President / Village Board	1-5 years	Village	Existing (2014) No. 5

§ Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 1,100 individuals). The Village works hard to provide even the most critical of services to its residents, but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-26
Sidell Hazard Mitigation Actions
(Sheet 1 of 3)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Develop and adopt a stormwater ordinance.	F, SS	FWS	LP&R	Large SVI: 0.1679 CEJST: No EDRC: Yes	Yes	Yes	2, 7	P1	Low/High	President / Village Board	2-5 years	Village	Existing (2014) No. 111
Develop and adopt an ordinance requiring all manufactured homes and trailers to have tie downs and enforce the ordinance.	SS, T	---	LP&R	Large SVI: 0.1679 CEJST: No EDRC: Yes	Yes	Yes	2, 4, 7	P1/P3	Low/High	President / Village Board	2-5 years	Village	Existing (2014) No. 113
Develop and adopt an ordinance requiring power lines be buried to new construction to limit service disruptions, establish a resilient and reliable power supply, and mitigate risk to Community Lifelines.	SS, SWS, T	E T	LP&R	Large SVI: 0.1679 CEJST: No EDRC: Yes	Yes	---	1, 2, 4, 5,7	P1/P3	Low/High	President / Village Board	2-5 years	Village	Existing (2014) No. 114
Publicize the locations of community safe rooms, warming/cooling centers, and emergency shelters within the Village.	EC, EH, EQ, F, MMH, SS, SWS, T	---	E&A	Large SVI: 0.1679 CEJST: No EDRC: Yes	---	---	4	P1/P3	Low/Medium	President / Village Board	1-5 years	Village	Existing (2014) No. 115

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 530 individuals). The Village works hard to provide even the most critical of services to its residents, but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-26
Sidell Hazard Mitigation Actions
(Sheet 2 of 3)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Designate additional warming/cooling centers within the Village to increase sheltering capabilities and capacities.	EC, EH	---	LP&R	Small SVI: 0.1679 CEJST: No EDRC: Yes	---	---	4	P2/P4	Low/High	President / Village Board	1-2 years	Village	Existing (2014) No. 117
Develop mutual aid agreements with neighboring communities to improve coordination and enhance mitigation activities within the Village.	EC, EH, EQ, F, MMH, SS, SWS, T	S&S	LP&R	Large SVI: 0.1679 CEJST: No EDRC: Yes	Yes	Yes	1, 2, 4, 5	P1/P3	Low/Medium	President / Village Board	2-5 years	Village	Existing (2014) No. 121
Identify an alternate/backup drinking water supply option for the Village to establish a constant and reliable supply of water for residents, ensure community resilience to drought, and aid in fire suppression during hazard events.	DR	FWS	LP&R	Large SVI: 0.1679 CEJST: No EDRC: Yes	---	---	1, 4, 5	P4	Low/High	President / Village Board	5-10 years	Village	Existing (2014) No. 123

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 530 individuals). The Village works hard to provide even the most critical of services to its residents, but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-26
Sidell Hazard Mitigation Actions
(Sheet 3 of 3)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Research participation in the National Flood Insurance Program to explore the benefits and costs.	F	S&S	LP&R	Small SVI: 0.1679 CEJST: No EDRC: Yes	---	---	3, 4, 5, 6, 7	P2	Low/Low	President / Village Board	1-5 years	Village	Existing (2014) No. 110
Develop and adopt a flood ordinance.	F	S&S	LP&R	Small SVI: 0.1679 CEJST: No EDRC: Yes	Yes	Yes	3, 4, 6, 7	P1	Low/Medium	President / Village Board	1-5 years	Village	Existing (2014) No. 112

§ Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 530 individuals). The Village works hard to provide even the most critical of services to its residents, but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-27
Sidell Volunteer Fire Department Hazard Mitigation Actions

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Purchase and install storm warning sirens within the District to establish Community Lifelines essential to human health and safety. Sirens locations would include 1) ¾ mile south of Sidell; 2) at Sidell; 3) at Salt Fork School South Campus; and 4) unincorporated area of Jamaica.	SS, T	---	E&A	Medium SVI: 0.1679 CEJST: No	---	---	4	P1/P3	Medium/High	Fire Chief / Board of Trustees	2-3 years	FD / FEMA BRIC HMGP / USDA – RD Critical Facilities Program	New
Purchase and install an automatic emergency backup generator at the Fire Station to establish a resilient and reliable power supply, ensure sustained functionality during extended power outages, maintain continuity of operations and mitigate risk to a Community Lifeline.	EC, EH, EQ, F, MMH, SS, SWS, T	S&S	S&IP	Large SVI: 0.1679 CEJST: No	---	Yes	1, 5	P1/P3	Medium/High	Fire Chief / Board of Trustees	1-3 years	FD / FEMA HMGP BRIC	New
Make public information materials available to District residents that detail the risks to life and property associated with the natural hazards that impact the District and the proactive approaches they can take to reduce their risk.	DR, EC, EH, EQ, F, MMH, SS, SWS, T	---	E&A	Large SVI: 0.1679 CEJST: No	---	---	3, 4	P2/P4	Low/Medium	Fire Chief / Board of Trustees	1-5 years	FD	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a small rural, all-volunteer fire protection district of this size (serving approx. 1,200 individuals in a service area of 36 square miles). Additional funding is necessary if implementation is to be achieved.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-28
Tilton Hazard Mitigation Actions
(Sheet 1 of 3)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Prepare and Emergency Operations Plan for the Village.	DR, EC, EH, EQ, F, MMH, MS, SS, SWS, T	S&S	LP&R E&A	Large SVI: 0.3928 – 0.6510 CEJST: Yes EDRC: Yes	---	---	2, 4, 5	P2/P4	Low/High	President Village Board / Public Works Director / Village Engineer	3 years	Village	New
Upsize roadway culverts and bridges at various locations, to increase carrying capacity, better manage stormwater runoff, alleviate recurring drainage/flood problems, and ensure system resilience and functionality.	F, SS	T	S&IP	Medium SVI: 0.3928 – 0.6510 CEJST: Yes EDRC: Yes	Yes	Yes	1, 5	P1	Medium/High	President Village Board / Public Works Director	2 years	Village / FHWA PROTECT	New
Line sanitary sewer sections/mains to eliminate stormwater infiltration, prevent sewage backups, improve capacity, function and reliability of the City's sewer system, and mitigate risk to a Community Lifeline.	F, SS	FWS	S&IP	Medium SVI: 0.3928 – 0.6510 CEJST: Yes EDRC: Yes	Yes	Yes	1, 5	P1	High/High	President Village Board / Public Works Director	5 years	Village / USDA – RD Water & Waste Disposal Program / IEPA SRF – WPCLP	New

§ Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 2,700 individuals). The Village works hard to provide critical of services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-28
Tilton Hazard Mitigation Actions
(Sheet 2 of 3)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Upgrade the existing storm sewer system and/or construct additions to the system to increase storage and draining capacity, ensure system resilience and functionality, and better manage stormwater runoff in an effort to address recurring heavy rain/flood events that overwhelm the system.	F, SS	FWS	S&IP	Medium SVI: 0.3928 – 0.6510 CEJST: Yes EDRC: Yes	Yes	Yes	1, 5	P1	High/High	President Village Board / Public Works Director / Village Engineer	5 years	Village / IEPA SRF – WPCLP / USDA – RD Water & Waste Disposal Program	New
Clean debris/obstructions out of culverts to maximize flow/carrying capacity, reduce/prevent drainage problems, and ensure system resilience and functionality.	F, SS	T	S&IP	Medium SVI: 0.3928 – 0.6510 CEJST: Yes EDRC: Yes	---	Yes	1, 5	P1	Low/Medium	President Village Board / Public Works Director	1-5 years	Village	New
Conduct sanitary sewer line reconnaissance study to identify locations where storm water infiltrates the system and mitigate risk to a Community Lifeline.	F, SS	FWS	LP&R	Medium SVI: 0.3928 – 0.6510 CEJST: Yes EDRC: Yes	---	---	1, 5	P2	Medium/Medium	President Village Board / Public Works Director / Village Engineer	3 years	Village	New

§ Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 2,700 individuals). The Village works hard to provide critical of services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-28
Tilton Hazard Mitigation Actions
(Sheet 3 of 3)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)§	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Status
					New	Existing							
Purchase portable, trailer-mounted message boards to alert the public of hazardous conditions associated with natural and man-made hazard events.	DF, EC, EH, EQ, F, MMH, MS, SS, SWS, T	---	E&A	Large SVI: 0.3928 – 0.6510 CEJST: Yes EDRC: Yes	---	---	4	P2/P4	Medium/Medium	President Village Board / Public Works Director	2-5 years	Village	New
Purchase additional road signage and barricades to alert motorists of hazardous conditions, detours, etc. associated with natural and man-made hazard events.	DF, EC, EH, EQ, F, MMH, MS, SS, SWS, T	---	E&A	Large SVI: 0.3928 – 0.6510 CEJST: Yes EDRC: Yes	---	---	4	P2/P4	Medium/Medium	President Village Board / Public Works Director	2 years	Village	New
Identify an alternate/backup drinking water supply option for the Village to establish a constant and reliable supply of water for residents, ensure community resilience to drought, and aid in fire suppression during hazard events.	DR	FWS	LP&R	Large SVI: 0.3928 – 0.6510 CEJST: Yes EDRC: Yes	---	---	1, 4, 5	P4	Low/High	President Village Board / Public Works Director	5-10 years	Village	Existing (2014) No. 3

§ Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 2,700 individuals). The Village works hard to provide critical of services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	MS	Mine Subsidence
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-29
Vermilion County Conservation District Hazard Mitigation Actions
(Sheet 1 of 2)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Purchase and install emergency backup generators at District-owned critical facilities and infrastructure systems to establish resilient and reliable power supplies, maintain continuity of operations, and mitigate risk to Community Lifelines. Generator locations would include: Lake Vermilion County Park – Maintenance Building; Forest Glen Preserve – Water Treatment Building, Office, Maintenance Building, Gannett Outdoor Education Center, Shower House; Kennekuk County Park – Lake Mingo Dam, Laury Restroom/Well House, Administration Building, Maintenance Building, and Environmental Education Center.	EC, EH, EQ, F, MMH, MS, SS, SWS, T	FWS S&S	S&IP	Large SVI: 0.6582 CEJST: No	---	Yes	1, 5, 8	P1/P3	Medium/High	Executive Director / Board of Trustees	2-5 years	District / USDA – RD / Critical Facilities Programs / FEMA HMGP	New
Design and construct community safe rooms (built to high wind standards and equipped with emergency backup generators and HVAC systems) that can also serve as warming/cooling centers for staff/park visitors at Forest Glen Preserve, Kennekuk County Park, Lake Vermilion County Park, Heron County Park, and Kickapoo Rail Trail.	EC, EH, SS, T	---	S&IP	Large SVI: 0.6582 CEJST: No	Yes	---	4	P1/P3	Medium/High	Vermilion County EMA Director / Executive Director / Board of Trustees	5 years	District / USDA – RD / Critical Facilities Programs / FEMA HMGP BRIC	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a small, rural conservation district. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

Figure MIT-29
Vermilion County Conservation District Hazard Mitigation Actions
(Sheet 2 of 2)

Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Population Affected (Size, SVI, CEJST, and/or EDRC)[§]	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Goal(s) Met	Priority	Cost/Benefit Analysis	Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)[†]	Status
					New	Existing							
Update the Emergency Action Plan (EAP) for Lake Mingo Dam to include the extent (water depth, speed of onset, warning times, etc.) of a potential dam failure to address data deficiencies.	DF	---	LP&R E&A	Small SVI: 0.1431 CEJST: No	---	---	1, 4, 5	P4	Low/Medium	Board of Directors / Emergency Preparedness Committee	5 years	District	New
Educate staff about the water conservation measures that can be taken to reduce drought impacts.	DR	---	E&A	Large County SVI: 0.6582 CEJST: No	---	---	3	P4	Low/Low	Board of Directors / Emergency Preparedness Committee	1-5 years	District	New

[§] Size refers to the general size of the population affected (i.e., small, medium, or large, while a Social Vulnerability Index (SVI) ranking of 0.6 or greater, a Climate and Economic Justice Screening Tool (CEJST) designation of "Yes", and/or an Economically Disadvantaged Rural Community (EDRC) designation of "Yes" identifies potentially underserved communities and/or socially vulnerable populations using the SVI, CEJST, and EDRC as described in Section 1.2.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a small, rural conservation district. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
DF	Dam Failure	MS	Mine Subsidence
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
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Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
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Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Priority:

P1	High Priority	P3	Moderate Priority
P2	Significant Priority	P4	Important

5.0 PLAN MAINTENANCE

This section focuses on the Federal Emergency Management Agency (FEMA) requirements for maintaining and updating the Plan once it has been approved by FEMA and adopted by the participating jurisdictions. These requirements include:

- establishing the method and schedule for monitoring, evaluating, and updating the Plan;
- describing how the requirements of the Plan will be incorporated into existing planning mechanisms; and
- detailing how continued public input will be obtained during the plan maintenance process.

These requirements ensure that the Plan remains an effective and relevant document. The following provides a detailed discussion of each requirement.

5.1 MONITORING, EVALUATING & UPDATING THE PLAN

Outlined below is a method and schedule for monitoring, evaluating, and updating the Plan. This method allows the participating jurisdictions to make necessary changes and updates to the Plan and track the implementation and results of the mitigation actions that have been undertaken.

5.1.1 Monitoring and Evaluating the Plan

The Plan update will be monitored and evaluated by a Plan Maintenance Subcommittee on an annual basis. The Subcommittee will be composed of the participating jurisdictions who sought Plan approval and other key members of the Committee. The Vermilion County Emergency Management Agency (EMA) will chair the Plan Maintenance Subcommittee.

The Vermilion County EMA will assume lead responsibility for monitoring and tracking the implementation status of the mitigation actions identified in the Plan update. It will be the responsibility of each Plan participant to provide the Vermilion County EMA with an annual progress report on the status of their existing mitigation actions and identify whether any actions need to be modified. New mitigation actions may be added to the Plan during the annual monitoring and evaluation period or at any time during the plan maintenance cycle by contacting the Vermilion County EMA and providing the appropriate information.

Monitoring & Evaluating

- A Plan Maintenance Subcommittee will be formed to monitor and evaluate the Plan update.
- The ***Plan update will be monitored and evaluated*** on an ***annual basis***.
- Each Plan participant will be responsible for providing an annual progress report on the status of their mitigation actions.
- Plan participants can add ***new mitigation actions*** to the Plan ***during the annual monitoring phase or by contacting*** the Vermilion County EMA.

The Vermilion County EMA together with the Plan Maintenance Subcommittee will also evaluate the Plan update on an annual basis to determine the effectiveness of the Plan at achieving its stated purpose and goals. In order to evaluate the effectiveness of the Plan update, the Subcommittee will review the mitigation actions that have been successfully implemented and determine whether the action achieved the identified goal(s) and had the intended result (i.e., losses were avoided, or the vulnerability of hazard-prone areas were reduced).

The Subcommittee will also ask each Plan participant to identify any significant changes in development or priorities that have occurred within the previous 12 months; whether any new plans, policies, regulations, or reports have been adopted; and if any hazard-related damages to critical facilities and infrastructure have been sustained.

In order to streamline the plan maintenance process, the Vermilion County EMA will provide each Plan participant with a Plan Maintenance Checklist along with the necessary forms to complete and return. **Appendix N** contains a copy of Checklist and associated forms.

The Vermilion County EMA will then prepare a progress report detailing the results of the annual Plan monitoring and evaluation period and provide copies to the Subcommittee. The annual progress report will include:

- information on any hazard-related damages sustained by critical facilities and infrastructure within the planning area during the previous year.
- implementation status of the mitigation actions identified in the Mitigation Strategy.
- identification of any new mitigation actions proposed by the Plan participants.
- information on changes in development, priorities, and planning and regulatory capabilities for the Plan participants.
- identification of how information will be disseminated to stakeholders and constituents on the Plan and its progress in effort to seek continued public participation.

If any existing mitigation actions are modified or new mitigation actions are identified for the Plan participants, then Section 4.7 of the Mitigation Strategy will be updated, and the Plan update resubmitted to the Illinois Emergency Management Agency (IEMA) and FEMA for reference.

On an as needed basis the Vermilion County EMA, in consultation with the Subcommittee, will evaluate requests from non-participating jurisdictions to "join" the Plan before the five-year update. Consideration will be given if certain conditions are met as outlined in Appendix D of *FEMA's Local Mitigation Planning Policy Guide.*

5.1.2 Updating the Plan

The Plan must be updated within five years of the of the Plan approval date indicated on the signed FEMA final approval letter. (This date can be found in Section 6, Plan Adoption.) This ensures that all the participating jurisdictions will remain eligible to receive federal grant funds to implement those mitigation actions identified in this Plan.

The Vermilion County EMA, with assistance from the Plan Maintenance Subcommittee, will be responsible for updating the Plan. The update will incorporate all of the information gathered during

Updating the Plan

- The Vermilion County EMA, with assistance from the Plan Maintenance Subcommittee, will be responsible for updating the Plan.
- The Plan ***must be updated within 5 years*** of the ***date of the final approval letter*** provided by FEMA.
- Once the Plan update has received FEMA/IEMA approval, each participating jurisdiction ***must adopt the Plan to remain eligible to receive federal mitigation funds.***

the monitoring and evaluation phase and will also include:

- a review of the Mitigation Strategy, including potential updates to the mitigation goals and prioritization methodology;
- an evaluation of whether additional natural or man-made hazards need to be addressed or included in the Plan;
- a review of new hazard data that may affect the Risk Assessment Section;
- identification of any changes in priorities within each participating jurisdiction; and
- identification of any changes in development that have occurred in hazard prone areas that would increase or decrease the participating jurisdictions' vulnerability.

A Planning Committee will be reformed to update the Plan and a public involvement strategy similar to the one employed for this Plan update will be implemented to ensure that the public and stakeholders have ample opportunities to become engaged and provide input during the development of the Plan update. In addition, any jurisdictions that did not take part in the previous Plan update may do so at this time. It will be the responsibility of these jurisdictions to provide all of the information needed to be integrated into the Plan update.

A public forum will be held to present the Plan update to the public for review and comment. The comments received at the public forum will be reviewed and incorporated into the Plan update. The Plan update will then be submitted to IEMA and FEMA for review and approval. ***Once the Plan update has received state and federal approval, FEMA requires that each of the participating jurisdictions adopt the Plan to remain eligible to receive federal funds to implement identified mitigation actions.***

5.2 INCORPORATING THE MITIGATION STRATEGY INTO EXISTING PLANNING MECHANISMS

As part of the planning process, the Committee identified each participating jurisdiction's existing capabilities (i.e., existing authorities, policies, programs, technical information, etc.) and resources available to support or accomplish mitigation and reduce long-term vulnerability. **Figures PP-3** through **PP-12** identify the existing authorities, policies, programs, technical information, and resources available by capability type by jurisdiction. ***It will be the responsibility of each participating jurisdiction to incorporate, where applicable, the mitigation strategy and other information contained in the Plan update into the planning mechanisms identified for their jurisdiction.***

Adoption of this Plan update will trigger each participating jurisdiction to review and, where appropriate, integrate the Plan into other available planning mechanisms. The Plan Maintenance Subcommittee's annual review will help maintain awareness of the Plan among the participating jurisdictions and encourage active integration of the Plan into their day-to-day operations and planning mechanisms. Any time a mitigation action is slated for implementation by a participating jurisdiction, it will be integrated into their capital improvement plan/budget.

Based on conversations with the Committee, only Danville has identified the need to adopt, review, and/or strengthen current policies or programs in the near future. Several of the participating jurisdictions (Fairmount, Fithian, Georgetown, Muncie, and Sidell) have limited capabilities to

integrate the mitigation strategy and other information contained in the Plan update into existing planning mechanisms. These jurisdictions are small in size and may not have the financial resources or trained personnel to develop planning mechanisms such as comprehensive plans or building and zoning ordinances.

5.3 CONTINUED PUBLIC INVOLVEMENT

The County and participating jurisdictions understand the importance of continued public involvement and will seek public input on the Plan update throughout the plan maintenance cycle. Any meetings held by the Plan Maintenance Subcommittee will be noticed and open to the public. Stakeholders and public will be encouraged to participate and provide feedback. Following distribution of the annual progress report, each participating jurisdiction will be encouraged to discuss the findings at their monthly board/council meetings to help maintain awareness of the Plan and encourage integration of the Plan in day-to-day operations.

Participating jurisdictions will also be encouraged to make the annual progress report available via social media and on their websites, as available, and at their offices. As the lead organization responsible for maintaining the Plan update, the Vermilion County EMA will also periodically post mitigation-related topics to social media including where to access the approved Plan, information on the hazards that have the potential to impact the County, interesting facts about each hazard, and no or low-cost actions that residents can take to reduce their risk from natural hazards.

A copy of the approved Plan will be maintained and available for review at the Vermilion County EMA Office and on the Commission's website. Individuals will be encouraged to provide feedback and submit comments for the next Plan update to the Vermilion County EMA Director. The comments received will be compiled and included in the annual progress report and considered for incorporation into the next Plan update. Separate Committee meetings and a public forum will be held prior to the next Plan update submittal to ensure that the public and stakeholders have ample opportunity to become engaged, provide input during the development of the Plan update, and comment on the proposed revision to the Plan update.

6.0 PLAN ADOPTION

The final step in the planning process is the adoption of the approved Plan update by each participating jurisdiction. Each jurisdiction must formally adopt the Plan to become or remain eligible for federal grant funds to implement mitigation actions identified in this Plan.

6.1 PLAN ADOPTION PROCESS

Before the Plan update could be adopted by the participating jurisdictions, it was made available for public review and comment through a public forum and comment period. Comments received were incorporated into the Plan update and the Plan was then submitted to the Illinois Emergency Management Agency (IEMA) and the Federal Emergency Management Agency (FEMA) for their review and approval.

Upon receipt of the Approval Pending Adoption (APA) letter from FEMA, the Plan update was presented to the County and participating jurisdictions for adoption. ***Each participating jurisdiction was required to formally adopt*** the Plan to become or remain eligible to receive federal grant funds to implement the mitigation actions identified in this Plan. Any jurisdiction that chose not to adopt the Plan update did not affect the eligibility of those who did.

Figure PA-1 identifies the participating jurisdictions and the date each formally adopted the Plan update. Signed copies of the adoption resolutions are located in **Appendix O**. FEMA signed the final approval letter on (Date) which began the five-year approval period and set the expiration date of (Date) for the Plan.

Figure PA-1
Plan Adoption Dates

Participating Jurisdiction	Plan Adoption Date

7.0 REFERENCES

Provided below is a listing, by section, of the resources utilized to create this document.

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4.0 MITIGATION STRATEGY

1. Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Planning Committee. Existing Mitigation Project/Activity Status. Form.
2. Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Planning Committee. Hazard Mitigation Projects. Form.

APPENDIX A

Attendance Sheet

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

October 27, 2022

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	Ken Runkle	AEC	Env. Toxicologist/Risk Assessor
2.	Russell Rudd	Vermilion Co EMA	Director
3.	[illegible]	Alvin IL	
4.	Amy Lacy	VCHD	Emergency Response Coor.
5.	Dave Ruwe	City of Danville	Operations Administrator
6.	Tim Dudley Tim Dudley	Vermilion Advantage	CEO
7.	John Thompson	Vermilion County 911	Director
8.	Lara Conklin	DACC	Ex. Dir. of College Relations
9.	Alex Hull	Vermilion County	
10.	Tiffany Jones-McClellan	Tilton	City Administrator
11.	Douglas Toole	VCHD	Public Health Administrator
12.	Caroline Darr	Village of Oakwood	Director Oakwood Ambulance
13.	Ricky Williams Jr	City of Danville	Mayor
14.	Synthia Lane	Village of Muncie	Mayor.
15.	Edward J. Butler	NAACP Vermilion Co	President NAACP
16.	Gayle Brandon	NAACP Vermilion County	member

Attendance Sheet

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

October 27, 2022

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	Bill DONAHUE	Vermilion County	Risk Consultant
2.	Andrea Bostwick-Campbell	American Environmental	EMS Manager
3.	Dave Ferber	Village of Fairmount	President
4.	Rob McCullers	OSF	Em Prep Coord.
5.	Don McMasters	DFD	Fire Chief
6.	TERRY BATES	SIDGAL	MAYOR
7.	ADRIAN GREENWELL	COUNTY HIGHWAY	Co. ENG.
8.	TERRY GEORGE	VILLAGE OF TILTON	DIRECTOR OF PUBLIC WORKS
9.	Mary Surprenant	United Way of Danville Area (Vermilion County)	CFO
10.		UCHC	
11.	Mary Ann McCullough	VC NAACP Danville	Treasurer
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Attendance Sheet

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

February 23, 2023

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	Andrea Campbell	AEC	EMS Manager
2.	Synthia Lane	Village of Muncie	Mayor
3.	Shaw Lane	Village of Muncie	
4.	Lisa Powell	Village of Fithian	Clerk
5.	Jana Messmore	VCHD	Interim PHA/ Director of EH
6.	Dince Rogers	SELF	INTERESTED DIVILLE CITIZEN
7.	Rob McCullers	OSF Healthcare	Em Prep Coord
8.	Kim Fox	Village of Fithian	treasurer
9.	Kim Fox	Vermilion Co. Conservation District	Assoc Dir.
10.	David Rowe	City of Danville	Operations Administrator
11.	Tom Dudley	Vermilion Advantage	CEO
12.	Gayle Brandon	NAACP	Member
13.	Edward J. Butler	NAACP	President
14.	Alex Hall	Vermilion County	Resident
15.	Russell Rudd	Vermilion Co EMA	Director
16.			

Attendance Sheet

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

February 23, 2023

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	KEN RUNKLE	AEC	RISK ASSESSOR
2.	MIKE BRAY	ROSSVILLE EMA	
3.	Dave Ferber	Village of Fairmount	President
4.	Lisa Beith	Danville Mass Transit	Director
5.	Brad Hardcastle	City of Hoopeston	Director
6.	ROY KOHL	CITY OF HOOPESTON	DEPUTY DIRECTOR
7.	Dennis Watsman	Oakwood Police Department	Police Officer
8.	JERRY BATES	[illegible]	MAYOR
9.	Preston Ballentine	Ballard Presto	EMC
10.	ADRIAN GREENWELL	HIGHWAY DEPT	COUNTY ENGINEER
11.	Mary Surprenant	United Way	CEO
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Attendance Sheet

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

May 18, 2023

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	AARON MARCOTT	DANVILLE FIRE DEPT.	FIRE CHIEF
2.	Russell Rodd	Vermilion Co EMA	Director
3.	Synthia Lane	Village of Muncie	Mayor
4.	[illegible]	" "	
5.	Dennis R. Davidson	Georgetown	Alderman
6.	TERRY BATES	Sidell	MAYOR
7.	ADRIAN GREENWELL	VERMILION CO. HIGHWAY	COUNTY ENGINEER
8.	Kim FOX	Verm. Co. Cons. Dist.	Assoc. Dir.
9.	Kim FOX	Village of Fithian	treasurer
10.	Edward J. Butler	Danville NAACP	President
11.	Lara Conklin	DACC	Ex Dir. College Relations
12.	DANIEL PENTECOST	VILLAGE OF TILTON	PUBLIC WORKS/DEP FIRE CHIEF
13.	Caroline Darr	Village of Oakwood	EMS Chief
14.	Caroline Darr	Village of Fairmount	Village Trustee
15.	Alan Hall	Vermilion County	
16.			

Attendance Sheet

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

May 18, 2023

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	KEN RUNKLE	AEC	RISK ASSESSOR
2.	Dave Ruwe	City of Danville	Operations Administrator
3.	Brad Hardcastle	City of Hoopeston	EMA Director
4.	Andrea Bostwick-Campbell	AEC	EMS Manager
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Attendance Sheet

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

August 17, 2023

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	Russell Rudd	Vermilion Co EMA	Director
2.	Tiffany Jones	Tilton	City Administrator
3.	Brad Hardcastle	City of Hoopeston	EMA Director
4.	David Ruwe	City of Danville	Operations Administrator
5.	ADRIAN GREENWELL	COUNTY HIGHWAY	CO. ENG.
6.	Dennis Davidson	Georgetown	Alderman
7.	Caroline Darr	Oakwood	EMS Coordinator
8.	Caroline Darr	Fairmount	Village Trustee
9.	Edward J. Butler	Danville	NAACP - City Alderman
10.	Aaron Marcott	DANVILLE FIRE DEPT	FIRE CHIEF
11.	Kim Fox	Verm Co. Cons Dist.	Assoc Dir.
12.	Synthia Kane	Village of ~~Fithian~~ Muncie	Mayor
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Attendance Sheet

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

August 17, 2023

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	KEN RUNKLE	AEC	RISK ASSESSOR
2.	MIKE BRAY	ROSSVILLE	EMA
3.	Lisa Powell	Fithian	Employee
4.	Jacee Seyfert	OSF Sacred Heart	Nursing Director
5.	Andrea Bostwick-Campbell	AEC	EMS Manager
6.	Bob BROWN		CITIZENS
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Attendance Sheet

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

November 2, 2023

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	KEN RUNKLE	AEC	RISK ASSESSOR
2.	Russell Rudd	Emt	DIRECTOR
3.	Synthia Lane	Village of Muncie	Mayor
4.	Tiffany Jones	Village of T. Ilon	City Administrator
5.	Dave Ruwe	City of Danville	Operations Administrator
6.	John Dwyer	Champaign Co EMA	Coordinator
7.	[illegible]	Sidell Fire-Village	Chief - Mayor
8.	Kim Fox	Verm Co. Cons. Dist	Assoc Dir.
9.	Edward J. Butler	NAACP 3009 of Danville	President
10.	ADRIAN GREENWELL	VERM. Co. HIGHWAY	Co. ENG.
11.	Jaree Soyfeit	OF Sacred Heart	Director of Nursing
12.	Caroline Darr	Village of Oakwood	EMS Coordinator
13.	Caroline Darr	Village of Fairmount	Village Trustee
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Attendance Sheet

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

November 2, 2023

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	Brad Hardcastle	City of Hoopeston	Ema Director
2.	Mike Bray	Village of Rossville	EM Director
3.	Andrea Campbell	AEC	EMS Manager
4.	Scott Anderson	Iroquois County EMA	Coordinator
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APPENDIX B

Meeting Minutes

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee
County Board Meeting Room, 2nd Floor
201 N. Vermilion St., Danville
October 27, 2022
6 p.m.

Committee Members

Alvin, Village of
Danville Area Community College
Danville, City of
Fairmount, Village of
Muncie, Village of
NAACP of Vermilion County
Oakwood, Village of
OSF Sacred Heart Medical Center
Sidell, Village of
Tilton, Village of
United Way of Danville Area
Vermilion Advantage
Vermilion County Offices:
- 911
- EMA
- Health
- Highway Department
- Risk Management

American Environmental Corp.

Welcome and Introductions

Russell Rudd, Director of the Vermilion County Emergency Management Agency, welcomed attendees. He indicated that the purpose of this Committee is to update the Vermilion County All Hazards Mitigation Plan.

Handout materials were distributed to each member, including a Natural Hazard Events Questionnaire. A link to a citizen questionnaire was provided to potential members via email as well. The questionnaires will help gauge residents and committee member understanding of the natural hazards that impact the County and also identifies communication preferences.

Andrea Bostwick, American Environmental Corporation (AEC) began the meeting by providing background information on the planning grant and the planning process. Vermilion County EMA applied for and received a planning grant from FEMA to update the County's hazard mitigation plan. This grant is administered through the Illinois Emergency Management Agency (IEMA) and pays for 90% of the planning cost. The remaining 10% will be met through in-kind services. The goal of the grant is to obtain a FEMA-approved hazard mitigation plan. The process generally takes about 16 to 18 months from start to finish.

What is Mitigation?

Andrea explained that for the purpose of this process, mitigation is any sustained action that reduces the long-term risk to people and property from natural and man-made hazards and their impacts. Sustained actions can include projects and activities such as

building a community safe room or establishing warming and cooling centers. Mitigation is one of the phases of emergency management and is an important component in creating hazard-resistant communities.

What is an All Hazards Mitigation Plan?

Andrea then explained that an All Hazards mitigation plan details the natural and man-made hazard events that have previously impacted the County and identifies activities and projects that reduce the risk to people and property from these hazards before an event occurs. A hazard mitigation plan is different from the County's Emergency Operations Plan/ Emergency Response Plan (EOP/ERP) because it identifies actions that can be taken before a disaster strikes whereas the EOP/ERP identifies how the County will respond during and immediately after an event occurs.

The natural and man-made hazards that will be included in the Plan update are severe summer storms (including thunderstorms with damaging winds, hail, lightning, and heavy rain events); severe winter storms (including ice and snowstorms); floods (both flash flood and riverine floods); tornadoes; excessive heat; extreme cold; drought; earthquakes; dam failures; transportation, generation, and storage of hazardous substances; hazardous materials incidents; waste disposal; and remediation activities

Andrea indicated that the Committee can also include additional hazards it feels have a significant impact on the County and then discussed mine subsidence, landslides, levee failures, and wildfires. AEC will send out a survey in the next week to poll the Committee on whether to include any of these hazards in the Plan update.

Why Update an All Hazards Mitigation Plan?

Since the early 1990s damages caused by weather extremes have risen substantially. In 2021 the U.S. experienced $141 billion in severe storm damages from twenty (20) severe weather and natural hazard events. The losses experienced in 2021 were the 3rd highest only behind 2017 (Harvey, Irma, Maria, and California Wildfires) and 2005 (Katrina, Rita, & Wilma). In the last decade, the U.S. has experienced the top three years with the highest total number of billion-dollar events and two of the top three years with the highest total losses ever recorded. Consequently, the Federal Emergency Management Agency (FEMA) continues to encourage counties throughout the U.S. to prepare and develop hazard mitigation plans because what they've found is that for every dollar spent on mitigation, $6 dollars can be reaped in savings.

Updating this plan provides several major benefits:

1. Access to federal mitigation assistance fund. Specific projects and activities will be developed and updated through the planning process to help each participating jurisdiction reduce damages. By including these actions in this Plan, the participating jurisdictions will become eligible to receive state and federal funds to implement the actions.
2. Increased awareness of the impacts associated with natural hazards. Verifiable information about the natural hazards that occur in Vermilion County will be gathered to help participants in municipal and county meetings make decisions about how to better protect citizens and property from storm damages.

The Planning Process

The goal of the Committee meetings is to update the Plan to meet state and federal requirements so that it can be approved by the IEMA and FEMA. The Planning Committee is an integral part of the planning process and ensures that the Plan is tailored to the needs of the County and participating jurisdictions.

A five meeting process has been developed to achieve this goal. Specific activities for the Committee meetings include:

1st Committee meeting	Orientation to the Planning Process Required Information Needed to Participate
2nd Committee meeting	Discuss the Risk Assessment Approve Mission Statement & Goals Participants Return Required Forms Begin discussing Mitigation Projects and Activities
3rd Committee meeting	Discuss and approve Mitigation Strategy Committee returns draft list of Mitigation Projects and Activities
4th Committee meeting	Finish discussing Mitigation Projects and Activities Committee discusses approval/adoption of the Plan
5th Committee meeting (Public Forum)	Present the Plan update for public review Committee helps answer questions from the public

Jurisdictions who wish to be part of the Plan must meet certain participation requirements that include:

- Participating in the planning meetings and public forum
- Completing required forms
- Coordinating with their constituents and the public; and
- Adopting the Plan once it's completed

Information Needed from the Committee

As part of the Plan update, Andrea indicated that there is information that will be needed from each participating jurisdiction. The information provided will be used to meet FEMA plan requirements. She then talked about each of the forms that must be completed at the beginning of the planning process. These Include:

Critical Facilities. Completed lists of Critical Facilities will be used to identify facilities vulnerable to natural hazards and will be provided to IEMA and FEMA as a separate supplement. Copies of the Plan made available to the public will not include these lists for security reasons.

Capability Assessment: Each jurisdiction has a unique set of capabilities and resources available to accomplish hazard mitigation and reduce long-term vulnerabilities to hazard events. As part of the update of the plan, the existing capabilities of each jurisdiction need to be identified and described.

Shelter Surveys. Identifies locations designated as severe weather shelters within each jurisdiction including warming centers, cooling centers and community safe rooms.

Drinking Water Supply Worksheet: Information on the drinking water supplies that serve the participating communities needs to be identified to assist in assessing drought vulnerability.

Ken Runkle, also of American Environmental, passed out the forms as Andrea fielded questions. Andrea asked participants to complete the forms and return them by the next meeting if possible and to let her know if they had any questions.

Severe Weather Events

Andrea told the Committee that, while AEC will review multiple data sources, including NOAA, NWS, and state and federal databases, these sources don't always include every event nor do they always include damage information, especially dollar amounts. In many cases, individuals at the local level are her best resource for this kind of information.

She then asked Committee members to share their memories of hazardous events that have occurred in the County including any damages to critical infrastructure and facilities.

Hazard events related include:

- A lightning strike took out 3 wells and recording equipment in Sidell in 2021
- A lightning strike took out a phone system and 35 security cameras at Danville Area Community College in 2022
- A May 16, 2019 a hailstorm damaged houses and cars in Danville and Tilton
- Flooding in 1992 shut down part of the hospital and affected the water system in Tilton and Georgetown
- In July of 2005 or 2006, a derecho with straight-line winds took out power in the County
- There was an ice storm on Valentine's Day in 1990

She asked participants to identify any hazard events that have impacted their jurisdiction by completing the form titled, "Hazard Event Questionnaire". The information provided will help supplement the information included in the risk assessment.

Andrea also asked Committee members to share any storm damage photos that they might have for inclusion in the Plan.

Community Participation

Andrea stressed the importance of attending each committee meeting and indicated that member participation helps the County meet its 10% match for this grant in addition to assuring that member jurisdictions are eligible for IEMA/FEMA funds. She indicated that tag-teaming and designating substitute representatives is permissible when other obligations arise. Andrea pointed out that a designated substitute representative does not have be an official or employee of the jurisdiction.

Andrea requested that each jurisdiction consider sharing meeting information with their boards, councils, etc. at regularly scheduled meetings and consider posting the press

release or adding a calendar item to their web pages. She also asked jurisdictions who are on Facebook to consider posting about the Plan on their pages as well.

Andrea indicated that another opportunity to include the public in the process is to post the link to the Citizen Questionnaire on their web pages or Facebook. The more individuals who complete the survey, the better our understanding will be of the public's perception of the hazards that impact the County. Finally, she asked the participants to consider posting or making available at their offices the "Frequently Asked Questions" document in their meeting packet. It provides a quick summary of what the Plan is and why it's important to participate.

Mission Statement & Goals

Copies of a draft mission statement and updated goals were distributed in the meeting packet. Committee Members were asked to review these prior to the next meeting. The mitigation goals describe the objectives or end results the Committee would like to accomplish in terms of hazard and loss reduction/prevention. Every project included in the Plan should be aimed at one or more of the goals identified by this Committee. Specific goals related to each jurisdiction can be added to this list as well.

What Happens Next?

The risk assessment will be the main topic of the next committee meeting.

The second meeting of the Committee was scheduled for:

Thursday, February 23, 2023
County Board Meeting Room, 2nd Floor
201 N. Vermilion St., Danville
6 P.M.

Andrea asked Committee members to please review the "Tasks to be Completed" handout before the next meeting and indicated that her contact information could be found on the last page of the meeting handout if any questions come up.

After answering some follow-up questions about participation roles and responsibilities, the meeting was adjourned, and Russell Rudd closed the event by thanking attendees for their participation.

Meeting Minutes

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee
County Board Meeting Room, 2nd Floor
201 N. Vermilion St., Danville
February 23, 2023
6 p.m.

Committee Members

Danville, City of
Danville Mass Transit
Fairmount, Village of
Fithian, Village of
Hoopseton, City of
Muncie, Village of
NAACP of Vermilion County
Oakwood, Village of
OSF Sacred Heart Medical Center
Rossville, Village of
Sidell, Village of
United Way of Danville Area
Vermilion Advantage
Vermilion County Conservation District
Vermilion County Offices:
- EMA
- Health
- Highway Department

American Environmental Corp.

Welcome and Introductions

Russell Rudd, Director of the Vermilion County Emergency Management Agency, welcomed attendees. He turned the meeting over to Andrea Bostwick, American Environmental Corporation (AEC), who opened the meeting.

Handout materials were distributed to each member in attendance. Andrea provided a brief recap to reorient Committee Members as to what has been accomplished. Before beginning the risk assessment presentation, Andrea asked the participating jurisdictions to submit their completed "Critical Facilities", "Capability Assessments" and "Shelter Surveys" if they haven't done so already.

Risk Assessment

Andrea began the presentation by noting that there have been eight federally-declared disasters in Vermilion County since 1968. A total of 824 verified natural hazard events have been documented over the last 20 to 70 years. There have been 279 events identified since the original Plan was completed. A minimum of $63.1 million in damages have resulted from 203 documented natural hazard events. In addition, $65.4 million in crop damages were recorded for just four events. Seven fatalities and 39 injuries were recorded for 17 of the documented natural hazard events.

The damage amounts are actually much higher based on several facts:

1.) damage descriptions for many floods, tornadoes and severe storm events did not include dollar amounts;

2.) damages to roads from heat and freeze/thaws conditions were not included; and
3.) crop damage figures were unavailable for a majority of the events.

The frequency, magnitude, and property damages for each category of natural hazard were described.

Severe Storms

Severe storms are the most frequently occurring natural hazard in Vermilion County with 350 events verified since 1974, with 146 of those events occurring since the original Plan was completed. One of the eight federal disaster declarations for Vermilion County included severe storms. Approximately $27.5 million in damages has resulted from 164 events, which is more than 40% of all the property damage recorded in the County. Additionally, there was $30,000 in crop damage from one event. At least eight fatalities and 238 injuries can be attributed to severe storms. Almost all the injuries and fatalities are attributed crashes associated with wet pavement conditions.

The highest recorded wind speed in the County, not associated with a tornado, is 78 knots (90 mph) and occurred at Oakwood on June 19, 2009 and again at Rossville on May 16, 2017. The largest hail recorded in the county is 3.50 inches (almost softball-sized) at Rossville on May 26, 2017 and again on May 16, 2019 at Westville.

Floods

Gaps in historical data were reviewed to document a least 113 verified flood events in the County, 25 riverine/shallow flood events since 1994 and 88 flash flood events since 1994. Four of the eight federal disaster declarations for Vermilion County are related to flooding. At least $13 million in damages has resulted from two general flood events. No injuries or fatalities were recorded as a result of any of the recorded events.

Severe Winter Storms

A review of additional resources allowed data gaps to be filled, which led to the identification of at least 139 verified events involving severe winter storms (snow and/or ice) since 1950 and 64 extreme cold events since 1995. Twenty-two severe wither storms and 31 extreme cold events have occurred since the original Plan was completed. One of the eight federal disaster declarations for Vermilion County is related to severe winter storms. Approximately $10,000 in damages and emergency protective measures were verified as a result of the 2011 Groundhog Day winter storm. At least three fatalities and 81 injuries can be attributed to severe winter storms, almost all of which are attributed to crashes involving ice and snow-covered roadways.

At least 14 major storms have occurred in every decade since 1950. Between 2010 and 2019, 24 severe winter storms took place. There have been four severe winter storms recorded during the current decade.

The record maximum 24-hour snowfall in the County is 13.0 inches, which occurred at the Danville COOP Station on December 19, 1973. The coldest recorded temperature is -26°F at the Danville COOP Station on January 17, 1982.

Excessive Heat

Additional resources were reviewed to fill historic data gaps which led to the identification of 88 recorded excessive heat events reported in Vermilion County since 1995. Two fatalities were recorded as the result of two separate events.

The hottest temperature recorded in Vermilion County was 112°F at the Danville COOP Station on July 14, 1936. Seven of the ten hottest recorded temperatures in Danville are form 1936.

Tornadoes

Since 1950, 63 tornadoes have been verified in Vermilion County, with 8 occurring since the original plan was completed. Approximately $21.9 million in property damages has resulted from 36 of these tornadoes, and $50,000 in crop damages from three separate events. One fatality and 23 injuries were recorded as a result of four separate tornado events.

The highest recorded F-Scale rating for a tornado in the County was an F4, which occurred on March 20, 1976. The longest tornado was an EF2 that was 19.7 miles in the County on November 17, 2013. The widest tornado recorded in the County was the F4, which was 800 yards wide (almost 1/2 mile) on March 20, 1976.

Drought

Five major droughts have occurred during the last four decades – 1983, 1988, 2005, 2011, and 2012. There has been at least one drought per decade with the exception of the 1990s when no substantial droughts were recorded. The 2012 drought caused an estimated $65.4 million in corn crop damages. Following each declared drought, crop yield reductions were generally experienced, some substantial. Corn and soybean yield reductions were most severe for the 1988 drought when there was a 45.0% reduction in corn yields and an 35.0% reduction in soybean yields.

Year	Corn	Soybeans
1983	33.8%	8.5%
1988	45.0%	35.0%
2005	1.2%	1.9%
2011	10.9%	18.7%
2012	32.4%	---

Mine Subsidence

There are 327 documented underground coal mines located in the County according to the Illinois State Geological Survey's Directory of Coal Mines. Only one mine subsidence event was documented within the County in West Danville in 2015. Andrea asked committee members for any additional information about such events. The Illinois Mine Subsidence Insurance Fund has reimbursed insurance companies $643,616 for mine subsidence insurance claims.

According to the Illinois State Geological Survey, there are 54,519 acres (9.7% of the land area) and 8,273 housing units (23.0% of the total housing units) in the County located over or adjacent to mapped mines and land that could be affected if the mine boundaries are inaccurate or uncertain. Mine subsidence has the potential to impact

Belgium, Catlin, Danville, Fairmount, Georgetown, Muncie, Oakwood, Tilton, and Westville as well as unincorporated areas of the County.

Earthquakes

In the previous 200 years, no earthquakes have originated in Vermilion County while two earthquakes have originated in the adjacent counties of Douglas and Champaign. While there are no known fault zones located in the County, there are two geologic structures.

Dams

There are nine classified dams in the County according to the US Army Corps of Engineers' National Inventory of Dams. Two dams are publicly-owned: Georgetown owns the Georgetown Dam and Vermilion County Conservation District owns Lake Mingo Dam. The lake Vermilion Dam has a hazard classification of "High" while Georgetown Dam & Lake Mingo Dam have a hazard classification of "Significant". There are six dams with a hazard classification of "Low". There has been one known dam failure recorded in the County according to the National Performance of Dams inventory. On May 21, 1930 the Lake Vermilion Dam experienced a dam failure due to an inflow flood event

Ken Runkle of AEC then provided information about select man-made hazards in Vermilion County.

Man-Made Hazards Risk Assessment

Ken informed the Committee that while the focus of this planning effort is directed at natural hazards, FEMA allows a small portion of the planning process to be devoted to an overview of selected man-made hazards.

Although this overview does not have the same depth as the assessment of natural hazards, it provides useful information to place various man-made hazards in perspective. The man-made hazard risk assessment focused on the following categories of:

- generation, storage/handling, and transportation of hazardous substances;
- waste disposal;
- hazardous materials (hazmat) incidents; and
- waste remediation.

Hazardous substances broadly include flammable, explosive, biological, chemical, or physical material that has the potential to harm public health or the environment. For the purposes of this Plan, the term includes both hazardous product and hazardous waste.

Generation, Storage/Handling, & Transportation

In 2021, there were eight facilities in Vermilion County that generated reportable quantities of hazardous substances according to the USEPA.

Based on records obtained from IEMA's Tier II database, there were 96 stationary facilities within Vermilion County that stored and/or handled hazardous substances. Thirty-one of these facilities stored and/or handled chemicals identified as "Extremely Hazardous Substances".

Waste Disposal

There are two active commercial solid (household) waste landfills operating in Vermilion County: Brickyard Disposal and Recycling near Danville and Illinois Landfill near Hoopeston. There are no other landfills that serve adjacent counties. There are no facilities within the County permitted to handle Potentially Infectious Medical Waste and no commercial off-site hazardous waste treatment or disposal facilities.

Hazardous Materials (Hazmat) Incidents

A hazardous materials (hazmat) incident refers to any accident involving the release of hazardous substances. Incidents can take place at fixed facilities or as they are being transported. Between 2013 and 2022 there were 145 hazmat incidents reported to IEMA & ICC in Vermilion County. Of the 145 incidents, 95 occurred at fixed facilities, while 50 occurred during transport. Of the 50 transportation hazmat incidents, 35 were roadway incidents and 15 were rail incidents.

Waste Remediation

Waste remediation in Illinois is primarily conducted through three programs: the federal Superfund Program (for sites posing the largest threat to public health and the environment), the Illinois Site Remediation Program (SRP), and the Illinois Leaking Underground Storage Tank (LUST) Program.

Superfund: There is one active Superfund site in Vermilion County, Hegeler Zinc.

Illinois SRP: There are 33 SRP sites located Vermilion County. Twenty-eight of the sites have received “No Further Remediation” (NFR) or 4(y) letters.

Illinois LUST: There are 250 LUST sites located in Vermilion County. Approximately 68% of these sites have received NFR, Non-Lust Determination or Section 4(y) letters or remediation is virtually complete.

Risk Priority Index Exercise

Following the risk assessment, Andrea led the Committee through a Risk Priority Index (RPI) exercise. The RPI is a quantitative means of providing guidance for ranking the hazards that have the potential to impact the County. This ranking can assist participants in determining which hazards present the highest risks and therefore which ones to focus on when formulating mitigation projects and activities. Each hazard is scored on three categories: frequency, impacts on life and health and impacts on property and infrastructure based on a scoring system provided. Andrea walked the committee through the scoring system using excessive heat as an example and then provided time for the Committee to fill out the PRI form during the meeting. The results will be compiled, and the findings will be presented at the next meeting.

Mission Statement & Goals

Ken asked Committee members to review the draft mission statement and updated mitigation goals provided in the meeting materials. Both of these are required elements of the Plan. As part of the Plan update process, both items need to be reviewed and re-evaluated. The mission statement was reviewed, and it was determined that no revisions to the wording were needed.

Next Ken discussed the mitigation goals, which are intended to reduce long-term vulnerabilities to natural and man-made hazards. Each project included in the updated Plan should be aimed at one or more of the goals developed by the committee. The updated goals were reviewed, and no revisions were made to the wording.

The mission statement and goals will be added to the Plan update.

Mitigation

Andrea explained that mitigation actions include activities and projects that reduce the long-term risk to people and property from the natural and man-made hazards discussed in the risk assessment.

To help the jurisdictions think about and assemble their lists, Andrea provided several examples and referred participants to a 2-page list of potential mitigation projects included in the handout material along with mitigation project lists from other jurisdictions. These examples can be used to help Committee members when they prepare their list. Finally, Andrea provided excerpts from a FEMA publication on mitigation ideas as another resource.

Status of Existing Projects

Ken distributed **"Status of Existing Mitigation Actions"** forms to each of the previously participating jurisdictions detailing the mitigation projects and activities included in the original Plan. Andrea explained that as part of the update process the status of these projects needs to be determined. She described how the form should be completed so that this information can be included in the Plan update.

New Projects

The form titled **"Hazard Mitigation Projects"** was distributed and Andrea indicated this form should be used to submit new projects and activities for the Plan. She told the committee that individual mitigation project lists will be developed for each participating jurisdiction and that this is a list of projects each jurisdiction would like to see accomplished if funding becomes available. FEMA is trying to stimulate the implementation of mitigation projects and activities to reduce the extraordinary amount of money being expended on hazard event damages.

The projects and activities included in the Plan should be mitigation-related, not emergency preparedness, response, recovery, or maintenance. Mitigation projects can include studies, regulatory activities, structural and infrastructure projects, and information/education activities. She provided advice for completing the mitigation project list including providing a detailed description of the project, the jurisdiction responsible for the project and the time frame to complete the project.

Committee members were encouraged to contact Andrea or Ken if questions arise before they return to the next Committee meeting.

What Happens Next?

The vulnerability assessment and mitigation project prioritization methodology will be the main topics of the next committee meeting.

The third meeting of the Committee was scheduled for:

Thursday May 18, 2023
County Board Meeting Room, 2nd Floor
201 N. Vermilion St., Danville
6 P.M.

Public Comment

With no questions or comments, Andrea and Russ adjourned the meeting.

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee

County Board Meeting Room, 2nd Floor
201 N. Vermilion St., Danville
May 18, 2023
6:00 p.m.

Committee Members

Danville, City of
Danville Area Community College
Fairmount, Village of
Fithian, Village of
Georgetown, Village of
Hoopeston, City of
Muncie, Village of
NAACP of Vermilion County
Oakwood, Village of
Sidell, Village of
Tilton, Village of
Vermilion County Conservation District
Vermilion County Offices:
    EMA
    Highway Department
American Environmental Corp.

Welcome

Russell Rudd, Director of the Vermilion County Emergency Management Agency, welcomed attendees. He turned the meeting over to Andrea Bostwick, American Environmental Corporation (AEC), who opened the meeting.

Handout materials were distributed to each member in attendance. Andrea provided a brief recap to reorient Committee Members as to what has been accomplished. Before beginning the vulnerability analysis presentation, Andrea asked the participating jurisdictions to submit their completed "Critical Facilities", "Capability Assessments", and "Shelter Surveys" if they haven't done so already.

Vulnerability Analysis

Ken Runkle of AEC then began the vulnerability analysis discussion by noting that the focus of this meeting is the vulnerability posed by tornadoes. The analysis estimates future potential damages in terms of dollar loss to residences, including contents, for each participating jurisdiction based on FEMA acceptable formulas. The potential damages were calculated on the magnitude most likely to be encountered, not on a worst-case event.

Tornadoes

Since 1950, 63 tornadoes have been verified in Vermilion County. While occurring less frequently than severe storms and severe winter storms, tornadoes have caused more than $21.9 million in property damages, 1 fatality, and 23 injuries.

Using information from the 63 verified tornadoes, damages were calculated based on an "average" tornado. The average tornado in Vermilion County impacts approximately 0.12 square miles. Housing densities were calculated from U.S. Census Bureau

information for each of the participating jurisdictions. This information, along with a set of assumptions were used to estimate the number of vulnerable residential structures.

Potential dollar losses were then calculated for these vulnerable residential structures using the provided tax assessment values and an additional assumption about the degree of damage sustained by the structures and their contents.

Potential dollar losses caused by an average-sized tornado to residences and their contents would be expected to exceed at least $1.6 million in any of the participating municipalities. Losses ranged from $1.6 million in Tilton to $16.2 million in Fithian. Potential dollar losses by township would be expected to range from $46,652 in Goose Creek Township to $1.4 million in Newell Township. Ken noted that the damage figure for the Newell Township would only be reached if the tornado's path included a portion of the City of Danville.

Risk Priority Index Exercise Results

Andrea then presented the results of the Risk Priority Index Exercise that was conducted at the February 23, 2023 meeting. She provided the Committee with a brief recap on what the Risk Priority Index is and how it can help participants determine which hazards present the highest risk and therefore which ones to focus on when formulating mitigation projects and activities.

Based on the Committee's responses, tornadoes scored the highest, followed by thunderstorms with damaging winds and winter storms. The highest scoring man-made hazard was transportation related hazmat incidents. The hazards that scored the lowest included drought, terrorism, and fixed facility hazmat incidents.

A side-by-side comparison of how the hazards ranked between the original exercise conducted for the 2014 Plan and this exercise was provided for comparison. The top hazards from the original exercise included floods followed by tornadoes and severe winter storms/extreme cold.

Asset Vulnerability Survey

As part of the Plan update, Andrea indicated that vulnerable community assets need to be identified for the participating jurisdictions. FEMA requires that the Plan include a summary, such as a list of key issues or problem statements, which describes the effects the hazards have on each participating jurisdiction and their assets. Assets include people, structures (including critical facilities, infrastructure, and community lifelines), systems (networks and capabilities such as electrical and communications grids), and natural, historic, and cultural resources. She asked Committee members to complete a 2-page survey distributed to help identify each community's vulnerable assets and the hazards they are vulnerable to. This information will be used in the vulnerability analysis.

Mitigation Actions Prioritization Methodology

The Mitigation Actions Prioritization Methodology outlines the approach used to classify each mitigation action identified by the participating jurisdictions and is a FEMA-required element of the Plan.

Mitigation actions can be prioritized in a number of ways. Andrea explained that the updated methodology is based on key factors such as frequency of the hazard, degree of mitigation, and cost/benefit utilization.

This methodology helps objectively identify which projects and activities maximize benefits and have a greater likelihood to significantly reduce the long-term vulnerabilities associated with the most frequently-occurring hazards. After reviewing the updated methodology, the Committee determined that no changes needed to be made.

Andrea acknowledged that while this methodology does not take politics into consideration, this factor may affect the order in which projects are implemented. She also noted that it is important to keep in mind that implementing any of the mitigation projects is desirable regardless of which prioritization category they fall under.

Community Lifelines

Before discussing mitigation projects and the mitigation action tables with the Committee, Andrea took a few minutes to discuss the concept of community lifelines. FEMA has identified seven community lifelines that are the most fundamental services in the community that, when stabilized, enable all aspects of society to function. The seven community lifelines include: safety & security; food, water, shelter; health & medical; energy (power & fuel); communications; transportation; and hazardous materials.

While the concept of community lifelines was developed to support emergency response and planning, FEMA has begun applying it to all phases of emergency management. Efforts to protect community lifelines and prevent and mitigate potential impacts to them is one of the focuses of the BRIC grant program. A handout with a brief description of the community lifelines was included in the meeting packet. Community lifelines will be included in most project description to create a clear connection to the concept.

Mitigation Projects

Committee Members were asked to submit their existing and new Mitigation Projects forms. Andrea then described how the draft methodology, the existing and new lists of mitigation projects, finalized goals and other information will be presented for Committee review.

Andrea chose a frequently requested mitigation project, a community safe room (tornado shelter), as an example to show how a typical project is prioritized and entered into the Plan on a Mitigation Action Table. She described how each column in the Mitigation Action Table would be completed for this example project.

Andrea explained that the information in the Mitigation Action Tables would be prepared by AEC, but that the Tables cannot be completed until all of the participants submit their draft lists of projects. Committee Members will have the opportunity at the next meeting to review all of the mitigation projects submitted so that they can make adjustments to their lists if they choose.

It was noted that each jurisdiction will have their own list of jurisdiction-specific mitigation projects and they do not need to get approval from the County or any of the other participants for any of their projects. Participants were also reminded that this is a list of

projects and activities they would like to see accomplished if funding becomes available. For a jurisdiction to be eligible for a project, it must be on its list.

This is a mitigation plan and there are some projects that IEMA/FEMA do not consider mitigation. Projects associated with emergency preparedness, disaster response & recovery and maintenance will not be included in the Plan. Andrea noted that as the committee members put their lists together, if they are unsure about whether a project would be considered mitigation, go ahead, and include it on their list. AEC will review the lists and help make the appropriate determinations.

What Happens Next?

Andrea asked that mitigation project forms and all other previously-distributed forms be returned to AEC by June 30. The Committee agreed to schedule the next meeting on:

August 17, 2023
6 p.m.
County Board Meeting Room, 2nd Floor
201 N. Vermilion St., Danville

Public Comment

The representative of Georgetown asked who's plan this was and who approves it. Andrea explained that the Plan belongs to the County and the AEC was hired by the County to help them write the Plan. As for approval, she explained that the Plan would be approved by IEMA and FEMA, and then adopted by each jurisdiction that chose to participate.

With no additional questions or comments, Andrea and Russ adjourned the meeting.

Vermilion County Multi-Jurisdictional
All Hazards Mitigation Planning Committee

County Board Meeting Room, 2nd Floor
201 N. Vermilion St., Danville
August 17, 2023
6:00 p.m.

Committee Members

Danville, City of
Fairmount, Village of
Fithian, Village of
Georgetown, Village of
Hoopeston, City of
Muncie, Village of
NAACP of Vermilion County
Oakwood, Village of
OSF Sacred Heart
Rossville, Village of
Tilton, Village of
Vermilion County Conservation District
Vermilion County Offices:
- EMA
- Highway Department

American Environmental Corp.

Welcome

Russell Rudd, Director of the Vermilion County Emergency Management Agency, welcomed attendees. He turned the meeting over to Andrea Bostwick-Campbell, American Environmental Corporation (AEC), who opened the meeting.

Handout materials were distributed to each member in attendance. Andrea provided a brief recap to reorient Committee members as to what has been accomplished and what will be covered at this meeting.

Mitigation Project Submittal & Action Tables

Andrea thanked the Committee Members for assembling their lists of mitigation projects and activities. She explained that the information in the draft Mitigation Action Tables handout was prepared by AEC using the lists of mitigation projects and activities provided by the participation jurisdictions. A draft of the Mitigation Strategy section that details the review and re-evaluation of the goals and prioritization methodology as well as how the mitigation projects were analyzed in the tables was also provided in the meeting handouts for review by the Committee.

Committee members were asked to review the Mitigation Action Tables containing the descriptions of the mitigation projects and activities. Andrea and Ken Runkle of AEC moved throughout the room to discuss questions with each member. Some committee members expressed interest in adding additional mitigation projects to these tables. Andrea advised Committee Members who wished to add additional projects to provide them to her as soon as possible, and no later than September 29.

Participants were reminded that this is a list of projects and activities they would like to see accomplished if the money becomes available. Also, for a jurisdiction to be eligible for a project, it must be on its list.

Since this is a mitigation plan, some projects were either removed or not included if they were not considered mitigation. Projects associated emergency preparedness/response, recovery, and maintenance will not be included in the Plan.

Public Forum and Adoption

Andrea laid out the timeline for the remainder of the Plan update process and explained in more detail how the final meeting and adoption process would proceed. The final Committee meeting will be conducted as an open-house style public forum to present the draft Plan for review and comment. A paper copy of the draft Plan will be available for review at the meeting and posted online on the County's website. There will be a two-week public comment period following the public forum.

Unless otherwise specified, Committee members will receive an electronic copy of the draft plan to make available for public comment.

Once the comment period is over, any comments received will be incorporated into the Plan and submitted to IEMA/FEMA. Following IEMA and FEMA review, any edits requested will be made and then FEMA will issue an Approval Pending Adoption letter. At this point an email will be sent to all the participating jurisdictions, along with a copy of a model adoption resolution, asking them to formally adopt the Plan by resolution. A copy of the executed resolution should then be provided to AEC. Once all the adoption resolutions are received, Andrea will submit them to IEMA and FEMA. FEMA will then issue the Final Approval letter starting the clock for the five-year update.

Plan Maintenance and Update

Andrea described the commitments detailed in a draft of the Plan Maintenance and Update section provided in the meeting handouts for review by the Committee. The Plan will be monitored and evaluated on an annual basis by a Plan Maintenance Subcommittee, which will be made up of the participating jurisdictions and key member of the Planning Committee. The Vermilion County EMA Office will send out a Plan Maintenance Checklist to each of the participating jurisdictions who will be responsible for providing information to the Subcommittee. This information will include: the status of their mitigation actions; any hazard-related damages to critical facilities and infrastructure; the adoption of any new plans, policies, or regulations; and any significant changes in development. The Subcommittee will also evaluate the Plan to determine its effectiveness at achieving its stated purpose and goals. Participants can also add new mitigation actions during the annual monitoring phase or by contacting the EMA Director.

The EMA Office will then prepare an annual progress report detailing the results of the annual monitoring and evaluation period and provide copies to the Subcommittee. Any modifications or additions to the mitigation project list will require an update of the Mitigation Strategy and a resubmittal of the Plan to IEMA and FEMA for reference.

At least once every five years, the Plan must be reviewed, revised, and resubmitted to IEMA/FEMA for the participating jurisdictions to remain eligible for mitigation project funds. At the five-year update, any jurisdiction that is not already part of this Plan and who wants to become part of the updated Plan may do so. New jurisdictions must supply the same information that all the current jurisdictions supplied.

What Happens Next?

Public Forum

The final Committee meeting will be conducted as an open-house style public forum where the draft Plan update will be presented for review and comment.

The public forum will be held on:

Thursday, November 2, 2023
County Board Meeting Room, 2nd Floor
201 N. Vermilion St., Danville
5 p.m. to 7 p.m.

Public Comment

A member had a question about the recent storms that caused extended power outages in Danville and whether mitigation projects might alleviate the inability of affected residents to obtain food during the response/recovery. Andrea and Ken discussed the differences between mitigation and response and suggested that perhaps a backup generator at a food pantry might be a mitigation project that would prevent loss of perishable food in such a situation. The member will discuss with the City to determine if this might be a viable project to add.

With no other questions, the meeting was adjourned.

APPENDIX C

Vermilion County Citizen Questionnaire

You can help protect lives and property from natural hazard events in the County by taking a few moments to complete this questionnaire.

Asterisk (*) desonates required questions for form completion.

* 1. **Please indicate where you live in the County (Please check only one.):**

- ☐ Allerton
- ☐ Alvan
- ☐ Belgium
- ☐ Bismarck
- ☐ Catlin
- ☐ Danville
- ☐ Fairmount
- ☐ Fithian
- ☐ Georgetown
- ☐ Henning
- ☐ Hoopeston
- ☐ Indianola
- ☐ Muncie
- ☐ Oakwood
- ☐ Olivet
- ☐ Potomac
- ☐ Rankin
- ☐ Ridge Farm
- ☐ Rossville
- ☐ Sidell
- ☐ Tilton
- ☐ Westville
- ☐ Unincorporated County
- ☐ Other (please specify)

* 2. **Please place a checkmark next to each of the natural hazards listed below that you have experienced in the County (please check all that apply).**

- ☐ Severe Summer Storms (thunderstorms, hail, lightning strikes)
- ☐ Floods
- ☐ Severe Winter Storms (snow,sleet, ice)
- ☐ Excessive Heat

- [ ] Extreme Cold
- [ ] Tornadoes
- [ ] Drought
- [ ] Earthquakes
- [ ] Mine/Land Subsidence
- [ ] Landslides
- [ ] Dam Failures
- [ ] Other (please specify)

3. **Which of the natural hazards above have you encountered most frequently?**

4. **Rank the natural hazards listed below in order from 1 to 11 based on which hazard you feel poses the greatest threat. (1 = greatest threat and 11 = least threat)**
Each number should only be used once.

- Severe Summer Storms
- Floods
- Severe Winter Storms
- Excessive Heat
- Extreme Cold
- Tornadoes
- Drought
- Earthquakes

Mine/Land Subsidence

Landslides

Dam Failures

* 5. **What types of mitigation projects or activities are most needed in the County?**
Please check the five you feel are most important

- [ ] Public information fact sheets and brochures describing actions residents can take to protect themselves and their property against natural hazard impacts.
- [ ] Floodplain Ordinances
- [ ] Building Codes and Enforcement
- [ ] Sirens or other Alert Systems
- [ ] Flood or Drainage Protection (i.e., culvert and drainage ditch maintenance, retention pond construction, dam or levee conctruction/maintenance and/or hydraulic studies to determine cause of drainage problems.)
- [ ] Maintain power during storms by burying power lines, trimming trees and/or purchasing a back-up generator
- [ ] Other (please specify)
- [ ] Tornado Safe Shelters
- [ ] Maintain roadway passage during snow storms and heavy rains
- [ ] Provide sufficient water supply during drought
- [ ] Identify residents with special needs in order to provide assistance during a ntural hazard event
- [ ] Retrofit critical infrastructure (public water supplies, schools, sewage treatment facilities, bridges, hospitals and other important services) to reduce potential damages

* 6. **What are the most effective ways *for you* to receive information about how to make your household and property safer from natural hazards (Please check all that apply.)**

- [ ] Newspaper
- [ ] Television
- [ ] Radio
- [ ] Mailings
- [ ] Extension Service
- [ ] Public Workshops/Meetings

- [ ] Internet
- [ ] Fire Department/Law Enforcement
- [ ] Social Media (Facebook, Twitter, etc.)
- [ ] Public Health Department
- [ ] Schools
- [ ] Municipal/County Offices
- [ ] Other (please specify)

Thank you for your time in assisting with the update of the County's Hazard Mitigation Plan.
Vermilion County Multi-Jurisdictional All Hazard Mitigation Advisory Committee

Done

APPENDIX D

Frequently Asked Questions

Vermilion County Multi-Jurisdictional Hazard Mitigation Plan Update

1) What is the Vermilion County Hazard Mitigation Plan?

The Vermilion County Multi-Jurisdictional Hazard Mitigation Plan evaluates damage to life and property from natural and man-made hazards that have impacted the County and identifies projects and activities to reduce these damages. The Plan is considered to be multi-jurisdictional because it includes municipalities and other jurisdictions (townships, fire protection districts, schools, etc.) who want to participate.

2) What is hazard mitigation?

Hazard mitigation is any action taken to ***reduce*** the long-term risk to people and property from natural and man-made hazards ***before*** an event occurs.

3) Why is this Plan being updated?

The Plan update fulfills federal planning requirements of the Stafford Act as amended by the Disaster Mitigation Act and the Disaster Recovery and Reform Act. While meeting federal requirements, this Plan update also provides these benefits:

- Funding for mitigation projects and activities ***before*** disasters occur.
- Funding for projects and activities ***following*** declared disasters.
- Increased awareness about natural hazards and closer cooperation among the various organizations and political jurisdictions involved in emergency planning and response.

4) Who is updating this Plan?

The Vermilion County Multi-Jurisdictional Hazards Mitigation Planning Committee is updating the Plan with assistance from technical experts in emergency planning, environmental matters, and infrastructure. The Committee will include members from education, emergency services, municipal, township and county government, health care, and law enforcement.

5) How can I participate?

You are invited to attend public meetings of the Vermilion County Hazard Mitigation Planning Committee. In addition, you are encouraged to provide photographs, other documentation, and anecdotal information about damages you experienced from natural and man-made hazards in Vermilion County. Surveys will be available at participating jurisdictions and through Vermilion County to help gather specific information from residents. All of this information will be used to update the Plan. The draft Plan update will be presented at a public forum for further public input.

More information can be obtained by contacting:

Russell Rudd, Director
Vermilion County Emergency Management Agency
201 North Vermilion Street – Lower Level
Danville, IL 61832
(217) 443-6012

APPENDIX E

Media Outlets Serving Vermilion County

Commercial-News (Weekly)
https://www.commercial-news.com/

Just the Facts (Daily)
https://www.justthefacts.net/

News-Gazette (Daily)
https://www.news-gazette.com/

Neuhoff Media - Danville
WDNL (102 FM), WRHK (94.9 FM), & WDAN (1490 AM)
https://vermilioncountyfirst.com/contact-us/

WHPO Radio (100.9 FM)
https://whporadio.com/

WITY News (980 AM & 99.5 FM)
https://wityradio.com/news

APPENDIX F

VERMILION COUNTY
EMERGENCY MANAGEMENT AGENCY

Contact: Russell Rudd
217-443-6012

County Prepares For Natural Disasters

Danville, IL (October 6, 2022) — Vermilion County will update its plan to reduce the damages caused by severe weather such as tornadoes, snow and ice storms, thunderstorms, and floods among other events. The plan is called a Hazard Mitigation Plan and the process to update it will be funded through a grant from the Federal Emergency Management Agency (FEMA).

“The Plan describes the natural and man-made hazard events that have impacted the County and identifies activities and projects to reduce the risk to residents, property, and infrastructure”, said Vermilion County Emergency Management Agency Director, Russell Rudd. “By having an updated hazard mitigation plan, the County and participating jurisdictions will become eligible for federal funds to construct these projects,” he added.

The Vermilion County Hazard Mitigation Planning Committee will hold its first meeting on Thursday, October 27 at 6pm at the Courthouse Administration Building, 2nd Floor, 201 N. Vermilion St., Danville. The meeting is open to the public.

The Planning Committee includes County, municipal, school, and health care representatives, as well as technical partners and other stakeholders. Meetings of this committee will be conducted over the next year as working sessions so that any interested residents can attend and ask questions. The purpose of these working sessions is to gather and discuss information that will be used to update the Plan.

“This mitigation plan is different from our County’s emergency response plan because it focuses on ways to reduce and prevent damages before they occur,” added Rudd.

Posted on the WITY Radio website
October 6, 2022 at 7:36am

Email: publish@justthefacts.net
Phone/Fax: (217) 283-9348
Just the Facts
Lourdine Florek, Owner
Thursday, October 13, 2022
Hoopeston's only locally-owned daily news publication!
P.O. Box 441, Hoopeston IL 60942
www.justthefacts.net

Project Success to mark *Lights On Afterschool* in county

Project Success in Hoopeston Area schools will join countless others across the nation in marking the 23rd annual Lights On Afterschool this month.

Lights On Afterschool is an annual celebration of afterschool programs, calling attention to the importance of such programs and resources required to keep the lights on and the doors open.

Project Success has programs in schools around the county and will celebrate Lights On Afterschool. Hoopeston Area schools will mark the night from 5-7 p.m. Thursday Oct. 20 at the McFerren Park Civic Center, where the program's high school students are putting together a Halloween-themed even with stations for different games and a haunted house.

Project Success is celebrating afterschool programs at Salt Fork on October 13. On October 20, Oakwood schools will mark the event and on October 27, activities are scheduled for Georgetown-Ridge Farm and Westville high schools and Mary Miller and Westville junior high schools, as well as Pine Crest.

Project Success after school programs are funded through 21st Century Community Learning Centers (Illinois State Board of Education), Teen REACH (IL Department of Human Services), and other community supports.

After school program sites include: Central Christian (serving Mark Denman and Meade Park Elementary), South View Upper Elementary, North Ridge Middle School, Hoopeston, Georgetown-Ridge Farm, Oakwood, Salt Fork, and Westville schools.

Vermilion County EMA readies mitigation plan for natural disasters

DANVILLE—Vermilion County will update its plan to reduce the damages caused by severe weather such as tornadoes, snow and ice storms, thunderstorms, and floods, among other events. The plan is called a Hazard Mitigation Plan and the process to update it will be funded through a grant from the Federal Emergency Management Agency (FEMA).

"The plan describes the natural and man-made hazard events that have impacted the county and identifies activities and projects to reduce the risk to residents, property, and infrastructure", said Russell Rudd, Vermilion County Emergency Management Agency Director.. "By having an updated hazard mitigation plan, the county and participating jurisdictions will become eligible for federal funds to construct these projects," he added.

The Vermilion County Hazard Mitigation Planning Committee will hold its first meeting at 6 p.m. Thursday, Oct. 27 at the Courthouse Administration Building, 2nd

See EMA on other side

Briefly

At the Library

Register by October 13 for the October guided craft project, Cork Pumpkins session at 1 p.m. Monday, Oct. 17.

STEAM Lab, 3:30 p.m. Thursday. For kids in grades 1-5. This month, experiments on pumpkins!

Treeclimbers Genealogy Group, 10:30 a.m. Saturday, Oct. 15. For experienced or beginning genealogists.

For more information on library programs, call (217) 283-6711 or visit 110 N. Fourth St.

Church hosting community meals

New Beginnings of Hoopeston is hosting a community meal at the Hoopeston Multi Agency on Thursdays starting at noon and ending at 1 p.m. or until the food is gone. It is for anyone that may be struggling and needs a hot meal.

The Gathering

The Gathering, a monthly social get-together for Rossville residents, will be he held from 1-3 p.m. Thursday at Rossville Fire Station.

The event is sponsored by Rossville Community Organization.

Alley cleanup

Alley cleanup will begin on Monday, Oct. 17, starting on the Northwest side of town, weather permitting. This is for yard waste ONLY. If there is anything else in the pile, the pile will not be picked up.

Trunk or Treat to benefit pets

Hoopeston Animal Rescue Team will hold a "Trunk or Treat" from 6-7:30 p.m. Saturday, Oct. 15 in the old Blurton Funeral Home parking lot, 907 W. Main. There will be a bake sale and opportunities to purchase pet food from Chad Thomas to donate to the shelter.

Pet supply and monetary donations will also be accepted. Rain Date is October 16.

Free tire collection

A free tire collection will be held from 9 a.m.-noon Saturday, Oct. 22, at the McFerren Park Annex.

Obituaries

BEISHUIZEN - Dorothy Jane (Perzee) Beishuizen, 94, of Cissna Park, died Tuesday, Oct. 11, 2022 at Iroquois Resident Home, Watseka. Visitation will be 11 a.m. until the 1 p.m. funeral Monday at Cissna Park United Methodist Church. Burial will follow in Cissna Park Cemetery. Memorials are suggested to the church. Condolences may be shared at www.knappfuneralhomes.com.

BUTLER - Melisa Mae Butler, 56, of Danville, died at 1:12 p.m. Monday, Oct. 10, 2022, at OSF Sacred Heart Medical Center, Danville. Visitation will be 4-7 p.m. Thursday at Faith Baptist Church, 920 Warrington Ave., Danville. Funeral will be at 10 a.m. Friday at the church. Burial will follow in Oakhill Cemetery, Danville. Memorials are suggested to the church. Anderson Funeral Home, Hoopeston, is handling arrangements. Condolences may be shared at www.anderson-funeral-home.com.

Fire Calls

Hoopeston Fire Department was called at 3:47 a.m. Monday for a dumpster fire at Tedd's Beverage, 101 W. Main. No injuries were reported.

EMA continued from other side

Floor, 201 N. Vermilion St., Danville. The meeting is open to the public.

The planning committee includes county, municipal, school, and health care representatives, as well as technical partners and other stakeholders. Meetings of this committee will be conducted over the next year as working sessions so that any interested residents can attend and ask questions. The purpose of these working sessions is to gather and discuss information that will be used to update the plan.

"This mitigation plan is different from our County's emergency response plan because it focuses on ways to reduce and prevent damages before they occur," added Rudd.

Weather

Sunny, breezy today. High 56. Tonight, clear, frost. Low 33. Tomorrow, early frost, sunny. High 56, low 42.

For real time Hoopeston weather, visit justthefacts.net/weather/.

Classifieds

HELP WANTED

Teasdale Latin Foods has immediate openings on 1st and 2nd shift in Manufacturing. Holding OPEN interviews Tuesdays 2 p.m.-4 p.m., Wednesdays and Fridays 10 a.m.-12 p.m. Come by the Human Resources office, 215 W. Washington St, Hoopeston for an immediate interview or apply online at teasdalelatinfoods.com. Please no phone calls.

Hoopeston Police Department will accept applications for the position of police officer until 8 a.m. Saturday, Nov. 5, 2022. Applications/forms are available at the Department, 301 W Main St. and cityofhoopeston.com/employment/. Completed applications/forms may be dropped at the Police Department or emailed to admin@hoopestonpolice.org.

Written testing will begin at 8 a.m. on 11/05/22 at the Hoopeston Area High School, 615 E Orange St., followed immediately by the physical agility test.

Fast Lanes is looking for a breakfast waitress. Apply in person. No phone calls.

Silgan Containers is hiring Press Operators. Please apply online at: https://silgancontainers.mua.hrdepartment.com/hr/ats/Posting/view/12655

KSI in Cissna Park is looking for a full time accounts receivable specialist.. Candidates should be organized, a communicator and adaptable. More details, along with culture and benefits, available at www.ksiedge.com. Inquiries may be sent to hr@ksiedge.com or call (785) 284-0600, ext. 1422. Applications available onsite at 454 N. St. Rt. 49, Cissna Park.

City of Hoopeston is seeking applications for full time position at the Water and Sewer Department. Applicants must have a HS diploma or equivalent, Class B CDL or ability to get one, a positive attitude with a strong work ethic, and a willingness to learn. Applications are available at City Hall, 301 W Main St. or online at cityofhoopeston.com/employment/.

Silgan Containers is hiring for Press Line Mechanics. Please apply online at: silgancontainers.mua.hrdepartment.com/hr/ats/Posting/view/12464/0

Fall help wanted at United Prairie, 18979 E 2850 N Rd., Hoopeston. Call Jordan Reese, (217) 888-0164 (office) or (217) 918-2876 (cell).

Full-Fill Industries in Henning is HIRING, starting pay $18/hour. Apply at www.full-fill.com or applications available onsite. EOE

Silgan Containers is hiring for an Electrician-Industrial/Maintenance position. Please apply online at: silgancontainers.mua.hrdepartment.com/hr/ats/Posting/view/12406/0

City of Hoopeston Police Department is taking applications for certified police officers/part time certification is recognized. Applications will be ongoing; no deadline applies for certified officers.

HOUSES FOR RENT

Hoopeston 3 bedroom 1 bath home, all one level, laundry room, large yard. Call or text 217-495-2274

Vermilion County Emergency Management Agency

Page · Government organization

(217) 443-6011

ema@vercounty.org

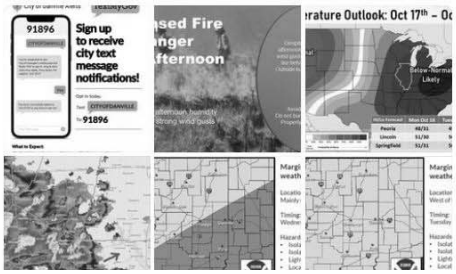
vercounty.org/emergency-management

Price Range · $

Rating · 5.0 (5 Reviews)

Add diversity info

Photos See all photos



Vermilion County Emergency Management Agency
October 6 at 6:54 AM ·

Contact: Russell Rudd
217-443-6012

County Prepares For Natural Disasters

Danville, IL (October 6, 2022) — Vermilion County will update its plan to reduce the damages caused by severe weather such as tornadoes, snow and ice storms, thunderstorms, and floods among other events. The plan is called a Hazard Mitigation Plan and the process to update it will be funded through a grant from the Federal Emergency Management Agency (FEMA).

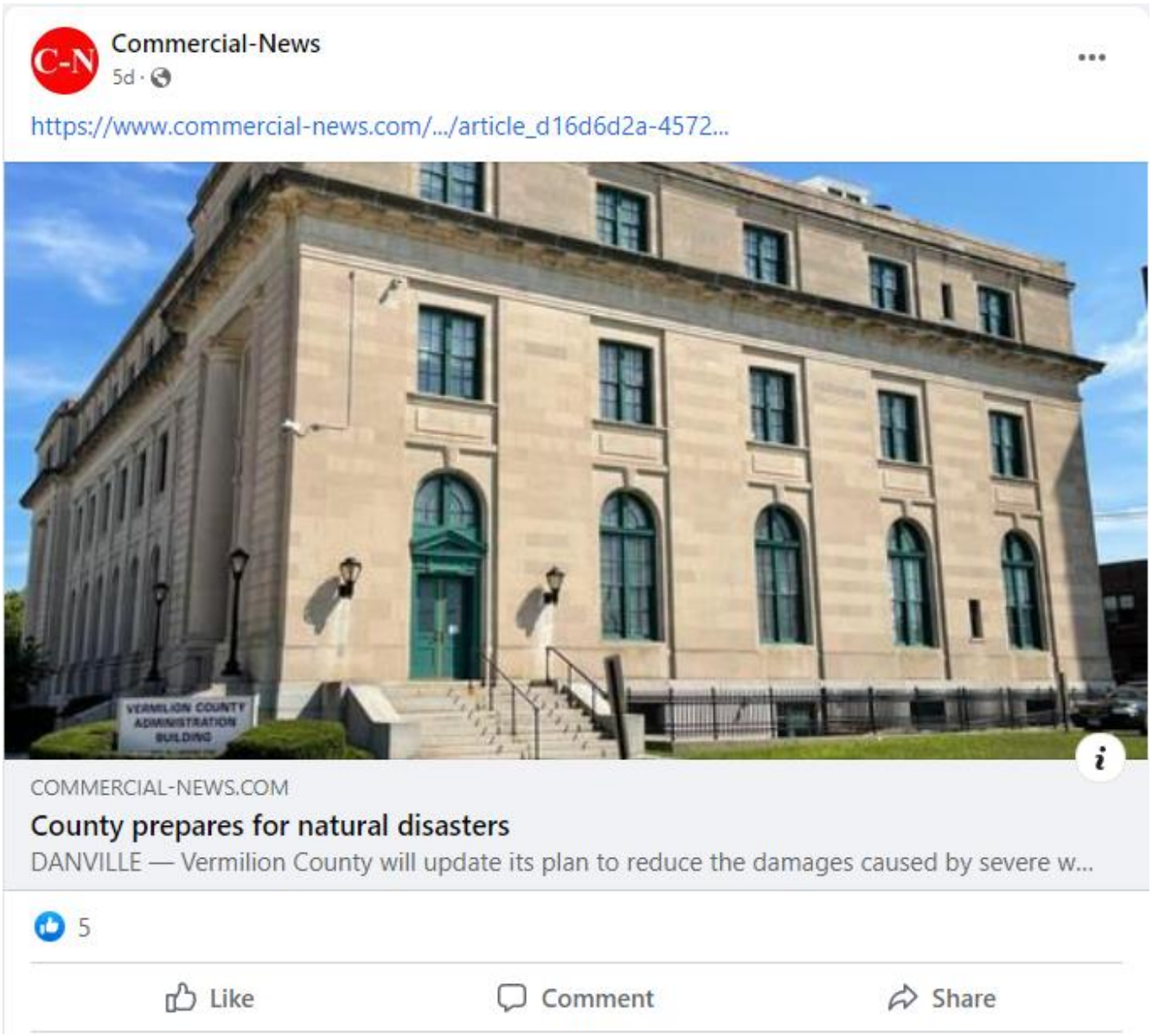
"The Plan describes the natural and man-made hazard events that have impacted the County and identifies activities and projects to reduce the risk to residents, property, and infrastructure", said Vermilion County Emergency Management Agency Director, Russell Rudd. "By having an updated hazard mitigation plan, the County and participating jurisdictions will become eligible for federal funds to construct these projects," he added.

The Vermilion County Hazard Mitigation Planning Committee will hold its first meeting on Thursday, October 27 at 6pm at the Courthouse Administration Building, 2nd Floor, 201 N. Vermilion St., Danville. The meeting is open to the public.

The Planning Committee includes County, municipal, school, and health care representatives, as well as technical partners and other stakeholders. Meetings of this committee will be conducted over the next year as working sessions so that any interested residents can attend and ask questions. The purpose of these working sessions is to gather and discuss information that will be used to update the Plan.

"This mitigation plan is different from our County's emergency response plan because it focuses on ways to reduce and prevent damages before they occur," added Rudd.

3



Posted on the Danville Commercial-News Facebook page
Thursday, October 6, 2022 at 8:34am.

VERMILION COUNTY
EMERGENCY MANAGEMENT AGENCY

FOR IMMEDIATE RELEASE

Contact: Russell Rudd
217-443-6012

Reducing Damages Caused by Severe Weather and Other Hazards

Danville, IL (February 6, 2023) — The frequency of and damages caused by severe storms and other natural and man-made hazards in Vermilion County will be discussed when the Vermilion County Hazard Mitigation Planning Committee meets at the at the Courthouse Administration Building, 2nd Floor, 201 N. Vermilion St., Danville, at 6 p.m. on Thursday, February 23.

This Committee, comprised of County, municipal, educational, and health care representatives, as well as technical partners and other stakeholders, will meet over the next several months to update the Vermilion County All Hazards Mitigation Plan. All Committee meetings are open to the public.

"The goal of this Committee Meeting is to identify how often severe weather events occur within the County and what kinds of damages have resulted. Based on this information we will begin to compile lists of activities and projects to reduce damages caused by these events," said Vermilion County Emergency Management Agency Director, Russell Rudd.

The focus of this effort is on natural hazards — severe thunderstorms with damaging winds or hail, tornadoes, snow and ice storms, floods, drought, and excessive heat.

Interested persons can provide input at these meetings or submit their comments and questions to their appropriate representatives.

Participants to date include the County, Alvin, Danville, Fairmount, Muncie, Oakwood, Sidell, Tilton, Danville Area Community College, NAACP of Vermilion County, OSF Sacred Heart Medical Center, United Way, and Vermilion Advantage. Jurisdictions who have yet to participate in a committee meeting are encouraged to attend.

"This Plan will be our best resource for determining how to prepare for storms and other natural and man-made hazards. After the Plan is updated, comprehensive information will be available in one document to help guide those who are making decisions about how to better protect Vermilion County residents," added Rudd.

https://www.commercial-news.com/news/local_news/county-updating-hazards-mitigation-plan/article_bf9c2a36-a653-11ed-8143-c3c61232c272.html

County updating hazards mitigation plan

JENNIFER BAILEY JBAILEY@DANCOMNEWS.COM
Feb 7, 2023

The frequency of and damages caused by severe storms and other natural and man-made hazards in Vermilion County will be discussed at a meeting this month.

The Vermilion County Hazard Mitigation Planning Committee will meet at 6 p.m. on Feb. 23 at the county administration building, second floor, 201 N. Vermilion St., Danville.

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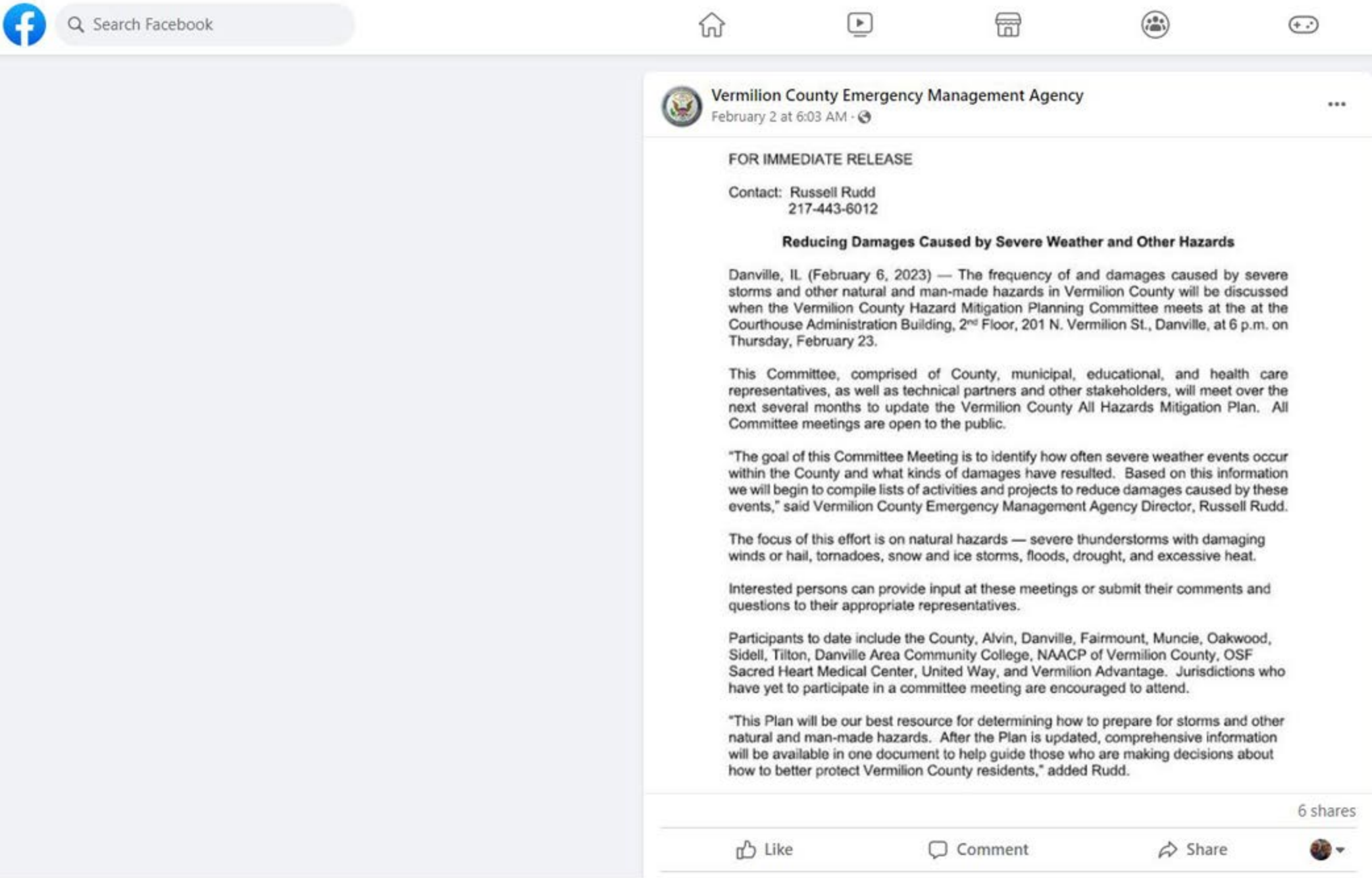
“This plan will be our best resource for determining how to prepare for storms and other natural and man-made hazards. After the plan is updated, comprehensive information will be available in one document to help guide those who are making decisions about how to better protect Vermilion County residents,” Rudd said.

Vermilion County received a $56,262 Hazard Mitigation Grant from the state.

American Environmental Corp. of Springfield is completing the Hazard Mitigation Plan update for the county. The update is required to allow all participating units of government in Vermilion County to apply for and receive Emergency Management Agency grants from the state.


Search Facebook
Vermilion County Emergency Management Agency
February 2 at 6:03 AM
FOR IMMEDIATE RELEASE
Contact: Russell Rudd
217-443-6012
Reducing Damages Caused by Severe Weather and Other Hazards
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6 shares
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Appendix F

VERMILION COUNTY
EMERGENCY MANAGEMENT AGENCY

FOR IMMEDIATE RELEASE

Contact: Russell Rudd
217-443-6012

Reducing Damages Caused by Severe Weather and Other Hazards

Danville, IL (May 1, 2023) — Identifying projects and activities that can protect Vermilion County residents, property, and critical infrastructure from natural and man-made hazards while maintaining vital services when severe weather hits will be discussed at the Vermilion County Hazard Mitigation Planning Committee meeting at the at the Courthouse Administration Building, 2nd Floor, 201 N. Vermilion St., Danville, at 6 p.m. on Thursday, May 18.

"Severe weather frequently damages buildings, crops, roads, and other critical infrastructure in this area. Since 1968, the County has been a part of eight federal disaster declarations. In addition, there have been at least seven fatalities, 39 injuries, and $128 million in verified property and crop damages caused by hazard events in the County," said Vermilion County Emergency Management Agency Director, Russell Rudd. "Identifying preventative steps that can be taken to reduce the dollar damages as well as protect public health before a natural hazard event occurs is the goal of this planning process."

This Committee began work in October 2022 to update the County's All Hazards Mitigation Plan. Committee meetings are open to the public.

"Other emergency plans are directed at responding after a storm or disaster strikes. With this Plan, we will identify actions that can be taken to reduce damages caused by natural and man-made hazards for each participating jurisdiction before they occur. This Plan also helps assure each participating jurisdiction is eligible to receive federal grant money for mitigation projects," added Rudd.

Building community safe rooms, acquiring flood prone properties, resolving drainage issues, retrofitting critical infrastructure to better withstand hazard events, installing back-up power supplies, and developing public information materials are a few of the more frequently encountered mitigation projects in Illinois.

Hazard planning public meeting set

Danville / WITY
Bob Iverson
May 15, 2023 | 7:40 PM

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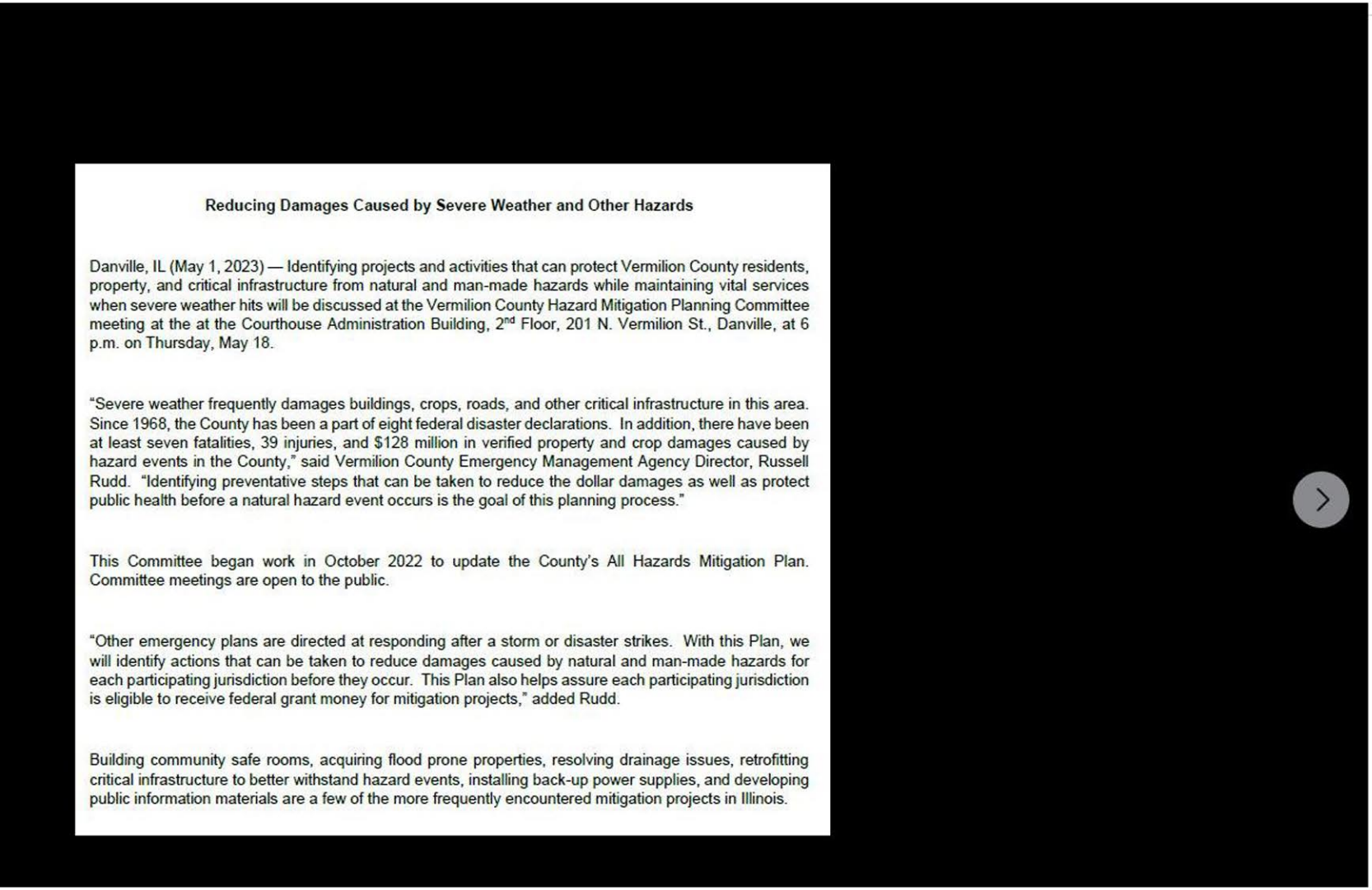

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VERMILION COUNTY
EMERGENCY MANAGEMENT AGENCY

FOR IMMEDIATE RELEASE

Contact: Russell Rudd
217-443-6012

Protecting Public Health and Property in Vermilion County

Danville, IL (July 31, 2023) -- Projects and activities to prevent injuries and fatalities while maintaining vital services for Vermilion County residents will be the main topic of discussion at the Vermilion County All Hazards Mitigation Planning Committee meeting to be held at the Courthouse Administration Building, 2nd Floor, 201 N. Vermilion St., Danville, at 6 p.m. on Thursday, August 17.

The Committee began work in October 2022 to update the County's All Hazards Mitigation Plan. This Plan details the past severe weather events that have impacted the County and identifies mitigation projects and activities that can be taken before a severe weather event occurs to protect residents and critical services and infrastructure.

"There has been at least $128 million in verified property and crop damages, seven fatalities, and 39 injuries caused by severe weather events in the County," according to Russell Rudd, Vermilion County Emergency Management Agency (EMA) Director. "Obtaining FEMA's approval of our updated Plan will make all of the participants eligible to receive federal grant money for mitigation projects and activities."

Projects identified by Committee members at this meeting will become part of the Vermilion County All Hazards Mitigation Plan. While the committee has provided input on portions of the Plan, the entire Plan will be presented for public review and comment before it is submitted to the state and federal government for approval.

"A public forum will be conducted later this fall for interested persons to review the Plan update and ask questions of Committee Members. A two-week public comment period will be held following the public forum to accommodate interested persons who are unable to attend. We want to make sure that anybody who is interested has an opportunity to review and comment on the draft Plan update," added Rudd.

Interested persons can submit questions and comments to the Committee members or directly to the Vermilion County EMA Office.

https://www.commercial-news.com/news/local_news/committee-to-discuss-hazard-planning-for-county/article_f630078e-2fe2-11ee-8d26-2b715128b0fc.html

Committee to discuss hazard planning for county

Staff Report
Aug 1, 2023

Projects and activities to prevent injuries and fatalities while maintaining vital services for Vermilion County residents will be the main topic of discussion at the Vermilion County All Hazards Mitigation Planning Committee meeting to be held at 6 p.m. on Thursday, Aug. 17 on the second floor of the Joseph G. Cannon Building, 201 N. Vermilion St.

The committee began work in October 2022 to update the County's All Hazards Mitigation Plan. This plan details the past severe weather events that have impacted the county and identifies mitigation projects and activities that can be taken before a severe weather event occurs to protect residents and critical services and infrastructure.

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Interested persons can submit questions and comments to the committee members or directly to the Vermilion County EMA Office.

Email: publish@justthefacts.net
Phone/Fax: (217) 283-9348
Lourdine Florek, Owner
Just the Facts
Wednesday, August 2, 2023
Hoopeston's only locally-owned daily news publication!
P.O. Box 441, Hoopeston IL 60942
www.justthefacts.net

Mitigation committee to finalize plan, seek public comment

DANVILLE—Projects and activities to prevent injuries and fatalities while maintaining vital services for Vermilion County residents will be the main topic at the Vermilion County All Hazards Mitigation Planning Committee meeting.

County officials, as well as those from communities throughout the county, will meet at 6 p.m. Thursday Aug. 16, at the Courthouse Administration Building, 2nd Floor, 201 N. Vermilion St., Danville.

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A two-week public comment period will be held following the public forum to accommodate interested people who are unable to attend. "We want to make sure that anybody who is interested has an opportunity to review and comment on the draft Plan update," added Rudd.

Those interested submit questions and comments to the committee members or directly to the Vermilion County EMA Office, 201 N. Vermilion St., Danville, Illinois 61832.

From the Blotter

Dana Breeling, 60, of Hoopeston, was stopped at 3:26 a.m. Thursday at South Fourth St. and East Maple. He was charged with operating when registration suspended and no insurance and was released on notices to appear in Vermilion County Traffic Court.

Dylan Shoulders, 19, of Hoopeston, was arrested after a traffic stop at 12:28 a.m. Saturday at West Penn and South Second Ave. He was charged with driving while license suspended and operating an uninsured vehicle.

Shoulders was processed at the police station before being released on notices to appear in Vermilion County Traffic Court.

Paul Odom Jr. 27, of Hoopeston, was arrested at 4:11 a.m. Saturday in the 400 block of North Fourth St. Wanted on a Vermilion County warrant, he was processed at the police station, then taken to the Public Safety Building in Danville in lieu of bond.

Joshua D. McKinnie, 23, of Danville, was arrested after a traffic stop at 4:40 a.m. Sunday on West Orange. He was charged with driving while license revoked and released with a notice to appear in Vermilion County Traffic Court.

A set of keys was found Sunday in the area of South Fourth St. and East Lincoln. The owner may identify and claim them at the police station.

A 17-year-old Potomac boy was stopped at 1:03 a.m. Thursday for a traffic violation at West Orange and South Dixie Hwy. on July 27.

See BLOTTER on other side

Whether your passion is events, kids, pets or something else, snap it and enter it in the

Just the Facts

Summer Snaps

Photo Contest

June 20-September 20

1 photo selected each week to compete for a $25 monthly prize. One photographer will win a

$100 Grand Prize!

Open to amateur photographers only. Limit 1 photo/week/person. Decision of the judges is final. By submitting photos, photographer gives Just the Facts all rights to photos. Entries must be less than 2 MB in size.

Email photos to ***publish@justthefacts.net*** and include "photo contest" in subject line, names of subjects in photo (if applicable), location and photographer's real (not screen/alias) name.

Briefly

At the library

Coffee, Craft & Conversation 10 a.m.-noon Wednesdays. Crochet, knit, sew and other needlecraft, along with those who do other portable handcrafts are inviting to bring their projects and enjoy a morning of fun and conversation!

City Chat, 10:30-11:30 a.m. Saturday. A monthly informal gathering with Mayor Jeff Wise.

For information on Hoopeston Public Library programs, stop by 110 N. Fourth St., or call (217) 283-6711.

HMA activities

Women's Morning Donut Group meets at 8:15 a.m. every Wednesday. Come join us!

Card group meets Wednesday for euchre starting 12:30.

For more information on Multi Agency programs, call (217) 283-5544 or stop by 206 S. First Ave.

Moms' group

Moms, come meet other moms and their children at 10 a.m. the first Friday of each month at the Hoopeston Multi Agency, 206 S. First Ave. The goal is to build friendships for moms and their children. For information, call/text Somer at (309) 242-5017.

Bulk garbage day

Bulk garbage day, for Hoopeston residents only, will be held from 7:30-10:30 a.m. Saturday at Hoopeston City Hall parking lot.

Residents are limited to one load per bulk day and must unload their own load or bring some-one to help.

Dumping of electronics, appliances, paint, liquids, tires, batteries, yard waste, construction/demolition material or anything that fits in the provided blue totes is not allowed. Items from apartments with a dumpster will not be allowed and items from businesses and contractors will not be permitted.

Class reunion

Rossville-Alvin class of 1968 will have its 55th class reunion August 4 at Rossville Hubbard Trail Country Club. Any Rossville-Alvin graduate or family member of a graduate is welcome to come to Hubbard Trail Country Club at 6 p.m.

Blotter continued from other side

Police said he was given several days to produce proof of insurance and failed to do so and on Monday was mailed a notice to appear in Vermilion County Traffic Court on the infraction.

Jeff Chandler, 46, of Hoopeston, was arrested after officers alleged they saw him digging through a dumpster at 4:12 a.m. Monday at Hoopeston Multi Agency, 206 S. First Ave.

After the manager said she would like to press charges, Chandler was found, charged with tampering with containers or contents, and released on a notice to appear in Hoopeston City Court.

The set of keys found Sunday were claimed Monday.

Weather

Mostly sunny today. High 83. Tonight, mostly cloudy, chance of showers. Low 64. Tomorrow, chance of showers, partly cloudy late. High 83, low 66.

For real time Hoopeston weather, visit justthefacts.net/weather/.

Classifieds

HELP WANTED

Customer service-driven business looking for a self-starter with excellent people skills to join our professional office team. Ability to learn new skills and familiarity with computer skills a must. Hours will be 9-5 M-F. Attire is business casual. Send resume to publish@justthefacts.net with Box A in the subject line.

Silgan Containers is hiring for Press Line Mechanics. Please apply online at silgancontainers.mua.hr department.com/hr/ats/Posting/view/13827

Silgan Containers is hiring an Electrician – Industrial/Maintenance Technician. Please apply online at: silgancontainers.mua.hrdepartment.com/hr/ats/Posting/view/13392

Aquality Solutions is looking for men or women to deliver its products to area businesses and residential customers. This position offers benefits and incentive bonuses. Apply in person at 102 N 1st Street in Hoopeston or call us at 855-692-7824.

Truck Drivers needed. Must have clean driving record. Contact Brent @ 815-405-4000 sinntruckinginc@gmail.com

City of Hoopeston Police Department is taking applications for certified police officers/part time certification is recognized. Applications ongoing; no deadline applies for certified officers.

NOTICES

The City of Hoopeston is accepting bids for the 50/50 sidewalk program. Bid specs are available at City Hall, 301 W Main St., or the Street and Alley Department, 434 W Penn St. and on the City of Hoopeston Facebook page and website, www.cityofhoopeston.com. Bids must be dropped off at City Hall and are due by 10 am Monday, August 14th, 2023. Bid openings will be held at City Hall on Monday, August 14th, 2023 at 10 am. For questions, please call City Hall at 217-283-5833.

Vermilion Co All Hazards Mitigation Planning Committee Mtg Set for 6 PM; Thurs Aug 17th

By Steve Brandy

Aug 14, 2023 | 12:18 PM

the Vermilion County Board chamber on the second floor of the Joseph G Cannon Vermilion County Administration Bulding.

This committee, consisting of various leaders around Vermilion County, was put together to come up with mitigation strategies for various hazards that could hit the county. The purpose is to prevent injuries and fatalities, while maintaining vital services. Earlier this year, there was a previous meeting to discuss what possible hazards to prepare for. But as Vermilion County Emergency Management Agency director Russell Rudd explains; since then, something happened creating some new concerns.

00:00 00:00

AUDIO: Obviously, since we had the storm, back on June 29th I think it was; nobody was really expecting to be without power for a week. Obviously, that's something that we need to look out. Because extended power outages do cause a great deal of inconvenience and harm.

As for other concerns already talked about, Rudd pointed out that it's important to remember various hazards can occur anywhere in Vermilion County, often connected to severe weather. One example would be flooding.

00:00 00:00

AUDIO: You don't necessarily have to live next to a river. I mean, you can have flash flooding and be nowhere near a river and have issues. And these are some of the hazards we take a look at, to see if there's any kind of mitigation efforts that might relieve the burden on the public if something like that happens; like you get a ten inch rainfall in a couple hours or something.

Once again, this Thursday's meeting is open to the public; and will begin at 6 PM in the Cannon County Administration Building at 201 North Vermilion.

Stories You May Have Missed

[Pastor Who Served at Shiloh Apostolic Church has Mon Aug 14th 2:30 PM Court Date]

[A Call for a Non-Profit to Come to Danville / Vermilion County to Increase Home Ownership]

[Nickolas Receives Five Years for Burglary]

[Rule Changes Proposed for County Board]

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Committee to discuss hazard planning for county

- Staff Report

- 14 hrs ago

Projects and activities to prevent injuries and fatalities while maintaining vital services for Vermilion County residents will be the main topic of discussion at the Vermilion County All Hazards Mitigation Planning Committee meeting to be held at 6 p.m. on Thursday, Aug. 17 on the second floor of the Joseph G. Cannon Building, 201 N. Vermilion St.

The committee began work in October 2022 to update the County's All Hazards Mitigation Plan. This plan details the past severe weather events that have impacted the county and identifies mitigation projects and activities that can be taken before a severe weather event occurs to protect residents and critical services and infrastructure.

"There has been at least $128 million in verified property and crop damages, seven fatalities, and 39 injuries caused by severe weather events in the county,"

according to Russell Rudd, Vermilion County Emergency Management Agency (EMA) Director. “Obtaining FEMA’s approval of our updated plan will make all of the participants eligible to receive federal grant money for mitigation projects and activities.”

Projects identified by committee members at this meeting will become part of the Vermilion County All Hazards Mitigation Plan. While the committee has provided input on portions of the Plan, the entire Plan will be presented for public review and comment before it is submitted to the state and federal government for approval.

“A public forum will be conducted later this fall for interested persons to review the Plan update and ask questions of Committee Members. A two-week public comment period will be held following the public forum to accommodate interested persons who are unable to attend. We want to make sure that anybody who is interested has an opportunity to review and comment on the draft Plan update,” added Rudd.

Interested persons can submit questions and comments to the committee members or directly to the Vermilion County EMA Office.

Search Facebook

Vermilion County Emergency Management Agency

Page · Government organization

(217) 443-6011

ema@vercounty.org

vercounty.org/emergency-management

Price Range · $

Rating · 5.0 (5 Reviews)

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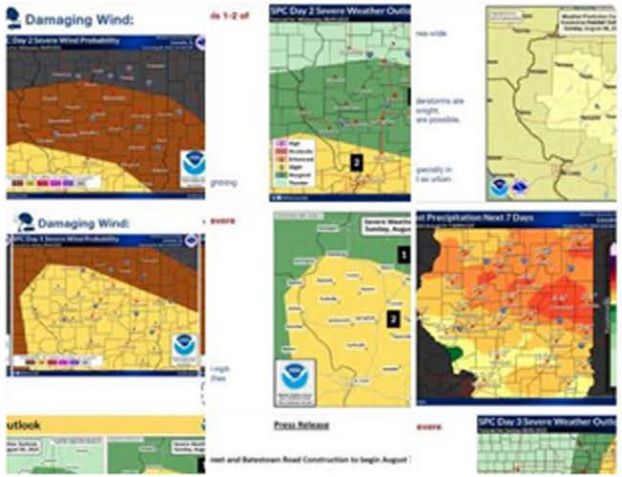

Vermilion County Emergency Management Agency
July 31 at 6:42 AM ·

Protecting Public Health and Property in Vermilion County

Danville, IL (July 31, 2023) -- Projects and activities to prevent injuries and fatalities while maintaining vital services for Vermilion County residents will be the main topic of discussion at the Vermilion County All Hazards Mitigation Planning Committee meeting to be held at the Courthouse Administration Building, 2nd Floor, 201 N. Vermilion St., Danville, at 6 p.m. on Thursday, August 17.

The Committee began work in October 2022 to update the County's All Hazards Mitigation Plan. This Plan details the past severe weather events that have impacted the County and identifies mitigation projects and activities that can be taken before a severe weather event occurs to protect residents and critical services and infrastructure.

"There has been at least $128 million in verified property and crop damages, seven fatalities, and 39 injuries caused by severe weather events in the County," according to Russell Rudd, Vermilion County Emergency Management Agency (EMA) Director. "Obtaining FEMA's approval of our updated Plan will make all of the participants eligible to receive federal grant money for mitigation projects and activities."

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"A public forum will be conducted later this fall for interested persons to review the Plan update and ask questions of Committee Members. A two-week public comment period will be held following the public forum to accommodate interested persons who are unable to attend. We want to make sure that anybody who is interested has an opportunity to review and comment on the draft Plan update," added Rudd.

Interested persons can submit questions and comments to the Committee members or directly to the Vermilion County EMA Office at ema@vercounty.org .

5 shares

VERMILION COUNTY
EMERGENCY MANAGEMENT AGENCY

FOR IMMEDIATE RELEASE

Contact: Russell Rudd
217-443-6012

Plan to Protect Public Health and Property in Vermilion County
Ready for Public Review

Danville, IL (October 16, 2023) -- The updated Vermilion County Multi-Jurisdictional All Hazards Mitigation Plan outlining projects and activities to reduce damages caused by severe weather and other natural hazards will be available for public review and comment starting November 2, 2023. The Plan, along with a summary sheet and a comment survey, will be available for review at the Vermilion County EMA office and on the County website.

The comment period will remain open through November 16, 2023. Public comments received will be used to make any revisions needed before the Plan is submitted to the Illinois and Federal Emergency Management Agencies.

The Vermilion County All Hazards Mitigation Planning Committee has been conducting working meetings open to the public since October 2022. The Committee prepared the Plan with technical assistance from state and federal agencies as well as a consultant specializing in emergency management planning.

The municipalities of Danville, Fairmount, Fithian, Georgetown, Hoopeston, Muncie, Oakwood, Rossville, Sidell, and Tilton have participated in the planning process. Other participating jurisdictions include OSF Healthcare, the Sidell Volunteer Fire Department, and the Vermilion County Conservation District. Technical partners in the process include the Danville Branch 3009 of the NAACP, Vermilion Advantage, and the United Way of Danville Area.

“This Plan describes how the County and the participating jurisdictions have been impacted by severe weather and other hazards and identifies specific mitigation actions that can be taken to reduce damages to people and property before events occur,” explained Russell Rudd, Vermilion County Emergency Management Agency Director.

An open-house style public forum will be held at the Courthouse Administration Building, 2nd Floor, 201 N. Vermilion St., Danville, from 5 p.m. to 7 p.m. on Thursday, **November 2, 2023**. Individuals can come and review the Plan at any time during the forum. Those unable to attend can still review the Plan and provide comments without participating in the public forum.

Plan to Protect Public Health and Property in Vermilion County Ready for Public Review

By Steve Brandy

THE FOLLOWING IS A VERMILION COUNTY EMERGENCY MANAGEMENT RELEASE

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Appendix F

The municipalities of Danville, Fairmount, Fithian, Georgetown, Hoopeston, Muncie, Oakwood, Rossville, Sidell, and Tilton have participated in the planning process. Other participating jurisdictions include OSF Healthcare, the Sidell Volunteer Fire Department, and the Vermilion County Conservation District. Technical partners in the process include the Danville Branch 3009 of the NAACP, Vermilion Advantage, and the United Way of Danville Area.

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Vermilion County Emergency Management Agency

Intro

County emergency management agency

Page · Government organization

(217) 443-6011

ema@vercounty.org

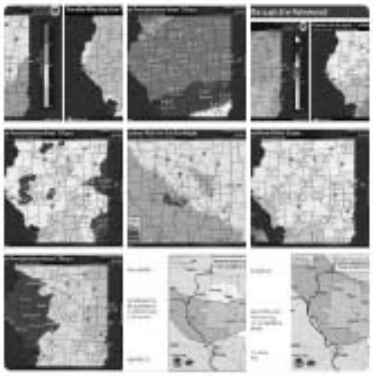
vercounty.org/emergency-management

Price Range · $

Rating · 5.0 (5 Reviews)

Photos

See all photos



Vermilion County Emergency Management Agency
October 16 at 6:05 AM

FOR IMMEDIATE RELEASE

Contact: Russell Rudd
217-443-6012

Plan to Protect Public Health and Property in Vermilion County Ready for Public Review

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2 3

Like Comment

APPENDIX G

VERMILION COUNTY MULTI-JURISDICTIONAL MULTI-HAZARD MITIGATION PLAN PUBLIC FORUM SUMMARY HANDOUT

NOVEMBER 2, 2023
5:00 P.M. – 7:00 P.M.

Each year natural hazards (i.e., severe thunderstorms, tornadoes, severe winter storms, flooding, etc.) cause damage to property and threaten the lives and health of Vermilion County residents. Since 1968, Vermilion County has been included in eight major federally-declared disasters and experienced at least $55.8 million in recorded property damages and $65.5 million in recorded crop damages.

In the last 10 years alone (2013 – 2022), there have been 107 thunderstorms with damaging winds, 39 severe storms with hail one inch in diameter or greater, 34 flash flood events, 29 extreme cold events, 27 excessive heat events, 21 severe winter storms, 9 tornadoes, 8 riverine flood events, 1 mine subsidence event, and 1 lightning strike with verified damages in the County. While natural and man-made hazards cannot be avoided, their impacts can be reduced through effective hazard mitigation planning and implementation.

What is hazard mitigation planning?
Hazard mitigation planning is the process of determining how to reduce or eliminate property damage and loss of life from natural and man-made hazards. This process helps the County and participating jurisdictions reduce their risk by identifying vulnerabilities and developing mitigation actions to lessen and sometimes even eliminate the effects of a hazard. The results of this process are documented in a multi-hazard mitigation plan.

Why prepare an updated multi-hazard mitigation plan?
By preparing and adopting an updated multi-hazard mitigation plan, participating jurisdictions become eligible to apply for and receive federal hazard mitigation funds to implement mitigation actions identified in the plan. These funds, made available through the Disaster Mitigation Act of 2000, can help provide local government entities with the opportunity to complete mitigation projects that would not otherwise be financially possible.

Who participated in the update of the County's Multi-Hazard Mitigation Plan?
Recognizing the benefits that could be gained from preparing an updated multi-hazard mitigation plan, Vermilion County invited all the local government entities within the County to participate. The following jurisdictions chose to participate in the Plan update with the County:

- Danville, City of
- Fairmount, Village of
- Fithian, Village of
- Georgetown, Village of
- Hoopeston, City of
- Muncie, Village of
- Oakwood, Village of
- OSF HealthCare Sacred Heart Medical Center
- Rossville, Village of
- Sidell, Village of
- Sidell Volunteer Fire Department
- Tilton, Village of
- Vermilion County Conservation District

How was the Plan update developed?
The Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Plan update was developed through the Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Planning Committee. The Committee included representatives from each participating jurisdiction, as well as business, education, emergency services, healthcare, and social services. The Planning Committee met five times between October 2022 and November 2023.

VERMILION COUNTY MULTI-JURISDICTIONAL MULTI-HAZARD MITIGATION PLAN

Which hazards are included in the Plan update?

After reviewing the risk assessment, the Planning Committee chose to include the following hazards in the Plan:

Natural Hazards

- severe storms (thunderstorms, hail, lightning)
- severe winter storms (snow & ice)
- floods (riverine & flash)
- excessive heat
- extreme cold
- tornadoes
- drought
- earthquakes
- mine subsidence
- dam failures

Man-Made Hazards

- hazardous substances (generation, transportation, and storage/handling)
- waste disposal
- hazardous material incidents
- waste remediation
- nuclear incidents
- terrorism

What is included in the Plan update?

The Plan update is divided into sections that cover the planning process; the risk assessment; the mitigation strategy, including the jurisdiction-specific mitigation action lists; and plan maintenance and adoption. The majority of the Plan update is devoted to the risk assessment and mitigation strategy.

The risk assessment identifies the natural and man-made hazards that pose a threat to the County and includes a profile of each hazard, which describes the location and severity of past occurrences, reported damages to public health and property, and the likelihood of future occurrences. It also provides a vulnerability analysis that estimates the potential impacts each natural hazard would have on the health and safety of the residents of Vermilion County, as well as the buildings, critical facilities, and infrastructure in the County.

The key component of the mitigation strategy is a list of the projects and activities developed by each participating jurisdiction to reduce the potential loss of life and property damage that results from the natural and man-made hazards identified in the risk assessment. These projects and activities are intended to be implemented *before* a hazard event occurs.

What happens next?

Any comments received at today's public forum and during the public comment period will be reviewed and, where applicable, incorporated into the draft Plan update before it is submitted to the Illinois Emergency Management Agency (IEMA) and Office of Homeland Security (IEMA-OHS) and the Federal Emergency Management Agency (FEMA) for review. Once IEMA-OHS and FEMA have reviewed and approved the Plan, it will be presented to the County and each participating jurisdiction for formal adoption. After adopting the Plan update, each participating jurisdiction will be eligible to apply for federal mitigation funds and can begin implementing the mitigation actions identified in the Plan.

APPENDIX H

VERMILION COUNTY MULTI-JURISDICTIONAL MULTI-HAZARD MITIGATION PLAN

COMMENT SHEET

PLAN COMMENT PERIOD
NOVEMBER 2, 2023 THRU NOVEMBER 16, 2023

The County's Multi-Jurisdictional Multi-Hazard Mitigation Plan evaluates damage to life and property from the natural and man-made hazards that occur in the County. This Plan also identifies projects and activities for the County and each participating jurisdiction that will help reduce these damages. This comment sheet should be used to provide feedback on the draft Plan update.

What comments, concerns or questions do you have regarding the draft Plan update?
(Use additional sheets if necessary.)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Please Print Your Name, Address, and Phone Number Below:

Name: _____ Phone: _____

Address: _____

_____ Zip Code: _____

Comments will be accepted through November 16, 2023.

Place
Stamp
Here

Mr. Russell Rudd, Director
Vermilion County Emergency Management Agency
201 N. Vermilion St., Lower Level
Danville, IL 61832

Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Plan Update Comment Survey

The Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Plan evaluates damage to life and property from the natural and man-made hazards that occur in the County. This Plan also identifies projects and activities for the County and each participating jurisdiction to help reduce these damages. This comment sheet should be used to provide feedback on the draft Plan.

An asterisk (*) denotes a question that is required for form completion.

* 1. What comments, concerns or questions do you have regarding the draft Plan?

* 2. Name:

3. Address:

4. City/Village/Town:

5. State/Province:

6. Zip Code:

* 7. Email Address:

8. Phone Number:

Comments will be accepted through November 16, 2023.

Done

Appendix H

APPENDIX I

Runkle, Ken

From: Russell L. Rudd <russell.rudd@vercounty.org>
Sent: Thursday, October 12, 2023 10:41 AM
To: 'John Dwyer'; Chana Ray - Douglas County EMA (chana.ray@douglascountyil.gov); Jill Taylor; 'Terry Whitebird'; Scott Anderson; 'mark.oheir@vermillioncounty.in.gov'; 'emadirector@warrencounty.in.gov'
Cc: Runkle, Ken
Subject: Hazard Mitigation Plans Update

Greetings all,

The purpose of this email is to inform you that Vermilion County is updating its countywide All Hazards Mitigation Plan. Since we share common boundaries, you are invited to review our draft Plan and provide comments during the public comment period, which runs from November 2 through November 16, 2023. Starting November 2, the Plan, along with a summary sheet and a comment survey, can be viewed on the Vermilion County webpage.

A public forum is scheduled for:

Thursday, November 2, 2023
5 p.m. to 7 p.m.
Vermilion County Administration Building, 2nd Floor
201 N. Vermilion St., Danville

If you have any questions, please contact me at 217-443-6012 or russell.rudd@vercounty.org

American Environmental Corp., an emergency management and environmental consulting firm experienced in preparing these plans, is leading our planning process. If you have specific questions about the Plan, please contact Ken Runkle, a consultant team member, at 217-585-9517 or krunkle@aecspfld.com

Russell Rudd
Director
Vermilion County Emergency Management
201 N Vermilion St, Lower Level
Danville, IL 61832
Russell.rudd@vercounty.org
Office: (217) 443-6012
Cell: (217) 495-0796

APPENDIX J

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
03/04/1974	6:20 PM	Catlin	n/a	n/a	n/a	n/a	n/a	
06/19/1974	8:20 PM	Danville	n/a	n/a	n/a	n/a	n/a	
08/13/1974	12:00 PM	Danville	50 kts	n/a	n/a	n/a	n/a	
07/19/1975	5:45 PM	Danville	52 kts	n/a	n/a	n/a	n/a	
06/15/1976	5:00 PM	Danville	n/a	n/a	n/a	n/a	n/a	
05/04/1977	9:30 PM	Hoopeston	n/a	n/a	n/a	n/a	n/a	
09/30/1977	8:40 PM	Danville	n/a	n/a	n/a	n/a	n/a	
09/30/1977	10:30 PM	Danville	n/a	n/a	n/a	n/a	n/a	
07/07/1978	1:20 PM	Rossville	n/a	n/a	n/a	n/a	n/a	
05/30/1980	10:50 AM	Alvin^	50 kts	n/a	n/a	n/a	n/a	
06/02/1980	11:50 AM	Danville	50 kts	n/a	n/a	n/a	n/a	
07/05/1980	4:05 AM	Hoopeston	52 kts	n/a	n/a	n/a	n/a	
06/15/1981	9:00 PM	Danville^	n/a	n/a	n/a	n/a	n/a	
04/02/1982	10:30 PM	Danville	n/a	n/a	n/a	n/a	n/a	
04/02/1982	11:30 PM	Westville^ Belgium^	n/a	n/a	n/a	n/a	n/a	
05/21/1982	8:07 PM	Danville	n/a	n/a	n/a	n/a	n/a	
04/12/1984	6:40 PM	Danville Danville^	n/a	4	n/a	n/a	n/a	
04/12/1984	7:00 PM	Danville Danville^	n/a	n/a	n/a	n/a	n/a	
09/23/1986	3:08 PM	Danville	n/a	n/a	n/a	n/a	n/a	
06/02/1987	1:25 PM	Danville	57 kts	n/a	n/a	n/a	n/a	
07/15/1987	3:20 PM	Danville^	n/a	n/a	n/a	n/a	n/a	
05/08/1988	6:45 PM	Danville	n/a	n/a	n/a	n/a	n/a	

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
06/17/1992	3:50 PM	Hoopeston Tilton Danville^	n/a	n/a	n/a	n/a	n/a	
05/24/1994	3:52 PM	Westville	n/a	1	n/a	$500,000	n/a	Thunderstorm winds peeled the roof off an elementary school. A custodian was injured by falling debris. There was $80,000 in damages to the roof and another $10,000 in water damage. Some of the roof debris damaged nearby homes. Tree limbs were also blown down.
05/13/1995	10:30 PM	Georgetown	n/a	n/a	n/a	$140,000	n/a	Thunderstorm winds tore the roof off of a gym in Mary Miller Junior High and did significant structural damage to an adjoining administration building.
06/10/1995	3:20 AM	Danville	52 kts	n/a	n/a	n/a	n/a	One large tree and several large tree limbs were blown down by thunderstorm winds.
06/26/1995	6:36 PM	Potomac	n/a	n/a	n/a	n/a	n/a	Thunderstorm winds blew down a large tree onto a house and caused substantial damage. No damage estimate was available.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
01/18/1996	12:45 PM	Ridge Farm Olivet^ Georgetown^ Midway^ Westville^ Belgium^ Catlin^ Tilton^ Danville Bismarck^ Henning^ Alvin^ Rossville Hoopeston	n/a	n/a	n/a	n/a	n/a	
07/24/1996	2:15 PM	Fithian Fithian^ Muncie^	n/a	n/a	n/a	n/a	n/a	
08/07/1996	6:20 PM	Henning	n/a	n/a	n/a	n/a	n/a	
10/29/1996	6:58 PM	Potomac	52 kts	n/a	n/a	n/a	n/a	
07/14/1997	2:10 PM	Danville	n/a	n/a	n/a	n/a	n/a	Thunderstorm winds blew down two large trees in Danville. One tree fell onto a garage causing moderate damage and the other one fell onto a car.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
07/18/1997	4:32 PM	Hoopeston Rossville^ Alvin^ Henning^ Bismarck^ Danville	n/a	n/a	n/a	$200	n/a	Thunderstorm winds blew down numerous trees in Hoopeston and Danville. One tree in Hoopeston fell near a business, breaking several windows in the building.
05/19/1998	5:30 PM	Danville Tilton^ Belgium^ Westville^ Midway^ Georgetown	n/a	n/a	n/a	$350,000	n/a	A severe thunderstorm moved south across Vermilion County. It caused considerable damage to the roof of a canning factory in Danville, as well as, destroying a nearby gas station's sign and causing minor damage to a hotel roof. As the storm moved into Georgetown, it blew down several large tree limbs and power lines.
06/12/1998	3:17 PM	Potomac Danville Catlin Jamesburg^	52 kts	n/a	n/a	n/a	n/a	Thunderstorm winds blew down several trees, tree limbs, and power lines in Potomac, Danville and Catlin.
06/18/1998	8:30 PM	Danville	60 kts	n/a	n/a	n/a	n/a	
06/29/1998	5:05 PM	Countywide	n/a	n/a	n/a	n/a	n/a	
07/20/1998	2:00 PM	Hoopeston	n/a	n/a	n/a	n/a	n/a	Thunderstorm winds blew some siding off of one house and blew down several small trees and tree limbs. Also, the post office window was pushed out slightly but not blown out from the winds.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
07/22/1998	2:20 PM	Danville	n/a	n/a	n/a	n/a	n/a	Thunderstorm winds blew down several trees, took part of a tin roof off of a building, and blew a garage off its foundation and destroyed it one mile east of Danville. Also, a barn door was blown in and a grain trailer was blown over.
09/20/1998	12:15 PM	Oakwood^	n/a	n/a	n/a	n/a	n/a	Thunderstorm winds blew off the roof of a barn in Brothers. Some of the debris was blown into a nearby house causing minor damage.
11/10/1998	6:57 AM	Hoopeston Rossville Alvin^ Henning^ Bismarck^ Danville	52 kts	n/a	n/a	$30,000	n/a	One mile west of Hoopeston, a shed was destroyed and a house sustained window and roof damage.
12/06/1998	7:10 PM	Hoopeston	n/a	n/a	n/a	n/a	n/a	Thunderstorm winds destroyed a shed and blew down several trees and power lines one mile west of Hoopeston.
02/11/1999	5:40 PM	Fithian^ Muncie^ Danville Rossville^ Potomac^ Collison^ Hoopeston	n/a	1	n/a	n/a	n/a	A semi was blown over on I-74 just north of Fithian. The driver sustained minor injuries. In Danville, several windows on a business were broken and in Hoopeston several power poles were blown down.
04/08/1999	10:50 PM	Danville	n/a	n/a	n/a	n/a	n/a	Several power lines were blown down in the City.
04/10/1999	10:00 PM	Armstrong^	52 kts	n/a	n/a	n/a	n/a	

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06/01/1999	8:44 PM	Westville Midway^ Belgium^ Tilton^ Danville	n/a	n/a	n/a	n/a	n/a	As storms moved across Vermilion County, a tree split in half and fell onto a house in Westville causing minor damage. Also, a shed was destroyed and a camper was flipped over onto its roof. In Danville, a tree fell onto a car causing minor damage. Numerous tree limbs were blown down.
06/04/1999	5:48 PM	Countywide	n/a	n/a	n/a	n/a	n/a	Countywide numerous trees, tree limbs, and power lines were blown down.
06/11/1999	12:10 PM	Fithian Muncie^	61 kts	n/a	n/a	n/a	n/a	
09/28/1999	4:18 PM	Rossville^	n/a	n/a	n/a	n/a	n/a	Microburst winds from a severe thunderstorm moved through an area just north of Rossville. The winds blew down several trees and numerous tree limbs. One tree split in half. One half of the tree fell onto a house causing minor damage. An old barn nearby was blown down.
05/09/2000	2:00 PM	Potomac Potomac^ Rossville^ Jamesburg Danville	62 kts	n/a	n/a	n/a	n/a	Numerous power poles and power lines were blown down between Potomac and Rossville. Also, a tree was blown down onto a home in Potomac causing minor damage. In Danville, several trees and tree limbs were blown down. Also, 6 sheets of aluminum (30 feet high) were ripped off of a building. One tree fell onto a truck causing minor damage and one mobile home sustained minor damage and another sustained major damage after being tipped over.

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Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
05/09/2000	2:30 PM	Ridge Farm	58 kts	n/a	n/a	n/a	n/a	Thunderstorm winds destroyed a tool shed, blew a tree onto a house causing minor damage, and took some shingles off of a garage roof in Ridge Farm.
05/12/2000	6:18 PM	Catlin Westville Belgium^ Midway^	n/a	n/a	n/a	n/a	n/a	Thunderstorm winds blew down numerous power lines. Also, in Westville a tree was blown over onto a house causing minor damage.
06/10/2000	2:10 PM	Danville Tilton^	n/a	n/a	n/a	n/a	n/a	Numerous large tree limbs were blown down as well as 4 power poles.
06/14/2000	1:50 PM	Danville	59 kts	n/a	n/a	n/a	n/a	Several large trees were blown down around town.
08/17/2000	7:25 PM	Georgetown Ridge Farm	n/a	n/a	n/a	n/a	n/a	Trees and power lines were reported down in Georgetown and in Ridge Farm.
04/06/2001	1:20 PM	Hoopeston	50 kts	n/a	n/a	n/a	n/a	
04/06/2001	1:40 PM	Bismarck^ Danville^ Danville Tilton^ Belgium^ Westville^ Midway^ Georgetown	60 kts	n/a	n/a	n/a	n/a	Numerous reports of damage were received in this area. Half of a 80-100 foot tree fell into a screened in porch and garage. A pole barn was destroyed 4 miles north northwest of Danville. Other reports around the area involved trees, tree limbs and power lines down. Also, in Georgetown the winds caused minor damage to the high school roof.
04/09/2001	11:40 PM	Fairmount Fairmount^ Georgetown	50 kts	n/a	n/a	n/a	n/a	Power lines and trees reported down. A empty semi trailer was tipped over onto the top of a car parked next to it in Fairmount.

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Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
06/19/2001	4:15 PM	Ridge Farm Ridge Farm^ Olivet^ Georgetown^	50 kts	n/a	n/a	n/a	n/a	Thunderstorm winds blew down numerous trees, tree limbs, power poles and lines, especially in the Ridge Farm area. In Ridge Farm, 3 homes sustained minor structural damage with major roof damage to a grade school.
06/19/2001	5:25 PM	Sidell^ Archie^ Danville Allerton Sidell Georgetown Westville Catlin Tilton Jamaica^	50 kts	n/a	n/a	n/a	n/a	A second storm moved through the county, causing widespread damage. In Sidell, two homes and a church sustained minor structural damage. Numerous trees, tree limbs and power lines were blown down in Allerton, Sidell, Georgetown, Westville and Danville.
07/08/2001	2:50 PM	Hoopeston Rossville^	74 kts	n/a	n/a	$8,500,000	n/a	Downburst winds caused considerable damage on the west side of Hoopeston. Three businesses were destroyed, one hundred homes sustained minor to moderate damage, and the EMS building was destroyed. Also, the sewer department suffered major damage and a church suffered minor damage. Numerous trees, tree limbs, power poles, and power lines were blown down in Hoopeston and areas to the southeast, east of Rossville.
07/23/2001	6:10 PM	Potomac	52 kts	n/a	n/a	n/a	n/a	Several power lines were blown down in the Village.

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Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
08/18/2001	1:31 PM	Hoopeston Rossville Rossville^	52 kts	n/a	n/a	n/a	n/a	A large tree was blown down near Rossville.
10/24/2001	1:25 PM	Countywide	56 kts	1	n/a	n/a	n/a	Thunderstorm winds blew down numerous trees, tree limbs, and power lines countywide. In Georgetown, the community center sustained moderate roof damage when a 120 foot by 100 foot section was blown apart. In Rossville, several outbuildings sustained minor to moderate damage. In Danville, the roof of a business was blown off. Also, several homes sustained minor damage in Westville, Sidell, and Georgetown.
06/04/2002	6:55 PM	Danville	50 kts	n/a	n/a	n/a	n/a	Several trees were blown down in town, as well as, tree limbs.
04/21/2003	4:00 AM	Rossville Rossville^	57 kts	n/a	n/a	$40,000	n/a	Thunderstorm winds uprooted several large trees, destroyed an above ground pool and destroyed several sheds.
05/28/2003	6:10 PM	Georgetown	55 kts	n/a	n/a	n/a	n/a	Several trees and power poles were blown down.
07/06/2003	7:40 PM	Rossville^	55 kts	n/a	n/a	n/a	n/a	Several large trees were blown down.
07/08/2003	5:00 PM	Countywide	52 kts	n/a	n/a	n/a	n/a	Numerous trees, tree limbs and power lines were blown down, especially in the Georgetown and Westville areas.
07/09/2003	5:39 PM	Rossville	50 kts	n/a	n/a	n/a	n/a	Several trees and power lines were blown down.
07/11/2003	6:20 PM	Danville Tilton^	52 kts	n/a	n/a	n/a	n/a	

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05/25/2004	1:25 AM	Ridge Farm Georgetown Olivet	52 kts	n/a	n/a	n/a	n/a	Several large tree limbs and power lines were blown down.
05/30/2004	6:35 PM	Rossville	50 kts	n/a	n/a	n/a	n/a	Several large trees were blown down.
06/10/2004	3:15 PM	Jamaica^	50 kts	n/a	n/a	n/a	n/a	Numerous large tree limbs were blown down.
06/10/2004	8:56 PM	Danville	55 kts	n/a	n/a	n/a	n/a	Several trees and power lines were blown down.
07/05/2004	12:30 PM	Alvin^	50 kts	n/a	n/a	n/a	n/a	Several trees and power lines were blown down.
07/09/2004	5:10 PM	Danville	52 kts	n/a	n/a	n/a	n/a	Thunderstorm winds blew two trees down onto unoccupied cars.
07/10/2004	6:00 PM	Danville	50 kts	n/a	n/a	n/a	n/a	A large tree was blown over onto an unoccupied car and pickup truck, damaging both.
07/13/2004	2:35 PM	Fithian^ Muncie^ Indianola^ Oakwood Oakwood^ Fairmount^ Jamaica^	61 kts	n/a	n/a	$500,000	n/a	A line of severe thunderstorms moved from northwest to southeast across Vermilion County. There was widespread tree and power line damage. Several small grain bins and barns were destroyed. In Oakwood, the roof of a truck stop was severely damaged. Several semis were blown over on I-74 near Oakwood and near Fithian. The drivers were uninjured.
07/21/2004	5:36 PM	Danville Tilton^ Belgium^ Westville^ Midway^ Georgetown	50 kts	n/a	n/a	n/a	n/a	Several power lines and trees were blown down.

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05/13/2005	5:30 PM	Fithian	60 kts	n/a	n/a	n/a	n/a	A greenhouse, 2 barns and a metal tool shed were destroyed. Numerous trees and power lines blown down.
06/05/2005	1:20 PM	Hoopeston	55 kts	n/a	n/a	n/a	n/a	Numerous trees and power lines down.
06/07/2005	4:40 PM	Rossville	55 kts	n/a	n/a	n/a	n/a	Extensive damage to a shed and a dog house was blown across a yard.
06/08/2005	5:25 PM	Rossville^ Hoopeston^	50 kts	n/a	n/a	n/a	n/a	Several tree limbs blown down.
07/26/2005	6:25 PM	Fithian Muncie^	50 kts	n/a	n/a	n/a	n/a	
08/11/2005	4:35 PM	Danville	50 kts	n/a	n/a	n/a	n/a	Building under construction damaged by wind gusts and a nearby tree was uprooted.
09/19/2005	4:50 PM	Catlin	50 kts	n/a	n/a	n/a	n/a	Tree limbs and power lines blown down.
11/06/2005	12:03 AM	Westville Belgium^ Midway^	50 kts	n/a	n/a	n/a	n/a	Power transformer and lines blown down.
11/06/2005	2:15 AM	Fairmount^	50 kts	n/a	n/a	n/a	n/a	A tree and fence were blown down.
04/02/2006	6:30 PM	Muncie Fithian^ Bismarck Bismarck^ Oakwood Oakwood^ Danville Danville^	60 kts	n/a	n/a	n/a	n/a	Widespread tree, power pole and power line damage and minor home damage was reported. Part of the roof was blown off the Oakwood Jr High School and Muncie Baptist Church. Windows were blown out of several buildings in downtown Danville. A semi trailer truck was blown over on I-74. No injuries were reported.

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04/14/2006	12:30 AM	Sidell Archie^	70 kts	n/a	n/a	n/a	n/a	Two garages were destroyed and several other structures received roof damage. Also, numerous trees, power poles and power lines were blown down.
05/24/2006	5:25 PM	Rossville	52 kts	n/a	n/a	n/a	n/a	Doors blown out on a tool shed. Several trees were blown down.
05/25/2006	1:28 PM	Alvin^	52 kts	n/a	n/a	n/a	n/a	Several trees and power lines were blown down.
06/19/2006	3:30 PM	Rossville	52 kts	n/a	n/a	n/a	n/a	
07/26/2006	6:20 PM	Rossville^	56 kts	n/a	n/a	n/a	n/a	Two large trees were blown down and some shingles were torn off a roof.
05/02/2008	10:35 AM	Danville	55 kts	n/a	n/a	$5,000	n/a	A large tree was blown down onto power lines.
05/30/2008	3:32 PM	Hoopeston	61 kts	n/a	n/a	n/a	n/a	
06/03/2008	10:25 PM	Danville	52 kts	n/a	n/a	$30,000	n/a	Numerous trees down on the south and east side of the City.
06/13/2008	11:00 AM	Catlin^	52 kts	n/a	n/a	$15,000	n/a	Several power poles were blown over to a 60 degree angle.
06/15/2008	3:58 PM	Hoopeston	58 kts	n/a	n/a	$35,000	n/a	Numerous large tree limbs and a power pole were blown down.
07/20/2008	2:00 PM	Catlin	52 kts	n/a	n/a	$22,000	n/a	Numerous 2 to 3 foot diameter trees were blown down in the Village.
07/20/2008	2:10 PM	Danville	52 kts	n/a	n/a	$15,000	n/a	Power lines were blown down on the southeast side of the City.
07/20/2008	2:20 PM	Georgetown	52 kts	n/a	n/a	$15,000	n/a	Numerous power lines were blown down in City.
07/20/2008	2:30 PM	Ridge Farm	52 kts	n/a	n/a	$15,000	n/a	Three foot diameter tree was blown over onto an unoccupied truck.
07/21/2008	9:45 PM	Danville	52 kts	n/a	n/a	$2,000	n/a	A tree was blown down 1 mile north of the Danville airport.

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Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
07/21/2008	9:50 PM	Sidell^ Archie^	61 kts	n/a	n/a	$20,000	n/a	Several trees were blown down.
07/21/2008	9:55 PM	Sidell^ Archie^	52 kts	n/a	n/a	$8,000	n/a	Two trees were blown down, pulling down some power lines.
08/05/2008	5:15 AM	Hoopeston	61 kts	n/a	n/a	$50,000	n/a	Twenty five to thirty large trees were blown down. One tree destroyed a car.
08/05/2008	5:35 AM	Danville	61 kts	n/a	n/a	$20,000	n/a	Numerous trees were blown down.
03/08/2009	12:45 PM	Rossville	52 kts	n/a	n/a	$25,000	n/a	Several large trees were knocked down and power lines were blown down across Attica Road just west of Rossville.
03/08/2009	12:50 PM	Hoopeston Hoopeston^	61 kts	n/a	n/a	$10,000	n/a	A trailer was blown over on Route 1 just south of the City.
05/13/2009	11:15 PM	Fairmount^	52 kts	n/a	n/a	$3,000	n/a	A tree was blown down onto power lines at the intersection of County Road 1050 North and 200 East.
05/13/2009	11:29 PM	Hoopeston^	61 kts	n/a	n/a	$40,000	n/a	A barn was destroyed by high winds 3 miles south of the City.
05/13/2009	11:50 PM	Rankin Rankin^	61 kts	n/a	n/a	$7,000	n/a	A tree was blown onto a house in the Village.
06/01/2009	3:25 PM	Hoopeston	52 kts	n/a	n/a	$8,000	n/a	Several 3 to 6 inch diameter trees were blown down. A flagpole was also knocked over by strong winds.
06/19/2009	5:10 PM	Tilton^ Westville Belgium^	61 kts	n/a	n/a	$470,000	n/a	Multiple trees were blown down across Vermilion County. Forty train cars were blown over just southwest of Tilton.

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06/19/2009	5:15 PM	Westville^ Belgium^ Oakwood	61 kts	n/a	n/a	$35,000	n/a	Numerous trees and power lines were blown down in the Westville/Belgium area. A house was damaged by a falling tree. A tree was blown onto a propane tank, causing a leak in the tank in Oakwood.
06/19/2009	6:20 PM	Oakwood Oakwood^	78 kts	n/a	n/a	$205,000	n/a	A downburst with estimated winds of 85 to 90 mph caused widespread wind damage on the south side of the Village. Tin roofing material was lifted off a barn just south of Route 150 and west of South Oakwood Street. Numerous large trees and tree limbs were blown down, causing damage to several mobile homes. Further south, five power poles were blown down and a garage was destroyed on South Oakwood Street. Extensive tree damage continued about three quarters of a mile east into a heavily wooded area. Several homes were damaged in this area.
06/19/2009	6:35 PM	Sidell^ Archie^	52 kts	n/a	n/a	$40,000	n/a	Numerous trees and power lines were blown down.
06/19/2009	6:38 PM	Ridge Farm^	61 kts	n/a	n/a	$60,000	n/a	A barn was destroyed and several trees were uprooted.
08/04/2009	9:10 AM	Hoopeston Tilton^ Danville^ Catlin^	61 kts	n/a	n/a	$35,000	n/a	Numerous trees were blown down and structural damage was reported to the FMC building on the south side of Hoopeston. Several trees were blown down across a road 3 miles north of Catlin.

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08/04/2009	9:15 AM	Georgetown Danville	61 kts	n/a	n/a	n/a	n/a	Widespread damage was reported at the Georgetown Fair. Numerous tents were destroyed and several buildings were damaged. Numerous trees were blown down across Danville.
06/14/2010	4:05 PM	Danville^	52 kts	n/a	n/a	$2,000	n/a	A tree was blown down across Henning Road and US 150 about 4 miles west of the City.
06/18/2010	4:50 PM	Hoopeston Hoopeston^	52 kts	n/a	n/a	$8,000	$30,000	Numerous tree limbs were blown down and corn was flattened near the City.
06/21/2010	8:35 PM	Ridge Farm	52 kts	n/a	n/a	n/a	n/a	
06/21/2010	11:50 PM	Danville	50 kts	n/a	n/a	$2,000	n/a	A large tree was blown down.
06/21/2010	11:55 PM	Georgetown Danville Westville Midway^ Tilton	61 kts	n/a	n/a	$62,000	n/a	Numerous power lines were blown down.
08/04/2010	5:13 PM	Danville	52 kts	n/a	n/a	$30,000	n/a	Numerous trees and power lines were blown down on the north side of the City.
04/19/2011	7:05 PM	Rossville^ Henning^	70 kts	n/a	n/a	$135,000	n/a	Numerous trees were blown down west of Rossville. One car was damaged when a tree fell onto it. Downburst winds damaged numerous grain bins and trees in a path from 3 miles northeast of Henning northeastward to about 4 miles east-southeast of Rossville.
04/19/2011	7:15 PM	Hoopeston	61 kts	n/a	n/a	$20,000	n/a	Power poles were blown down at the intersection of Illinois Route 1 and Illinois Route 9.
05/23/2011	2:39 PM	Indianola^	52 kts	n/a	n/a	$8,000	n/a	A power pole was snapped and a 3-foot diameter tree was blown down 1 mile north of the Village.

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05/25/2011	7:36 AM	Rankin Rankin^	52 kts	n/a	n/a	$75,000	n/a	Numerous trees and powerlines were blown down in the Village.
05/25/2011	7:40 AM	Fithian^	52 kts	n/a	n/a	$20,000	n/a	Several trees were blown down and a house lost part of its siding 1 mile west of the Village.
05/25/2011	7:57 AM	Danville Danville^	52 kts	n/a	n/a	$80,000	n/a	Several trees and powerlines were blown down near the City while numerous powerlines were blown down on the east side of City.
05/25/2011	6:39 PM	Jamesburg^	52 kts	n/a	n/a	n/a	n/a	Numerous trees were blown down in the Jamesburg area, blocking several local roads.
06/04/2011	7:35 PM	Tilton Danville Danville^	52 kts	n/a	n/a	$70,000	n/a	Numerous trees were blown down in Tilton. Numerous trees were blown down along Grape Creek Road south of Danville while power lines were blown down on Gilbert Street in Danville.
06/04/2011	8:20 PM	Olivet^ Georgetown^ Ridge Farm^	52 kts	n/a	n/a	$20,000	n/a	A large tree was blown down across Route 1 south of Georgetown. Trees and power lines were blown down at the corner of 300N and 1270E.
06/10/2011	9:50 PM	Indianola Indianola^	52 kts	n/a	n/a	$10,000	n/a	A large tree was blown onto a garage in the Village.
06/21/2011	5:20 PM	Indianola Indianola^	52 kts	n/a	n/a	$20,000	n/a	Several trees were blown down in the Village.
06/21/2011	5:25 PM	Georgetown	52 kts	n/a	n/a	$20,000	n/a	Several trees were blown down in the City.
06/21/2011	5:30 PM	Danville	52 kts	n/a	n/a	$35,000	n/a	Several trees were blown down. In addition, a power pole was knocked down at the intersection of 3rd St. and Highland Blvd.
07/02/2011	7:10 PM	Oakwood	52 kts	n/a	n/a	$10,000	n/a	A van was blown off I-74 at mile marker 206.
07/02/2011	8:00 PM	Georgetown	52 kts	n/a	n/a	$30,000	n/a	Numerous trees were blown down.

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07/07/2011	4:05 PM	Potomac	52 kts	n/a	n/a	$8,000	n/a	A tree and power pole were blown down on South Vermilion Street.
03/23/2012	3:10 PM	Ridge Farm	52 kts	n/a	n/a	$2,000	n/a	A large pine tree was uprooted.
03/23/2012	3:15 PM	Ridge Farm	52 kts	n/a	n/a	$9,000	n/a	Two 2-3 foot diameter trees were blown down and siding was peeled from a building in downtown.
05/06/2012	4:58 PM	Hoopeston Hoopeston^	61 kts	n/a	n/a	$12,000	n/a	Power poles were blown down near the junction of highways 1 and 9 near the City.
05/06/2012	5:20 PM	Danville	52 kts	n/a	n/a	$2,000	n/a	A tree was blown down across Winter Avenue a quarter of a mile east of Bowman Avenue.
07/18/2012	6:10 PM	Danville^	52 kts	n/a	n/a	$3,000	n/a	A large tree was blown down near the intersection of 1750E and 2000N.
07/25/2012	4:45 AM	Tilton Tilton^ Danville^ Belgium^ Westville^	65 kts	n/a	n/a	$25,000	n/a	The roof of a trailer was damaged, two power poles were snapped, and numerous trees were blown down.
09/21/2012	3:50 PM	Olivet^	52 kts	n/a	n/a	$9,000	n/a	A few trees were blown down, including one that became entangled in power lines and caught fire.
04/10/2013	6:10 PM	Ridge Farm	61 kts	n/a	n/a	$10,000	n/a	A small garage was destroyed.
05/31/2013	10:20 PM	Hoopeston Danville Danville^	61 kts	n/a	n/a	$65,000	n/a	Numerous trees were blown down in Hoopeston. Numerous power lines were blown down around Danville.
06/25/2013	6:05 PM	Danville	52 kts	n/a	n/a	$23,000	n/a	A 2-foot diameter tree was blown down onto a car. A tree and power lines were blown down at Bowman and Seminary Streets.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
07/10/2013	9:04 AM	Georgetown Ridge Farm	52 kts	n/a	n/a	$105,000	n/a	Numerous trees were blown down in Georgetown, including one that fell onto a house. Numerous trees and tree branches were blown down in Ridge Farm.
07/10/2013	9:05 AM	Danville Catlin	52 kts	n/a	n/a	$38,000	n/a	Numerous trees and tree branches were blown down across Danville. Power lines were blown down in Catlin.
08/30/2013	8:42 PM	Danville	52 kts	n/a	n/a	$50,000	n/a	Several trees were blown down. Approximately 200 people lost power as 50 to 60 mph winds arrived along a gust front.
08/30/2013	8:47 PM	Danville^	52 kts	n/a	n/a	$12,000	n/a	Several trees were blown down in Leisure Times Estates near Henning Road.
08/31/2013	4:58 PM	Jamaica^	52 kts	n/a	n/a	$30,000	n/a	A grain silo was destroyed about 1 mile north of Jamaica on 600 East Road.
08/31/2013	5:06 PM	Sidell Sidell^ Archie^ Indianola Indianola^	52 kts	n/a	n/a	$45,000	n/a	Numerous trees and power lines were blown down in Sidell. Several trees were blown down in Indianola.
11/17/2013	1:11 PM	Tilton Danville^	61 kts	n/a	n/a	$60,000	n/a	***This event was part of a federally-declared disaster (Declaration #4157)*** A roof was blown off a house.
06/21/2014	5:42 PM	Danville Bismarck Bismarck^	52 kts	n/a	n/a	$76,500	n/a	A large tree was blown down at Liberty Lane and Ferndale in Danville. Numerous trees were blown down onto power lines or across roads from Danville to Bismarck.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
07/14/2014	1:00 PM	Danville^	52 kts	n/a	n/a	$10,000	n/a	A tree was blown down and was blocking Henning Road at Kickapoo Road northwest of City. Numerous tree branches were blown down as well.
07/14/2014	1:01 PM	Danville	52 kts	n/a	n/a	$1,000	n/a	A large tree was blown down onto Franklin Street.
07/23/2014	2:35 AM	Hoopeston	52 kts	n/a	n/a	$12,000	n/a	Several tree branches up to 6 inches in diameter were blown down.
07/26/2014	5:05 PM	Georgetown Georgetown^ Westville Belgium^ Midway^	52 kts	n/a	n/a	$25,500	n/a	A large tree was blown down blocking Route 1 just south of Georgetown. Numerous trees were blown down in Westville.
07/26/2014	5:05 PM	Georgetown^ Midway^	52 kts	n/a	n/a	$1,500	n/a	A tree was blown down onto 1800E near Morey Chapel.
08/25/2014	6:00 PM	Sidell Sidell^ Archie^	52 kts	n/a	n/a	$25,000	n/a	Several trees were blown down in Sidell. One power pole and a few power lines were downed as well.
09/05/2014	6:00 PM	Hoopeston	52 kts	n/a	n/a	$35,000	n/a	Several 12 to 15-inch diameter tree branches were blown down on the southeast side City. Numerous tree branches and power lines were blown down.
05/10/2015	8:15 PM	Danville	52 kts	n/a	n/a	$2,000	n/a	A tree and a large tree limb were blown down.
06/07/2015	6:35 PM	Danville Danville^	61 kts	n/a	n/a	$65,000	n/a	A 30x50 farm building was destroyed by strong thunderstorm winds. Several trees were blown down on Denmark Road near Lake Vermilion on the north side of the City.
06/07/2015	7:10 PM	Danville	61 kts	n/a	n/a	$80,000	n/a	Numerous trees were blown down causing power outages across the City.
06/07/2015	8:00 PM	Georgetown	61 kts	n/a	n/a	$4,000	n/a	A few large tree branches were blown down.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
06/07/2015	8:15 PM	Westville Belgium^	61 kts	n/a	n/a	$22,000	n/a	A tree was blown onto a car and several large branches were knocked down near Westville High School on Hickman St.
06/07/2015	9:10 PM	Georgetown	61 kts	n/a	n/a	$15,000	n/a	A tree and power lines were blown onto a car on Whittier Street.
06/08/2015	10:30 PM	Oakwood^	52 kts	n/a	n/a	$20,000	n/a	Power lines were blown down on Catlin-Homer Road.
06/20/2015	10:30 PM	Hoopeston	52 kts	n/a	n/a	$30,000	n/a	Several trees were blown down and a small shed was destroyed.
06/20/2015	10:47 PM	Hoopeston^	52 kts	n/a	n/a	$15,000	n/a	Several 4 to 8-inch diameter tree branches were blown down.
07/13/2015	8:20 AM	Hoopeston	52 kts	n/a	n/a	$25,000	n/a	Several large tree limbs were blown down and a shed was damaged by the wind.
07/13/2015	8:45 AM	Henning^ Bismarck^ Danville	52 kts	n/a	n/a	$5,000	n/a	A tree and power lines were blown down at 2650 N about 4 miles west of Bismarck. A tree was blown down across the railroad tracks at 3rd Street in Danville.
07/13/2015	9:20 AM	Catlin	52 kts	n/a	n/a	$3,000	n/a	A tree and power lines were blown down on Douglas Street.
09/04/2015	6:40 PM	Tilton Danville Danville^	52 kts	n/a	n/a	$40,000	n/a	A couple of trees were snapped or uprooted in Tilton. One tree fell onto a house. Numerous large tree branches were blown down across Danville.
06/20/2016	9:40 PM	Danville Danville^ Tilton	61 kts	n/a	n/a	$37,000	n/a	Several trees were blown down in Danville, including one that fell on a parked car. A tree was blown down at the intersection of Second and North L streets in Tilton.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
07/13/2016	5:15 PM	Danville^	61 kts	n/a	n/a	$75,000	n/a	Power poles and power lines were blown down on South Henning Road just south of US Highway 150.
07/18/2016	9:39 AM	Sidell^	52 kts	n/a	n/a	$35,000	n/a	Several trees and power lines were blown down.
07/18/2016	10:00 AM	Sidell^ Archie^	52 kts	n/a	n/a	$30,000	n/a	Several trees and power lines were blown down.
11/18/2016	3:03 PM	Catlin	52 kts	n/a	n/a	$25,000	n/a	Numerous power lines were blown down.
11/18/2016	3:15 PM	Danville	52 kts	n/a	n/a	$70,000	n/a	Numerous power lines were blown down.
03/01/2017	12:45 AM	Danville	52 kts	n/a	n/a	$80,000	n/a	Numerous trees and power lines were blown down.
03/07/2017	2:17 AM	Allerton Sidell^	52 kts	n/a	n/a	$20,000	n/a	A shed was damaged in Allerton.
03/07/2017	2:20 AM	Alvin^	52 kts	n/a	n/a	n/a	n/a	A tree was blown down across Route 119.
03/30/2017	2:30 PM	Danville	52 kts	n/a	n/a	$15,000	n/a	Numerous small trees and tree limbs were blown down. Railroad crossing gates were blown off and broken as well.
03/30/2017	2:58 PM	Fairmount^	52 kts	n/a	n/a	$65,000	n/a	Several power poles were blown down near 1050N Road and 100E Road.
03/30/2017	3:08 PM	Fairmount^ Catlin^	52 kts	n/a	n/a	$75,000	n/a	Several power poles and power lines were blown down between Fairmount and Catlin.
03/30/2017	3:20 PM	Danville	52 kts	n/a	n/a	$14,000	n/a	Two power poles were blown down.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
05/26/2017	4:52 PM	Henning^ Rossville Rossville^	78 kts	n/a	n/a	$2,860,000	n/a	Trees were snapped near Illinois Route 1 south of 3200 N Road. Extensive tree damage occurred across Rossville due to wind gusts of 80-90mph. Many homes and cars were damaged due to falling trees and tree branches. Numerous power poles and power lines were blown down and a few street lights were broken. A pole barn was destroyed, with its roof and walls being blown about 300 yards to the southwest into a field. A tree was snapped in half.
05/26/2017	5:00 PM	Rossville^	70 kts	n/a	n/a	$125,000	n/a	A farmstead had an outbuilding destroyed and several trees damaged.
05/26/2017	5:15 PM	Bismarck^	70 kts	n/a	n/a	$600,000	n/a	Numerous trees, power poles, and power lines were blown down.
07/11/2017	9:15 AM	Sidell^	52 kts	n/a	n/a	$80,000	n/a	Power poles were blown down on buildings.
07/11/2017	9:30 AM	Georgetown Danville Danville^ Tilton Catlin	52 kts	n/a	n/a	$72,000	n/a	Trees were blown down on Route 1 blocking the road into Georgetown. Several trees were snapped or uprooted across Danville. Trees were blown down onto Route 1 and 14th Street in Tilton. A tree was blown onto a car on the 600 block of South Paris Street.
08/03/2017	2:35 PM	Hoopeston	52 kts	n/a	n/a	$32,000	n/a	A machine shed was damaged and a few tree branches were blown down.
05/13/2018	5:00 PM	Hoopeston	52 kts	n/a	n/a	$10,000	n/a	Minor roof damage occurred to the middle school in Hoopeston due to strong outflow winds that passed well to the north across Iroquois County.
05/28/2018	2:55 PM	Hoopeston	52 kts	n/a	n/a	$15,000	n/a	Numerous tree limbs were blown down on the southwest side of the City.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
05/31/2018	5:07 PM	Danville Danville^	52 kts	n/a	n/a	$5,000	n/a	A large tree was blown down near the intersection of Main Street and Michigan Avenue on the east side of the City. Four trees were blown down east-souteast of the City.
06/10/2018	7:10 AM	Danville^	52 kts	n/a	n/a	$18,000	n/a	Several tree limbs and power lines were blown down.
06/10/2018	12:47 PM	Danville	52 kts	n/a	n/a	$18,000	n/a	A tree was blown onto a garage causing significant damage to the garage. Another tree was blown onto power lines on North Kimball Street.
06/10/2018	1:53 PM	Georgetown	61 kts	n/a	n/a	$35,000	n/a	A large tree was blown onto a house, causing major damage to the house.
06/10/2018	2:00 PM	Midway^ Westville^ Danville^ Tilton^ Catlin^ Belgium^ Georgetown	61 kts	n/a	n/a	$135,000	n/a	Several power poles and power lines were blown down south of Midway. Numerous trees and power poles were blown down from southwest of Danville to Georgetown.
08/06/2018	6:30 PM	Rankin^	61 kts	n/a	n/a	$15,000	n/a	Numerous tree branches were blown down, some of which blocked roadways.
08/06/2018	8:37 PM	Henning	61 kts	n/a	n/a	$30,000	n/a	A tree was blown down at Henning Road and Highway 136. Several tree limbs and power lines were blown down in Henning.
10/06/2018	12:45 PM	Rossville Hoopeston	52 kts	n/a	n/a	$30,000	n/a	Powerlines were blown down from Rossville northward to Hoopeston.
05/16/2019	2:50 PM	Danville	52 kts	n/a	n/a	n/a	n/a	A large tree was blown onto a garage.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

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Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
05/23/2019	1:03 AM	Fithian^ Collison^	61 kts	n/a	n/a	n/a	n/a	Large tree limbs and power lines were blown onto IL-49 and 1900 North Road. Numerous power poles were blown down onto IL-49 near Hope Township.
05/23/2019	1:15 AM	Hoopeston	61 kts	n/a	n/a	n/a	n/a	Numerous trees and power lines were blown down across town.
05/23/2019	1:17 AM	Danville	61 kts	n/a	n/a	n/a	n/a	Numerous trees, tree limbs, and power lines were blown down across Danville. At least two houses were damaged by falling trees.
05/26/2019	12:16 AM	Oakwood^ Muncie	52 kts	n/a	n/a	$100,000	n/a	A metal roof and siding was ripped off a barn southeast of Oakwood. In Muncie roofs sustained damages as did trees with large tree banches downed. Muncie identified $100,000 in damages sustained by the Village.
05/26/2019	1:00 AM	Danville	52 kts	n/a	n/a	n/a	n/a	A few trees were blown down across the City.
05/28/2019	3:00 PM	Oakwood	52 kts	n/a	n/a	n/a	n/a	A tree was blown down.
05/28/2019	3:13 PM	Bismarck^	52 kts	n/a	n/a	n/a	n/a	A power pole was blown down.
06/15/2019	11:40 PM	Danville	52 kts	n/a	n/a	n/a	n/a	Tree limbs were blown down near Lake Vermilion.
06/23/2019	12:45 PM	Danville Tilton^	52 kts	n/a	n/a	n/a	n/a	Power lines were blown down at the intersection of Perrysville Avenue and Griffin Street on the southeast side of Danville.
06/29/2019	6:15 PM	Alvin Alvin^ Rossville	52 kts	n/a	n/a	n/a	n/a	Power lines were blown down in Alvin and Rossville.
06/29/2019	6:55 PM	Danville^ Vermilion Regional Airport^	52 kts	n/a	n/a	n/a	n/a	A tree was blown down across Shake Rag Road near 2350N Road.
06/30/2019	2:45 PM	Henning	52 kts	n/a	n/a	n/a	n/a	A treehouse was blown over.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

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1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
06/30/2019	2:55 PM	Danville Tilton^	52 kts	n/a	n/a	n/a	n/a	Several large limbs and power lines were blown down in the 700 block of South Street.
06/30/2019	3:40 PM	Sidell^ Archie^	52 kts	n/a	n/a	n/a	n/a	Several large tree limbs and power lines were blown down.
08/18/2019	3:15 PM	Tilton Danville^ Westville Belgium Belgium^	52 kts	n/a	n/a	n/a	n/a	Several trees were damaged from Tilton to Westville. Power lines were blown down near Westville Sanitary Plant.
08/18/2019	3:20 PM	Ridge Farm	52 kts	n/a	n/a	n/a	n/a	A tree was blown down, damaging a tank and causing a propane leak.
08/20/2019	10:40 AM	Oakwood Potomac	52 kts	n/a	n/a	n/a	n/a	Several trees were blown down in Oakwood and Potomac.
08/20/2019	10:45 AM	Catlin	52 kts	n/a	n/a	$25,000	n/a	Several trees and power lines were blown down. A metal sign at a gas station was blown down and minor roof damage occurred to a house as well.
08/20/2019	10:50 AM	Tilton Danville^ Westville Belgium^ Midway^ Bismarck Bismarck^	52 kts	n/a	n/a	n/a	n/a	Several trees were blown down in Tilton, Westville, and Bismarck.
08/20/2019	10:55 AM	Danville	52 kts	n/a	n/a	n/a	n/a	Several trees and tree branches were blown down.

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1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
04/08/2020	5:32 PM	Danville	61 kts	n/a	n/a	$70,000	n/a	Numerous small tree branches were blown down. A tree was blown down at Bowman and May Street. Roof damage to buildings on Bensyl and Emerson and the 100 block of North Walnut.
04/08/2020	5:40 PM	Oakwood	61 kts	n/a	n/a	n/a	n/a	A wooden fence was blown over.
04/08/2020	5:50 PM	Westville Belgium^ Midway^	61 kts	n/a	n/a	$10,000	n/a	A semi was blown over on Highway 1 on the south end of Westville.
04/08/2020	6:15 PM	Olivet^	61 kts	n/a	n/a	$30,000	n/a	A shed was destroyed.
08/10/2020	3:40 PM	Oakwood^	65 kts	n/a	n/a	n/a	n/a	Two large trees were blown down onto US-150.
08/10/2020	3:50 PM	Danville	52 kts	n/a	n/a	$100,000	n/a	Numerous trees and power lines were blown down throughout the City. Several streets were blocked.
05/06/2021	1:45 PM	Muncie^	52 kts	n/a	n/a	$20,000	n/a	Several tree limbs were blown down, including one that fell onto a house.
06/12/2021	5:00 PM	Rankin^	52 kts	n/a	n/a	n/a	n/a	A small grain bin was wrapped around a telephone pole.
06/12/2021	6:00 PM	Sidell^ Archie^	52 kts	n/a	n/a	n/a	n/a	Several large tree branches were snapped.
06/19/2021	2:16 AM	Ridge Farm	52 kts	n/a	n/a	n/a	n/a	A tree was blown down.
06/26/2021	5:10 PM	Hoopeston	52 kts	n/a	n/a	n/a	n/a	Several 6 to 8-inch diameter tree limbs were blown down.
03/06/2022	12:35 AM	Vermilion Regional Airport Danville^	56 kts	n/a	n/a	n/a	n/a	
03/06/2022	12:45 AM	Olivet^	52 kts	n/a	n/a	n/a	n/a	A large tree was blown down and a 12 by 6-foot trailer was pushed approximately 100 feet.
06/12/2022	7:50 AM	Georgetown	52 kts	n/a	n/a	n/a	n/a	A 6-inch diameter tree limb was blown down.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
07/04/2022	5:15 PM	Potomac	52 kts	n/a	n/a	n/a	n/a	Power lines down.
07/04/2022	5:25 PM	Bismarck^	65 kts	n/a	n/a	n/a	n/a	Two power poles blown down and corn flattened. 75 mph gust measured by the public. Report was relayed by broadcast media.
07/04/2022	5:59 PM	Danville	52 kts	n/a	n/a	n/a	n/a	Power lines downed.
08/01/2022	5:15 AM	Jamaica^ Sidell Sidell^ Archie^	52 kts	n/a	n/a	n/a	n/a	Several trees were blown down near Jamaica and in Sidell.
08/01/2022	5:26 AM	Indianola Indianola^ Ridge Farm	52 kts	n/a	n/a	n/a	n/a	A few trees and power lines were downed in Indianola. Several 8 to 12-inch diameter tree branches were blown down in Ridge Farm.
08/03/2022	3:05 PM	Hoopeston	52 kts	n/a	n/a	n/a	n/a	A power line was blown down on West Main Street.
08/29/2022	6:12 PM	Potomac	61 kts	n/a	n/a	n/a	n/a	Trees and a power pole were blown down near the 100 block of Grant Street.
08/29/2022	6:22 PM	Bismarck Bismarck^	61 kts	n/a	n/a	n/a	n/a	Trees were blown down in the Village.
08/29/2022	6:30 PM	Tilton Danville^	61 kts	n/a	n/a	n/a	n/a	Power poles were blown down and a transformer caught on fire near the 1700 block of Washington Street.
08/29/2022	6:35 PM	Danville Oakwood^ Vermilion Regional Airport^	61 kts	n/a	n/a	n/a	n/a	Several large tree limbs were blown down on Denmark Road about 2 miles northwest of Danville. Power poles were blown down on Poland Road in Danville. Several large tree branches and power lines were blown down near Oakwood.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
08/29/2022	6:40 PM	Catlin Oakwood^	61 kts	n/a	n/a	n/a	n/a	Several trees were blown down in Catlin. Several trees were damaged in Kickapoo State Park.
08/29/2022	6:45 PM	Armstrong^	61 kts	n/a	n/a	n/a	n/a	A tree was blown onto power lines.
GRAND TOTAL:				**7**	**0**	**$17,903,700**	**$30,000**	

Source: NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.
Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Planning Committee Member responses to the Natural Hazard Events Questionnaire.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 2
Severe Storms - Hail Events Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Hail Stone Diameter (inches)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
08/13/1974	12:00 PM	Danville	1.50 in.	n/a	n/a	n/a	n/a	
06/13/1975	3:15 PM	Westville Midway^	1.75 in.	n/a	n/a	n/a	n/a	
08/11/1977	11:30 AM	Muncie^ Fithian^	1.75 in.	n/a	n/a	n/a	n/a	
09/30/1977	8:40 PM	Danville Danville^	2.00 in.	n/a	n/a	n/a	n/a	
07/02/1985	4:20 PM	Oakwood^	1.00 in.	n/a	n/a	n/a	n/a	
05/07/1986	2:36 PM	Danville^	1.75 in.	n/a	n/a	n/a	n/a	
06/01/1987	1:40 PM	Danville	1.75 in.	n/a	n/a	n/a	n/a	
05/17/1991	1:58 PM	Oakwood	2.75 in.	n/a	n/a	n/a	n/a	
03/23/1994	9:19 PM	Oakwood	1.75 in.	n/a	n/a	n/a	n/a	
03/23/1994	9:38 PM	Danville	1.75 in.	n/a	n/a	n/a	n/a	
04/26/1994	9:45 PM	Westville	1.75 in.	n/a	n/a	n/a	n/a	
04/10/1995	5:57 AM	Jamaica^	1.75 in.	n/a	n/a	n/a	n/a	
06/26/1995	6:20 PM	Potomac^	1.75 in.	n/a	n/a	n/a	n/a	
04/07/1998	7:36 PM	Ridge Farm	1.75 in.	n/a	n/a	n/a	n/a	
05/19/1998	4:20 PM	Sidell^	1.75 in.	n/a	n/a	n/a	n/a	
05/19/1998	4:59 PM	Potomac	1.75 in.	n/a	n/a	n/a	n/a	
08/24/1998	3:35 PM	Rossville	1.00 in.	n/a	n/a	n/a	n/a	
03/08/2000	10:55 PM	Potomac	1.00 in.	n/a	n/a	n/a	n/a	
05/09/2000	2:05 PM	Catlin Danville Tilton	1.75 in.	n/a	n/a	n/a	n/a	
05/12/2000	5:25 PM	Potomac Rossville	1.00 in.	n/a	n/a	n/a	n/a	

^ Hail event verified in the vicinity of this location(s).

Table 2
Severe Storms - Hail Events Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Hail Stone Diameter (inches)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
05/18/2000	9:28 AM	Georgetown	2.75 in.	n/a	n/a	n/a	n/a	
05/18/2000	9:40 AM	Rossville	2.00 in.	n/a	n/a	n/a	n/a	
05/18/2000	10:30 AM	Indianola^ Georgetown	2.75 in.	n/a	n/a	$4,000,000	n/a	
05/18/2000	11:04 AM	Oakwood	1.75 in.	n/a	n/a	n/a	n/a	
05/18/2000	11:20 AM	Hoopeston	1.75 in.	n/a	n/a	n/a	n/a	
04/06/2001	1:20 PM	Potomac	1.25 in.	n/a	n/a	n/a	n/a	
08/18/2001	3:10 PM	Sidell Sidell^ Archie^	2.00 in.	n/a	n/a	n/a	n/a	
04/12/2002	1:20 PM	Sidell Archie^ Catlin^ Tilton^ Danville Georgetown	1.00 in.	n/a	n/a	n/a	n/a	
07/21/2004	5:40 PM	Westville Belgium^ Midway^	1.00 in.	n/a	n/a	n/a	n/a	
08/11/2005	4:35 PM	Danville	1.00 in.	n/a	n/a	n/a	n/a	
06/15/2008	3:58 PM	Hoopeston	1.00 in.	n/a	n/a	n/a	n/a	
05/15/2009	7:25 PM	Danville^ Batestown^	1.00 in.	n/a	n/a	n/a	n/a	
06/01/2009	3:13 PM	Rankin^ East Lynn^	1.00 in.	n/a	n/a	n/a	n/a	
08/19/2009	4:20 PM	Danville	1.00 in.	n/a	n/a	n/a	n/a	

^ Hail event verified in the vicinity of this location(s).

Table 2
Severe Storms - Hail Events Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Hail Stone Diameter (inches)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
06/13/2010	3:20 PM	Jamaica^	1.00 in.	n/a	n/a	n/a	n/a	
04/19/2011	7:00 PM	Jamaica^	1.00 in.	n/a	n/a	n/a	n/a	
08/24/2011	6:06 PM	Danville	1.75 in.	n/a	n/a	n/a	n/a	
11/14/2011	2:00 PM	Rossville^	1.75 in.	n/a	n/a	$60,000	n/a	The ground was covered with hailstones. Some minor damage to vehicles and buildings was reported.
03/23/2012	3:52 PM	Hoopeston	1.00 in.	n/a	n/a	n/a	n/a	
04/01/2012	7:10 AM	Hoopeston^	1.00 in.	n/a	n/a	$1,000	n/a	A hail stone cracked the windshield of a pickup truck.
05/01/2012	4:20 PM	Belgium^ Danville	1.75 in.	n/a	n/a	n/a	n/a	
05/06/2012	4:10 PM	Hoopeston^	2.50 in.	n/a	n/a	n/a	n/a	
05/06/2012	4:17 PM	Rossville^	1.00 in.	n/a	n/a	n/a	n/a	
05/06/2012	4:24 PM	Hoopeston	2.50 in.	n/a	n/a	n/a	n/a	
05/06/2012	4:30 PM	Hoopeston	1.75 in.	n/a	n/a	n/a	n/a	
06/29/2012	1:25 PM	Henning^ Bismarck^	3.50 in.	n/a	n/a	n/a	n/a	
06/29/2012	1:38 PM	Vermilion Regional Airport Danville^	2.00 in.	n/a	n/a	n/a	n/a	
07/31/2012	9:07 AM	Collison^	1.00 in.	n/a	n/a	n/a	n/a	
07/31/2012	9:27 AM	Fithian^	1.25 in.	n/a	n/a	n/a	n/a	
09/07/2012	1:53 PM	Ridge Farm^	1.25 in.	n/a	n/a	n/a	n/a	
05/31/2013	10:00 PM	Rankin^	1.00 in.	n/a	n/a	n/a	n/a	
05/21/2014	2:05 PM	Rossville^	1.00 in.	n/a	n/a	n/a	n/a	
05/21/2014	2:15 PM	Rossville	1.50 in.	n/a	n/a	n/a	n/a	
05/21/2014	2:35 PM	Danville^	1.50 in.	n/a	n/a	n/a	n/a	

^ Hail event verified in the vicinity of this location(s).

Table 2
Severe Storms - Hail Events Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Hail Stone Diameter (inches)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
05/21/2014	6:41 PM	Sidell^ Archie^	1.00 in.	n/a	n/a	n/a	n/a	
06/07/2015	6:52 PM	Danville^ Batestown^	1.00 in.	n/a	n/a	n/a	n/a	
06/12/2015	3:38 PM	Westville	1.00 in.	n/a	n/a	n/a	n/a	
09/18/2015	8:50 PM	Muncie^	1.00 in.	n/a	n/a	n/a	n/a	
03/15/2016	9:08 PM	Westville	1.00 in.	n/a	n/a	n/a	n/a	
03/20/2017	11:16 AM	Hoopeston	2.00 in.	n/a	n/a	n/a	n/a	
03/20/2017	11:30 AM	Hoopeston	2.75 in.	n/a	n/a	n/a	n/a	
04/10/2017	6:35 AM	Collison^	1.25 in.	n/a	n/a	n/a	n/a	
04/10/2017	6:40 AM	Collison^	1.75 in.	n/a	n/a	n/a	n/a	
04/10/2017	6:50 AM	Bismarck^	1.00 in.	n/a	n/a	n/a	n/a	
04/10/2017	6:35 PM	Muncie^	1.25 in.	n/a	n/a	n/a	n/a	
04/29/2017	6:47 PM	Olivet^	1.00 in.	n/a	n/a	n/a	n/a	
05/26/2017	4:26 PM	Rankin^	2.50 in.	n/a	n/a	n/a	n/a	
05/26/2017	4:35 PM	Hoopeston^	1.50 in.	n/a	n/a	n/a	n/a	
05/26/2017	4:40 PM	East Lynn^ Hoopeston^	2.00 in.	n/a	n/a	$325,000	n/a	Hail lasted for 4 minutes and broke windshields.
05/26/2017	4:48 PM	Rossville^	2.00 in.	n/a	n/a	$65,000	n/a	Wind-driven hail did extensive damage to the siding and roof of a house.
05/26/2017	4:58 PM	Rossville	1.75 in.	n/a	n/a	n/a	n/a	
05/26/2017	5:00 PM	Hoopeston^	2.00 in.	n/a	n/a	n/a	n/a	Hail drifts of 1.5 to 3 feet deep due to flooding were reported west of the City.
06/14/2017	4:13 PM	Hoopeston	1.00 in.	n/a	n/a	n/a	n/a	
08/02/2018	4:51 PM	Hoopeston	1.00 in.	n/a	n/a	n/a	n/a	
08/06/2018	9:10 PM	Potomac^	1.00 in.	n/a	n/a	n/a	n/a	

^ Hail event verified in the vicinity of this location(s).

Table 2
Severe Storms - Hail Events Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Hail Stone Diameter (inches)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
08/06/2018	9:18 PM	Danville^	1.00 in.	n/a	n/a	n/a	n/a	
05/16/2019	2:25 PM	Potomac	1.75 in.	n/a	n/a	n/a	n/a	
05/16/2019	2:50 PM	Oakwood Danville	1.75 in.	n/a	n/a	n/a	n/a	
05/16/2019	2:55 PM	Catlin	1.75 in.	n/a	n/a	n/a	n/a	
05/16/2019	2:58 PM	Danville	1.75 in.	n/a	n/a	n/a	n/a	
05/16/2019	3:04 PM	Tilton Westville Midway^ Danville Georgetown	2.75 in.	n/a	n/a	$5,200,000	n/a	Approximately 4 million dollars of hail damage occurred at the Toyota dealership on the south side of Tilton. A window was damaged due to baseball-sized hail in Westville. OSF HealthCare Sacred Heart Medical Center sustained damage when leaves battered from the trees by the hail clogged the storm drains and caused water to flow into the lower-level Emergency Department. Eight inches of water flooded the flood forcing the evacuation of patients from teh Emergency Department to upper levels. The Medical Center had to stop accepting patients.
05/26/2019	12:55 AM	Potomac	1.00 in.	n/a	n/a	n/a	n/a	
06/29/2019	6:25 PM	Alvin^ Bismarck^	1.00 in.	n/a	n/a	n/a	n/a	
06/30/2019	2:15 PM	Hoopeston	1.00 in.	n/a	n/a	n/a	n/a	
06/30/2019	2:45 PM	Henning	1.75 in.	n/a	n/a	n/a	n/a	
08/18/2019	3:25 PM	Georgetown Tilton Danville^	1.00 in.	n/a	n/a	n/a	n/a	
08/18/2019	3:30 PM	Westville Midway^	1.00 in.	n/a	n/a	n/a	n/a	

^ Hail event verified in the vicinity of this location(s).

Table 2
Severe Storms - Hail Events Reported in Vermilion County
1974 - 2022

Date(s)	Start Time	Location(s)	Magnitude Hail Stone Diameter (inches)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
04/08/2020	4:47 PM	Alvin^	1.25 in.	n/a	n/a	n/a	n/a	
05/06/2021	1:41 PM	Cheneyville^	1.00 in.	n/a	n/a	n/a	n/a	
GRAND TOTAL:				**0**	**0**	**$9,651,000**	**$0**	

Source: NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.
Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Planning Committee Member responses to the Natural Hazard Events Questionnaire.

^ Hail event verified in the vicinity of this location(s).

Table 3
Severe Storms - Lightning Events Reported in Vermilion County
1994 - 2022

Date(s)	Start Time	Location(s)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
05/24/1994	5:45 PM	Danville	n/a	1	n/a	n/a	A man was struck and killed by lightning while getting out of his car.
03/18/2012	7:40 AM	Danville	n/a	n/a	$2,000	n/a	Lightning struck a power pole, knocking down power lines across a road.
06/29/2019	6:30 PM	Bismarck^	n/a	n/a	$2,000	n/a	A house was struck by lightning, causing a small fire.
GRAND TOTAL:			**0**	**1**	**$4,000**	**$0**	

Source: NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.

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^ Lightning event verified in the vicinity of this location(s).

Table 4
Severe Winter Storm Events Reported in Vermilion County
1950 - 2022

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/18/1950	n/a	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	
02/22/1950	n/a	Heavy Snow	4.5 in.					Danville Hoopeston	n/a	n/a	n/a	
02/25/1950	n/a	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	
11/26/1950	n/a	Heavy Snow	5.0 in.					Danville Hoopeston	n/a	n/a	n/a	
12/06/1950	n/a	Heavy Snow	7.5 in.					Danville Hoopeston	n/a	n/a	n/a	
12/11/1950	n/a	Heavy Snow	4.0 in.					Danville	n/a	n/a	n/a	
03/12/1951 thru 03/13/1951	5:00 PM	Heavy Snow	6.0 in.					Hoopeston	n/a	n/a	n/a	
11/06/1951 thru 11/07/1951	1:00 AM	Winter Storm	9.0 in.			X		Danville Hoopeston	n/a	n/a	n/a	
12/14/1951	4:30 AM	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	
02/05/1952 thru 02/06/1952	11:00 PM	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	
02/29/1952	10:30 AM	Heavy Snow	6.0 in.					Danville Hoopeston	n/a	n/a	n/a	

[1] An "X" in the snow, freezing rain, ice, sleet and/or strong winds columns indicates the presences of that weather condition during the severe winter storm event.

[2] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 4
Severe Winter Storm Events Reported in Vermilion County
1950 - 2022

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
03/02/1954 thru 03/03/1954	6:00 PM	Heavy Snow	4.5 in.					Hoopeston	n/a	n/a	n/a	
11/18/1955 thru 11/19/1955	6:30 PM	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	
01/29/1956 thru 01/30/1956	8:45 PM	Heavy Snow	4.2 in.					Hoopeston	n/a	n/a	n/a	
02/11/1956	12:45 AM	Heavy Snow	5.5 in.					Danville Hoopeston	n/a	n/a	n/a	
03/25/1957	6:00 AM	Winter Storm	4.5 in.			X		Hoopeston	n/a	n/a	n/a	
04/03/1957	3:30 AM	Ice Storm				X		Hoopeston			$45,000	The Ice storm on the 3rd caused an estimated damage of $12,000 to telephone lines and an estimate of $33,000 to power lines in the Hoopeston territory.
04/07/1957 thru 04/08/1957	3:00 AM	Heavy Snow	5.0 in.					Hoopeston	n/a	n/a	n/a	

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Severe Winter Storm Events Reported in Vermilion County
1950 - 2022

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
01/20/1959 thru 01/21/1959	10:00 AM	Winter Storm	4.0 in.		X	X		Hoopeston	n/a	n/a	n/a	Severe Ice storm. The worst that has occurred in at least 40 years. Several thousand dollars damage to power lines.
03/10/1959	n/a	Heavy Snow	5.0 in.					Danville	n/a	n/a	n/a	
11/12/1959	9:00 AM	Heavy Snow	5.0 in.					Hoopeston	n/a	n/a	n/a	
02/25/1960	2:00 AM	Heavy Snow	5.8 in.					Hoopeston	n/a	n/a	n/a	
03/03/1960	n/a	Heavy Snow	4.0 in.					Danville	n/a	n/a	n/a	
03/09/1960	7:00 AM	Heavy Snow	5.0 in.					Danville	n/a	n/a	n/a	
12/11/1960	5:00 AM	Winter Storm	4.0 in.	X	X	X		Danville	n/a	n/a	n/a	
12/20/1960	3:00 AM	Heavy Snow	7.0 in.					Danville Hoopeston	n/a	n/a	n/a	
02/02/1961 thru 02/03/1961	4:00 PM	Heavy Snow	5.0 in.					Danville Hoopeston	n/a	n/a	n/a	
02/24/1961 thru 02/25/1961	3:00 PM	Heavy Snow	7.0 in.					Danville	n/a	n/a	n/a	
02/23/1962 thru 02/24/1962	1:00 PM	Heavy Snow	9.0 in.					Danville	n/a	n/a	n/a	

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[2] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 4
Severe Winter Storm Events Reported in Vermilion County
1950 - 2022

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/23/1963 thru 02/24/1963	9:00 AM	Heavy Snow	11.0 in.					Danville Hoopeston	n/a	n/a	n/a	
01/12/1964 thru 01/13/1964	7:45 AM	Winter Storm	6.5 in.				X	Danville	n/a	n/a	n/a	Strong winds, drifting snow, some highways blocked
02/12/1964 thru 02/13/1964	5:00 PM	Heavy Snow	4.0 in.					Danville	n/a	n/a	n/a	
02/15/1964 thru 02/16/1964	7:00 PM	Heavy Snow	6.0 in.					Danville	n/a	n/a	n/a	
03/09/1964 thru 03/10/1964	6:30 PM	Heavy Snow	5.0 in.					Danville	n/a	n/a	n/a	
01/14/1965 thru 01/15/1965	4:30 PM	Heavy Snow	6.0 in.					Danville	n/a	n/a	n/a	
02/01/1966 thru 01/00/1900	3:00 AM	Heavy Snow	5.0 in.					Danville	n/a	n/a	n/a	

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[2] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

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1950 - 2022

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
12/18/1973 thru 12/20/1973	11:00 AM	Heavy Snow	16.9 in.					Danville Hoopeston	n/a	n/a	n/a	
12/30/1973 thru 12/31/1973	10:00 AM	Heavy Snow	5.4 in.					Danville	n/a	n/a	n/a	
11/13/1974 thru 11/14/1974	11:30 AM	Winter Storm	5.0 in.			X		Danville Hoopeston	n/a	n/a	n/a	
12/25/1975 thru 12/26/1975	8:30 PM	Heavy Snow	5.5 in.					Danville	n/a	n/a	n/a	
03/15/1976 thru 03/16/1976	8:15 PM	Heavy Snow	4.5 in.					Danville	n/a	n/a	n/a	
12/04/1977 thru 12/06/1977	11:00 PM	Heavy Snow	7.1 in.					Danville	n/a	n/a	n/a	
12/08/1977	9:30 AM	Winter Storm	4.0 in.			X		Danville	n/a	n/a	n/a	

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Severe Winter Storm Events Reported in Vermilion County
1950 - 2022

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
01/25/1978 thru 01/26/1978	10:00 AM	Blizzard	4.7 in.				45 mph	Hoopeston	n/a	3	n/a	Winds whipped the snow into 6-foot drifts that closed all roads and isolated small towns. Schools, post offices, some factories and most businesses were closed. Hospitals were short-staffed as employees weren't able to get in. Snowmobiles and four-wheel-drive vehicles were the only means of transportation in the County. In Danville streets were clogged with stalled cars. Some motorists were stranded in the country, and had to be rescued, while at least three deaths were linked to the storm.
02/13/1978	7:00 AM	Winter Storm	4.3 in.			X		Danville	n/a	n/a	n/a	
01/13/1979 thru 01/14/1979	4:00 PM	Winter Storm	4.0 in.	X				Danville	n/a	n/a	n/a	

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1950 - 2022

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
01/23/1979 thru 01/24/1979	4:30 PM	Heavy Snow	7.1 in.					Danville	n/a	n/a	n/a	
01/27/1979	8:30 AM	Heavy Snow	6.3 in.					Danville Hoopeston	n/a	n/a	n/a	
03/09/1979	8:00 AM	Heavy Snow	5.4 in.					Danville	n/a	n/a	n/a	
11/27/1980	12:30 AM	Heavy Snow	8.3 in.					Danville	n/a	n/a	n/a	
02/09/1981 thru 02/11/1981	11:30 PM	Heavy Snow	7.5 in.					Danville	n/a	n/a	n/a	
12/16/1981 thru 12/17/1981	2:30 PM	Heavy Snow	5.8 in.					Danville	n/a	n/a	n/a	
12/22/1981 thru 12/23/1981	4:00 PM	Heavy Snow	4.5 in.					Hoopeston	n/a	n/a	n/a	
12/27/1981 thru 12/28/1981	11:00 PM	Heavy Snow	4.2 in.					Danville	n/a	n/a	n/a	
01/29/1982 thru 01/31/1982	5:30 PM	Heavy Snow	10.5 in.					Danville	n/a	n/a	n/a	
04/05/1982	10:00 AM	Heavy Snow	5.4 in.					Danville	n/a	n/a	n/a	

[1] An "X" in the snow, freezing rain, ice, sleet and/or strong winds columns indicates the presences of that weather condition during the severe winter storm event.

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1950 - 2022

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
03/20/1983	6:30 AM	Winter Storm	7.1 in.			X		Danville	n/a	n/a	n/a	
12/21/1983	9:00 AM	Winter Storm	7.4 in.		X			Danville Hoopeston	n/a	n/a	n/a	
02/27/1984 thru 02/28/1984	7:30 AM	Winter Storm	8.8 in.				47 mph	Danville Hoopeston	n/a	n/a	n/a	
01/09/1987 thru 01/10/1987	10:00 AM	Heavy Snow	7.3 in.					Danville Hoopeston	n/a	n/a	n/a	
01/19/1987	2:00 AM	Winter Storm	6.9 in.	X	X	X		Danville Hoopeston	n/a	n/a	n/a	
12/14/1987 thru 12/15/1987	12:00 PM	Winter Storm	7.1 in.		X			Danville	n/a	n/a	n/a	
02/02/1988 thru 02/04/1988	8:00 PM	Heavy Snow	7.3 in.					Danville	n/a	n/a	n/a	
03/03/1988 thru 03/04/1988	2:30 AM	Heavy Snow	8.7 in.					Danville	n/a	n/a	n/a	
12/27/1988 thru 12/28/1988	5:30 AM	Winter Storm	5.0 in.	X				Danville	n/a	n/a	n/a	

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/04/1989 thru 02/05/1989	5:00 PM	Heavy Snow	5.0 in.					Danville	n/a	n/a	n/a	
03/06/1989	1:00 AM	Heavy Snow	7.6 in.					Danville	n/a	n/a	n/a	
02/14/1990 thru 02/15/1990	9:00 AM	Ice Storm	X	X	X			Danville Hoopeston	n/a	n/a	n/a	***This event was part of a federally-declared disaster (Declaration #860)*** Hoopeston COOP observer indicated the ice storm downed power lines and trees.
12/22/1990 thru 12/24/1990	7:00 PM	Winter Storm	5.5 in.		X			Danville Hoopeston	n/a	n/a	n/a	
01/09/1993 thru 01/10/1993	4:00 PM	Heavy Snow	4.0 in.					Danville	n/a	n/a	n/a	
02/25/1993 thru 02/26/1993	8:30 AM	Heavy Snow	7.5 in.					Danville Hoopeston	n/a	n/a	n/a	
12/18/1995 thru 12/19/1995	1:00 AM	Winter Storm	2.0 in.	X			30 mph	Hoopeston	n/a	n/a	n/a	

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
01/02/1996 thru 01/03/1996	5:00 AM	Heavy Snow	8.0 in.					Danville	n/a	n/a	n/a	The storm dumped up to 8 inches of snow across the area. Also, gusty northwest winds from 30 to 40 mph accompanied the storm, creating near whiteout conditions, making travel hazardous, and closing numerous roads. There were numerous minor accidents were reported across central Illinois.
03/19/1996 thru 03/20/1996	3:00 PM	Heavy Snow	4.0 in.					Danville Hoopeston	n/a	n/a	n/a	There was considerable blow and drifting of snow which temporarily closed some roads in the area. There were numerous minor accidents occurred across the region.

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
11/25/1996	9:00 AM	Winter Storm	0.5 in.		X	X		Danville Hoopeston	n/a	n/a	n/a	Significant icing occurred in this area. This caused numerous accidents and power outages across the region. Power outages came as ice covered power lines snapped from winds of 15 to 30 mph.
01/08/1997 thru 01/09/1997	11:00 PM	Heavy Snow	6.2 in.					Danville	n/a	n/a	n/a	Numerous accidents were reported throughout central Illinois.
01/16/1997	n/a	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	
01/26/1997 thru 01/27/1997	8:30 AM	Winter Storm	2.5 in.			X		Danville Hoopeston	n/a	n/a	n/a	Numerous accidents were reported across the region, especially in the morning hours on the 27th.
03/07/1998 thru 03/09/1998	7:30 PM	Heavy Snow	7.0 in.					Hoopeston	n/a	n/a	n/a	Numerous accidents were reported across the region. Even after the snowfall subsided, gusty winds to 50 mph created near white-out conditions in most locations, before subsiding during the evening hours on the 9th.

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
01/01/1999 thru 01/03/1999	5:00 PM	Heavy Snow	13.0 in.					Hoopeston	n/a	n/a	n/a	
01/13/1999	4:00 AM	Ice Storm			0.5 in.				n/a	n/a	n/a	The ice caused widespread power outages and numerous car accidents.
03/08/1999 thru 03/09/1999	5:00 PM	Heavy Snow	6.0 in.					Danville Hoopeston	n/a	n/a	n/a	
01/19/2000	1:00 PM	Heavy Snow	6.0 in.					Danville Hoopeston	1	n/a	n/a	Blowing and drifting of snow was reported. The storm caused numerous road closures as well as accidents.
01/29/2000 thru 01/30/2000	9:00 AM	Heavy Snow	6.0 in.					Hoopeston	n/a	n/a	n/a	
03/11/2000	10:30 AM	Heavy Snow	4.0 in.					Danville	n/a	n/a	n/a	
12/13/2000	n/a	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	
12/20/2000	n/a	Heavy Snow	5.0 in.					Hoopeston	n/a	n/a	n/a	
12/30/2000	12:00 AM	Heavy Snow	6.5 in.					Danville	n/a	n/a	n/a	
01/26/2001	n/a	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/25/2002 thru 02/26/2002	n/a	Heavy Snow	5.0 in.				40 mph	Hoopeston	n/a	n/a	n/a	Northwest winds of 15 to 25 mph with gusts of 30 to 40 mph occurred on the 26th, which created considerable blowing and drifting snow, and visibilities were restricted to less than a quarter mile at times.
03/25/2002	n/a	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	The combination of ice and snow resulted in downed power lines and tree limbs, along with dozens of traffic accidents the morning of the 26th.
12/24/2002	3:00 PM	Winter Storm	6.0 in.		X			Danville Hoopeston	n/a	n/a	n/a	The Christmas Eve snow caused numerous vehicle related accidents, especially during the afternoon and early evening. There was only minor blowing and drifting snow with this winter storm.

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
01/02/2003	n/a	Heavy Snow	7.0 in.					Hoopeston	n/a	n/a	n/a	There was only minor blowing and drifting of the snow with this winter storm. No injuries or deaths were reported with this storm.
02/14/2003 thru 02/15/2003	9:30 AM	Winter Storm	10.0 in.				50 mph	Danville	n/a	n/a	n/a	Winds of 30 to 50 mph especially Saturday evening caused major blowing and drifting snow across this area, with drifts as high as 3 to 5 feet.
12/04/2003	n/a	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	
01/27/2004	2:00 AM	Heavy Snow	4.0 in.					Danville	n/a	n/a	n/a	
01/04/2005 thru 01/06/2005	4:30 PM	Ice Storm			0.5 in.			Danville	n/a	n/a	n/a	There were numerous reports of downed trees and power lines, as well as numerous traffic accidents. No fatalities or major injuries were reported.
01/28/2005 thru 01/29/2005	10:30 PM	Heavy Snow	4.0 in.					Danville	n/a	n/a	n/a	
12/08/2005	n/a	Heavy Snow	6.0 in.					Hoopeston	n/a	n/a	n/a	
02/06/2007	n/a	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/13/2007	n/a	Heavy Snow	17.0 in.				45 mph	Danville	n/a	2	n/a	Snowfall totals averaged 8 to 17 inches. Blizzard conditions were also reported. Two fatalities were reported in Vermilion County but specific details were unavailable.
02/24/2007	4:00 AM	Ice Storm			X			Danville Hoopeston	n/a	n/a	n/a	
12/15/2007	4:00 AM	Heavy Snow	8.0 in.					Hoopeston, Danville	n/a	n/a	n/a	Heavy snow fell across Vermilion county, with 5 to 8 inch snowfall totals common.
01/31/2008 thru 02/01/2008	n/a	Heavy Snow	7.0 in.					Danville Hoopeston	n/a	n/a	n/a	
02/22/2008	12:30 AM	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	
02/25/2008	n/a	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
01/06/2009	12:00 AM	Winter Storm	X	X	X	X			1	1	n/a	Numerous traffic accidents were reported by Illinois State Police across the County as a result of icy road conditions. One woman slid off the road just north of Sidell and was transported to a local hospital. Another woman lost her life as her vehicle slid off I-74 just west of Tilton.
01/14/2009	1:00 AM	Heavy Snow	4.0 in.					Danville	n/a	n/a	n/a	
01/18/2009 thru 01/19/2009	6:00 AM	Winter Storm	0.5 in.		X				4	n/a	n/a	Light icing and snow produced several accidents in the County, two of which led to injuries. The first accident occurred 9 miles south of Danville and injured two people. The second accident occured 7 miles south of Danville and also injured two people.

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
01/27/2009 thru 01/28/2009	8:00 AM	Heavy Snow	6.0 in.					Danville	n/a	n/a	n/a	
12/27/2009	n/a	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	
01/06/2010 thru 01/07/2010	11:00 PM	Heavy Snow	6.0 in.					Danville Hoopeston	2	n/a	n/a	Numerous weather observers across the County measured around 6 inches of snow. As a result of snow-covered roadways, several traffic accidents and vehicle slide-offs were reported. The most significant accident occurred on January 7th on I-74 near just east of the Oakwood exit when a semi-trailer truck struck a car. Two people were injured.

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/08/2010 thru 02/09/2010	5:00 PM	Winter Storm	5.0 in.				X		1	n/a	n/a	As a result of slick and snow-covered roads, several minor traffic accidents were reported. The most significant accident happened on I-74 just west of Danville when a driver lost control of their vehicle and spun into the path of another vehicle. One person was injured.
12/03/2010 thru 12/04/2010	6:00 PM	Heavy Snow	6.0 in.					Danville Hoopeston	n/a	n/a	n/a	
12/12/2010 thru 12/13/2010	8:00 AM	Blizzard	3.0 in.				35 mph	Danville Hoopeston	n/a	n/a	n/a	
12/24/2010	n/a	Heavy Snow	4.0 in.					Hoopeston	n/a	n/a	n/a	
01/11/2011	12:00 AM	Winter Storm	5.0 in.		X			Danville Hoopeston	n/a	n/a	n/a	Due to snow-covered and icy roadways, numerous traffic accidents were reported.
01/20/2011	5:00 AM	Heavy Snow	5.1 in.					Danville	n/a	n/a	n/a	

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/01/2011 thru 02/02/2011	11:30 AM	Winter Storm	7.0 in.			3.0 in.		Hoopeston	n/a	n/a	$10,000	Numerous power outages and traffic accidents were reported across the county.
03/24/2013 thru 03/25/2013	3:00 PM	Heavy Snow	12.0 in.					Danville Hoopeston	n/a	n/a	n/a	The heavy snow led to the closing of many area schools and businesses and caused numerous traffic accidents across the area.
12/13/2013 thru 12/14/2013	5:00 PM	Heavy Snow	9.0 in.					Danville Hoopeston	n/a	n/a	n/a	Numerous traffic accidents were reported as a result of the heavy snowfall.
01/01/2014 thru 01/02/2014	6:00 PM	Heavy Snow	4.5 in.					Danville	n/a	n/a	n/a	
01/05/2014 thru 01/06/2014	9:00 AM	Winter Storm	11.2 in.				X	Danville Hoopeston	n/a	n/a	n/a	The heavy snowfall along with significant blowing and drifting caused numerous road closures and traffic accidents across the County.
02/04/2014 thru 02/05/2014	3:00 PM	Heavy Snow	8.0 in.					Danville Hoopeston	n/a	n/a	n/a	Numerous traffic accidents occurred due to snow-covered roads.
02/17/2014	10:00 AM	Heavy Snow	4.7 in.					Hoopeston	n/a	n/a	n/a	

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
01/05/2015 thru 01/06/2015	7:00 PM	Heavy Snow	5.4 in.					Danville Hoopeston	n/a	n/a	n/a	
02/01/2015 thru 02/02/2005	5:00 AM	Heavy Snow	5.5 in.					Hoopeston	n/a	n/a	n/a	Numerous traffic accidents occurred due to snow-covered and hazardous roadways.
02/20/2015 thru 02/21/2015	8:00 PM	Heavy Snow	6.0 in.					Danville	n/a	n/a	n/a	Numerous traffic accidents occurred due to snow-covered and hazardous roadways.
02/28/2015 thru 03/01/2015	7:00 PM	Heavy Snow	9.0 in.					Danville Hoopeston	n/a	n/a	n/a	Numerous traffic accidents occurred due to snow-covered and hazardous roadways.

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/24/2016 thru 02/25/2016	8:00 AM	Blizzard	6.0 in.				50 mph	Hoopeston	n/a	n/a	n/a	Weather observers across Vermilion County reported snowfall amounts of 4 to 6 inches, with drifts between 1 and 2 feet. Winds gusting to between 40 and 50 mph created whiteout conditions. Snow-covered roads and poor visibility due to falling and blowing snow contributed to numerous traffic accidents across the county, especially on I-74 where part of the road west of Danville was closed. In addition, many trees and power lines were blown down, resulting in scattered power outages.
12/29/2017	n/a	Heavy Snow	4.3 in.					Hoopeston	n/a	n/a	n/a	
03/24/2018	3:00 AM	Heavy Snow	10.0 in.					Danville Hoopeston	n/a	n/a	n/a	Numerous traffic accidents were reported due to snow-covered roads.
04/02/2018	n/a	Heavy Snow	4.8 in.					Hoopeston	n/a	n/a	n/a	

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
01/12/2019	12:00 AM	Heavy Snow	7.4 in.					Hoopeston	n/a	n/a	n/a	Numerous traffic accidents occurred due to snow-covered roads. The snow was heavy and wet, which made plowing of roads difficult.
01/19/2019	3:00 AM	Winter Storm	3.2 in.				35 mph	Danville Hoopeston	n/a	n/a	n/a	Northerly winds gusting 30-35mph created snow drifts of 1-3 feet deep. As a result, numerous traffic accidents occurred and vehicles became stuck in drifts, especially on rural roads.
01/31/2021	n/a	Heavy Snow	5.9 in.					Hoopeston	n/a	n/a	n/a	
02/14/2021 thru 02/16/2021	9:00 PM	Heavy Snow	12.0 in.					Danville Hoopeston	n/a	n/a	n/a	Numerous traffic accidents occurred due to snow-covered and hazardous roads.

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/02/2022 thru 02/03/2022	7:00 AM	Winter Storm	15.0 in.				40 mph	Danville Hoopeston	n/a	n/a	n/a	The heavy snow accumulations and considerable blowing and drifting snow led to road closures and numerous traffic accidents.
02/16/2022 thru 02/17/2022	6:00 PM	Winter Storm	5.0 in.				45 mph	Hoopeston	n/a	n/a	n/a	Falling and blowing snow created hazardous travel conditions and resulted in a few traffic accidnets around the area.

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
12/22/2022 thru 12/23/2022	10:00 AM	Winter Storm	3.0 in.				40 mph	Danville Hoopeston	n/a	n/a	n/a	Strong northwesterly winds created near white-out conditions at times, especially in rural locations. Numerous traffic accidents occurred as roads became snow-covered and hazardous. In addition, temperatures plunging below zero created life-threatening conditions for anyone venturing outside.
GRAND TOTAL:									**9**	**6**	**$55,000**	

Sources: Commercial-News.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Cooperative Observation Forms.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Data.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.
Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Planning Committee Member responses to Natural Hazard Events Questionnaire.

[1] An "X" in the snow, freezing rain, ice, sleet and/or strong winds columns indicates the presences of that weather condition during the severe winter storm event.

[2] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 5
General Flood Events Reported in Vermilion County
1994 - 2022

Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Vermilion River Danville[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
04/12/1994 thru 04/21/1994	12:00 PM	Vermilion River, area rivers, streams, & creeks	countywide	31.56 ft. 04/13/1994 flood of record			X	n/a	n/a	$10,000,000	n/a	***This event was part of a federally-declared disaster (Declaration #1025)*** Flooding occurred along the Vermilion River and its tributaries due to the very heavy rain which fell on April 11th and 12th. Danville's water treatment plant was flooded causing substantial damage.
05/19/1995	n/a	Vermilion River	central & northern portion of county	18.58 ft. 05/19/1995				n/a	n/a	n/a	n/a	
05/10/1996 thru 05/11/1996	n/a	Vermilion River	central & northern portion of county	21.58 ft. 05/11/1996				n/a	n/a	n/a	n/a	
06/15/1998 thru 06/17/1998	n/a	Vermilion River	central & northern portion of county	23.82 ft. 06/16/1998				n/a	n/a	n/a	n/a	

^ Flood event verified in the vicinity of this location(s).

[1] Flood stage at gauge location is 18 feet, moderate flood stage is 22 feet and major flood stage is 28 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Vermilion River Danville[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
05/12/2002 thru 05/13/2002	4:00 PM	Vermilion River, area rivers, streams, & creeks	countywide	18.54 ft. 05/13/2002				n/a	n/a	n/a	n/a	***This event was part of a federally-declared disaster (Declaration #1416)***
09/02/2003	n/a	Vermilion River	central & northern portion of county	19.47 ft. 9/2/20023				n/a	n/a	n/a	n/a	
03/27/2004	n/a	Vermilion River	central & northern portion of county	18.70 ft. 03/27/2004				n/a	n/a	n/a	n/a	
06/12/2004 thru 06/14/2004	n/a	Vermilion River	central & northern portion of county	21.36 ft. 06/12/2004				n/a	n/a	n/a	n/a	
01/06/2005	n/a	Vermilion River	central & northern portion of county	18.05 ft. 01/06/2005				n/a	n/a	n/a	n/a	

[A] Flood event verified in the vicinity of this location(s).

[1] Flood stage at gauge location is 18 feet, moderate flood stage is 22 feet and major flood stage is 28 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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					Home	Business	Infra-structure					
01/12/2005 thru 01/16/2005	n/a	Vermilion River	central & northern portion of county	22.69 ft. 01/14/2005				n/a	n/a	n/a	n/a	
02/05/2008 thru 02/09/2008	n/a	Vermilion River	Danville	26.30 ft. 02/07/2008				n/a	n/a	n/a	n/a	
06/04/2008 thru 06/05/2008	4:17 AM	area rivers, streams, & creeks	countywide	---				n/a	n/a	n/a	n/a	
06/07/2008 thru 06/08/2008	n/a	Vermilion River	central & southern portion of county	20.75 ft. 06/08/2008				n/a	n/a	n/a	n/a	
12/28/2008 thru 12/29/2008	n/a	Vermilion River	Danville	18.76 ft. 12/29/2008				n/a	n/a	n/a	n/a	
05/14/2009	7:36 AM	area rivers, streams, & creeks	countywide	---				n/a	n/a	n/a	n/a	
05/16/2009 thru 05/18/2009	n/a	Vermilion River	countywide	21.55 ft. 05/17/2009				n/a	n/a	n/a	n/a	

^ Flood event verified in the vicinity of this location(s).

[1] Flood stage at gauge location is 18 feet, moderate flood stage is 22 feet and major flood stage is 28 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Vermilion River Danville[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
04/27/2011 thru 04/29/2011	n/a	Vermilion River	countywide	19.69 ft. 04/28/2011				n/a	n/a	n/a	n/a	
04/18/2013 thru 04/20/2013	n/a	Vermilion River	Danville	24.30 ft. 04/20/2013				n/a	n/a	n/a	n/a	
06/08/2015 thru 06/10/2015	n/a	Vermilion River	countywide	22.83 ft. 06/08/2015				n/a	n/a	n/a	n/a	
09/19/2015	2:45 AM	area rivers, streams, & creeks	northern portion of county	---				n/a	n/a	n/a	n/a	Following flash flooding, the rainfall finally ended in the early morning hours, which allowed areal flooding to subsided around daybreak on the 19th.
12/27/2015 thru 12/31/2015	n/a	Vermilion River	countywide	26.66 ft. 12/29/2015 6th highest crest on record				n/a	n/a	n/a	n/a	

^ Flood event verified in the vicinity of this location(s).

[1] Flood stage at gauge location is 18 feet, moderate flood stage is 22 feet and major flood stage is 28 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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General Flood Events Reported in Vermilion County
1994 - 2022

Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Vermilion River Danville[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
04/29/2017 thru 05/01/2017	11:45 PM	area rivers, streams, & creeks	southern portion of county	---				n/a	n/a	n/a	n/a	Following flash flooding, an additional 1.00 to 2.00 inches of rain occurred on April 30th, keeping many roads flooded. As a result, areal flooding continued until the late morning hours of May 1st.
05/04/2017 thru 05/05/2017	2:45 PM	Vermilion River	countywide	18.47 ft. 05/05/2017				n/a	n/a	n/a	n/a	Following flash flooding, additional rainfall of 1.00 to 1.50 inches later in the day May 4th into May 5th caused creeks and roads to stay flooded for nearly 24 hours. Flood waters subsided by the afternoon on May 5th.

^ Flood event verified in the vicinity of this location(s).

[1] Flood stage at gauge location is 18 feet, moderate flood stage is 22 feet and major flood stage is 28 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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General Flood Events Reported in Vermilion County
1994 - 2022

Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Vermilion River Danville[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
02/21/2018 thru 02/24/2018	1:00 AM	Vermilion River	countywide	27.42 ft. 02/22/2018 3rd highest crest on record	X		X	n/a	n/a	$3,000,000	n/a	Following flash flooding, another 0.50 to 1.00 inch of rain from late on February 21st into early February 23rd exacerbated the flooding. The North Fork of the Vermilion River flooded so quickly that 25 homes had to be evacuated by boat in the Morin addition on the west side of Danville early in the morning on February 21st. A person attempting to cross a flooded section of Illinois Route 1, between Hoopeston and Rossville had to be rescued from the roof of their car, also early in the morning on February 21st. The flood waters took more than two days to recede, with much of the flooding ending by the late afternoon of February 23rd.

A Flood event verified in the vicinity of this location(s).

1 Flood stage at gauge location is 18 feet, moderate flood stage is 22 feet and major flood stage is 28 feet.

2 An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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General Flood Events Reported in Vermilion County
1994 - 2022

Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Vermilion River Danville[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
1/10/2020 thru 1/12/2020	n/a	area rivers, streams, & creeks	Danville^	---	X		X	n/a	n/a	n/a	n/a	
06/28/2021 thru 06/29/2021	n/a	Vermilion River	central & northern portion of county	18.02 ft. 06/28/2021				n/a	n/a	n/a	n/a	
GRAND TOTAL:								**0**	**0**	**$13,000,000**	**$0**	

Sources: NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Data.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.
NOAA, National Weather Service, River Observations, North Central River Forecast Center, Vermilion River near Danville.
United States Geological Survey, National Water Dashboard.

^ Flood event verified in the vicinity of this location(s).

[1] Flood stage at gauge location is 18 feet, moderate flood stage is 22 feet and major flood stage is 28 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

Table 6
Flash Flood Events Reported in Vermilion County
1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
04/11/1994 thru 04/12/1994	5:00 PM	countywide				n/a	n/a	n/a	n/a	***This event was part of a federally-declared disaster (Declaration #1025)***
05/08/1996	12:15 PM	Sidell	X		X	n/a	n/a	n/a	n/a	***This event was part of a federally-declared disaster (Declaration #1112)*** Slow moving thunderstorms dumped up to 2.5 inches of rain in a little over two hours in Sidell. Streets and roads in the area were flooded and one home sustained minor damage due to the flash flooding. No injuries were reported and no damage estimate was available.
05/10/1996	11:30 AM	countywide	X		X	n/a	n/a	n/a	n/a	***This event was part of a federally-declared disaster (Declaration #1112)*** Thunderstorms dumped up to 2 inches of rain in a 30 minute period. Twenty-five families had to be evacuated from one subdivision near Danville after flood gates were opened at the Lake Vermilion Dam, causing the North Fork to spill over its banks in some areas. Some roads, especially around the Georgetown area, were washed out. Also, the Georgetown water treatment plant was threatened and several homes sustained flooding damage. No injuries were reported and no damage estimate was available.

[A] Flash flood event verified in the vicinity of this location(s).

[1] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a flash flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

Table 6
Flash Flood Events Reported in Vermilion County
1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
06/09/1996	7:00 PM	Danville Tilton	X		X	n/a	n/a	n/a	n/a	Slow moving thunderstorms produced between 1 and 2 inches of rain in a short period of time in the Danville and Tilton areas. Numerous streets were flooded and several people had to be rescued from their cars after driving into flooded areas. Several homes sustained minor flood damage and no injuries or deaths were reported. No damage estimate was available.
05/19/1998 thru 05/20/1998	5:30 PM	southern portion of county			X	n/a	n/a	n/a	n/a	The water treatment plant in Georgetown was threatened by flood waters as the Little Vermilion River rose quickly. Area personnel sandbagged throughout the night to protect the plant. No structural damage occurred in Vermilion County.
06/14/1998 thru 06/15/1998	5:00 PM	southern portion of county	X		X	n/a	n/a	n/a	n/a	A series of thunderstorms moved through the southern portions of Vermilion County. Up to two inches fell in an hour in this area. Numerous roads were flooded and some water was reported in basements. Some of the towns affected by the flooding were Catlin, Hawbuck, Hillery, Tilton, and Georgetown. Flooding slowly subsided by the early morning hours on the 15th of June. No damage estimate was available.

[A] Flash flood event verified in the vicinity of this location(s).

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1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
08/03/1998	7:00 PM	northern portion of county	X		X	n/a	n/a	n/a	n/a	A series of thunderstorms moved across northern portions of Champaign and Vermilion counties over a three hour period with between 4 to 6 inches of rain falling. The Thomasboro, Collison, Hope, and Potomac areas were the most affected. Numerous roads were flooded and a few homes in the Collison area sustained minor damage. Also, several motorists had to be rescued after driving into flooded roadways. No injuries were reported.
02/24/2001 thru 02/25/2001	9:19 PM	countywide				n/a	n/a	n/a	n/a	
06/19/2001	4:30 PM	countywide			X	n/a	n/a	n/a	n/a	Numerous roads were reported flooded in spots, with a few impassable in Ridge Farm, Vermilion Grove, Olivet, Sidell and Georgetown.
04/12/2002	3:00 PM	southern portion of county	X		X	n/a	n/a	n/a	n/a	Very heavy rain fell over extreme southern portions of Vermilion County. Illinois Route 1 and several secondary roads were closed due to high water. Numerous basements were flooded in Georgetown with some residents evacuated. No injuries were reported. Also several township roads in the area were washed out.

[A] Flash flood event verified in the vicinity of this location(s).

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1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
04/19/2002 thru 04/20/2002	8:37 PM	southwestern portion of county				n/a	n/a	n/a	n/a	
05/07/2002	3:22 AM	southern portion of county				n/a	n/a	n/a	n/a	***This event was part of a federally-declared disaster (Declaration #1416)***
05/12/2002	11:30 AM	southern portion of county	X		X	n/a	n/a	n/a	n/a	***This event was part of a federally-declared disaster (Declaration #1416)*** Between 2 and 4 inches of rain fell over southern portions of Vermilion County causing flash flooding. Twenty-two homes in Westville and Tilton suffered basement and crawl space flooding. Several water treatment plants in the area had to be sandbagged to prevent flooding of the facilities.
07/28/2002	4:00 PM	western portion of county			X	n/a	n/a	n/a	n/a	Several inches of rain fell in a short amount of time causing numerous rural roads to flood.
08/19/2002	3:30 AM	northern portion of county	X		X	n/a	n/a	n/a	n/a	Up to 8 inches of rain fell in the north half of Vermilion and Champaign counties, especially in the Hoopeston area. Three homes in Hoopeston had water in the living space areas. Also, numerous roads were flooded.

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Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
08/22/2002 thru 08/23/2002	10:00 PM	northern portion of county			X	n/a	n/a	n/a	n/a	Between 2 and 5 inches of rain fell in a short amount of time. Numerous roads were flooded. No structures were affected.
05/10/2003	1:30 PM	countywide				n/a	n/a	n/a	n/a	
06/11/2003	7:35 PM	northern portion of county			X	n/a	n/a	n/a	n/a	Very heavy rain fell in a short amount of time over the northern portions of Vermilion County. U.S. Route 136 was briefly flooded with 6 to 8 inches of water near Potomac.
06/14/2003	2:46 PM	central & southern portions of county				n/a	n/a	n/a	n/a	
07/06/2003	2:45 AM	countywide				n/a	n/a	n/a	n/a	
07/09/2003	5:39 PM	countywide			X	n/a	n/a	n/a	n/a	Very heavy rains fell for several hours over Vermilion County. Many streets and roads were flooded. No injuries were reported.
07/21/2003	3:50 AM	countywide				n/a	n/a	n/a	n/a	
09/24/2003	7:00 AM	northern portion of county				n/a	n/a	n/a	n/a	
03/26/2004	5:15 PM	central portion of county				n/a	n/a	n/a	n/a	Flash flooding was reported around Danville in the Morin Addition Subdivision. EMA requested voluntary evacuations of residents in the subdivision with 13 families evacuated.

[A] Flash flood event verified in the vicinity of this location(s).

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Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
05/30/2004	7:31 PM	Rossville			X	n/a	n/a	n/a	n/a	Over 2 inches of rain fell in under half an hour in the Rossville area. This caused several streets to become flooded.
06/10/2004	3:15 PM	Jamaica			X	n/a	n/a	n/a	n/a	Brief heavy rain fell causing several roads in Jamaica to become flooded.
06/10/2004 thru 06/11/2004	9:15 PM	Danville			X	n/a	n/a	n/a	n/a	Very heavy rain caused flooding in Danville as well as county roads including IL Route 119 east of IL Route 1.
06/12/2004	5:00 AM	Danville	X			n/a	n/a	n/a	n/a	Morin subdivision evacuated due to flooding.
06/12/2004 thru 06/13/2004	9:00 PM	Hoopeston			X	n/a	n/a	n/a	n/a	Several streets flooded in Hoopston.
06/16/2004	8:16 PM	northern portion of county			X	n/a	n/a	n/a	n/a	Very heavy rains in a short period of time flooded numerous roads in northern Vermilion County. This included roads in the Rossville, Armstrong and Hoopeston areas.
07/09/2004	5:53 PM	northern portion of county				n/a	n/a	n/a	n/a	
07/10/2004	12:53 AM	central portion of county				n/a	n/a	n/a	n/a	
08/24/2004	4:50 PM	Hoopeston			X	n/a	n/a	n/a	n/a	Very heavy rain fell on already saturated ground causing street flooding.

[A] Flash flood event verified in the vicinity of this location(s).

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1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
08/27/2004 thru 08/28/2004	10:15 PM	northern portion of county				n/a	n/a	n/a	n/a	
08/28/2004	6:30 PM	Rankin			X	n/a	n/a	n/a	n/a	Very heavy rain caused Illinois Routes 49 and 9 to become flooded in Rankin.
01/11/2005 thru 01/12/2005	10:20 PM	countywide				n/a	n/a	n/a	n/a	
01/13/2005	3:40 AM	countywide			X	n/a	n/a	n/a	n/a	Many roads were flooded in county, including Illinois Highway 49 in Rankin.
06/07/2005	6:58 PM	northeastern portion of county				n/a	n/a	n/a	n/a	
05/29/2006	6:30 PM	northeastern portion of county	X		X	n/a	n/a	n/a	n/a	Very heavy rain fell in a short period of time across the northeast portion of Vermilion County. Water was reported flowing across roads near Cheneyville. In Hoopston, 15 roads were reported impassible and several homes experienced extensive flooding.
05/31/2006	3:00 PM	southwestern portion of county				n/a	n/a	n/a	n/a	

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1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
02/05/2008 thru 02/06/2008	7:30 PM	central portion of county	X		X	n/a	n/a	n/a	n/a	Several roads were flooded near the Middle Fork of the Vermilion River and severe flooding occurred near the North Fork of the Vermilion River. A few homes near Danville were evacuated due to the rising water near the river. Two vehicles were swept off the road by flood waters into a ditch.
05/30/2008	7:37 PM	southern portion of county				n/a	n/a	n/a	n/a	
06/03/2008 thru 06/04/2008	10:11 PM	countywide				n/a	n/a	n/a	n/a	
05/14/2009	1:30 AM	southern portion of county			X	n/a	n/a	n/a	n/a	Heavy rain of 2.00 to 4.00 inches within two to three hours produced significant flash flooding of most roads in southern Vermilion County.
05/15/2009 thru 05/16/2009	7:45 PM	northern portion of county			X	n/a	n/a	n/a	n/a	Heavy rain of 1.50 to 2.00 inches fell within two hours, on already saturated ground, across northern Vermilion County. This produced extensive flash flooding, particularly on rural roads. Multiple streets were flooded in the city of Danville, and Illinois Route 9 near Hoopeston was impassible.

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1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
06/01/2009	5:30 PM	northeastern portion of county			X	n/a	n/a	n/a	n/a	Heavy rainfall totaling up to 6.00 inches in spots was reported in northeast Vermilion County. Rainfall rates of 1 to 2 inches per hour were common, which caused the inundation of numerous rural roads as well as streets in the village of Hoopeston.
08/28/2009	12:01 AM	countywide				n/a	n/a	n/a	n/a	
05/21/2010	1:15 PM	western portion of county			X	n/a	n/a	n/a	n/a	Training thunderstorm cells produced an area of flash flooding in western Vermilion County. Many rural roads were inundated because of the flooding, particularly near Indianola. Many roads were inundated, particularly Illinois Route 49 and U.S. Route 136 west of Potomac.
05/26/2010	5:00 PM	northwestern portion of county			X	n/a	n/a	n/a	n/a	A slow moving thunderstorm produced 2.50 inches of rain in one hour in a small part of northwest Vermilion County. Many rural roads were inundated around the town of Rankin, including a small part of Illinois Route 9 and Illinois Route 49.
06/14/2010	4:30 PM	southern portion of county			X	n/a	n/a	n/a	n/a	Heavy rain impacted southern parts of Vermilion County with rainfall amounts of nearly 2.00 in an hour. This caused many rural roads to quickly flood and become impassable.

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Table 6
Flash Flood Events Reported in Vermilion County
1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
06/21/2010 thru 06/22/2010	7:45 PM	northeastern portion of county			X	n/a	n/a	n/a	n/a	Very heavy rain produced flash flooding in a small part of northeast Vermilion County. Around 2.00 of rain was reported in one hour, which resulted in the flooding of many roads from Hoopeston to the Indiana border.
06/22/2010	12:15 AM	southern portion of county			X	n/a	n/a	n/a	n/a	Two rounds of heavy rain, measuring around 1.50 each time, resulted in flash flooding across a small part of southern Vermilion County. Most rural roads were impassable due to the flooding. In the town Indianola, the water was nearly 15 inches deep in spots.
07/15/2010	1:33 PM	central & southern portions of county				n/a	n/a	n/a	n/a	
05/06/2012	5:00 PM	northeastern portion of county			X	n/a	n/a	n/a	n/a	Nearly 3.00 of rain fell in northeast Vermilion County within 90 minutes during the early evening. Streets and rural roads from Hoopeston to 3 miles west of Hoopeston, and along Illinois Route 9 to the Indiana border were impacted by more than a foot of water.
04/10/2013 thru 04/11/2013	4:30 PM	northern portion of county			X	n/a	n/a	n/a	n/a	Rainfall rates of 1 to 2 inches per hour for nearly three hours resulted in flash flooding in northern Vermilion County. Several rural roads were impassable due to high water.

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Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
04/18/2013 thru 04/19/2013	2:18 AM	countywide				n/a	n/a	n/a	n/a	
06/22/2013	12:00 PM	northeastern portion of county			X	n/a	n/a	n/a	n/a	Scattered thunderstorms, with heavy rainfall amounts of 2 to 3 inches in one hour produced flash flooding in northeast Vermilion County during the early afternoon. Many rural roads from Hoopeston to the Indiana border were impassable. The flooding subsided by mid-afternoon.
10/05/2013	3:04 PM	central portion of county				n/a	n/a	n/a	n/a	
02/20/2014	6:30 PM	countywide			X	n/a	n/a	n/a	n/a	Rainfall of 0.50 to 1.00 combined with 2 of snow depth and a frozen ground to produce flash flooding across much of Vermilion County. Many streets in Danville were flooded and most rural roads were impassable.

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Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
05/21/2014 thru 05/22/2014	7:45 PM	central & northern portions of county			X	n/a	n/a	n/a	n/a	Two bands of persistent rain from numerous thunderstorms tracking over the same areas in central and southern Vermilion County produced 3.00 to 4.00 inches in less than two hours during the evening. Numerous rural roads in central and southern Vermilion County were impassable. State Highway 1 from Georgetown to the Edgar County Line and Interstate 74 from mile post 198 to 203 were impacted and traffic was stopped at times.
06/23/2014	7:02 PM	northern portion of county				n/a	n/a	n/a	n/a	
04/09/2015	4:30 AM	central portion of county			X	n/a	n/a	n/a	n/a	Clusters of thunderstorms with very heavy rainfall produced rainfall rates of 1 to 2 inches per hour in central Vermilion County during the pre-dawn hours. Numerous streets in the city of Danville were flooded. Danville Police reported that the water was up to car doors on some of the flooded streets. The rain ended shortly after daybreak, and the flooding subsided by late morning.

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1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
05/16/2015	4:00 PM	central & northern portions of county	X		X	n/a	n/a	n/a	n/a	Many county roads north of Danville became impassable due to high water. Two cars became submerged on East 2550 North Road just west of IL Route 1, a few miles southwest of Bismarck. Locations in and near Kickapoo State Park were also inundated due to rapidly rising water and flooded roads. The Vermilion River west of Danville also came out of its banks quickly, resulting in the evacuation of a subdivision. No injuries were reported.
06/07/2015 thru 06/08/2015	8:30 PM	central & northern portions of county	X	x	X	n/a	n/a	$250,000	n/a	Thunderstorms with rainfall rates of 1.50 to 2.00 per hour for nearly three hours produced a total of 4.00 to 8.00 of rain in northern and central Vermilion County. Many streets were impassable in the city of Danville. Significant road flooding was reported on most of U.S. Highways 136, 150 and Interstate 74 , as well as State Highway 1 from Bismarck to Westville. Fithian indicated hundreds of thousands of dollars in damages was sustained in the Village with basements and crawl spaces were flooded, bridges were torn out, decks were ripped off of houses, creeks and streams overflowed and crops were damaged.

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1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
06/25/2015	4:33 AM	southern portion of county				n/a	n/a	n/a	n/a	
09/01/2015	9:34 AM	northern portion of county				n/a	n/a	n/a	n/a	
09/05/2015	8:30 AM	northeastern portion of county			X	n/a	n/a	n/a	n/a	Slow moving thunderstorms produced 4.00 to 6.00 inches of rain in two hours around daybreak in extreme northeast Vermilion County, including the town of Hoopeston. Extensive flooding of streets occurred in Hoopeston. Illinois Route 1 west of Hoopeston to the Iroquois County line was flooded. A four mile stretch of Illinois Route 9 southwest and south of Hoopeston was closed. The flooding subsided by late in the morning.
09/18/2015 thru 09/19/2015	10:00 PM	northeastern portion of county			X	n/a	n/a	n/a	n/a	Thunderstorms with heavy rainfall produced flash flooding in northeast Vermilion County for the second time in less than two weeks. Rainfall amounts of 3.50 to 5.00 inches resulted from two separate rounds of storms - one in the late evening and one after Midnight. Extensive street flooding was reported in the town of Hoopeston. Most rural roads from Hoopeston to Rossville, and east to the Indiana border were impassable.

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1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
12/26/2015 thru 12/27/2015	11:28 PM	countywide				n/a	n/a	n/a	n/a	
08/18/2016	8:08 PM	west-central portion of county				n/a	n/a	n/a	n/a	
09/09/2016 thru 09/10/2016	6:37 PM	central portion of county				n/a	n/a	n/a	n/a	
04/29/2017	8:30 PM	central & southern portions of county			X	n/a	n/a	n/a	n/a	Rain amounts of 2.00 to 3.00 inches in about a two hour period during the evening hours, on already saturated ground, resulted in flash flooding across central and southern Vermilion County. Several streets from Danville to Westville were impassable. Numerous rural roads and highways in the southern part of the county from Sidell to Ridge Farm were inundated, including U.S. Highway 150/Illinois Route 1.

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1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
05/04/2017	9:00 AM	countywide			X	n/a	n/a	n/a	n/a	Heavy rainfall of 1.50 to 2.50 inches during the morning hours of May 4th, on already saturated ground, resulted in flash flooding across much of Vermilion County. Officials reported that most roads were impassable and numerous creeks rapidly flooded, particularly south of I-74. Most rural roads from Allerton to Jamaica to Sidell were closed.
05/26/2017 thru 05/27/2017	6:00 PM	northern portion of county			X	n/a	n/a	n/a	n/a	Intense rainfall of 2.00 to 3.00 inches in 30 to 60 minutes produced rapid flash flooding in northern Vermilion County. The flooding on roads from East Lynn to Hoopeston was intensified by hail drifts 1.5 to 3 feet deep. Severe street flooding was reported in Hoopeston with water up to 3 feet deep. Illinois Route 1 was impassable from near the Iroquois County line to 3 miles southwest of Hoopeston. The combination of additional rainfall during the late evening hours and slowly melting hail drifts kept flash flood conditions in place until the early morning hours of May 27th.
11/18/2017	9:59 AM	northern portion of county				n/a	n/a	n/a	n/a	

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Flash Flood Events Reported in Vermilion County
1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
02/20/2018 thru 02/21/2018	9:00 PM	central & northern portions of county			X	n/a	n/a	n/a	n/a	Around 1.00 to 1.75 inches of rain fell onto frozen ground late on February 19th. This set the conditions for rapid flash flooding to occur on February 20th into the 21st when 3.00 to 5.00 of rain occurred. Numerous creeks and streams rapidly flooded in northern and central Vermilion County. Numerous roads in Hoopeston, Bismarck and Danville were impassable.
06/10/2018	3:10 PM	northern portion of county			X	n/a	n/a	n/a	n/a	Heavy rain of more than 3.00 inches in an hour during the early afternoon of June 10th resulted in flash flooding in northern Vermilion County, primarily north of U.S. Highway 136. Most roads were closed in Hoopeston and a viaduct on Illinois Route 119 near Alvin was impassable. The flooding subsided by early evening.
07/05/2018	11:30 AM	central portion of county			X	n/a	n/a	n/a	n/a	Rainfall amounts of 2.50 to 4.00 inches of rain in a two period during the late morning of July 5th resulted in flash flooding in the central part of Vermilion County, including the city of Danville. There were numerous reports of rural roads and streets that were impassable for a short period of time. Several cars either stalled in the flood waters or were partially submerged. The flooding subsided by mid-afternoon.

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1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
08/06/2018 thru 08/07/2018	10:17 PM	northern portion of county				n/a	n/a	n/a	n/a	
09/07/2018	2:06 PM	countywide				n/a	n/a	n/a	n/a	
06/29/2019 thru 06/30/2019	7:15 PM	northeastern portion of county			X	n/a	n/a	n/a	n/a	Heavy rain of 2.00 to 4.00 inches on saturated ground resulted in flash flooding in northeast Vermilion County during the late evening of June 29th. The North Fork went out of its banks which resulted in flooding of nearby roadways, including Illinois Route 119 just west of Alvin and county roads near Bismarck. The flooding subsided during the very early morning hours of June 30th.
08/18/2019	5:03 PM	southern portion of county				n/a	n/a	n/a	n/a	
06/04/2020	12:35 AM	southern portion of county				n/a	n/a	n/a	n/a	
06/27/2020	10:02 PM	northwestern portion of county			X	n/a	n/a	n/a	n/a	Six to eight inches of water was flowing over Route 49 west of Potomac prompting law enforcement to barricade the road.
06/12/2021	6:21 PM	northwestern portion of county				n/a	n/a	n/a	n/a	

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Flash Flood Events Reported in Vermilion County
1994 - 2022

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
06/19/2021	3:29 AM	countywide				n/a	n/a	n/a	n/a	
07/11/2021	6:30 PM	Danville Tilton			X	n/a	n/a	n/a	n/a	Several roads in both Danville and Tilton were flooded.
08/29/2022 thru 08/30/2022	7:33 PM	countywide				n/a	n/a	n/a	n/a	
GRAND TOTAL:						**0**	**0**	**$250,000**	**$0**	

Sources: Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Planning Committee Member responses to the Natural Hazard Events Questionnaire.
Iowa State University, Iowa Environmental Mesonet, National Weather Service Data, Search for Warnings.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Data.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.

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Table 7
Tornadoes Reported in Vermilion County
1950 - 2022

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
1	04/09/1953	5:45 PM	Hope^ Collison^ Jamesburg^ Bismarck^	F 3	22.20 mi.	750 yd.	5	1	n/a	n/a	*Touchdown/Liftoff – Multiple Counties* Touched down in Champaign County north of Champaign and traveled east-northeast through Vermilion County into Indiana before lifting off northeast of Williamsport in Warren County – total length: 37.0 miles
2	11/15/1955	5:00 PM	Jamaica^	F 0	0.20 mi.	10 yd.	n/a	n/a	$250	n/a	
3	12/18/1957	6:40 PM	Sidell^ Indianola^	F 1	3.00 mi.	60 yd.	n/a	n/a	$25,000	n/a	
4	07/10/1958	5:00 PM	Oakwood Oakwood^	F 1	2.00 mi.	167 yd.	n/a	n/a	$2,500	n/a	
5	08/15/1958	5:00 AM	Sidell^ Indianola^ Catlin^ Belgium^ Tilton^	F 1	13.90 mi.	30 yd.	n/a	n/a	$2,500	n/a	
6	06/16/1960	1:00 PM	Sidell	F 0	0.10 mi.	10 yd.	n/a	n/a	$2,500	n/a	Unroofed a barn and twisted off trees.
7	03/06/1961	4:15 AM	Archie^ Sidell Sidell^ Indianola Indianola^	F 2	10.35 mi.	10 yd.	n/a	n/a	n/a	n/a	*Touchdown/Liftoff – Multiple Counties* Touched down in Douglas County east of Tuscola and traveled northeast moving through southeast Champaign County before lifting off southeast of Indianola in Vermilion County – total length: 30.6 miles Farm buildings were damaged or destroyed near Sidell and Indianola.

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^ Tornado touchdown verified in the vicinity of this location(s).
† Property damages sustained as a result of this tornado represent losses sustained in two or more counties. A detailed breakdown by county was not available.

Table 7
Tornadoes Reported in Vermilion County
1950 - 2022

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
8	07/21/1961	5:20 PM	Bismarck Bismarck^	F 2	3.60 mi.	10 yd.	n/a	n/a	$25,000	$25,000	Tornado damaged farmsteads, killing 15 hogs and leveled corn fields.
9	07/21/1961	6:25 PM	Tilton^	F 1	0.10 mi.	10 yd.	n/a	n/a	$25,000	$2,500	Tornado damaged farm buildings, machinery, and killed farm animals.
10	07/02/1962	3:30 PM	Hope^ Hope	F 2	5.30 mi.	50 yd.	n/a	n/a	$25,000	$25,000	*Touchdown/Liftoff – Two Counties* Touched down in Champaign County south of Royal and traveled northeast before lifting off in Hope in Vermilion County – total length: 6.9 miles Greatest damage occurred in Hope, where several houses, a church, a trailer, and farm buildings were damaged.
11	11/12/1965	5:00 PM	Tilton^	F 0	0.20 mi.	10 yd.	n/a	n/a	$2,500	n/a	An old school building was destroyed and a trailer home turned upside down and badly
12	05/10/1969	10:15 AM	Tilton^	F 0	0.10 mi.	10 yd.	n/a	n/a	$300	n/a	A tornado picked upa 100 lb. calf and carried it in the air for 50 yards and uprooted a tree.
13	07/24/1969	10:55 AM	Tilton	F 0	0.30 mi.	50 yd.	n/a	n/a	$25,000	n/a	Tornado first touched down in an amusement park west of IL Rte. 1 and lifted as it crossed the highway before touching down a second time in residential are east of the highway. As many as 20 to 25 homes received some damage, mostly to roofs and garages.

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Table 7
Tornadoes Reported in Vermilion County
1950 - 2022

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
14	08/12/1973	10:15 AM	Ridge Farm^	F 2	0.10 mi.	10 yd.	n/a	n/a	n/a	n/a	Tornado knocked down trees, power lines, windows and destroyed a cement bus garage. A tree limb was driven through an aluminum camper. Crop damage was reported but damaged totals were unavailable.
15	08/14/1973	12:30 PM	Hoopeston	F 2	0.10 mi.	10 yd.	n/a	n/a	n/a	n/a	Tornado did some crop damage near Hoopston but damaged totals were unavailable.
16	08/14/1973	12:45 PM	Oakwood^	F 0	0.10 mi.	10 yd.	n/a	n/a	$25,000	n/a	A lumberyard was hit by a tornado near Oakwood throwing debris 600 feet in the ari. A warehouse, home, and garage were also
17	04/03/1974	2:55 PM	Fithian^ Fithian	F 3	4.80 mi.	350 yd.	n/a	n/a	n/a	n/a	*Touchdown/Liftoff – Two Counties* Touched down in Champaign County south of Sidney and traveled northeast acorss the Homer Lake area before lifting off near near Fithian in Vermilion County – total length: 14.9 miles ***This event was part of a federally-declared disaster (Declaration #860)***
18	04/03/1974	3:25 PM	Bismarck^ Bismarck Alvin^	F 2	7.80 mi.	177 yd.	12	n/a	$1,000,000	n/a	***This event was part of a federally-declared disaster (Declaration #860)*** The tornado caused significant damage to the township high school and homes on the west side of Bismarck.

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Table 7
Tornadoes Reported in Vermilion County
1950 - 2022

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
19	11/10/1975	12:08 AM	Potomac^	F 2	0.10 mi.	10 yd.	n/a	n/a	$250,000	n/a	A tornado demolished a one-story frame house and mobile home in the Bluegrass community northwest of Potomac. A garage and machine shed on the grounds were also destroyed
20	03/20/1976	2:25 PM	Fithian^ Danville^	F 4	14.90 mi.	800 yd.	n/a	n/a	n/a	n/a	*Touchdown/Liftoff – Multiple Counties* touched down in Macon County southeast of Long Creek and traveled northeast through Piatt & Champaign Counties before lifting off northwest of Danville in Vermilion County – total length: 63.7 miles
21	07/04/1981	3:07 PM	Hoopeston	F 0	0.20 mi.	167 yd.	n/a	n/a	$2,500	n/a	Tornado touched down in the northwest corner of Hoopston damaging 3 mobile homes, a garage, and destroyed 8 utility-storage sheds. One mobile home was lifted off its foundation blocks. Some trees were uprooted and power lines were knocked down.
22	04/02/1982	11:18 PM	Ridge Farm Ridge Farm^	F 1	4.00 mi.	127 yd.	5	n/a	$250,000	n/a	Five individuals were injured and five blocks of bulidings and homes suffered damage as a tornado first touched down near IL Rte. 1 and travelled through the southeast portion of the Village. Five homes and one mobile home were destroyed and 15 other homes were damaged.

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1950 - 2022

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
23	06/22/1984	6:55 PM	Hoopeston Hoopeston^	F 1	1.00 mi.	300 yd.	n/a	n/a	$250,000	n/a	Tornado touched down on the northeast side of the City and felled a grain elevator, demolished four house trailers, downed power lines and flattened several garages along its path.
24	06/01/1987	12:50 PM	Potomac^	F 0	0.20 mi.	10 yd.	n/a	n/a	n/a	$2,500	A tornado touched down briefly in an open field near Potomac. Only minor damage was done to field crops.
25	06/01/1987	12:53 PM	Collison^	F 0	0.50 mi.	10 yd.	n/a	n/a	n/a	$25,000	A tornado touched down in a cornfield northwest of Collison.
26	06/13/1987	2:25 PM	Sidell^	F 0	1.00 mi.	10 yd.	n/a	n/a	n/a	n/a	*Touchdown/Liftoff – Two Counties* touched down in Vermilion County southwest of Sidell and traveled southeat before lifting off northeast of Metcalf in Edgar County – total length: 2.0 miles
27	05/08/1988	6:45 PM	Fithian^ Fithian	F 0	0.50 mi.	50 yd.	n/a	n/a	$25,000	n/a	Extensive damage occurred to tree limbs and some damate to roofs occurred throughout an area 50 yards wide and 0.5 miles long through
28	03/22/1991	11:13 PM	Tilton Danville	F 1	1.00 mi.	50 yd.	n/a	n/a	$975,000	n/a	Touched down briefly in Tilton causing extensive damage to 10 homes, a liquor store, and the City Hall/Fire Station complex. It continued to the northeast, where it touched down for the last time in southwestern Danville causing damage to signs, store windows, and trees.

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† Property damages sustained as a result of this tornado represent losses sustained in two or more counties. A detailed breakdown by county was not available.

Table 7
Tornadoes Reported in Vermilion County
1950 - 2022

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
29	06/08/1993	6:01 PM	Danville	F 0	0.10 mi.	10 yd.	n/a	n/a	n/a	n/a	Several tombstones and numerous tree limbs were blown down in a cemetery. The tornado tore off part of the roof of an office building and blew down some large tree limbs and power
30	06/08/1993	6:16 PM	Danville	F 0	0.10 mi.	10 yd.	n/a	n/a	n/a	n/a	
31	08/08/1994	3:31 PM	Hoopeston	F 0	0.20 mi.	10 yd.	n/a	n/a	n/a	n/a	
32	08/08/1994	3:35 PM	Cheneyville	F 0	0.20 mi.	10 yd.	n/a	n/a	n/a	n/a	
33	08/08/1994	3:50 PM	Rossville	F 0	0.20 mi.	10 yd.	n/a	n/a	n/a	n/a	
34	04/19/1996	8:08 PM	Catlin^	F 0	0.10 mi.	100 yd.	n/a	n/a	n/a	n/a	A tornado touched down in a field. No damage was reported.
35	04/07/1998	7:20 PM	Sidell^	F 0	0.10 mi.	10 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in a field. No injuries or damage were reported.
36	05/19/1998	4:30 PM	Ridge Farm^	F 0	0.30 mi.	40 yd.	n/a	n/a	$50,000	n/a	A tornado destroyed a barn and machine shedand damaged another barn, machine shed, and a grain bin. No injuries were reported.
37	12/06/1998	6:55 PM	Collison Collison^	F 0	2.00 mi.	200 yd.	n/a	n/a	$300,000	n/a	A tornado touched down on the west side of Collison. It caused moderate to major damage to a dozen homes and destroyed a post office and two mobile homes. Dozens of trees were blown over and numerous projectiles - ranging from small tree branches to 2 inch by 8 inch boards - were either driven into the ground or into structures. No injuries or deaths were reported.
38	05/14/2003	6:19 PM	Oakwood^	F 0	0.10 mi.	10 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in a field. No damage or injuries were reported.

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39	05/14/2003	6:40 PM	Ridge Farm^	F 0	0.10 mi.	10 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in a field. No damage or injuries were reported.
40	05/28/2003	6:05 PM	Indianola^	F 0	0.10 mi.	10 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in a field. No damage or injuries were reported.
41	06/10/2004	1:57 PM	Jamaica^	F 0	3.50 mi.	10 yd.	n/a	n/a	n/a	n/a	A tornado touched down in a field. No damage or injuries were reported.
42	07/26/2006	6:15 PM	Rossville^	F 1	2.80 mi.	50 yd.	n/a	n/a	$40,000	n/a	A tornado touched down 2 miles west of Rossville and tracked to the northeast. Numerous trees were blown down, a tool shed was destroyed, several outbuildings were damaged, and a 16 foot box trailer was moved 20
43	07/26/2006	6:30 PM	Hoopeston	F 0	0.10 mi.	30 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down and caused damage to a shed.
44	05/13/2009	11:23 PM	Fairmount^	EF 0	0.06 mi.	50 yd.	n/a	n/a	$35,000	n/a	A tornado very briefly touched down destroying a large farm machinery shed and snapping several main transmission power poles.
45	06/19/2009	4:50 PM	Fairmount^	EF 0	0.10 mi.	10 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in a field. No damage was reported.
46	06/19/2009	5:09 PM	Westville^	EF 0	0.10 mi.	10 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in a field. No damage was reported.
47	08/19/2009	4:10 PM	Jamesburg^ Henning^	EF 0	4.71 mi.	50 yd.	n/a	n/a	$80,000	$15,000	The tornado damaged two homes and numerous outbuildings in addition to crop and tree damage.

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48	06/21/2010	5:22 PM	East Lynn^	EF 0	0.40 mi.	50 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in a field. No damage was reported.
49	06/21/2010	6:02 PM	Rossville^	EF 0	0.60 mi.	50 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in a field. No damage was reported.
50	07/21/2010	12:24 PM	Sidell^	EF 0	0.09 mi.	10 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in a field. No damage was reported.
51	04/19/2011	7:02 PM	Henning Henning^	EF 0	2.71 mi.	25 yd.	n/a	n/a	$225,000	n/a	A tornado touched down near Henning and traveled northeastward, damaging roofs, siding, and awnings on numerous houses. The tornado also knocked down a number of trees before dissipating 3 miles northeast of Henning.
52	04/19/2011	7:11 PM	Rossville^	EF 1	2.56 mi.	100 yd.	n/a	n/a	$360,000	n/a	A tornado damaged 6 grain bins, 2 farmsteads, 2 large sheds, and a combine.
53	05/07/2011	5:08 PM	Allerton^	EF 0	0.22 mi.	25 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in a field . No damage was reported.
54	05/01/2012	4:18 PM	Tilton	EF 0	0.46 mi.	30 yd.	n/a	n/a	$8,000	n/a	A tornado blew a small carport garage about 75 yards onto a trailer.
55	05/06/2012	4:18 PM	Hoopeston^ Hoopeston	EF 0	2.12 mi.	75 yd.	n/a	n/a	$65,000	n/a	A tornado tdestroyed a grain silo, throwing a grain auger into a 20 X 40 shed, and ripped shingles off two houses .

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56	05/31/2013	10:24 PM	Westville^	EF 1	0.49 mi.	70 yd.	n/a	n/a	$50,000	n/a	A tornado severely damaged an attached garage and part of a house near North 1850 East Road. The garage was pulled from its foundation and pushed about 10 feet on top of the car inside. A large barn was damaged and several trees were splintered as well. No injuries were reported.
57	11/17/2013	12:45 PM	Rankin^ East Lynn Hoopston^	EF 2	14.16 mi.	440 yd.	n/a	n/a	$2,500,000	n/a	*Touchdown/Liftoff – Multiple Counties* Touched down in Champaign County east of Thomasboro and traveled northeast through Vermilion County before lifting off southwest of Wellington in Iroquois County – total length: 29.83 miles ***This event was part of a federally-declared disaster (Declaration #4157)*** A tornado destroyed 1 home, 20 outbuildings, and a camper. It also damaged 7 other homes and snapped numerous power poles and trees.

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58	11/17/2013	1:03 PM	Allerton^ Jamaica Catlin^ Belgium^ Tilton Danville^	EF 2	19.68 mi.	440 yd.	1	n/a	$9,500,000	n/a	***This event was part of a federally-declared disaster (Declaration #4157)*** A tornado touched down in an open field northeast of Allerton and tracked to the northeast for about 15 miles doing major damage to 2 homes, roof damage to 4 other homes, and destroying 9 outbuildings, 4 garages, and 2 grain bins. Numerous trees and power poles were also snapped. The tornado crossed State Route 1 about 2 miles north of Westville, impacting Belgium and Hegeler where 1 person was injured. Nine homes sustained major damage, 26 had significant roof damage, and more than 100 had minor roof damage. The tornado also damaged more than 50 mobile homes, numerous garages and vehicles, and destroyed about 25 outbuildings. The tornado crossed the Vermilion River and moved through about a mile of
59	09/09/2016	5:13 PM	Catlin^	EF 0	0.10 mi.	10 yd.	n/a	n/a	n/a	$10,000	A tornado briefly touched down in a field. Minor crop damage was reported.
60	09/09/2016	5:34 PM	Danville^ Bismarck^	EF 1	1.63 mi.	50 yd.	n/a	n/a	$50,000	n/a	A tornado damaged a few trees, took shingles off the roof of a house, and blew a camper over.

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61	05/26/2017	4:53 PM	Alvin^	EF 1	0.29 mi.	75 yd.	n/a	n/a	$45,000	n/a	A tornado snapped a tree, did minor damage to the roof and siding of a house, broke an attic window, and blew the siding off a garage.
62	05/23/2019	1:06 AM	Muncie Muncie^	EF 1	1.56 mi.	200 yd.	n/a	n/a	$200,000	n/a	A tornado touched down east of Fithian and tracked northeastward through the community of Muncie, damaging numerous trees and snapping power poles. A house was damaged when a tree fell onto it, and a semi was blown off I-74. The Mayor of Muncie identified $200,000 in damages sustained by the Village during this tornado.
63	05/28/2019	3:06 PM	Jamesburg^	EF 0	0.16 mi.	10 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in an open field. No damage was reported.

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64	12/10/2021	10:43 PM	Ridge Farm^	EF 1	0.20 mi.	200 yd.	n/a	n/a	n/a	n/a	*Touchdown/Liftoff – Two Counties* Touched down in Edgar County north of Chrisman and traveled northeast lifting off east of Ridge Farm in Vermilion County – total length: 3.65 miles
GRAND TOTAL:							**23**	**1**	**$16,421,050**	**$105,000**	

Sources: NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Data.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.
NOAA, National Weather Service, Weather Forecast Office Lincoln, Illinois, Tornado Climatology for Central and Southeast Illinois, Vermilion County.
NOAA, National Weather Service, Storm Prediction Center, SVRGIS, Tornadoes (1950-2021) Database.
Vermilion County Multi-Jurisdictional Multi-Hazard Mitigation Planning Committee Member responses to the Natural Hazard Events Questionnaire.

During the process of collecting and verifying the tornado data used in this updated Plan, discrepancies were identified in the existing tornado information databases. Discussions were immediately conducted with the NWS Weather Forecast Office in Lincoln to verify tornado coordinates so that these discrepancies could be corrected or clarified. Consequently, this Hazard MitigationPlan has the most accurate information on tornadoes for the County. If the reader compares the tornado information in this Plan with other databases, they may encounter the same discrepancies until these databases are formally corrected.

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Table 8
Excessive Heat Events Reported in Vermilion County
1995 - 2022

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
07/12/1995 thru 07/16/1995	n/a	100 °F	70 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
08/11/1995 thru 08/19/1995	n/a	94 °F	71 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
6/30/1996	n/a	95 °F	72 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/18/1996 thru 07/19/1996	n/a	92 °F	70 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
08/06/1996 thru 08/07/1996	n/a	93 °F	71 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
06/24/1997 thru 06/25/1997	n/a	92 °F	71 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/26/1997 thru 07/27/1997	9:00 AM	95 °F	72 °F	115 °F	Danville Hoopeston	n/a	1	n/a	n/a	A 64 year-old male died while working in farm fields near Danville. There were numerous reports of heat related injuries in most area hospitals. There were also numerous reports fo roads buckling due to the high temperatures.

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

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1995 - 2022

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
06/25/1998 thru 06/28/1998	n/a	94 °F	74 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	Several heat related illnesses were reported in area hospitals due to the heat. Also, several highways in the area had sections of roadway buckle due to the excessive heat.
07/21/1998 thru 07/22/1998	n/a	95 °F	69 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
08/23/1998 thru 08/24/1998	n/a	92 °F	71 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
9/6/1998	n/a	96 °F	71 °F	n/a	Hoopeston	n/a	n/a	n/a	n/a	
9/27/1998	n/a	92 °F	72 °F	n/a	Hoopeston	n/a	n/a	n/a	n/a	
06/06/1999 thru 06/08/1999	n/a	94 °F	72 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/03/1999 thru 07/06/1999	n/a	92 °F	74 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/21/1999 thru 07/26/1999	n/a	94 °F	69 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/29/1999 thru 07/31/1999	n/a	99 °F	73 °F	110 °F	Danville Hoopeston	n/a	1	n/a	n/a	A 50 year-old woman died in her apartment due to the heat.
8/30/2000	n/a	93 °F	70 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	

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		Day (Max)	Night (Min)	Heat Index (Max)						
05/16/2001 thru 05/17/2001	n/a	94 °F	71 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/20/2001 thru 07/24/2001	n/a	93 °F	71 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
8/9/2001	n/a	91 °F	75 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
06/30/2002 thru 07/04/2002	n/a	95 °F	68 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
7/9/2002	n/a	93 °F	71 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/21/2002 thru 07/22/2002	n/a	96 °F	68 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
8/4/2002	n/a	93 °F	72 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
7/4/2003	n/a	96 °F	75 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
6/30/2005	n/a	93 °F	73 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/24/2005 thru 07/26/2005	n/a	95 °F	75 °F	115 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
8/12/2005	n/a	94 °F	72 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	

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		Day (Max)	Night (Min)	Heat Index (Max)						
6/21/2006	n/a	92 °F	72 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/30/2006 thru 08/03/2006	11:00 AM	93 °F	71 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
08/06/2007 thru 08/09/2007	n/a	96 °F	70 °F	109 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
08/22/2007 thru 08/23/2007	n/a	95 °F	69 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
6/23/2009 thru 06/26/2009	n/a	94 °F	70 °F	105 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
8/9/2009	n/a	91 °F	73 °F	105 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
6/27/2010	n/a	90 °F	74 °F	100 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
7/15/2010	n/a	90 °F	73 °F	105 °F	Danville	n/a	n/a	n/a	n/a	
07/17/2010 thru 07/18/2010	n/a	91 °F	66 °F	105 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/23/2010 thru 07/24/2010	n/a	93 °F	74 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	

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		Day (Max)	Night (Min)	Heat Index (Max)						
07/28/2010 thru 07/29/2010	n/a	92 °F	69 °F	105 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
08/03/2010 thru 08/04/2010	12:00 PM	96 °F	70 °F	105 °F	Danville	n/a	n/a	n/a	n/a	
08/09/2010 thru 08/14/2010	n/a	94 °F	69 °F	105 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
6/4/2011	n/a	96 °F	72 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
06/07/2011 thru 06/08/2011	n/a	94 °F	68 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
7/2/2011	n/a	93 °F	70 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/11/2011 thru 07/12/2011	n/a	95 °F	71 °F	115 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/18/2011 thru 07/23/2011	n/a	100 °F	74 °F	115 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/28/2011 thru 07/29/2011	n/a	93 °F	72 °F	105 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	

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		Day (Max)	Night (Min)	Heat Index (Max)						
08/02/2011 thru 08/03/2011	n/a	93 °F	73 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
09/01/2011 thru 09/03/2011	n/a	100 °F	67 °F	107 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
5/27/2012	n/a	95 °F	71 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
06/28/2012 thru 07/08/2012	n/a	103 °F	66 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/18/2012 thru 07/19/2012	n/a	97 °F	68 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/23/2012 thru 07/26/2012	n/a	101 °F	70 °F	105 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
8/4/2012	n/a	97 °F	70 °F	105 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
7/9/2013	n/a	91 °F	74 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/17/2013 thru 07/19/2103	n/a	94 °F	70 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
8/28/2013	n/a	93 °F	73 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	

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1995 - 2022

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
09/10/2013 thru 09/11/2103	n/a	98 °F	70 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
8/25/2014	n/a	91 °F	70 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
7/17/2015	n/a	90 °F	72 °F	105 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
6/11/2016	n/a	94 °F	71 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
6/26/2016	n/a	92 °F	72 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/21/2016 thru 07/24/2016	n/a	92 °F	71 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
08/11/2016 thru 08/12/2016	n/a	93 °F	70 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
9/7/2016	n/a	91 °F	72 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/21/2017 thru 07/23/2017	n/a	91 °F	72 °F	110 °F	Danville	n/a	n/a	n/a	n/a	
05/27/2018 thru 05/28/2018	n/a	97 °F	68 °F	n/a	Hoopeston	n/a	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 8
Excessive Heat Events Reported in Vermilion County
1995 - 2022

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
06/16/2018 thru 06/18/2018	n/a	93 °F	69 °F	108 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
06/30/2018 thru 07/01/2018	n/a	92 °F	71 °F	115 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/04/2018 thru 07/05/2018	n/a	93 °F	71 °F	109 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
08/26/2018 thru 08/28/2018	n/a	92 °F	72 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
09/03/2018 thru 09/05/2018	n/a	94 °F	69 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	n/a	
7/10/2019	n/a	94 °F	70 °F	108 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/18/2019 thru 07/21/2019	n/a	95 °F	71 °F	115 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
7/18/2020	n/a	90 °F	70 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
6/18/2021	n/a	92 °F	69 °F	105 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
7/29/2021	n/a	87 °F	73 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 8
Excessive Heat Events Reported in Vermilion County
1995 - 2022

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
08/10/2021 thru 08/11/2021	n/a	92 °F	73 °F	110 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
8/24/2021	n/a	97 °F	70 °F	105 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
06/14/2022 thru 06/16/2022	n/a	97 °F	70 °F	112 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
07/05/2022 thru 07/06/2022	n/a	97 °F	71 °F	112 °F	Danville Hoopeston	n/a	n/a	n/a	n/a	
GRAND TOTAL:						**0**	**2**	**$ -**	**$ -**	

Sources: Iowa State University, Iowa Environmental Mesonet, National Weather Service Data, Search for Warnings.
Midwestern Regional Climate Center, cli-MATE.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Cooperative Observation Forms.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 9
Extreme Cold/Wind Chill Events Reported in Vermilion County
1995 - 2022

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
1/4/1995	n/a	-3 °F	10 °F	n/a	Hoopeston	n/a	n/a	n/a	
1/31/1996	n/a	-10 °F	7 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
02/02/1996 thru 02/04/1996	12:00 AM	-17 °F	9 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	Many people experienced problems with cars and frozen pipes.
01/11/1997 thru 01/14/1997	n/a	-11 °F	15 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
01/17/1997 thru 01/18/1997	n/a	-17 °F	6 °F	n/a	Danville	n/a	n/a	n/a	
12/31/1998	n/a	-3 °F	14 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
01/04/1999 thru 01/05/1999	n/a	-24 °F	14 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
1/10/1999	n/a	-15 °F	18 °F	n/a	Danville	n/a	n/a	n/a	
1/21/2000	n/a	-7 °F	14 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
1/24/2000	n/a	-9 °F	13 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
12/20/2000	n/a	-6 °F	17 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
12/22/2000	n/a	-6 °F	8 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 9
Extreme Cold/Wind Chill Events Reported in Vermilion County
1995 - 2022

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
12/25/2000	n/a	-8 °F	11 °F	n/a	Hoopeston	n/a	n/a	n/a	
1/2/2001	n/a	-2 °F	12 °F	n/a	Hoopeston	n/a	n/a	n/a	
01/23/2003 thru 01/24/2003	n/a	-4 °F	14 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
1/27/2003	n/a	-11 °F	17 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
01/30/2004 thru 01/31/2004	n/a	-12 °F	12 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
12/24/2004	n/a	-2 °F	12 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
1/17/2005	n/a	-2 °F	13 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
02/04/2007 thru 02/10/2007	n/a	-9 °F	15 °F	-25 °F	Danville Hoopeston	n/a	n/a	n/a	
02/15/2007 thru 02/16/2007	n/a	-11 °F	18 °F	-30 °F	Danville Hoopeston	n/a	n/a	n/a	
1/20/2008	n/a	-2 °F	16 °F	-20 °F	Danville Hoopeston	n/a	n/a	n/a	
12/22/2008	n/a	-2 °F	11 °F	-25 °F	Hoopeston	n/a	n/a	n/a	
01/15/2009 thru 01/16/2009	12:00 AM	-18 °F	13 °F	-30 °F	Danville Hoopeston	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 9
Extreme Cold/Wind Chill Events Reported in Vermilion County
1995 - 2022

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
01/02/2010 thru 01/04/2010	n/a	-5 °F	12 °F	n/a	Hoopeston	n/a	n/a	n/a	
01/09/2010 thru 01/10/2010	n/a	-5 °F	18 °F	-25 °F	Danville Hoopeston	n/a	n/a	n/a	
2/10/2011	n/a	-9 °F	18 °F	-20 °F	Danville Hoopeston	n/a	n/a	n/a	
1/3/2014	n/a	-10 °F	18 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
01/06/2014 thru 01/07/2014	12:00 AM	-16 °F	16 °F	-45 °F	Danville Hoopeston	n/a	n/a	n/a	
01/22/2014 thru 01/23/2014	n/a	-5 °F	19 °F	-25 °F	Danville Hoopeston	n/a	n/a	n/a	
01/27/2014 thru 01/28/2014	12:00 AM	-8 °F	11 °F	-30 °F	Danville Hoopeston	n/a	n/a	n/a	
02/06/2014 thru 02/07/2014	n/a	-12 °F	10 °F	-25 °F	Hoopeston	n/a	n/a	n/a	
02/10/2014 thru 02/11/2014	n/a	-17 °F	17 °F	-25 °F	Danville Hoopeston	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 9
Extreme Cold/Wind Chill Events Reported in Vermilion County
1995 - 2022

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
01/07/2015 thru 01/08/2015	n/a	-9 °F	13 °F	-30 °F	Danville Hoopeston	n/a	n/a	n/a	
1/14/2015	n/a	-10 °F	17 °F	n/a	Hoopeston	n/a	n/a	n/a	
2/5/2015	n/a	-9 °F	13 °F	n/a	Hoopeston	n/a	n/a	n/a	
2/19/2015	n/a	-5 °F	9 °F	-20 °F	Danville Hoopeston	n/a	n/a	n/a	
2/27/2015	n/a	-8 °F	17 °F	-25 °F	Danville Hoopeston	n/a	n/a	n/a	
1/18/2016	n/a	-3 °F	10 °F	-25 °F	Danville Hoopeston	n/a	n/a	n/a	
12/15/2016	n/a	2 °F	18 °F	-20 °F	Danville Hoopeston	n/a	n/a	n/a	
12/19/2016	n/a	-6 °F	17 °F	n/a	Hoopeston	n/a	n/a	n/a	
1/6/2017	n/a	-3 °F	11 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
12/27/2017 thru 12/28/2017	n/a	-12 °F	17 °F	-25 °F	Danville Hoopeston	n/a	n/a	n/a	
12/30/2017 thru 01/09/2018	n/a	-19 °F	19 °F	-30 °F	Danville Hoopeston	n/a	n/a	n/a	
2/6/2018	n/a	-17 °F	14 °F	n/a	Danville Hoopeston	n/a	n/a	n/a	
1/16/2018	n/a	-5 °F	10 °F	-25 °F	Danville Hoopeston	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 9
Extreme Cold/Wind Chill Events Reported in Vermilion County
1995 - 2022

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
02/05/2018 thru 02/06/2018	n/a	-7 °F	16 °F	n/a	Hoopeston	n/a	n/a	n/a	
1/21/2019	n/a	-8 °F	14 °F	n/a	Hoopeston	n/a	n/a	n/a	
01/30/2019 thru 01/31/2019	n/a	-21 °F	10 °F	-40 °F	Danville Hoopeston	n/a	n/a	n/a	
3/4/2019	n/a	-4 °F	18 °F	-20 °F	Danville Hoopeston	n/a	n/a	n/a	
2/14/2020	n/a	-6 °F	15 °F	-20 °F	Danville Hoopeston	n/a	n/a	n/a	
2/7/2021	n/a	-8 °F	13 °F	-25 °F	Danville Hoopeston	n/a	n/a	n/a	
02/14/2021 thru 02/17/2021	n/a	-10 °F	18 °F	-25 °F	Danville Hoopeston	n/a	n/a	n/a	
01/06/2022 thru 01/07/2022	n/a	-3 °F	17 °F	-25 °F	Danville Hoopeston	n/a	n/a	n/a	
2/5/2022	n/a	-5 °F	19 °F	-15 °F	Danville Hoopeston	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 9
Extreme Cold/Wind Chill Events Reported in Vermilion County
1995 - 2022

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
12/23/2022 thru 12/24/2022	10:34 AM	-11 °F	15 °F	-33 °F	Danville Hoopeston	n/a	n/a	n/a	
GRAND TOTAL:						**0**	**0**	**$ -**	

Sources: Iowa State University, Iowa Environmental Mesonet, National Weather Service Data, Search for Warnings.
Midwestern Regional Climate Center, cli-MATE.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Cooperative Observation Forms.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 10
Drought Events Reported in Vermilion County
1980 - 2022

Year(s)	Start Month	Duration (Months)	Magnitude Drought Intensity Category[1]					Percent Crop Yield Reduction from Previous Year		Designated USDA Primary Natural Disaster Area	Crop Damages	Impacts/Event Description
			D0	D1	D2	D3	D4	Corn	Soybeans			
1983	n/a	n/a						33.8 %	8.5 %	n/a	n/a	All 102 counties in Illinois were proclaimed state disaster areas because of high temperatures and insufficient precipitation beginning in mid-June
1988	June	16						45.0 %	35.0 %	n/a	n/a	Approximately half of all Illinois counties were impacted by drought conditions
2005	May	4	X	X				1.2 %	1.9 %	Yes	n/a	
2011	August	3	X	X	X			10.9 %	18.7 %	Yes	n/a	
2012	May	5.5	X	X	X	X		32.4 %	---	Yes	$ 65,400,000	Crop damage figures are for corn crop damage only. Due to the hot and dry conditions, a ban on open burning was instituted by local officials in July. The flow along the Middle Fork of the Vermilion River near Oakwood dropped to the lowest on record in July and again in August. A mandatory water restriction was instituted in Sidell in August.
GRAND TOTAL:											**$ 65,400,000**	

Sources: Illinois State Water Survey, Illinois State Climatologist.
National Drought Mitigation Center, United States Drought Monitor.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.
United States Department of Agriculture, National Agricultural Statistics Service, Quik Stats Lite.

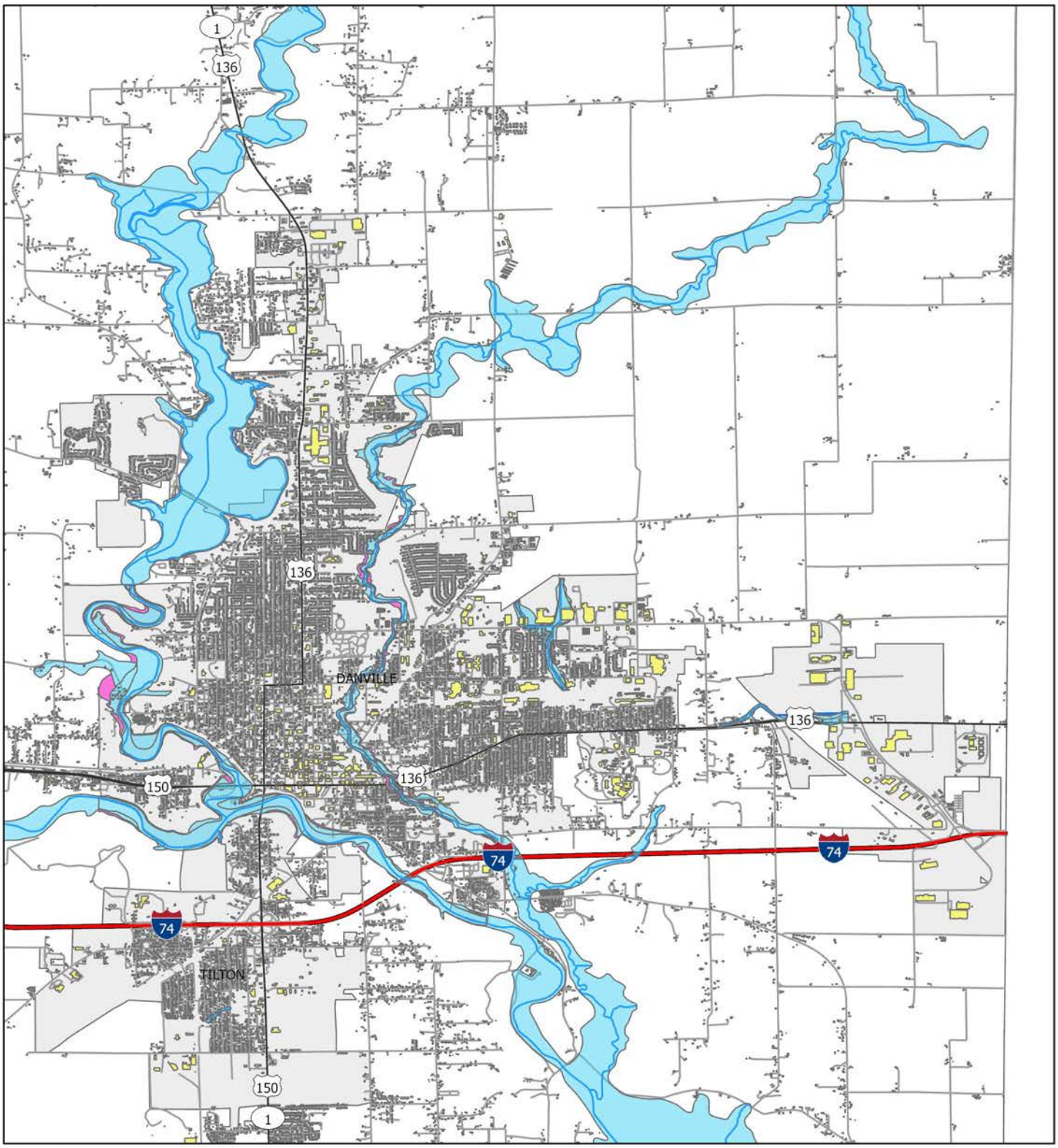
[1] An "X" identifies the level of drought intensity reached by at least a portion of the County during the event, if available.

US Drought Monitor – Drought Intensity Category Descriptions

D0	abnormally dry	D3	extreme drought
D1	moderate drought	D4	exceptional drought
D2	severe drought		

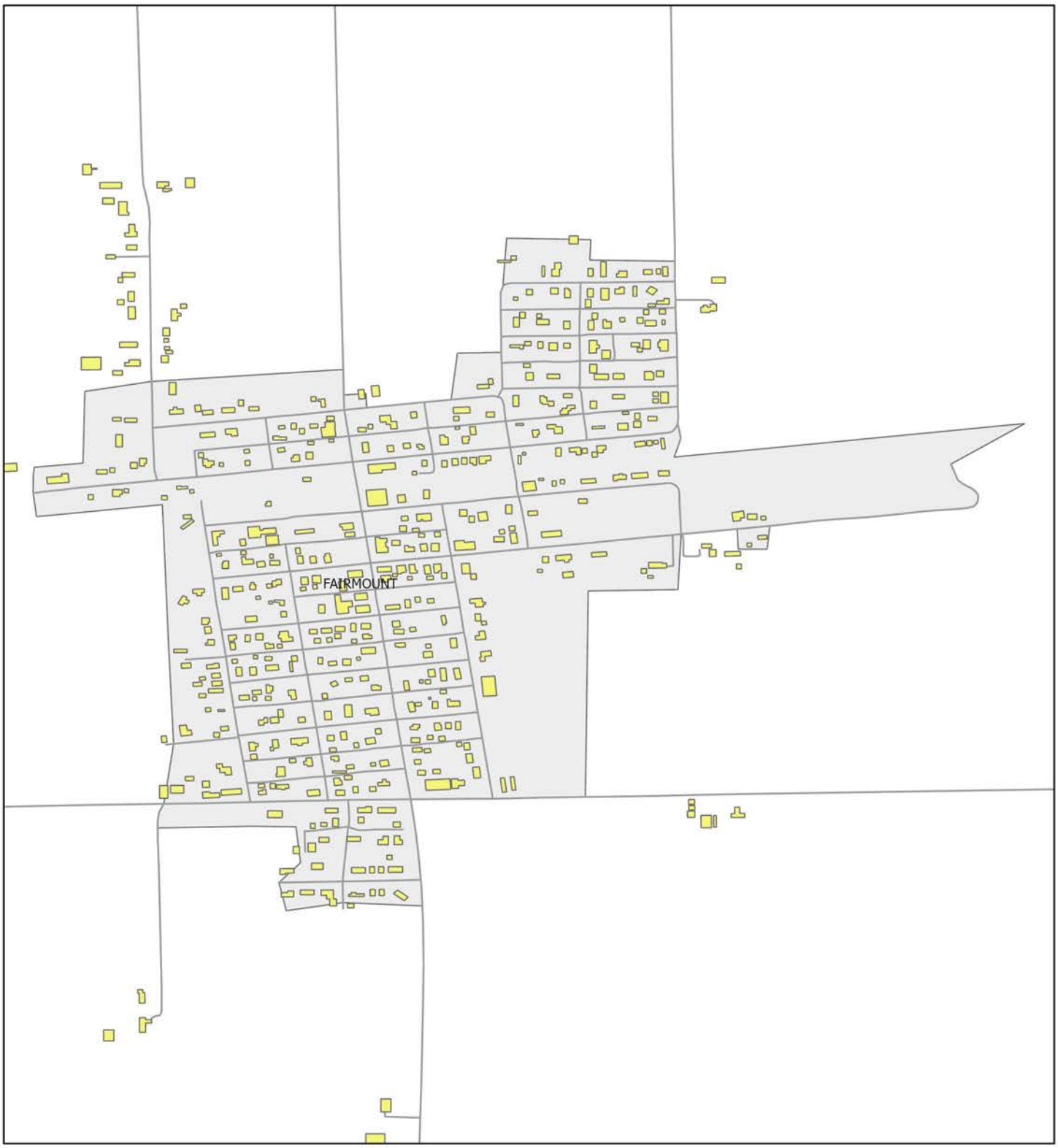
APPENDIX K

Danville



Map Created August 2023 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Iowa DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Fairmount



Map Created August 2023 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Iowa DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

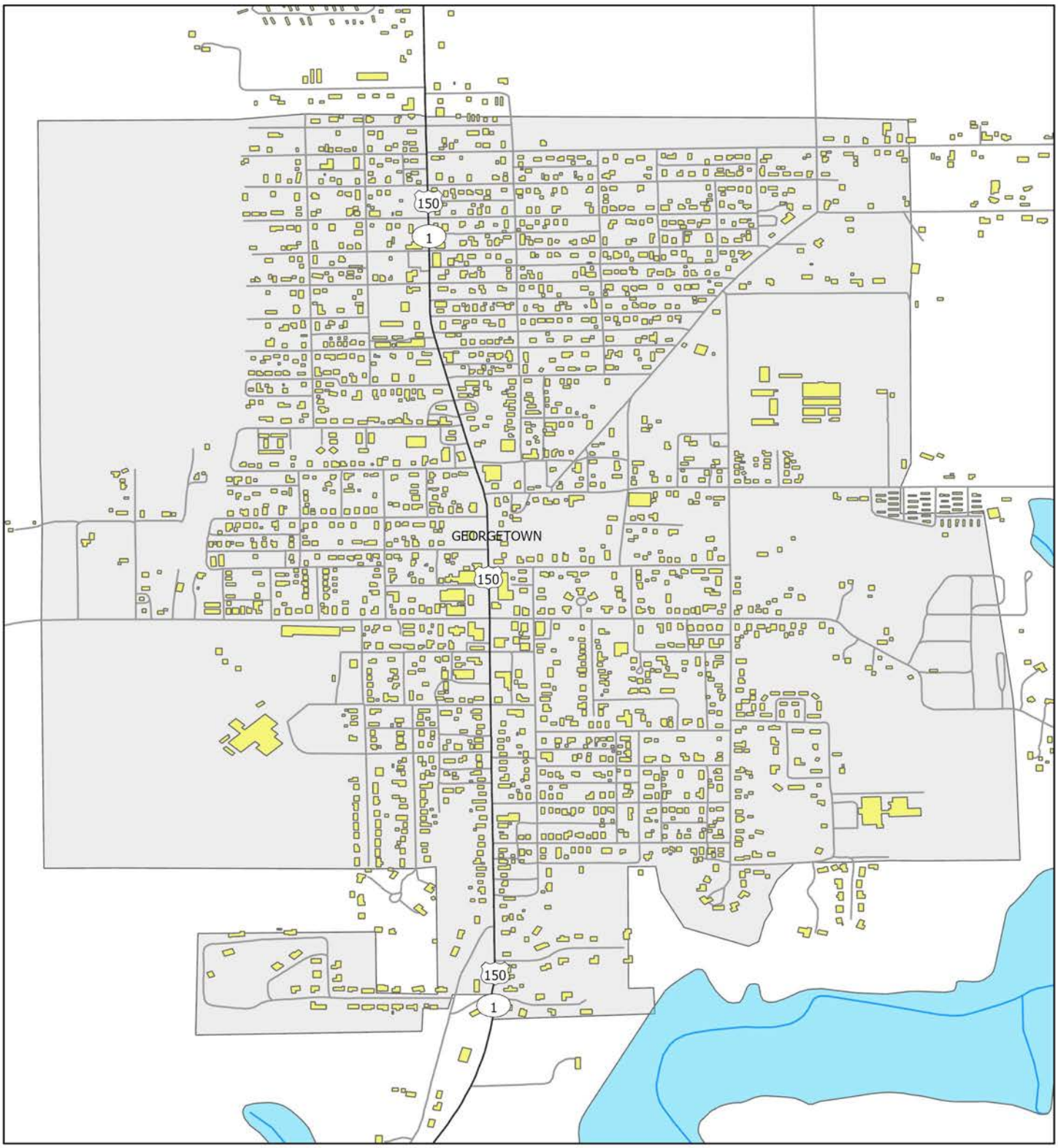
Fithian

100 Year Floodplain
Municipal Boundaries
Building Footprints
Rivers/Streams
Interstates
US/ State Routes
Roadways

0 0.13 0.25 0.5 Miles

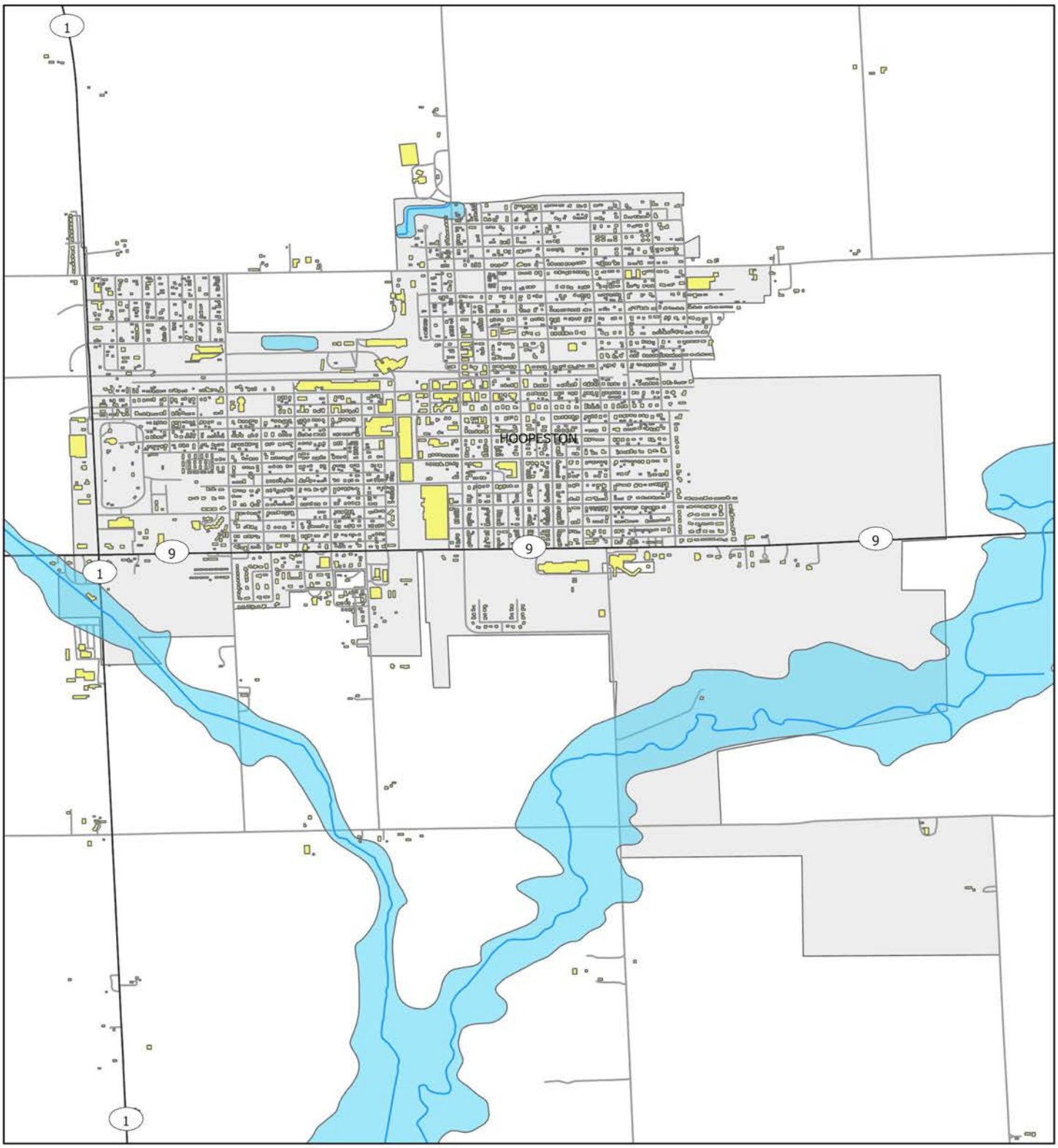
Map Created August 2023 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Iowa DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Georgetown



Map Created August 2023 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Iowa DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Hoopeston



Map Created August 2023 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Iowa DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

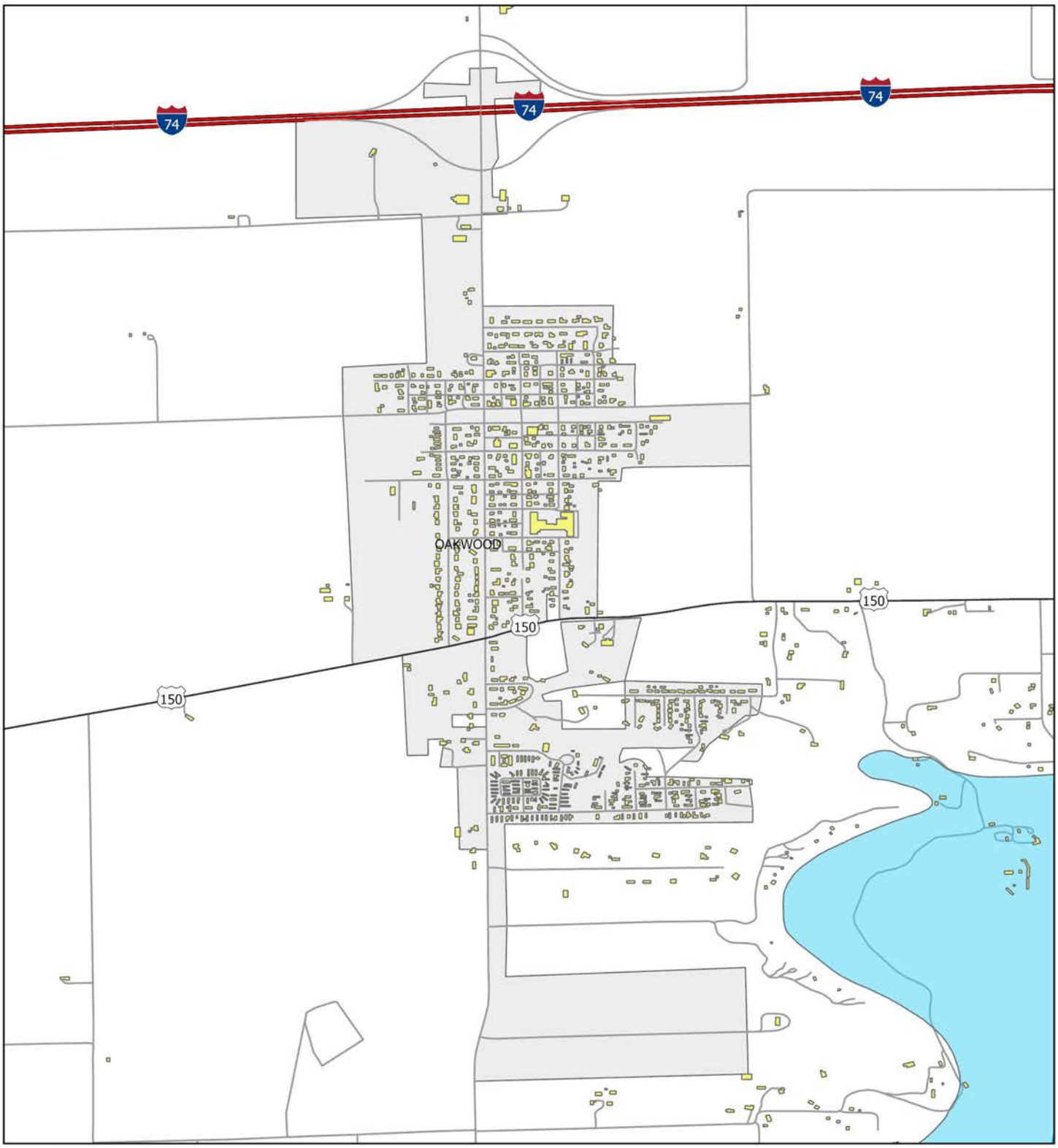
Muncie

100 Year Floodplain
Municipal Boundaries
Building Footprints
Rivers/Streams
Interstates
US/ State Routes
Roadways

0 0.13 0.25 0.5 Miles

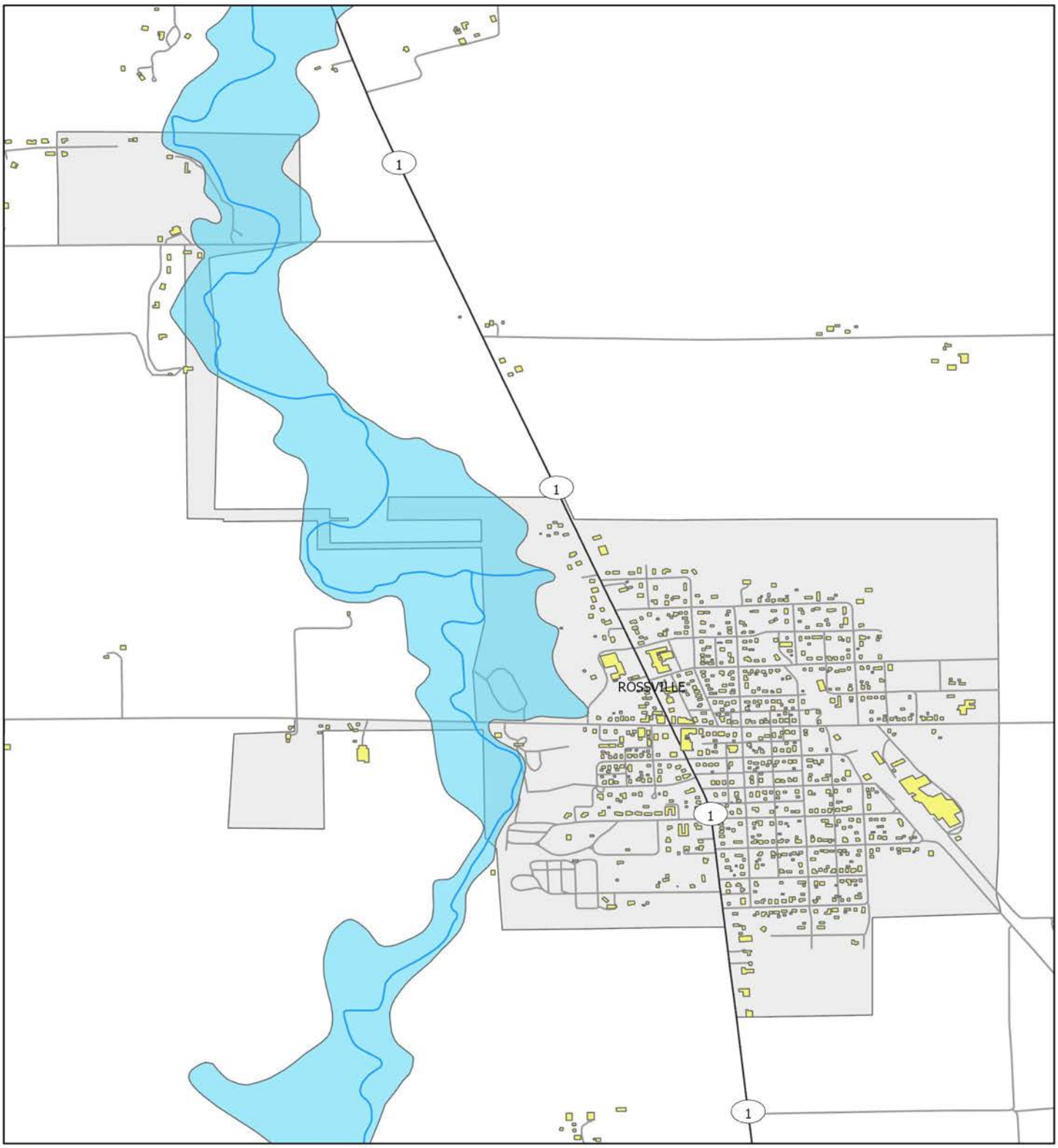
Map Created August 2023 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Iowa DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Oakwood



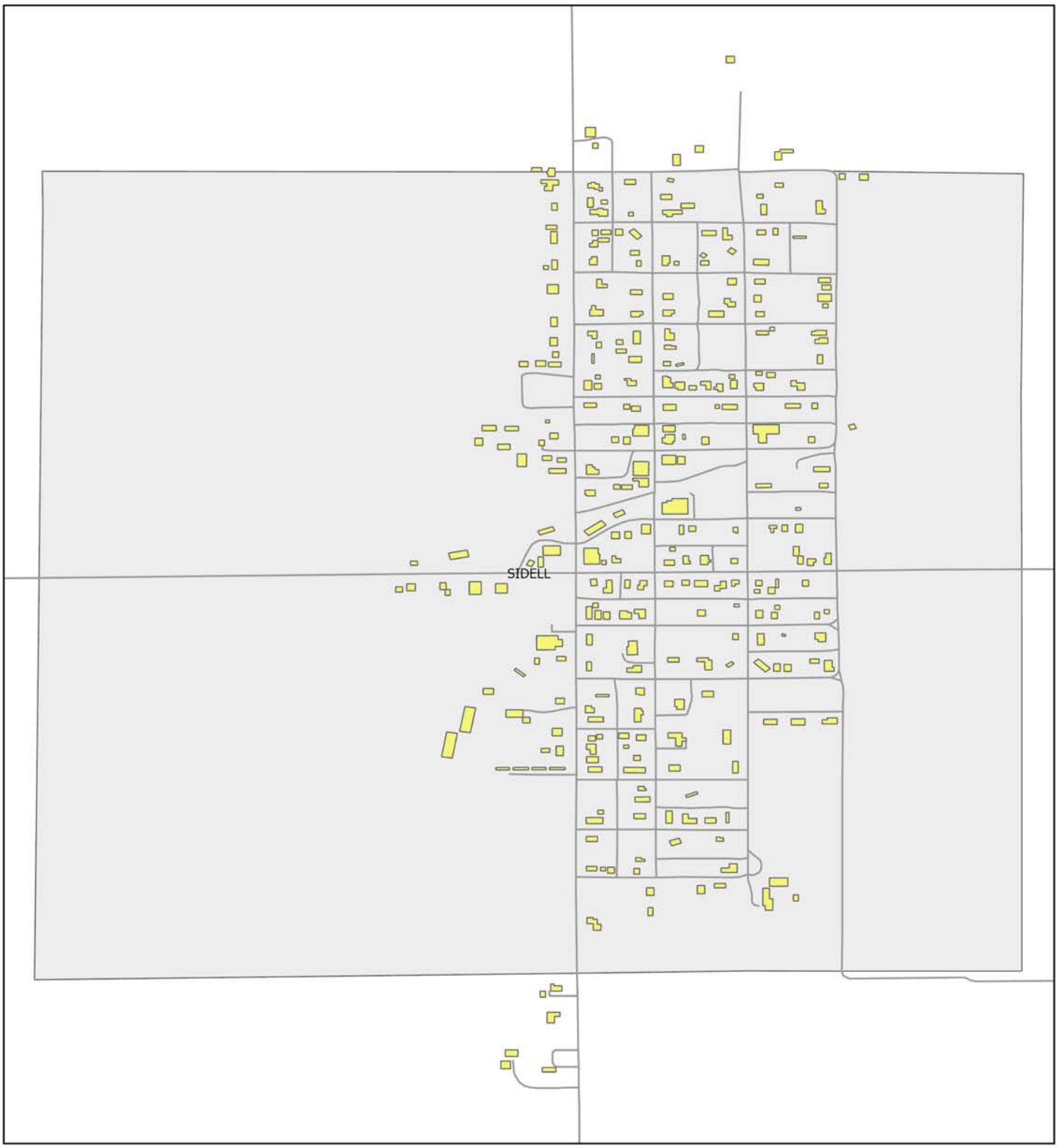
Map Created August 2023 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Iowa DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Rossville



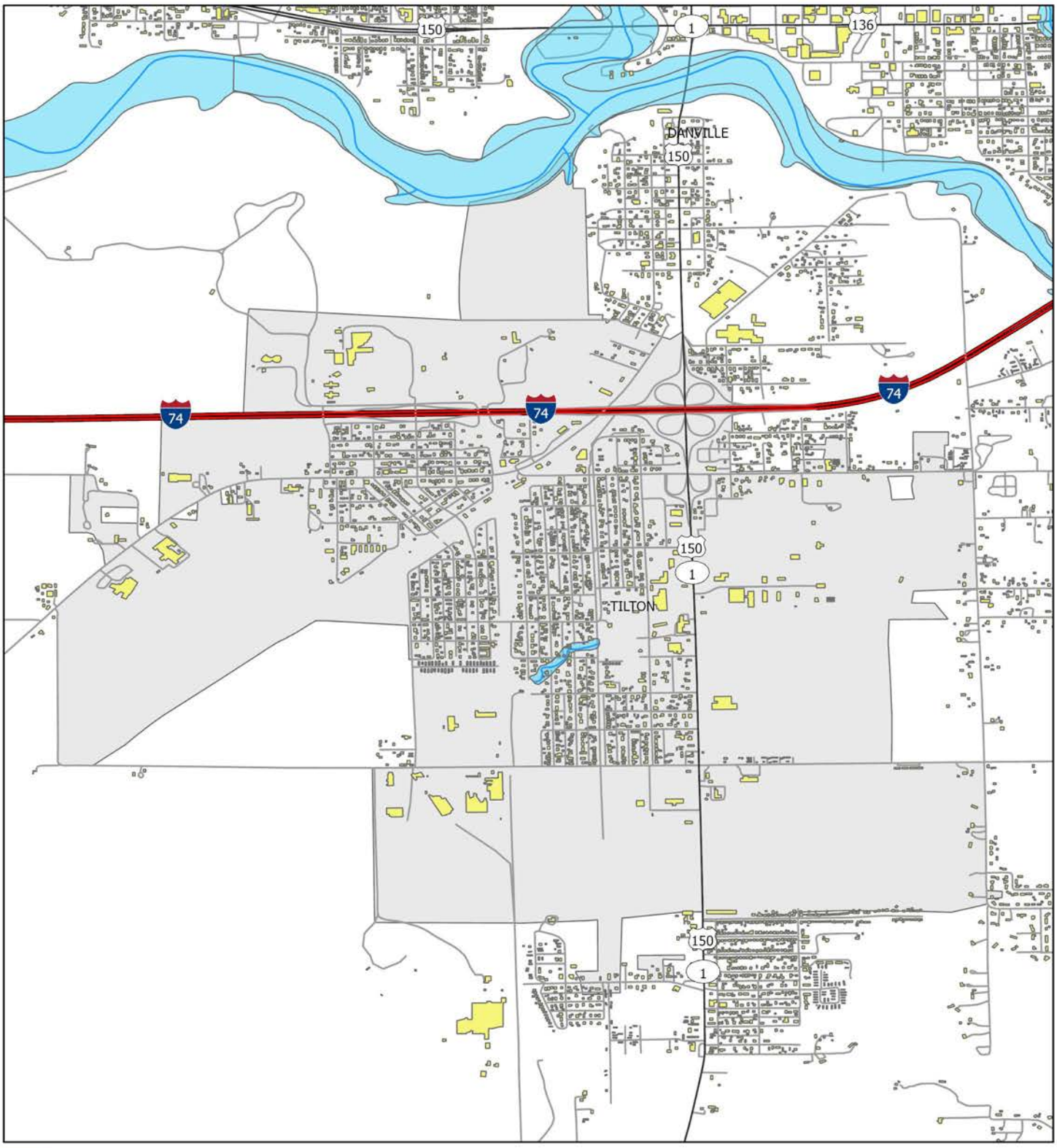
Map Created August 2023 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Iowa DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Sidell



Map Created August 2023 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Iowa DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Tilton



Map Created August 2023 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Iowa DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

APPENDIX L

DIRECTORY OF COAL MINES IN ILLINOIS

Vermilion County

This directory accompanies the Illinois Coal Mines map or maps for this County.

February 2023

ILLINOIS
Illinois State Geological Survey
PRAIRIE RESEARCH INSTITUTE

Prairie Research Institute
Illinois State Geological Survey
615 East Peabody Drive
Champaign, Illinois 61820
(217) 333-4747
http//:www.isgs.illinois.edu

INTRODUCTION

Coal has been mined in 77 counties. More than 7,400 coal mines have operated since commercial mining began in Illinois circa 1810. Our maps of known mines for each county may help the public to identify mined areas. This accompanying coal mine directory provides basic information about the coal mines. Please note, however, that the accuracy and completeness of the maps and directories vary depending on the availability and quality of source material. Little or no information is available for many mines, especially the older ones, because mining activity was not regulated or documented until the late 1800's. Even then, reporting requirements were minimal.

The coal mine maps are maps compiled by the Illinois State Geological Survey (ISGS) of known mines: underground and surface coal mines as well as underground industrial mineral mines. Buffer regions for industrial mineral underground mines were incorporated into the maps due to limited information regarding these mines. The size of the buffer region is dependent on the uncertainty or inaccuracy of the mine location based on the quality of the source material. For more information regarding industrial mineral mines please contact the ISGS Industrial Minerals Section.

In cooperation with the Illinois State Geological Survey, the Office of Mines and Minerals (a division of the Department of Natural Resources) is in search of old underground mine maps of Illinois. Many of the undocumented maps are believed to be in libraries, historical societies and personal files of old mine employees. The Department asks that anyone who knows of one of these maps, please contact the Department at (618) 650-3197 or by emailing rgibson@siue.edu. A map specialist will come to your location, if you wish. Otherwise maps can be mailed, or you may stop by one of our offices in Edwardsville, Springfield, Ottawa, or Benton. These maps will be checked against existing inventory. If they are found to be a new discovery, they will be electronically imaged and returned to the owner (if requested).

MINE MAPS

The mined areas are shown on county base maps at a scale of 1:100,000.

Three types of mine information are shown on the maps: an index number that identifies the mine in the directory, a symbol that marks the 'location' of the mine, and an outline of the mined area if that is known. The location is almost always the site of the main mine opening or, in the case of surface mines, the location of the tipple (coal washing and storage facility). The type of symbol indicates whether the opening is a shaft, drift, or slope and whether the mine is active or abandoned. Another symbol represents a mine with an uncertain type of portal and/or uncertain location. When the exact location is unknown, the symbol is placed in the center of the section or quarter section in which the mine was reported to exist. If a mine cannot be located within a section, it is not shown on the map, but is listed in the directory.

The boundaries of the mined areas are also shown for most of the mines; however, for some mines the only information available is the location of the main opening. There are three types of coal-mined areas: underground, surface, and indefinite--which are shaded with different patterns. The underground mines also show large blocks of unmined coal within the mine, when that information is available. The indefinite areas, which have been plotted from sketchy or incomplete information, usually are underground workings, although the directory should be consulted to determine the specific mine type.

For most counties, one map shows all known mines. However, in Gallatin, Saline, Vermilion, and Williamson Counties, several seams have been extensively mined. For the sake of readability, separate maps have been produced for the mines in each seam. Mines in the Herrin Coal are shown on one map, those in the Springfield Coal are shown on another, and the mines in all other coals are shown on a third map. In Vermilion County, the mines that operated in the Herrin and the Danville Coals are presented on separate maps.

Quadrangle maps at 1:24,000 scale have been completed for select areas and contain more detailed outlines with directories that contain more detailed coal mine information. The maps and directories are available as downloadable PDF files or can be purchased. Please visit the ISGS web site for more information.

MINE DIRECTORIES

Each county directory is keyed to the mine map by the mine index number; the directory provides basic information about the coal mines shown on the map. The data have been compiled from a variety of sources such as the annual Coal Report of the Illinois Office of Mines and Minerals and field notes taken by ISGS geologists. The information presented in the table is described below. A blank in any column indicates that information is not available for that item. Again, we welcome any additional information that you may have.

ISGS Index Each mine in the state is identified with a unique number; this number is shown on the map and is the link between the map and the directory. The number is permanently assigned to a mine regardless of changes in the mine name, ownership, or operator.

Company Name A mine may have been operated by more than one company or the operating company may have changed its name. Separate entries in the directory show each name and the years of operation under the name. In many instances, names have been abbreviated to fit within the space available.

Mine Name and Mine Number An entry is included for each name and/or number the mine operated under, even if the company name remained the same. Many companies use the same name for all their mines, but differentiate them by number. Again, abbreviations have been used where necessary.

Mine Type Underground mines are either "shaft," "slope," or "drift" which refers to the type of opening used to remove the coal from the mine. In shaft mines the coal is removed through a vertical shaft. Slope designates mines in which the coal is removed via a sloping incline from the ground surface to the mining level. In slope mines, miners and equipment may use either the slope or a vertical shaft to get into the mine. A drift mine is an underground mine that is excavated where the coal outcrops in the side of a bluff or the highwall of a surface mine. The mine type for surface mines is "strip" because these mines are more commonly called "strip mines."

Method This refers to the pattern by which the coal was removed. Most underground mines in Illinois have used a type of room and pillar pattern, the areas where the coal is removed are the 'rooms' with 'pillars' of coal left in place to support the roof. In some mines, the pillars were later pulled to extract additional coal. The abbreviations are listed below and most are illustrated in Figure 1.

RP	Room & Pillar; specific type unknown
RPB	Room & Pillar Basic; irregular panels, typical of old mines
MRP	Modified Room & Pillar; a somewhat more regular pattern than Room & Pillar Basic
RPP	Room and Pillar Panel; similar to Modified Room & Pillar
BRP	Blind Room and Pillar; every 6th or 7th room is left unmined to provide additional support
CRP	Checkerboard Room and Pillar; evenly spaced large pillars
LW	Longwall; all coal is removed Old longwall mines were backfilled with rock to provide support Modern longwall mines allow roof to collapse behind as mining progresses
HER	High Extraction Retreat; a form of Room & Pillar mining that extracts most of the coal

Years Operated Years that the mine operated; these dates may include periods when the mine was idle or not in full operation. Dates of mining from different sources are sometimes contradictory. The conventions that we have used to indicate where we were uncertain of dates are as follows. If we know the full range of dates that a mine operated under a specific name, those are given (1928-1934). If we know when a mine last operated, but not when it began, we use a dash and end date (-1934). If we know that a mine operated in a particular year, but not when it opened or closed, we just give the year we know (1920). To avoid confusion with the previous case, if a mine opened and closed in the same year, the year is repeated (1926-1926). In cases where a mine operated under different names, but we don't know when the name change occurred, the full range of dates is given for all names (John Smith Sr. Mine 1913-1944, Bill Smith Mine 1913-1944). A blank indicates that we have no information on the dates that the mine operated.

Coal Seam Mined The seam name is that used by the Illinois State Geological Survey. Figure 2 shows these coal seams in a stratigraphic column and provides a cross-reference to other names commonly used for these coals. If a mine has operated in more than one seam, there are separate entries in the table for each seam mined.

Location The location given is the site of the main portal or, for surface mines, the tipple. For small surface mines, the pit and the tipple are assumed to be the same. The location is based on the Public Land Survey System of townships and sections. Townships are identified by a township (north-south) and range (east-west) designation such as T14N-R6E. Townships are subdivided into approximately 36 one-square-mile sections, which are numbered from 1 to 36.

ORDERING INFORMATION

A 1:100,000 scale color plot with the directory is available at a cost of $12.50. This can be ordered by contacting the Information Office at (217) 244-2414 or sales@prairie.illinois.edu.

ACCURACY OF MAP

The maps and digital files used for this study were compiled from data obtained from a variety of sources and have varying degrees of completeness and accuracy. They present reasonable interpretations of the geology of the area and are based on available data. These data were compiled and digitized at a scale of 1:62,500, except for areas where quadrangle studies have been completed and the data was compiled at 1:24,000 or better. Locations of some features may be offset by 500 feet or more due to errors in the original source maps, the compilation process, digitizing, or a combination of these factors. These data are not intended for use in site-specific screening or decision-making. Data included in this map are suitable for use at a scale of 1:100,000.

DISCLAIMER

The Illinois State Geological Survey and the University of Illinois make no guarantee, expressed or implied, regarding the correctness of the interpretations presented in this data set and accept no liability for the consequences of decisions made by others on the basis of the information presented here.

DIRECTORY OF COAL MINES FOR VERMILION COUNTY, ILLINOIS (February 2023)

ISGS INDEX	COMPANY NAME	MINE NAME	MINE NO.	MINE TYPE	METHOD	YEARS OPERATED	SEAM MINED	COUNTY	LOCATION TWP	RGE	SEC
91	DERING COAL CO.	DERING	4	SHAFT	MRP	1904-1909	HERRIN	VERMILION	18N	12W	15
91	BRAZIL BLOCK COAL CO.	BRAZIL	4	SHAFT	MRP	1909-1911	HERRIN	VERMILION	18N	12W	15
91	DERING COAL CO.	DERING	4	SHAFT	MRP	1911-1916	HERRIN	VERMILION	18N	12W	15
91	PEABODY COAL CO.	PEABODY	24	SHAFT	MRP	1916-1944	HERRIN	VERMILION	18N	12W	15
91	CHICAGO & HARRISBURG COAL CO	CHICAGO-HARRISBURG	24	SHAFT	MRP	1944-1946	HERRIN	VERMILION	18N	12W	15
92	SHARON COAL & BRICK CO.	SHARON		SHAFT	MRP	1906-1910	HERRIN	VERMILION	17N	11W	7
92	LANKFORD (S. N.)	LANKFORD		SHAFT	MRP	1910-1911	HERRIN	VERMILION	17N	11W	7
92	SHARON COAL & BRICK CO.	SHARON		SHAFT	MRP	1911-1921	HERRIN	VERMILION	17N	11W	7
92	SHARON COAL MINING CO.	SHARON		SHAFT	MRP	1921-1924	HERRIN	VERMILION	17N	11W	7
93	VERMILION COAL CO.	VERMILION	1	SHAFT	MRP	1905-1906	HERRIN	VERMILION	18N	11W	19
93	LITTLE VERMILION COAL CO.	LITTLE VERMILION		SHAFT	MRP	1906-1908	HERRIN	VERMILION	18N	11W	19
93	BUNSEN COAL CO.	VERMILION		SHAFT	MRP	1908-1916	HERRIN	VERMILION	18N	11W	19
93	UNITED STATES FUEL CO.	VERMILION		SHAFT	MRP	1916-1932	HERRIN	VERMILION	18N	11W	19
94	ELECTRIC COAL COMPANY	HILLERY	1	SHAFT	RP	1903-1914	DANVILLE	VERMILION	19N	12W	10
95	SCHAFER (WILLIAM C.)	SCHAFER		SHAFT		1898-1923	HERRIN	VERMILION	19N	11W	7
95	SCHAFER BROTHERS	SHAFER	4	SHAFT		1923-1928	HERRIN	VERMILION	19N	11W	7
97	JORDAN COAL COMPANY	JORDAN		SHAFT	RP	1907-1908	DANVILLE	VERMILION	19N	13W	35
97	MORIN(D.A.) & NEVARIO(SECAN)	JORDAN		SHAFT	RP	1908-1909	DANVILLE	VERMILION	19N	13W	35
97	FAIRMOUNT COAL COMPANY	FAIRMOUNT NO. 1, BENNETT STA	1	SHAFT	RP	1909-1912	DANVILLE	VERMILION	19N	13W	35
97	WOODS (WILLIAM)	WOODS		SHAFT	RP	1913-1914	DANVILLE	VERMILION	19N	13W	35
97	FAIRMOUNT COAL COMPANY	FAIRMOUNT		SHAFT	RP	1914-1917	DANVILLE	VERMILION	19N	13W	35
97	CHICAGO COLLIERIES COMPANY	CHICAGO COLLIERIES NO. 3	3	SHAFT	RP	1917-1921	DANVILLE	VERMILION	19N	13W	35
211	GRAY (E. S.)	GRAY shaft	4	SHAFT	RP	1903-1910	DANVILLE	VERMILION	19N	12W	17
211	GRAY (E. S.)	GRAY strip	4	STRIP		1911-1913	DANVILLE	VERMILION	19N	12W	16
212	TAYLOR-ENGLISH COAL COMPANY	TAYLOR-ENGLISH	2	SHAFT	MRP	1917-1930	DANVILLE	VERMILION	18N	12W	3
212	TAYLOR-ENGLISH COAL COMPANY	TAYLOR-ENGLISH	2	SHAFT	RP	1917-1930	HERRIN	VERMILION	18N	12W	3

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ISGS INDEX	COMPANY NAME	MINE NAME	MINE NO.	MINE TYPE	METHOD	YEARS OPERATED	SEAM MINED	COUNTY	LOCATION TWP	RGE	SEC
400	MISSION MINING COMPANY	MISSION	1	STRIP	RP	1910-1915	DANVILLE	VERMILION	19N	12W	16
400	TWO RIVERS COAL COMPANY	TWO RIVERS NO. 4	4	STRIP	STR	1915-1917	DANVILLE	VERMILION	19N	12W	16
400	ELECTRIC COAL COMPANY	ELECTRIC	1	STRIP	STR	1918-1921	DANVILLE	VERMILION	19N	12W	16
400	MISSION MINING COMPANY	MISSION		STRIP	STR	1918-1918	DANVILLE	VERMILION	19N	12W	16
400	UNITED ELECTRIC COAL COMPANY	UNITED ELECTRIC	1	STRIP	STR	1921-1933	DANVILLE	VERMILION	19N	12W	8
401	UNITED STATES FUEL COMPANY	BUNSEN		SHAFT	MRP	1916-1940	HERRIN	VERMILION	18N	12W	26
401	UNITED STATES COAL & COKE	BUNSEN		SHAFT	MRP	1941-1947	HERRIN	VERMILION	18N	12W	26
507	GRAPE CREEK MINING CO.	GRAPE CREEK	7	STRIP	STR	1939-1941	DANVILLE	VERMILION	18N	11W	6
603	M. & B.	MAUCK & BOCK		SHAFT	MRP	1923-1939	DANVILLE	VERMILION	19N	12W	10
656	KEDAS (ALEX)	KEDAS		STRIP	STR	1925-1934	DANVILLE	VERMILION	18N	11W	32
656	KEDAS STRIPPING COMPANY	KEDAS		STRIP	STR	1935-1939	DANVILLE	VERMILION	18N	11W	32
656	KEDAS COAL COMPANY	KEDAS		STRIP	STR	1944-1946	DANVILLE	VERMILION	18N	11W	32
656	TRI-STATE COAL COMPANY	KEDAS		STRIP	STR	1946-1946	DANVILLE	VERMILION	18N	11W	32
656	KEDAS COAL COMPANY	KEDAS		STRIP	STR	1947-1955	DANVILLE	VERMILION	18N	11W	32
660	BROWN (HARRY) COAL COMPANY	BROWN NO. 2	2	SLOPE	RPP	1928-1932	DANVILLE	VERMILION	19N	13W	13
660	BROWN COAL COMPANY	BROWN NO. 2	2	SLOPE	RPP	1933-1933	DANVILLE	VERMILION	19N	13W	13
660	OAKWOOD COAL COMPANY	OAKWOOD		SLOPE	RPP	1934-1953	DANVILLE	VERMILION	19N	13W	13
663	MORGAN COAL COMPANY	OLD VERMILION		STRIP	STR	1935-1943	DANVILLE	VERMILION	19N	12W	16
669	CHEROKEE COAL CO.	CHEROKEE	2	STRIP	STR	1948-1951	HERRIN	VERMILION	17N	11W	11
673	FAIRVIEW COLLIERIES CORP.	HARMATTAN		STRIP	STR	1949-1965	DANVILLE	VERMILION	19N	12W	2
673	MEADOWLARK FARMS, INC.	HARMATTAN		STRIP	STR	1966-1966	DANVILLE	VERMILION	19N	12W	2
673	AYRSHIRE COLLIERIES CORP.	HARMATTAN		STRIP	STR	1966-1968	DANVILLE	VERMILION	20N	12W	28
673	AYRSHIRE COAL CO DIV OF AMAX	HARMATTAN		STRIP	STR	1969-1970	DANVILLE	VERMILION	19N	12W	2
694	V-DAY COAL COMPANY	V-DAY		SLOPE	RPP	1945-1974	HERRIN	VERMILION	19N	11W	30

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ISGS INDEX	COMPANY NAME	MINE NAME	MINE NO.	MINE TYPE	METHOD	YEARS OPERATED	SEAM MINED	COUNTY	LOCATION TWP	RGE	SEC
811	W. W. COAL COMPANY	W. W.	2	SLOPE	MRP	1943-1944	DANVILLE	VERMILION	19N	12W	27
811	BLUE LAKE COAL CO. (W.MAUCK)	MAUCK		SLOPE	MRP	1944-1952	DANVILLE	VERMILION	19N	12W	27
811	BLUE LAKE COAL COMPANY	BLUE LAKE		SLOPE	MRP	1952-1965	DANVILLE	VERMILION	19N	12W	27
851	PICHON (JOSEPH)	PICHON		SLOPE	RP	1933-1941	DANVILLE	VERMILION	19N	12W	27
851	TILTON MINING COMPANY	TILTON NO. 2	2	SLOPE	RP	1941-1949	DANVILLE	VERMILION	19N	12W	27
852	BLACK HAWK COAL COMPANY	BLACK HAWK		SLOPE	MRP	1934-1942	DANVILLE	VERMILION	19N	12W	9
853	PIERCE COAL COMPANY	PIERCE	2	SLOPE	RP	1939-1940	DANVILLE	VERMILION	19N	12W	10
889	LEE COAL COMPANY	LEE SURFACE		STRIP	STR	1975-1981	DANVILLE	VERMILION	19N	12W	14
924	TWO RIVERS COAL CO.	TWO RIVERS		STRIP	STR	1952-1963	DANVILLE	VERMILION	19N	11W	17
994	COAL PRODUCERS, INC.	CALEFY		DRIFT	CRP	1979-1980	HERRIN	VERMILION	19N	12W	14
994	LEE COAL COMPANY	CALEFY		DRIFT	CRP	1981-1981	HERRIN	VERMILION	19N	12W	14
1006	LEE COAL COMPANY	OAKWOOD NO. 2	2	SHAFT	RP	1982-1983	DANVILLE	VERMILION	19N	12W	19
1006	IL & W.VIRGINIA COAL COMPANY	ILLINOIS		SHAFT	RP	1983-1984	DANVILLE	VERMILION	19N	12W	19
1018	CATLIN COAL CO.	RIOLA		SLOPE	RP	1996-1999	HERRIN	VERMILION	18N	12W	27
1018	BLACK BEAUTY COAL CO.	RIOLA COMPLEX - RIOLA PORTAL		SLOPE	RP	1999-2006	HERRIN	VERMILION	18N	12W	27
1026	BLACK BEAUTY COAL CO.	VERMILION GROVE PORTAL		SLOPE	RP	2001-2009	HERRIN	VERMILION	17N	12W	13
2290	MILES COAL CO.	MILES		STRIP	STR	1938-1938	DANVILLE	VERMILION	19N	12W	21
3194	LEE COAL COMPANY	LEE AUGER	1	AUGER		1968-1968	DANVILLE	VERMILION	19N	12W	14
3641	LEE COAL COMPANY	LEE	2	STRIP		1960-1967	DANVILLE	VERMILION	19N	12W	12
3642	MORGAN (NOAH)	MORGAN		STRIP		1883-1889	HERRIN	VERMILION	17N	11W	2
3642	MORGAN (JOHN E.)	MORGAN		STRIP		1889-1891	HERRIN	VERMILION	17N	11W	2

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ISGS INDEX	COMPANY NAME	MINE NAME	MINE NO.	MINE TYPE	METHOD	YEARS OPERATED	SEAM MINED	COUNTY	LOCATION TWP	RGE	SEC
3643	CLIFFORD PIT	CLIFFORD		STRIP			HERRIN	VERMILION	17N	11W	3
3645	DONOVAN (SAM)	DONOVAN		STRIP	STR	1928-1928	HERRIN	VERMILION	17N	11W	11
3645	DONOVAN (BEN)	DONOVAN		STRIP	STR	1929-1933	HERRIN	VERMILION	17N	11W	11
3645	ANDERSON & DONOVAN	ANDERSON & DONOVAN		STRIP	STR	1934-1937	HERRIN	VERMILION	17N	11W	11
3646	M. & N. COAL COMPANY	M. & N.				1950-1951		VERMILION	17N	11W	12
3648	ILLINOIS & INDIANA COAL CO.	ILLINOIS & INDIANA		STRIP	STR	1920-1923	HERRIN	VERMILION	18N	11W	34
3650	DOWIATT(P. J.)& SONS COAL CO	DOWIATT	2	SLOPE	RPB	1935-1942	HERRIN	VERMILION	18N	11W	3
3651	DOYLE COAL COMPANY	DOYLE		SHAFT	RP		HERRIN	VERMILION	18N	11W	3
3652	O'BRIEN & KYGER	O'BRIEN & KYGER		SLOPE	RPB	1926-1927	HERRIN	VERMILION	18N	11W	3
3652	KYGER (H. P.)	KYGER		SLOPE	RPB	1928-1928	HERRIN	VERMILION	18N	11W	3
3652	DOWIATT (P. J.) & SONS	DOWIATT	1	SLOPE	RPB	1929-1938	HERRIN	VERMILION	18N	11W	3
3653	BLAKENEY HOLLOW	BLAKENEY HOLLOW		SLOPE	MRP		HERRIN	VERMILION	18N	11W	3
3653	DIAMOND COAL CO.	DIAMOND		SLOPE	MRP	1935-1943	HERRIN	VERMILION	18N	11W	3
3654	JUMPS & JUMPS	JUMPS		SLOPE	RPB	1927-1927	HERRIN	VERMILION	18N	11W	3
3654	JUMPS COAL COMPANY	JUMPS		SLOPE	RPB	1928-1932	HERRIN	VERMILION	18N	11W	3
3654	TALBERT & SCARCE	TALBERT & SCARCE		SLOPE	RPB	1933-1936	HERRIN	VERMILION	18N	11W	3
3654	TALBERT & ANDERSON	TALBERT & ANDERSON		SLOPE	RPB	1936-1937	HERRIN	VERMILION	18N	11W	3
3655	JINKINS BROS COAL COMPANY	JINKINS		SLOPE	RPB	1937-1938	HERRIN	VERMILION	18N	11W	3
3655	HOWARD COAL COMPANY	HOWARD	2	SLOPE	RPB	1938-1941	HERRIN	VERMILION	18N	11W	3
3655	GOODWIN & SWISHER	GOODWIN & SWISHER		SLOPE	RPB	1941-1941	HERRIN	VERMILION	18N	11W	3
3655	GOODWIN COAL COMPANY	GOODWIN		SLOPE	RPB	1942-1942	HERRIN	VERMILION	18N	11W	3
3655	HARRIS COAL COMPANY	HARRIS		SLOPE	RPB	1942-1942	HERRIN	VERMILION	18N	11W	3
3656	LARSON & HOWARD	LARSON & HOWARD		SLOPE	RP	1928-1929	HERRIN	VERMILION	18N	11W	3

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ISGS INDEX	COMPANY NAME	MINE NAME	MINE NO.	MINE TYPE	METHOD	YEARS OPERATED	SEAM MINED	COUNTY	LOCATION TWP	RGE	SEC
3656	LARSON, HOWARD & LARSON	LARSON, HOWARD & LARSON		SLOPE	RP	1928-1928	HERRIN	VERMILION	18N	11W	3
3656	LARSON, EVENS & LARSON	LARSON, EVENS & LARSON		SLOPE	RP	1930-1930	HERRIN	VERMILION	18N	11W	3
3656	EVENS & LARSON	EVENS & LARSON		SLOPE	RP	1931-1931	HERRIN	VERMILION	18N	11W	3
3656	LARSON, HOWARD & HANLEY	LARSON, HOWARD & HANLEY		SLOPE	RP	1932-1932	HERRIN	VERMILION	18N	11W	3
3656	LARSON & HOWARD	LARSON & HOWARD		SLOPE	RP	1933-1933	HERRIN	VERMILION	18N	11W	3
3656	HOWARD & HANLEY	HOWARD & HANLEY		SLOPE	RP	1934-1934	HERRIN	VERMILION	18N	11W	3
3656	HOWARD COAL CO.	HOWARD		SLOPE	RP	1935-1937	HERRIN	VERMILION	18N	11W	3
3657	STAME (H. & F.)	STAME		DRIFT	RP	1918-1919	HERRIN	VERMILION	18N	11W	3
3657	STAME BROTHERS	STAME		DRIFT	RP	1919-1920	HERRIN	VERMILION	18N	11W	3
3657	STAME (HENRY)	STAME		DRIFT	RP	1920-1936	HERRIN	VERMILION	18N	11W	3
3658	JUILIANI (ALBERT) COAL CO.	JUILIANI		SLOPE	RPB		DANVILLE	VERMILION	19N	12W	21
3659	NELSON (ALFRED & JOHN)	NELSON		SLOPE	RP	1917-1922	HERRIN	VERMILION	18N	11W	3
3659	NELSON (ALFRED) COAL COMPANY	NELSON		SLOPE	RP	1922-1936	HERRIN	VERMILION	18N	11W	3
3659	N. & H. COAL COMPANY	N. & H.		SLOPE	RP	1938-1939	HERRIN	VERMILION	18N	11W	3
3659	NELSON (ALFRED) COAL COMPANY	NELSON		SLOPE	RP	1939-1943	HERRIN	VERMILION	18N	11W	3
3660	KELLYVILLE COAL COMPANY	KELLY	4	SHAFT	MRP	1902-1904	HERRIN	VERMILION	18N	11W	5
3660	KELLY COAL COMPANY	KELLY	4	SHAFT	MRP	1904-1906	HERRIN	VERMILION	18N	11W	5
3660	KELLY COAL COMPANY	KELLY	44	SHAFT	MRP	1906-1908	HERRIN	VERMILION	18N	11W	5
3660	HAMMOND COAL COMPANY	KELLY	4	SHAFT	MRP	1908-1909	HERRIN	VERMILION	18N	11W	5
3660	BUNSEN COAL COMPANY	KELLY	4	SHAFT	MRP	1909-1917	HERRIN	VERMILION	18N	11W	5
3660	UNITED STATES FUEL COMPANY	KELLY	47	SHAFT	MRP	1916-1924	HERRIN	VERMILION	18N	11W	5
3661	PAWNEE COAL CO.	PAWNEE		SHAFT	MRP	1887-1898	HERRIN	VERMILION	18N	11W	5
3661	COBB (CALVIN)	COBB		SHAFT	MRP	1887-1890	HERRIN	VERMILION	18N	11W	5
3661	KICKAPOO COAL CO.	KICKAPOO		SHAFT	MRP	1890-1891	HERRIN	VERMILION	18N	11W	5
3661	PAWNEE COAL CO.	PAWNEE		SHAFT	MRP	1891-1896	HERRIN	VERMILION	18N	11W	5
3661	HIMROD COAL CO.	PAWNEE	1	SHAFT	MRP	1896-1897	HERRIN	VERMILION	18N	11W	5
3661	HIMROD COAL CO.	PAWNEE		SHAFT	MRP	1898-1902	HERRIN	VERMILION	18N	11W	5
3661	KELLYVILLE COAL CO.	PAWNEE		SHAFT	MRP	1902-1904	HERRIN	VERMILION	18N	11W	5
3661	KELLY COAL CO.	KELLY	47	SHAFT	MRP	1905-1908	HERRIN	VERMILION	18N	11W	5

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ISGS INDEX	COMPANY NAME	MINE NAME	MINE NO.	MINE TYPE	METHOD	YEARS OPERATED	SEAM MINED	COUNTY	LOCATION TWP	RGE	SEC
3662	WESTVILLE COAL COMPANY	WESTVILLE	1	SHAFT	MRP	1895-1904	HERRIN	VERMILION	18N	11W	18
3662	DERING COAL COMPANY	DERING	1	SHAFT	MRP	1905-1907	HERRIN	VERMILION	18N	11W	18
3663	KELLY COAL COMPANY	KELLY	3	SHAFT	RP	1896-1897	HERRIN	VERMILION	18N	11W	7
3663	KELLYVILLE COAL COMPANY	KELLY		SHAFT	RP	1897-1904	HERRIN	VERMILION	18N	11W	7
3663	KELLY COAL COMPANY	KELLY	3	SHAFT	RP	1904-1905	HERRIN	VERMILION	18N	11W	7
3663	BUNSEN COAL COMPANY	KELLY	3	SHAFT	RP	1911-1916	HERRIN	VERMILION	18N	11W	7
3663	UNITED STATES FUEL COMPANY	KELLY	3	SHAFT	RP	1916-1921	HERRIN	VERMILION	18N	11W	7
3664	HIMROD COAL COMPANY	HIMROD	2	SHAFT	RP	1897-1902	HERRIN	VERMILION	18N	11W	9
3664	KELLYVILLE COAL COMPANY	HIMROD		SHAFT	RP	1902-1904	HERRIN	VERMILION	18N	11W	9
3664	KELLY COAL COMPANY	HIMROD		SHAFT	RP	1904-1906	HERRIN	VERMILION	18N	11W	9
3664	KELLY COAL COMPANY	KELLY	46	SHAFT	RP	1906-1908	HERRIN	VERMILION	18N	11W	9
3666	SHORT COAL CO.	SHORT	1	STRIP	STR	1927-1935	DANVILLE	VERMILION	18N	11W	32
3666	SHORT COAL CO.	SHORT	2	STRIP	STR	1936-1936	DANVILLE	VERMILION	18N	11W	32
3666	RIGGLE & SHORT	SHORT	2	STRIP	STR	1937-1937	DANVILLE	VERMILION	18N	11W	32
3666	PHILLIPS STRIPPING CO.	PHILLIPS		STRIP	STR	1938-1939	DANVILLE	VERMILION	18N	11W	32
3666	SHORT COAL CO.	SHORT	2	STRIP	STR	1938-1938	DANVILLE	VERMILION	18N	11W	32
3666	GEORGETOWN COAL CO.	GEORGETOWN		STRIP	STR	1940-1945	DANVILLE	VERMILION	18N	11W	32
3666	NIELSON COAL CO.	NIELSON		STRIP	STR	1946-1947	DANVILLE	VERMILION	18N	11W	32
3666	H. & L. EXCAVATION, INC.	H. & L.		STRIP	STR	1948-1950	DANVILLE	VERMILION	18N	11W	32
3667	SCARCE (O. E.)	SCARCE		SHAFT		1934-1936	HERRIN	VERMILION	18N	11W	3
3667	SCARCE BROTHERS	SCARCE	1	SHAFT	RP	1937-1937	HERRIN	VERMILION	18N	11W	3
3668	DERING COAL COMPANY	DERING	2	SHAFT	MRP	1904-1909	HERRIN	VERMILION	18N	12W	13
3668	WESTVILLE COAL COMPANY	WESTVILLE	2	SHAFT	MRP	1904-1904	HERRIN	VERMILION	18N	12W	13
3668	BRAZIL BLOCK COAL COMPANY	DERING	2	SHAFT	MRP	1909-1911	HERRIN	VERMILION	18N	12W	13
3668	DERING COAL COMPANY	DERING	2	SHAFT	MRP	1911-1915	HERRIN	VERMILION	18N	12W	13
3668	PRODUCERS COAL COMPANY	PRODUCERS	22	SHAFT	MRP	1915-1916	HERRIN	VERMILION	18N	12W	13
3670	DERING COAL COMPANY	DERING	3	SHAFT	MRP	1905-1909	HERRIN	VERMILION	18N	12W	23

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3670	BRAZIL BLOCK COAL COMPANY	DERING	3	SHAFT	MRP	1909-1911	HERRIN	VERMILION	18N	12W	23
3670	DERING COAL COMPANY	DERING	3	SHAFT	MRP	1911-1913	HERRIN	VERMILION	18N	12W	23
3671	BRAZIL BLOCK COAL COMPANY	WESTVILLE	3	SHAFT	RP	1909-1910	HERRIN	VERMILION	18N	12W	23
3672	FAIRMOUNT COAL MINING CO.	FAIRMOUNT		SHAFT	RPP	1890-1892	DANVILLE	VERMILION	18N	13W	3
3672	CONSOLID COAL CO OF ST.LOUIS	FAIRMOUNT		SHAFT	RPP	1892-1906	DANVILLE	VERMILION	18N	13W	3
3673	SCHAFER (WILLIAM C.)	SCHAFER		SLOPE	MRP	1922-1923	DANVILLE	VERMILION	19N	11W	17
3673	SCHAFER BROTHERS	SCHAFER NO. 5	5	SLOPE	MRP	1923-1929	DANVILLE	VERMILION	19N	11W	17
3673	MARTIN BROTHERS COAL COMPANY	MARTIN		SLOPE	MRP	1935-1937	DANVILLE	VERMILION	19N	11W	17
3674	PARLE (JAMES H.)	PARLE		SLOPE	RP	1904-1907	DANVILLE	VERMILION	19N	11W	7
3674	WATKINS (WILLIAM)	WATKINS		SLOPE	RP	1907-1917	DANVILLE	VERMILION	19N	11W	7
3674	WATKINS (MRS. ALICE)	WATKINS		SLOPE	RP	1917-1919	DANVILLE	VERMILION	19N	11W	7
3675	COMMISSARY COAL CO.	COMMISSARY		SLOPE	RP	1941-1941	HERRIN	VERMILION	19N	11W	32
3675	MAPLE CREEK COAL CO.	MAPLE		SLOPE		1942-1943	HERRIN	VERMILION	19N	11W	32
3676	STANDBURG & RUSSELL	STANDBURG & RUSSELL		SLOPE	RP	1885-1888	DANVILLE	VERMILION	19N	11W	6
3677	ALLDREDGE BROTHERS COAL CO.	ALLDREDGE		STRIP	STR	1941-1943	DANVILLE	VERMILION	19N	11W	7
3678	MADDOX COAL COMPANY	MADDOX	2	STRIP	STR	1944-1945	DANVILLE	VERMILION	19N	11W	7
3679	PARLE (DICK)	PARLE		STRIP	STR	1922-1923	DANVILLE	VERMILION	19N	11W	7
3679	PARLE (J. H.)	PARLE		STRIP	STR	1923-1924	DANVILLE	VERMILION	19N	11W	7
3680	CHEROKEE COAL COMPANY	CHEROKEE		SHAFT		1947-1947	DANVILLE	VERMILION	17N	11W	14
3681	VEIN SIX COAL COMPANY	VEIN SIX	6	DRIFT	MRP	1917-1921	HERRIN	VERMILION	19N	11W	16
3682	DEEP VALLEY COAL COMPANY	DEEP VALLEY		STRIP	STR	1942-1942	HERRIN	VERMILION	19N	11W	16
3682	MADDOX COAL COMPANY	MADDOX	1	STRIP	STR	1943-1945	HERRIN	VERMILION	19N	11W	16

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3683	B. & W. COAL COMPANY	B. & W.		STRIP	STR	1938-1940	DANVILLE	VERMILION	19N	11W	16
3683	CAMPBELL (J. E.) STRIP CO.	CAMPBELL		STRIP	STR	1940-1942	DANVILLE	VERMILION	19N	11W	16
3684	HAUN & SON STRIPPING COMPANY	HAUN		STRIP	STR	1934-1939	HERRIN	VERMILION	19N	11W	16
3685	SCHAFER BROS COAL COMPANY	SCHAFER NO. 7	7	SLOPE		1938-1944	DANVILLE	VERMILION	19N	11W	17
3685	SCHAFER & FRITZ COAL COMPANY	SCHAFER NO. 7	7	SLOPE		1944-1944	DANVILLE	VERMILION	19N	11W	17
3685	SCHAFER BROTHERS	SCHAFER NO. 7	7	SLOPE		1945-1945	DANVILLE	VERMILION	19N	11W	17
3686	SCHAFER (AUGUST G.)	SCHAFER		SLOPE	RPB	1919-1921	HERRIN	VERMILION	19N	11W	17
3686	SCHAFER BROTHERS COAL CO.	SCHAFER NO. 6	6	SLOPE	RPB	1929-1938	HERRIN	VERMILION	19N	11W	17
3687	THOMAS (JAMES)	THOMAS		DRIFT	RP	1892-1905	DANVILLE	VERMILION	19N	11W	17
3687	ROYCE (S.)	ROYCE		DRIFT	RP	1905-1906	DANVILLE	VERMILION	19N	11W	17
3687	THOMAS (JAMES & SON)	THOMAS		DRIFT	RP	1906-1912	DANVILLE	VERMILION	19N	11W	17
3688	ELLSWORTH COAL COMPANY	ELLSWORTH	2	SHAFT	RP	1870-1886	DANVILLE	VERMILION	19N	11W	17
3688	CONSOL COAL CO. OF ST LOUIS	ELLSWORTH	2	SHAFT	RP	1886-1890	DANVILLE	VERMILION	19N	11W	17
3689	HIGHLAND PARK COAL COMPANY	HIGHLAND		SLOPE	UG	1933-1935	DANVILLE	VERMILION	19N	11W	17
3690	WINEHOUSE (WILLIAM)	WINEHOUSE		UG		1934-1937	DANVILLE	VERMILION	19N	11W	17
3691	ELLSWORTH COAL COMPANY	ELLSWORTH	1	DRIFT	RP	1878-1886	DANVILLE	VERMILION	19N	11W	17
3691	CONSOL. COAL CO. OF ST LOUIS	ELLSWORTH	1	DRIFT	RP	1886-1887	DANVILLE	VERMILION	19N	11W	17
3692	LEE (J. S.)	LEE	2	DRIFT	MRP	1893-1894	DANVILLE	VERMILION	19N	11W	17
3692	WILKINSON (M. C.)	WILKINSON NO. 1	1	DRIFT	MRP	1894-1904	DANVILLE	VERMILION	19N	11W	17
3692	WILKINSON (M. C.)	WILKINSON	2	DRIFT	MRP	1904-1911	DANVILLE	VERMILION	19N	11W	17
3694	ELLSWORTH COAL COMPANY	ELLSWORTH	4	SHAFT	MRP	1872-1886	DANVILLE	VERMILION	19N	11W	9
3694	CONSOL. COAL CO. OF ST LOUIS	ELLSWORTH	4	SHAFT	MRP	1888-1898	DANVILLE	VERMILION	19N	11W	9

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3695	BLACKBURN COAL CO(DONALDSON)	BLACKBURN		SLOPE	RP	1934-1934	DANVILLE	VERMILION	19N	11W	18
3695	BLACKBURN COAL COMPANY	BLACKBURN		SLOPE	RP	1935-1937	DANVILLE	VERMILION	19N	11W	18
3695	DONALDSON & FAIRHALL	BLACKBURN		SLOPE	RP	1938-1939	DANVILLE	VERMILION	19N	11W	18
3695	BLACKBURN COAL COMPANY	BLACKBURN		SLOPE	RP	1940-1941	DANVILLE	VERMILION	19N	11W	18
3696	DANVILLE CONSUMERS COAL CO.	CONSUMERS		STRIP	STR	1907-1913	DANVILLE	VERMILION	19N	11W	18
3698	BARRETT & JONES COAL COMPANY	BARRETT & JONES		SLOPE	RP	1938-1938	DANVILLE	VERMILION	19N	11W	18
3699	SOUTH SIDE COAL COMPANY	SOUTH SIDE		SLOPE	RP	1937-1939	DANVILLE	VERMILION	19N	11W	18
3700	CARBON HILL COAL COMPANY	CARBON HILL	5	STRIP	STR	1915-1918	DANVILLE	VERMILION	19N	11W	18
3700	ELECTRIC COAL COMPANY	ELECTRIC	5	STRIP	STR	1918-1921	DANVILLE	VERMILION	19N	11W	18
3700	UNITED ELECTRIC COAL COMPANY	UNITED ELECTRIC	5	STRIP	STR	1921-1926	DANVILLE	VERMILION	19N	11W	18
3701	IRELAND COAL COMPANY	IRELAND		DRIFT	RPB	1939-1941	DANVILLE	VERMILION	19N	11W	18
3701	SPRING VALLEY COAL COMPANY	SPRING VALLEY		DRIFT	RPB	1941-1941	DANVILLE	VERMILION	19N	11W	18
3702	DANIELS (J. B.) & COMPANY	DANIELS		DRIFT	RP	1899-1901	DANVILLE	VERMILION	19N	11W	18
3702	STAR COAL COMPANY	STAR NO. 1	1	DRIFT	RP	1901-1904	DANVILLE	VERMILION	19N	11W	18
3702	RUNNELL (J. A.)	STAR	2	DRIFT	RP	1904-1905	DANVILLE	VERMILION	19N	11W	18
3702	TILTON COAL COMPANY	STAR		DRIFT	RP	1905-1911	DANVILLE	VERMILION	19N	11W	18
3702	RAMSEY & BRACEWELL	OLD STAR		DRIFT	RP	1938-1939	DANVILLE	VERMILION	19N	11W	18
3703	OLD STAR COAL COMPANY	OLD STAR	2	SLOPE	RP	1940-1942	DANVILLE	VERMILION	19N	11W	18
3704	LANE (H. A.)	LANE		SLOPE	MRP	1931-1932	DANVILLE	VERMILION	19N	11W	19
3704	LANE (ROSS) COAL COMPANY	LANE		SLOPE	MRP	1933-1934	DANVILLE	VERMILION	19N	11W	19
3704	M. & M. COAL COMPANY	M. & M.		SLOPE	MRP	1935-1941	DANVILLE	VERMILION	19N	11W	19
3705	TAYLOR-ENGLISH COAL COMPANY	TAYLOR-ENGLISH		SLOPE	RPP	1923-1924	DANVILLE	VERMILION	19N	11W	19
3705	MCCOMB COAL COMPANY	MCCOMB		SLOPE	RPP	1924-1929	DANVILLE	VERMILION	19N	11W	19
3705	TAYLOR-ENGLISH COAL COMPANY	TAYLOR-ENGLISH	3	SLOPE	RPP	1930-1930	DANVILLE	VERMILION	19N	11W	19
3705	TILTON MINING COMPANY	TILTON		SLOPE	RPP	1931-1941	DANVILLE	VERMILION	19N	11W	19

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3706	JENKINS (DANIEL A.)	JENKINS		DRIFT	RP	1894-1910	DANVILLE	VERMILION	19N	11W	17
3707	UNITED ELECTRIC COAL COMPANY	MARY MOORE	25	STRIP	STR	1955-1960	DANVILLE	VERMILION	19N	11W	20
3707	UNITED ELECTRIC COAL COMPANY	MARY MOORE	25	STRIP	STR	1960-1965	HERRIN	VERMILION	19N	11W	20
3708	GRAPE CREEK COAL & COKE CO.	GRAPE CREEK				1890-1891	DANVILLE	VERMILION	19N	11W	20
3708	MOZIER & WILSON	GRAPE CREEK				1891-1893	DANVILLE	VERMILION	19N	11W	20
3709	L. & C. COAL COMPANY	L. & C.		SLOPE	MRP	1920-1930	DANVILLE	VERMILION	19N	11W	20
3710	WESTERN BRICK COMPANY	WESTERN BRICK	3	STRIP	STR	1925-1930	HERRIN	VERMILION	19N	11W	21
3711	DELAWARE COAL COMPANY	DELAWARE NO. 1	1	SLOPE	RP	1894-1896	HERRIN	VERMILION	19N	11W	21
3711	DELAWARE COAL COMPANY	DELAWARE NO. 2	2	SLOPE	RP	1894-1896	HERRIN	VERMILION	19N	11W	21
3711	DELAWARE COAL COMPANY	DELAWARE NO. 3	3	SLOPE	RP	1894-1896	HERRIN	VERMILION	19N	11W	21
3712	CONTRACT COAL COMPANY	CONTRACT	3	SLOPE	RP	1924-1930	HERRIN	VERMILION	19N	11W	21
3713	DRY BREAD MINE	DRY BREAD		SLOPE	RP		HERRIN	VERMILION	19N	11W	21
3714	CAMPBELL BROTHERS	CAMPBELL		SLOPE	RP	1930-1931	HERRIN	VERMILION	19N	11W	21
3714	CAMPBELL (J. E.)	CAMPBELL		SLOPE	RP	1932-1932	HERRIN	VERMILION	19N	11W	21
3714	CAMPBELL BROTHERS COAL CO.	CAMPBELL		SLOPE	RP	1933-1937	HERRIN	VERMILION	19N	11W	21
3715	TRAER COAL COMPANY	TRAER	1	SLOPE	RP	1910-1912	HERRIN	VERMILION	19N	11W	21
3716	SUNSHINE COAL COMPANY	SUNSHINE	1	UG	RP	1934-1936	DANVILLE	VERMILION	19N	11W	27
3716	SUNSHINE COAL COMPANY	SUNSHINE	2	UG	RP	1935-1936	DANVILLE	VERMILION	19N	11W	27
3717	BALES (A. L.) COAL COMPANY	BALES		SHAFT	RP	1930-1936	DANVILLE	VERMILION	19N	11W	27
3718	RED TOP COAL COMPANY	RED TOP		STRIP	STR	1950-1950	HERRIN	VERMILION	19N	11W	28

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3719	GRAPE CREEK COAL & COKE CO.	GRAPE CREEK	5	SHAFT	RP	1884-1892	HERRIN	VERMILION	19N	11W	28
3719	DICKINSON & FRAZIER	GRAPE CREEK	5	SHAFT	RP	1892-1893	HERRIN	VERMILION	19N	11W	28
3719	COASTER & JACOBS	GRAPE CREEK	5	SHAFT	RP	1893-1894	HERRIN	VERMILION	19N	11W	28
3719	GRAPE CREEK COAL & COKE CO.	GRAPE CREEK	5	SHAFT	RP	1894-1894	HERRIN	VERMILION	19N	11W	28
3720	QUALITY COAL COMPANY	QUALITY	1	SLOPE	MRP	1932-1938	HERRIN	VERMILION	19N	11W	28
3720	QUALITY COAL COMPANY	QUALITY	2	SLOPE	MRP	1939-1942	HERRIN	VERMILION	19N	11W	28
3720	TURNER COAL COMPANY	QUALITY		SLOPE	MRP	1942-1943	HERRIN	VERMILION	19N	11W	28
3721	GRAPE CREEK COAL CO.	GRAPE CREEK		STRIP	STR	1949-1951	DANVILLE	VERMILION	17N	11W	2
3721	GEORGETOWN COAL CO.	GEORGETOWN		STRIP	STR	1953-1953	DANVILLE	VERMILION	17N	11W	2
3722	SMITH (RUSSELL)	SMITH HOLLOW		SLOPE	RP	1940-1941	HERRIN	VERMILION	19N	11W	28
3723	STEWART (JAMES)	STEWART		UG	RP	1929-1933	DANVILLE	VERMILION	19N	11W	28
3723	STEWART & BOYD COAL COMPANY	STEWART		UG	RP	1934-1934	DANVILLE	VERMILION	19N	11W	28
3723	STEWART COAL COMPANY	STEWART		UG	RP	1935-1935	DANVILLE	VERMILION	19N	11W	28
3724	BATES (SUMNER) COAL COMPANY	BATES		STRIP	STR	1926-1939	HERRIN	VERMILION	19N	11W	28
3725	STREATOR CLAY MFG. CO.	CLAYWORKS		SHAFT	LW	1895-1897	COLCHESTER	LIVINGSTON	30N	3E	1
3725	POLAND COAL COMPANY	POLAND		SLOPE	RP	1934-1937	HERRIN	VERMILION	19N	11W	28
3726	LETE(ACHILLE F)&SONS COAL CO	LETE		SLOPE	MRP	1922-1941	HERRIN	VERMILION	19N	11W	29
3726	LETE COAL COMPANY, INC.	LETE		SLOPE	MRP	1941-1946	HERRIN	VERMILION	19N	11W	29
3727	SMITH (E. E.) COAL CO.	SMITH		STRIP		1934-1934	DANVILLE	VERMILION	19N	11W	29
3727	SMITH STRIPPING CO.	SMITH		STRIP		1935-1935	DANVILLE	VERMILION	19N	11W	29
3727	SMITH (R. S.) COAL CO.	SMITH		STRIP		1936-1936	DANVILLE	VERMILION	19N	11W	29
3727	SMITH (R. F.)	SMITH	2	STRIP		1937-1937	DANVILLE	VERMILION	19N	11W	29
3728	HEGELER COAL COMPANY	HEGELER		SHAFT	RPP	1918-1940	DANVILLE	VERMILION	19N	11W	30
3729	KELLY (MICHAEL)	KELLY	2	SHAFT	MRP	1890-1891	HERRIN	VERMILION	19N	11W	31

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3729	KELLYVILLE COAL COMPANY	KELLY	2	SHAFT	MRP	1891-1895	HERRIN	VERMILION	19N	11W	31
3729	KELLY COAL COMPANY	KELLY	2	SHAFT	MRP	1895-1897	HERRIN	VERMILION	19N	11W	31
3729	KELLYVILLE COAL COMPANY	KELLY	2	SHAFT	MRP	1897-1904	HERRIN	VERMILION	19N	11W	31
3729	KELLY COAL COMPANY	KELLY	2	SHAFT	MRP	1904-1906	HERRIN	VERMILION	19N	11W	31
3729	KELLY COAL COMPANY	KELLY	42	SHAFT	MRP	1906-1908	HERRIN	VERMILION	19N	11W	31
3729	HAMMOND COAL COMPANY	KELLY	42	SHAFT	MRP	1908-1909	HERRIN	VERMILION	19N	11W	31
3729	BUNSEN COAL COMPANY	KELLY	2	SHAFT	MRP	1909-1914	HERRIN	VERMILION	19N	11W	31
3731	KELLY (MICHAEL)	KELLY	1	SHAFT	RP	1878-1891	HERRIN	VERMILION	19N	11W	32
3731	KELLYVILLE COAL COMPANY	KELLYVILLE	1	SHAFT	RP	1891-1895	HERRIN	VERMILION	19N	11W	32
3731	KELLY COAL COMPANY	KELLY	1	SHAFT	RP	1895-1897	HERRIN	VERMILION	19N	11W	32
3731	KELLYVILLE COAL COMPANY	KELLYVILLE	1	SHAFT	RP	1897-1898	HERRIN	VERMILION	19N	11W	32
3732	MADEN COAL COMPANY	MADEN	2	SLOPE	RP	1940-1941	DANVILLE	VERMILION	19N	11W	32
3732	LIBERTY HILL COAL COMPANY	LIBERTY HILL		SLOPE	RP	1941-1941	DANVILLE	VERMILION	19N	11W	32
3733	KELLY (WILLIAM)	KELLY		SHAFT	RP	1892-1894	HERRIN	VERMILION	19N	11W	32
3733	O'CONNELL & HUME	BLUEBIRD		SHAFT	RP	1894-1896	HERRIN	VERMILION	19N	11W	32
3733	O'CONNELL (JOHN)	BLUEBIRD		SHAFT	RP	1896-1907	HERRIN	VERMILION	19N	11W	32
3734	JANOSICK (STEVE)	JANOSICK		SLOPE	RP	1934-1934	DANVILLE	VERMILION	19N	11W	32
3734	WILLIAMS (W. E.) COAL CO.	WILLIAMS	1	SLOPE	RP	1934-1936	DANVILLE	VERMILION	19N	11W	32
3734	JANOSICK (STEVE)	JANOSICK		SLOPE	RP	1937-1937	DANVILLE	VERMILION	19N	11W	32
3734	NEW GRAPE CREEK COAL CO.	NEW GRAPE CREEK	2	SLOPE	RP	1938-1939	DANVILLE	VERMILION	19N	11W	32
3735	DEL VALLEY (ALFRED L.)	DEL VALLEY		SLOPE	MRP	1928-1930	DANVILLE	VERMILION	19N	11W	32
3735	DUVALL & WYATT	DUVALL & WYATT		SLOPE	MRP	1931-1931	DANVILLE	VERMILION	19N	11W	32
3735	WYATT (R. S.)	WYATT		SLOPE	MRP	1932-1932	DANVILLE	VERMILION	19N	11W	32
3735	DEL VALLEY COAL COMPANY	DEL VALLEY	2	SLOPE	MRP	1933-1936	DANVILLE	VERMILION	19N	11W	32
3735	MARKUNAS COAL COMPANY	MARKUNAS		SLOPE	MRP	1937-1939	DANVILLE	VERMILION	19N	11W	32
3736	JAMES (JOHN T.)	JAMES		SHAFT	RP	1912-1917	HERRIN	VERMILION	19N	11W	32
3737	BROOKSIDE COAL MINING CO.	BROOKSIDE	1	SLOPE	RP	1896-1902	HERRIN	VERMILION	19N	11W	32

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3738	MARKUNAS COAL COMPANY	MARKUNAS	2	SLOPE	MRP	1939-1943	DANVILLE	VERMILION	19N	11W	32
3739	GRAPE CREEK CO-OP MINING CO.	CO-OPERATIVE		SHAFT	RP	1887-1890	HERRIN	VERMILION	19N	11W	32
3739	PROTECTIVE CO-OP COAL CO.	CO-OPERATIVE		SHAFT	RP	1890-1892	HERRIN	VERMILION	19N	11W	32
3739	CO-OP MINING ASSOCIATION	CO-OPERATIVE		SHAFT	RP	1892-1894	HERRIN	VERMILION	19N	11W	32
3740	KELLYVILLE COAL COMPANY	KELLYVILLE	5	SHAFT	MRP	1902-1904	HERRIN	VERMILION	19N	11W	32
3740	KELLY COAL COMPANY	KELLY	5	SHAFT	MRP	1904-1906	HERRIN	VERMILION	19N	11W	32
3740	KELLY COAL COMPANY	KELLY	45	SHAFT	MRP	1906-1909	HERRIN	VERMILION	19N	11W	32
3740	BUNSEN COAL COMPANY	BUNSEN	5	SHAFT	MRP	1909-1911	HERRIN	VERMILION	19N	11W	32
3742	SPELLMAN (T. L.) COAL CO.	SPELLMAN	2	SLOPE	RP	1886-1896	HERRIN	VERMILION	19N	11W	33
3742	BROOKSIDE COAL MINING CO.	BROOKSIDE	2	SLOPE	RP	1897-1903	HERRIN	VERMILION	19N	11W	33
3742	WHITE (C.)	BROOKSIDE	2	SLOPE	RP	1903-1904	HERRIN	VERMILION	19N	11W	33
3742	HASKINS (GEORGE H.)	BROOKSIDE	2	SLOPE	RP	1904-1905	HERRIN	VERMILION	19N	11W	33
3743	RILEY (C. & W.)	RILEY		SLOPE	RP	1892-1893	HERRIN	VERMILION	19N	11W	33
3743	RILEY BROTHERS	RILEY		SLOPE	RP	1893-1894	HERRIN	VERMILION	19N	11W	33
3743	COASTER & WILSON	NO. 4		SLOPE	RP	1894-1895	HERRIN	VERMILION	19N	11W	33
3743	REILLY (C. J. & W.)	REILLY		SLOPE	RP	1895-1896	HERRIN	VERMILION	19N	11W	33
3743	BROOKSIDE COAL MINING CO.	BROOKSIDE NO. 4	4	SLOPE	RP	1896-1898	HERRIN	VERMILION	19N	11W	33
3744	B., T. & M. COAL COMPANY	B., T. & M.		DRIFT	RP	1929-1929	HERRIN	VERMILION	19N	11W	33
3744	BROWN & TALBERT	BROWN & TALBERT		DRIFT	RP	1930-1931	HERRIN	VERMILION	19N	11W	33
3744	BROWN & BERTON	BROWN & BERTON		DRIFT	RP	1932-1932	HERRIN	VERMILION	19N	11W	33
3744	BROWN (I. R.)	BROWN		DRIFT	RP	1933-1934	HERRIN	VERMILION	19N	11W	33
3745	GRAPE CREEK COAL & COKE CO.	GRAPE CREEK	4	SLOPE	RPB	1884-1892	HERRIN	VERMILION	19N	11W	33
3745	DICKINSON & FRASIER	GRAPE CREEK	4	SLOPE	RPB	1892-1893	HERRIN	VERMILION	19N	11W	33
3745	BUNTING BROTHERS	GRAPE CREEK	4	SLOPE	RPB	1893-1908	HERRIN	VERMILION	19N	11W	33
3746	DALE BLUE COAL COMPANY	BLUE		STRIP	STR	1934-1938	HERRIN	VERMILION	19N	11W	33

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3747	SUPERIOR COAL COMPANY	SUPERIOR		SLOPE	RP	1936-1937	HERRIN	VERMILION	19N	11W	33
3748	KEMPER COAL CO.	KEMPER	1	SLOPE	RPB	1934-1935	DANVILLE	VERMILION	19N	12W	21
3748	KEMPER COAL CO.	KEMPER	2	SLOPE	RPB	1936-1937	DANVILLE	VERMILION	19N	12W	21
3748	LARSON & SON	LARSON		SLOPE	RPB	1937-1938	DANVILLE	VERMILION	19N	12W	21
3749	NEW GRAPE CREEK COAL CO.	NEW GRAPE CREEK		DRIFT	RPB	1934-1937	DANVILLE	VERMILION	19N	11W	32
3750	GRAPE CREEK COAL & COKE CO.	GRAPE CREEK	3	SHAFT	RP	1884-1891	HERRIN	VERMILION	19N	11W	33
3751	BURCH COAL COMPANY	BURCH		SLOPE	RP	1936-1936	HERRIN	VERMILION	19N	11W	33
3752	BLUE BIRD COAL COMPANY	BLUE BIRD	2	SLOPE	RPB	1933-1937	HERRIN	VERMILION	19N	11W	33
3753	BLUE BIRD COAL COMPANY	BLUEBIRD		SLOPE	RPB	1938-1940	HERRIN	VERMILION	19N	11W	33
3754	BUNTING BROTHERS	BUNTING		STRIP	STR	1885-1891	HERRIN	VERMILION	19N	11W	33
3754	HOWARD (HENRY)	BUNTING		STRIP	STR	1891-1893	HERRIN	VERMILION	19N	11W	33
3754	BUNTING BROTHERS	BUNTING		STRIP	STR	1893-1894	HERRIN	VERMILION	19N	11W	33
3754	TROSPER (C. H.)	BUNTING		STRIP	STR	1894-1895	HERRIN	VERMILION	19N	11W	33
3755	GRAPE CREEK COAL & COKE CO.	GRAPE CREEK	2	DRIFT	RPB	1884-1887	HERRIN	VERMILION	19N	11W	34
3756	GRAPE CREEK COAL & COKE CO.	GRAPE CREEK	1	DRIFT	RP	1881-1885	HERRIN	VERMILION	19N	11W	34
3757	HASKINS (GEORGE H.)	HASKINS		SLOPE	RP	1905-1914	HERRIN	VERMILION	19N	11W	34
3757	SHUMAKER & TUTTLE	SHUMAKER & TUTTLE		SLOPE	RP	1914-1914	HERRIN	VERMILION	19N	11W	34
3758	CHICAGO COLLERIES COAL CO.	CHICAGO COLLIERIES NO. 4	4	STRIP	STR	1922-1925	DANVILLE	VERMILION	19N	12W	16
3758	UNITED ELECTRIC COAL COMPANY	UNITED ELETRIC NO. 12	12	STRIP	STR	1926-1934	DANVILLE	VERMILION	19N	12W	16
3759	NORIN STRIP PIT	NORIN		STRIP	STR		DANVILLE	VERMILION	19N	12W	1
3760	LIND COAL COMPANY	LIND	3	SLOPE	RP	1939-1941	DANVILLE	VERMILION	19N	12W	1

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3760	RITTER COAL COMPANY	RITTER	3	SLOPE	RP	1941-1941	DANVILLE	VERMILION	19N	12W	1
3760	PIERCE COAL COMPANY	PIERCE		SLOPE	RP	1941-1942	DANVILLE	VERMILION	19N	12W	1
3761	HAUN & SONS COAL COMPANY	HAUN		SLOPE	RP	1936-1936	DANVILLE	VERMILION	19N	12W	1
3761	HUNT (BERT) COAL COMPANY	HUNT		SLOPE	RP	1937-1940	DANVILLE	VERMILION	19N	12W	1
3762	FREDERICKSON COAL COMPANY	FREDERICKSON	1	SLOPE	RP	1946-1951	DANVILLE	VERMILION	19N	12W	1
3763	RIVERSIDE COAL COMPANY	RIVERSIDE		SLOPE	RPP	1929-1940	DANVILLE	VERMILION	19N	12W	1
3763	WYATT (HERBERT J.)	RIVERSIDE		SLOPE	RPP	1941-1941	DANVILLE	VERMILION	19N	12W	1
3763	RIVERSIDE COAL COMPANY	RIVERSIDE		SLOPE	RPP	1942-1942	DANVILLE	VERMILION	19N	12W	1
3764	FREDERICKSON(OSCAR R)COAL CO	FREDERICKSON		SLOPE	MRP	1918-1939	DANVILLE	VERMILION	19N	12W	1
3765	MARTIN & HOWARD COAL COMPANY	MARTIN & HOWARD		SLOPE	RPB	1930-1932	DANVILLE	VERMILION	19N	12W	1
3765	MARTIN & BOWEN COAL COMPANY	MARTIN & BOWEN		SLOPE	RPB	1933-1936	DANVILLE	VERMILION	19N	12W	1
3765	LIND COAL COMAPNY	LIND	2	SLOPE	RPB	1937-1947	DANVILLE	VERMILION	19N	12W	1
3766	LAMB-SINGLETON COAL COMPANY	LAMB SINGLETON		SLOPE	RP	1938-1939	DANVILLE	VERMILION	19N	12W	1
3766	FREDERICKSON COAL COMPANY	FREDERICKSON	4	SLOPE	RP	1939-1940	DANVILLE	VERMILION	19N	12W	1
3767	SQUARE DEAL COAL COMPANY	SQUARE DEAL		SHAFT	RP	1924-1926	DANVILLE	VERMILION	19N	12W	1
3767	ELLIOT BROTHERS	ELLIOT		SHAFT	RP	1927-1935	DANVILLE	VERMILION	19N	12W	1
3767	SQUARE DEAL COAL COMPANY	SQUARE DEAL		SHAFT	RP	1935-1937	DANVILLE	VERMILION	19N	12W	1
3768	FREDERICKSON COAL COMPANY	FREDERICKSON	2	SLOPE	MRP	1951-1955	DANVILLE	VERMILION	19N	12W	1
3769	KELLY BRANCH COAL COMPANY	KELLY BRANCH	2	SLOPE	RP	1933-1937	DANVILLE	VERMILION	19N	12W	1
3770	MOOREHOUSE COAL COMPANY	MOOREHOUSE		SLOPE	RP		DANVILLE	VERMILION	19N	12W	4
3771	BLACK DIAMOND COAL COMPANY	BLACK DIAMOND		SHAFT	RP	1934-1937	DANVILLE	VERMILION	19N	12W	4
3772	BIG DIAMOND COAL COMPANY	BIG DIAMOND		SLOPE	RP	1933-1936	DANVILLE	VERMILION	19N	12W	4

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3773	SWALLOW (S. H.)	GLENBURN		SHAFT	RP	1885-1887	DANVILLE	VERMILION	19N	12W	5
3773	SWALLOW (C. M.)	GLENBURN		SHAFT	RP	1887-1890	DANVILLE	VERMILION	19N	12W	5
3773	GLENBURN COAL COMPANY	GLENBURN		SHAFT	RP	1890-1897	DANVILLE	VERMILION	19N	12W	5
3773	ELLSWORTH (J. W.)	ELLSWORTH		SHAFT	RP	1897-1898	DANVILLE	VERMILION	19N	12W	5
3773	GLENBURN COAL COMPANY	GLENBURN		SHAFT	RP	1898-1899	DANVILLE	VERMILION	19N	12W	5
3774	BLACK DIAMOND COAL COMPANY	BLACK DIAMOND		DRIFT	RP	1912-1913	DANVILLE	VERMILION	19N	12W	9
3775	SKELTON (A. H.)	SKELTON		SLOPE	MRP	1923-1929	DANVILLE	VERMILION	19N	12W	9
3775	SKELTON (J. G.)	SKELTON		SLOPE	MRP	1930-1945	DANVILLE	VERMILION	19N	12W	9
3776	SUGAR GROVE COAL COMPANY	SUGAR GROVE		SHAFT	RP		DANVILLE	VERMILION	19N	12W	9
3778	RED DRAGON COAL COMPANY	RED DRAGON		SLOPE	RP	1932-1936	DANVILLE	VERMILION	19N	12W	10
3778	DRAGON COAL COMPANY	DRAGON		SLOPE	RP	1937-1942	DANVILLE	VERMILION	19N	12W	10
3779	STINE COAL CO.	STINE		DRIFT	RPB	1935-1936	DANVILLE	VERMILION	19N	12W	10
3779	PIERCE COAL CO.	PIERCE		DRIFT	RPB	1936-1939	DANVILLE	VERMILION	19N	12W	10
3780	THATCHER (BERT)	THATCHER		SLOPE	RPB	1929-1936	DANVILLE	VERMILION	19N	12W	6
3780	M. & D. COAL COMPANY	M. & D.		SLOPE	RPB	1936-1937	DANVILLE	VERMILION	19N	12W	6
3780	M. D. COAL COMPANY	M. D. (MURPHY-DEDRYVERE)		SLOPE	RPB	1937-1942	DANVILLE	VERMILION	19N	12W	6
3780	DEDRYVERE (JULES) COAL CO.	DEDRYVERE		SLOPE	RPB	1938-1939	DANVILLE	VERMILION	19N	12W	6
3780	FARRELL & MURPHY	FARRELL & MURPHY		SLOPE	RPB	1939-1939	DANVILLE	VERMILION	19N	12W	6
3781	MAUCK & SPANGLER	MAUCK & SPANGLER		SHAFT	RP	1910-1914	DANVILLE	VERMILION	19N	12W	11
3781	MAUCK (A. B.)	MAUCK		SHAFT	RP	1914-1919	DANVILLE	VERMILION	19N	12W	11
3782	ROBERTS COAL COMPANY	ROBERTS		STRIP	STR	1934-1937	DANVILLE	VERMILION	19N	12W	11
3783	WESTERN BRICK COMPANY	WESTERN BRICK	2	STRIP	STR	1939-1940	DANVILLE	VERMILION	19N	12W	11
3784	COAL STRIPPING COMPANY	COAL STRIPPING	2	STRIP	STR	1934-1934	HERRIN	VERMILION	19N	12W	12

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3784	PYRAMID COAL COMPANY	PYRAMID	2	STRIP	STR	1935-1937	HERRIN	VERMILION	19N	12W	12
3785	ECONOMY COAL & MINING CO.	ECONOMY		SHAFT	RP	1896-1907	DANVILLE	VERMILION	19N	12W	11
3786	KEDAS COAL CO.	KEDAS		SLOPE	MRP		HERRIN	VERMILION	19N	11W	33
3787	I. & W. COAL COMPANY	I. & W.		SLOPE	RP	1937-1938	DANVILLE	VERMILION	19N	11W	18
3788	REILLY & DAUGHERTY	WESTERN BRICK NO. 2	2	SLOPE	RP	1907-1910	DANVILLE	VERMILION	19N	12W	12
3788	CONTRACT MINING CONPANY	CONTRACT NO. 1	1	SLOPE	RP	1910-1926	DANVILLE	VERMILION	19N	12W	12
3788	CONTRACT COAL COMPANY	CONTRACT NO. 2	2	SLOPE	RP	1924-1929	DANVILLE	VERMILION	19N	12W	12
3788	CONTRACT COAL COMPANY	CONTRACT NO. 4	4	STRIP	STR	1926-1929	DANVILLE	VERMILION	19N	12W	12
3788	CONTRACT COAL COMPANY	CONTRACT NO. 1	1	STRIP	STR	1927-1930	DANVILLE	VERMILION	19N	12W	12
3789	DEPRETT COAL COMPANY	DEPRETT		DRIFT	RP	1938-1941	DANVILLE	VERMILION	19N	12W	12
3790	WESTERN BRICK COMPANY	WESTERN BRICK		STRIP	STR	1938-1939	DANVILLE	VERMILION	19N	12W	12
3791	REILY & DAUGHERTY	WESTERN BRICK	2	DRIFT	RP	1907-1910	DANVILLE	VERMILION	19N	12W	12
3791	CONTRACT MINING COMPANY	CONTRACT	1	DRIFT	RP	1910-1926	DANVILLE	VERMILION	19N	12W	12
3791	CONTRACT COAL COMPANY	CONTRACT	2	DRIFT	RP	1924-1929	DANVILLE	VERMILION	19N	12W	12
3791	CONTRACT COAL COMAPNY	CONTRACT	4	STRIP	STR	1926-1929	DANVILLE	VERMILION	19N	12W	12
3791	CONTRACT COAL COMPANY	CONTRACT	1	STRIP	STR	1927-1930	DANVILLE	VERMILION	19N	12W	12
3792	DIAMOND COAL COMPANY	DIAMOND		SHAFT	RP	-1879	DANVILLE	VERMILION	19N	12W	12
3792	SHORT (JOHN)	MOSS BANK		SHAFT	RP	1870-1873	DANVILLE	VERMILION	19N	12W	12
3792	PARIS & DANVILLE RAILROAD CO	MOSS BANK		SHAFT	RP	1873-	DANVILLE	VERMILION	19N	12W	12
3793	DONALDSON-FAIRHALL COAL CO.	DONALDSON-FAIRHALL		SLOPE	RP	1935-1936	DANVILLE	VERMILION	19N	12W	13
3794	ERWEN (J. W.)	ERWEN		SHAFT	RP	1909-1912	DANVILLE	VERMILION	19N	12W	13
3795	TILTON COAL COMPANY	COMET		SHAFT	RP	1910-1914	DANVILLE	VERMILION	19N	12W	13

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3796	BRADY BRANCH COAL COMPANY	BRADY BRANCH		SLOPE	MRP	1917-1924	DANVILLE	VERMILION	19N	12W	13
3797	RUSSELL (FRED)	RUSSELL		DRIFT	MRP	1883-1885	DANVILLE	VERMILION	19N	12W	13
3797	STANSBURY & RUSSELL	RUSSELL		DRIFT	MRP	1885-1888	DANVILLE	VERMILION	19N	12W	13
3798	HOWE COAL COMPANY	HOWE		SLOPE	RP	1939-1940	DANVILLE	VERMILION	19N	12W	13
3799	WILSON & DUBIE	WILSON & DUBIE		DRIFT	MRP	1922-1923	DANVILLE	VERMILION	19N	12W	13
3799	WILSON (R. C.)	WILSON		DRIFT	MRP	1923-1938	DANVILLE	VERMILION	19N	12W	13
3799	RYAN & JONES	WILSON		DRIFT	MRP	1938-1939	DANVILLE	VERMILION	19N	12W	13
3799	RAMSEY & BRACEWELL	WILSON		DRIFT	MRP	1940-1940	DANVILLE	VERMILION	19N	12W	13
3799	WILSON COAL COMPANY	WILSON		DRIFT	MRP	1941-1941	DANVILLE	VERMILION	19N	12W	13
3800	WILSON (ANTHONY)	WILSON		SLOPE	RP	1917-1928	DANVILLE	VERMILION	19N	12W	13
3801	PIERCE (L. C.) COAL COMPANY	PIERCE		SLOPE	MRP	1936-1936	DANVILLE	VERMILION	19N	12W	13
3801	WEIR (WILLIAM A.)	WEIR		SLOPE	MRP	1937-1941	DANVILLE	VERMILION	19N	12W	13
3801	HUNT & SONS COAL COMPANY	HUNT		SLOPE	MRP	1941-1942	DANVILLE	VERMILION	19N	12W	13
3801	PIERCE COAL COMPANY	PIERCE	5	SLOPE	MRP	1943-1946	DANVILLE	VERMILION	19N	12W	13
3801	WILSON & GRIMES COAL COMPANY	WILSON & GRIMES		SLOPE	MRP	1947-1947	DANVILLE	VERMILION	19N	12W	13
3802	SWAN COAL COMPANY	SWAN		SLOPE	RPB	1934-1938	DANVILLE	VERMILION	19N	12W	13
3802	B. & B. COAL COMPANY	B. & B.		SLOPE	RPB	1938-1939	DANVILLE	VERMILION	19N	12W	13
3802	BALES (PERRY) COAL COMPANY	BALES		SLOPE	RPB	1939-1943	DANVILLE	VERMILION	19N	12W	13
3803	ELLIS COAL COMPANY	ELLIS		DRIFT	RP	1929-1935	DANVILLE	VERMILION	19N	12W	14
3804	LIME SPRINGS COAL COMPANY	LIME SPRINGS		STRIP		1938-1939	DANVILLE	VERMILION	19N	12W	14
3805	LIME SPRINGS COAL COMPANY	LIME SPRINGS	3	SLOPE	MRP	1939-1939	DANVILLE	VERMILION	19N	12W	14
3805	PIERCE (E. A.)	LIME SPRINGS	3	SLOPE	MRP	1940-1940	DANVILLE	VERMILION	19N	12W	14
3806	SCOTT & SON COAL COMPANY	SCOTT		SLOPE	RP	1939-1940	DANVILLE	VERMILION	19N	12W	15

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3807	WONDERLIN & DALE	WONDERLIN & DALE		DRIFT	RP	1899-1900	DANVILLE	VERMILION	19N	12W	14
3807	WONDERLIN (HENRY)	WONDERLIN		DRIFT	RP	1900-1914	DANVILLE	VERMILION	19N	12W	14
3808	MAUCK (J. W.)	MAUCK		DRIFT	RP	1901-1915	DANVILLE	VERMILION	19N	12W	15
3809	MILLER & TELLIER COAL CO.	MILLER & TELLIER		SLOPE	RPP	1941-1942	DANVILLE	VERMILION	19N	12W	15
3809	MILLER COAL COMPANY	MILLER		SLOPE	RPP	1942-1945	DANVILLE	VERMILION	19N	12W	15
3809	GHIBANDY & MACKOVICH	GHIBANDY & MACKOVICH		SLOPE	RPP	1945-1946	DANVILLE	VERMILION	19N	12W	15
3809	G. & M. COAL COMPANY	G. & M.		SLOPE	RPP	1947-1950	DANVILLE	VERMILION	19N	12W	15
3809	J. & M. COAL COMPANY	J. & M.		SLOPE	RPP	1950-1953	DANVILLE	VERMILION	19N	12W	15
3809	GREEN TOP COAL COMPANY	GREEN TOP		SLOPE	RPP	1953-1954	DANVILLE	VERMILION	19N	12W	15
3810	YOUNG & ELLIS	YOUNG & ELLIS		SLOPE	RP	1903-1904	DANVILLE	VERMILION	19N	12W	15
3810	YOUNG (HENRY)	YOUNG	1	SLOPE	RP	1904-1909	DANVILLE	VERMILION	19N	12W	15
3811	K. & T. STRIP MINING CO.	K. & T.		STRIP	STR	1939-1940	DANVILLE	VERMILION	19N	12W	15
3812	KISTLER (MARY)	KISTLER		UG	RP		DANVILLE	VERMILION	19N	12W	15
3813	DEL VALLEE COAL COMPANY	DEL VALLEE	3	DRIFT	RPB	1936-1941	DANVILLE	VERMILION	19N	12W	15
3815	DOUGHERTY (LOU)	DOUGHERTY		SLOPE	MRP	1920-1926	DANVILLE	VERMILION	19N	12W	16
3815	DOUGHERTY (LOU) & SON	DOUGHERTY		SLOPE	MRP	1927-1934	DANVILLE	VERMILION	19N	12W	16
3815	DAUGHERTY (L.)	DAUGHERTY		SLOPE	MRP	1927-1927	DANVILLE	VERMILION	19N	12W	16
3815	BURGOYNE	BURGOYNE		SLOPE	MRP	1935-1935	DANVILLE	VERMILION	19N	12W	16
3815	BURGOYNE-HOLYCROSS COAL CO.	BURGOYNE-HOLYCROSS		SLOPE	MRP	1935-1936	DANVILLE	VERMILION	19N	12W	16
3815	BURGOYNE (GLEN) COAL COMPANY	BURGOYNE		SLOPE	MRP	1937-1943	DANVILLE	VERMILION	19N	12W	16
3817	THOMAS BROTHERS COAL COMPANY	THOMAS		DRIFT	MRP	1936-1937	DANVILLE	VERMILION	19N	12W	16
3818	HARRIS	HARRIS		SLOPE	RPB	1935-1935	DANVILLE	VERMILION	19N	12W	16
3818	LONE HILL COAL COMPANY	LONE HILL		SLOPE	RPB	1936-1939	DANVILLE	VERMILION	19N	12W	16
3819	WOODWARD COAL COMPANY	WOODWARD		SLOPE	MRP	1936-1936	DANVILLE	VERMILION	19N	12W	16

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3819	W. & B. COAL COMPANY	W. & B. (WORLEY & BENIS)		SLOPE	MRP	1937-1943	DANVILLE	VERMILION	19N	12W	16
3820	MCFARLAND (NELSON) COAL CO.	MCFARLAND	2	SLOPE	MRP	1940-1943	DANVILLE	VERMILION	19N	12W	16
3821	BUCKINGHAM & SON	BUCKINGHAM	1	UG	RP	1917-1918	DANVILLE	VERMILION	19N	12W	16
3822	CASSEL BRANCH COAL COMPANY	CASSEL BRANCH	2	SLOPE	MRP	1933-1937	DANVILLE	VERMILION	19N	12W	16
3823	LAKESIDE COAL CO.	LAKESIDE		SLOPE		1939-1943	DANVILLE	VERMILION	19N	12W	16
3824	SHADY VALLEY COAL COMPANY	SHADY VALLEY NO. 2	2	STRIP	STR	1934-1936	DANVILLE	VERMILION	19N	12W	16
3824	KISTLER HILL STRIP COMPANY	KISTLER HILL		STRIP	STR	1940-1940	DANVILLE	VERMILION	19N	12W	16
3824	SHADY VALLEY COAL COMPANY	SHADY VALLEY	2	STRIP	STR	1941-1941	DANVILLE	VERMILION	19N	12W	16
3825	KISTLER HILL COAL COMPANY	KISTLER HILL		DRIFT	MRP	1939-1942	DANVILLE	VERMILION	19N	12W	16
3826	SALT FORK COAL COMPANY	SALT FORK		SLOPE	MRP	1934-1938	DANVILLE	VERMILION	19N	12W	17
3826	RIVERSIDE COAL COMPANY	RIVERSIDE		SLOPE	MRP	1942-1943	DANVILLE	VERMILION	19N	12W	17
3827	BAKER (LOUIS E.) COAL CO.	BAKER		UG	RP	1893-1908	DANVILLE	VERMILION	19N	12W	17
3828	WALTON & SHEETS	WALTON & SHEETS		SLOPE	RP		DANVILLE	VERMILION	19N	12W	17
3829	MISSIONFIELD COAL CO.	MISSIONFIELD	2	SHAFT	RP	1911-1918	DANVILLE	VERMILION	19N	12W	17
3829	ELECTRIC COAL CO.	ELECTRIC	2	SHAFT	RP	1918-1919	DANVILLE	VERMILION	19N	12W	17
3830	ELECTRIC COAL COMPANY	ELECTRIC NO. 4	4	STRIP	STR	1918-1921	DANVILLE	VERMILION	19N	12W	18
3830	UNITED ELECTRIC COAL COMPANY	UNITED ELECTRIC NO. 4	4	STRIP	STR	1921-1926	DANVILLE	VERMILION	19N	12W	18
3831	OAKWOOD COAL COMPANY	OAKWOOD NO. 1	1	SHAFT	RP	1901-1909	DANVILLE	VERMILION	19N	12W	18
3831	SOUTH OAKWOOD COAL COMPANY	SOUTH OAKWOOD		SHAFT	RP	1909-1911	DANVILLE	VERMILION	19N	12W	18
3832	CRAWFORD (JAMES H.) COAL CO.	CRAWFORD		SHAFT	RPP	1930-1940	DANVILLE	VERMILION	19N	12W	18

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3833	SCARCE BROTHERS COAL COMPANY	SCARCE		SLOPE	RP	1936-1936	DANVILLE	VERMILION	19N	12W	18
3833	WORLEY (ALVA) COAL COMPANY	WORLEY		SLOPE	RP	1937-1939	DANVILLE	VERMILION	19N	12W	18
3833	AUTER & SONS COAL COMPANY	AUTER		SLOPE	RP	1940-1942	DANVILLE	VERMILION	19N	12W	18
3833	WORLEY COAL COMPANY	WORLEY		SLOPE	RP	1946-1948	DANVILLE	VERMILION	19N	12W	18
3834	WILSON (WALTER)	WILSON		DRIFT	MRP	1937-1937	DANVILLE	VERMILION	19N	12W	18
3834	MCFARLAND-WILSON COAL CO.	MCFARLAND-WILSON		DRIFT	MRP	1938-1938	DANVILLE	VERMILION	19N	12W	18
3834	MCFARLAND COAL COMPANY	MCFARLAND		DRIFT	MRP	1939-1940	DANVILLE	VERMILION	19N	12W	18
3835	DEVALLEY BROTHERS	DEVALLEY		SHAFT	RP	1924-1925		VERMILION	19N	12W	18
3835	DUVALL & LEWIS & COMPANY	DUVALL & LEWIS		SHAFT	RP	1924-1924		VERMILION	19N	12W	18
3836	COBERT BROTHERS	COBERT BROTHERS		SHAFT	RP	1899-1900	DANVILLE	VERMILION	19N	12W	18
3836	WINEHOUSE (WILLIAM)	WINEHOUSE		SHAFT	RP	1900-1906	DANVILLE	VERMILION	19N	12W	18
3836	WINEHOUSE (CHARLES)	WINEHOUSE		SHAFT	RP	1906-1908	DANVILLE	VERMILION	19N	12W	18
3837	BLACK DIAMOND COAL COMPANY	BLACK DIAMOND NO. 1	1	STRIP	STR	1910-1913	DANVILLE	VERMILION	19N	12W	18
3838	CONSOLID COAL CO OF ST LOUIS	MISSIONFIELD		STRIP	STR	1890-1897	DANVILLE	VERMILION	19N	12W	19
3838	BUTLER BROTHERS CO. (LESSEE)	MISSIONFIELD		STRIP	STR	1897-1898	DANVILLE	VERMILION	19N	12W	19
3838	CONSOLIDATED COAL COMPANY	MISSIONFIELD		STRIP	STR	1898-1904	DANVILLE	VERMILION	19N	12W	19
3838	SALT FORK COAL COMPANY	MISSIONFIELD		STRIP	STR	1904-1907	DANVILLE	VERMILION	19N	12W	19
3839	MATHES (J.)	MATHES		DRIFT	RPB	1922-1923	DANVILLE	VERMILION	19N	12W	12
3839	MATTHEWS (JOHN)	MATTHEWS		DRIFT	RPB	1923-1926	DANVILLE	VERMILION	19N	12W	12
3841	RAY COAL COMPANY	RAY	2	SLOPE	MRP	1936-1937	DANVILLE	VERMILION	19N	12W	20
3841	KING COAL COMPANY	RAY		SLOPE	MRP	1937-1939	DANVILLE	VERMILION	19N	12W	20
3841	RAY COAL COMPANY	RAY	2	SLOPE	MRP	1939-1941	DANVILLE	VERMILION	19N	12W	20
3841	HARPER COAL COMPANY	RAY	2	SLOPE	MRP	1942-1942	DANVILLE	VERMILION	19N	12W	20
3841	RAY COAL COMPANY	RAY	2	SLOPE	MRP	1943-1943	DANVILLE	VERMILION	19N	12W	20
3842	PEARSON (J. P.)	PEARSON	2	SLOPE	RPB	1922-1924	DANVILLE	VERMILION	19N	12W	20
3842	PEARSON COAL COMPANY	PEARSON NO. 1	1	SLOPE	RPB	1925-1936	DANVILLE	VERMILION	19N	12W	20

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3842	PEARSON COAL COMPANY	PEARSON	2	SLOPE	RPB	1934-1943	DANVILLE	VERMILION	19N	12W	20
3843	PEARSON COAL COMPANY	PEARSON	3	SLOPE	RP	1939-1944	DANVILLE	VERMILION	19N	12W	20
3844	RAY (S. B.)	RAY		DRIFT	MRP	1926-1926	DANVILLE	VERMILION	19N	12W	20
3844	RAY & JOHNSON	RAY & JOHNSON		DRIFT	MRP	1927-1932	DANVILLE	VERMILION	19N	12W	20
3844	RAY COAL COMPANY	RAY	1	DRIFT	MRP	1933-1939	DANVILLE	VERMILION	19N	12W	20
3845	TAYLOR COAL COMPANY	TAYLOR		SLOPE	MRP	1935-1938	DANVILLE	VERMILION	19N	12W	20
3845	JOHNSON COAL COMPANY	JOHNSON	3	SLOPE	MRP	1938-1938	DANVILLE	VERMILION	19N	12W	20
3845	POVELONE COAL COMPANY	POVELONE		SLOPE	MRP	1938-1941	DANVILLE	VERMILION	19N	12W	20
3845	TWIN COAL COMPANY	TWIN	1	SLOPE	MRP	1941-1942	DANVILLE	VERMILION	19N	12W	20
3846	LARREW BERT	LARREW		SLOPE	RPB	1937-1937	DANVILLE	VERMILION	19N	12W	20
3846	PEARSON COAL COMPANY	PEARSON		SLOPE	RPB	1938-1938	DANVILLE	VERMILION	19N	12W	20
3846	LARREW COAL COMPANY	LARREW		SLOPE	RPB	1939-1941	DANVILLE	VERMILION	19N	12W	20
3846	ACE COAL COMPANY	ACE		SLOPE	RPB	1941-1941	DANVILLE	VERMILION	19N	12W	20
3847	COLLINS COAL COMPANY	COLLINS		SLOPE	RP	1934-1935	DANVILLE	VERMILION	19N	12W	20
3847	STRAIGHTWAY COAL COMPANY	COLLINS		SLOPE	RP	1936-1936	DANVILLE	VERMILION	19N	12W	20
3847	COLLINS COAL COMPANY	COLLINS NO. 2	2	SLOPE	RP	1936-1938	DANVILLE	VERMILION	19N	12W	20
3847	COLLINS (NOBLE) COAL COMPANY	COLLINS	2	SLOPE	RP	1939-1941	DANVILLE	VERMILION	19N	12W	20
3847	TWIN COAL COMPANY	TWIN	2	SLOPE	RP	1941-1942	DANVILLE	VERMILION	19N	12W	20
3847	G. & G. COAL COMPANY	G. & G.		SLOPE	RP	1946-1946	DANVILLE	VERMILION	19N	12W	20
3848	MISSIONFIELD COAL COMPANY	MISSIONFIELD	3	SLOPE	MRP	1911-1918	DANVILLE	VERMILION	19N	12W	20
3848	ELECTRIC COAL COMPANY	ELECTRIC	3	SLOPE	MRP	1918-1918	DANVILLE	VERMILION	19N	12W	20
3849	LARSON (C. W.)	LARSON		SLOPE	MRP	1933-1933	DANVILLE	VERMILION	19N	12W	21
3849	LARSON COAL COMPANY	LARSON		SLOPE	MRP	1934-1935	DANVILLE	VERMILION	19N	12W	21
3849	LARSON (CHESTER W.)	LARSON		SLOPE	MRP	1936-1936	DANVILLE	VERMILION	19N	12W	21
3849	RIVERBANK COAL COMPANY	RIVERBANK		SLOPE	MRP	1936-1943	DANVILLE	VERMILION	19N	12W	21
3849	SHARON COAL COMPANY	RIVERBANK		SLOPE	MRP	1943-1945	DANVILLE	VERMILION	19N	12W	21
3849	HENRY BROTHERS COAL COMPANY	RIVERBANK		SLOPE	MRP	1946-1947	DANVILLE	VERMILION	19N	12W	21

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3850	DIXON BLOCK COAL COMPANY	DIXON BLOCK	2	STRIP	STR	1944-1946	DANVILLE	VERMILION	19N	12W	30
3851	JOHNSON COAL COMPANY	JOHNSON	1	SLOPE	RP	1933-1934	DANVILLE	VERMILION	19N	12W	21
3851	JOHNSON COAL COMPANY	JOHNSON	2	SLOPE	RP	1934-1937	DANVILLE	VERMILION	19N	12W	21
3851	GIBSON COAL COMPANY	GIBSON		SLOPE	RP	1937-1938	DANVILLE	VERMILION	19N	12W	21
3851	BOCK COAL COMPANY	BOCK		SLOPE	RP	1938-1940	DANVILLE	VERMILION	19N	12W	21
3851	PIERCE (T. W.) COAL COMPANY	PIERCE	3	SLOPE	RP	1940-1941	DANVILLE	VERMILION	19N	12W	21
3852	SHEWARD & NEEK	SHEWARD & NEEK		DRIFT	RPB	1935-1935	DANVILLE	VERMILION	19N	12W	21
3852	SHEWARD (J. P.) COAL COMPANY	SHEWARD	1	DRIFT	RPB	1936-1937	DANVILLE	VERMILION	19N	12W	21
3853	JOHNSON & BOYER	JOHNSON & BOYER		DRIFT	RPB	1920-1923	DANVILLE	VERMILION	19N	12W	21
3853	JOHNSON (JOHN M.)	JOHNSON		DRIFT	RPB	1923-1932	DANVILLE	VERMILION	19N	12W	21
3853	JOHNSON COAL COMPANY	JOHNSON		DRIFT	RPB	1933-1933	DANVILLE	VERMILION	19N	12W	21
3853	JOHNSON & SON	JOHNSON		DRIFT	RPB	1934-1934	DANVILLE	VERMILION	19N	12W	21
3853	JOHNSON STRIPPING COMPANY	JOHNSON		DRIFT	RPB	1935-1935	DANVILLE	VERMILION	19N	12W	21
3853	JOHNSON COAL COMPANY	JOHNSON	2	DRIFT	RPB	1936-1936	DANVILLE	VERMILION	19N	12W	21
3853	JOHNSON (JOHN M.)	JOHNSON	2	DRIFT	RPB	1937-1940	DANVILLE	VERMILION	19N	12W	21
3854	JIM & JIM COAL COMPANY	JIM & JIM	2	SLOPE	RP	1936-1938	DANVILLE	VERMILION	19N	12W	21
3854	JONES & TRUAX COAL COMPANY	JONES & TRUAX	2	SLOPE	RP	1938-1939	DANVILLE	VERMILION	19N	12W	21
3854	SMITH (WILLIAM) COAL COMPANY	SMITH		SLOPE	RP	1939-1941	DANVILLE	VERMILION	19N	12W	21
3855	L. P. & S. COAL COMPANY	L. P. & S.		SLOPE	MRP	1932-1934	DANVILLE	VERMILION	19N	12W	21
3855	STINE COAL COMPANY	STINE		SLOPE	MRP	1935-1936	DANVILLE	VERMILION	19N	12W	21
3855	BECKER (JACOB J.)	BECKER		SLOPE	MRP	1937-1937	DANVILLE	VERMILION	19N	12W	21
3855	M. & P. COAL COMPANY	M. & P.		SLOPE	MRP	1937-1939	DANVILLE	VERMILION	19N	12W	21
3856	WILLIAMS (W. E.) COAL CO.	WILLIAMS	2	DRIFT	RP	1937-1938	DANVILLE	VERMILION	19N	11W	32
3857	HASS (WILLIAM J.)	HASS		DRIFT	MRP	1932-1932	DANVILLE	VERMILION	19N	12W	21
3858	UNITED ELECTRIC COAL COMPANY	UNITED ELECTRIC	14	DRIFT	RPP	1927-1931	DANVILLE	VERMILION	19N	12W	21

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3859	MAUCK (A. B.)	MAUCK		SLOPE	MRP	1923-1925	DANVILLE	VERMILION	19N	12W	21
3859	MAUCK (WALTER)	MAUCK		SLOPE	MRP	1925-1926	DANVILLE	VERMILION	19N	12W	21
3859	DEEP VALLEY COAL COMPANY	DEEP VALLEY		SLOPE	MRP	1926-1926	DANVILLE	VERMILION	19N	12W	21
3859	MAUCK (A. B.)	MAUCK		SLOPE	MRP	1927-1929	DANVILLE	VERMILION	19N	12W	21
3859	DEEP VALLEY COAL COMPANY	DEEP VALLEY		SLOPE	MRP	1930-1930	DANVILLE	VERMILION	19N	12W	21
3859	MAUCK (JOHN JR.)	MAUCK		SLOPE	MRP	1931-1932	DANVILLE	VERMILION	19N	12W	21
3859	DEEP VALLEY COAL COMPANY	DEEP VALLEY		SLOPE	MRP	1933-1936	DANVILLE	VERMILION	19N	12W	21
3859	DEEP VALLEY COAL COMPANY	DEEP VALLEY		SLOPE	MRP	1937-1942	DANVILLE	VERMILION	19N	12W	21
3859	MAUCK (A. B.)	DEEP VALLEY		SLOPE	MRP	1937-1939	DANVILLE	VERMILION	19N	12W	21
3860	ALLEN COAL	ALLEN						VERMILION	19N	12W	21
3861	TRUAX (CHARLES W.)	TRUAX		SLOPE	RP	1929-1928	DANVILLE	VERMILION	19N	12W	21
3862	DOOLITTLE COAL COMPANY	DOOLITTLE		STRIP	STR	1959-1960	DANVILLE	VERMILION	19N	12W	22
3863	F. B. & M. COAL COMPANY	F. B. & M.		SLOPE	RPP	1934-1939	DANVILLE	VERMILION	19N	12W	22
3863	B. & M. COAL COMPANY	B. & M.		SLOPE	RPP	1940-1940	DANVILLE	VERMILION	19N	12W	22
3863	F. B. & M. COAL COMPANY	F. B. & M.		SLOPE	RPP	1941-1944	DANVILLE	VERMILION	19N	12W	22
3864	L. & S. COAL COMPANY	L. & S.		SLOPE	MRP	1933-1942	DANVILLE	VERMILION	19N	12W	22
3865	RIPPON COAL COMPANY	RIPPON		SLOPE	MRP	1934-1936	DANVILLE	VERMILION	19N	12W	22
3865	JAY COAL COMPANY	I. L. TRUAX		SLOPE	MRP	1937-1938	DANVILLE	VERMILION	19N	12W	22
3866	SONDRY (MORRIS)	SONDRY		SLOPE	RPP	1942-1942	DANVILLE	VERMILION	19N	12W	22
3866	DEEP VALLEY COAL COMPANY	DEEP VALLEY	2	SLOPE	RPP	1943-1944	DANVILLE	VERMILION	19N	12W	22
3866	MAUCK (A.B. & HARRY) COAL CO	MAUCK		SLOPE	RPP	1945-1945	DANVILLE	VERMILION	19N	12W	22
3866	DEEP VALLEY COAL COMPANY	DEEP VALLEY		SLOPE	RPP	1946-1971	DANVILLE	VERMILION	19N	12W	22
3867	CESSNA COAL COMPANY	CESSNA		SLOPE	MRP	1933-1936	DANVILLE	VERMILION	19N	12W	22
3867	CESSNA BROTHERS COAL COMPANY	CESSNA		SLOPE	MRP	1937-1937	DANVILLE	VERMILION	19N	12W	22
3867	CESSNA (P.) COAL COMPANY	CESSNA	2	SLOPE	MRP	1938-1946	DANVILLE	VERMILION	19N	12W	22

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3867	CESSNA COAL COMPANY	CESSNA	1	SLOPE	MRP	1938-1938	DANVILLE	VERMILION	19N	12W	22
3867	CESSNA BROTHERS COAL COMPANY	CESSNA	2	SLOPE	MRP	1947-1950	DANVILLE	VERMILION	19N	12W	22
3869	NORTH CATLIN COAL COMPANY	NORTH CATLIN		SLOPE	RPB	1938-1943	DANVILLE	VERMILION	19N	12W	22
3870	LOVETT & SONS COAL COMPANY	LOVETT		SHAFT	RP	1935-1938	DANVILLE	VERMILION	19N	12W	22
3871	MAUCK (JOHN W.)& SON COAL CO	MAUCK		SLOPE	MRP	1935-1948	DANVILLE	VERMILION	19N	12W	22
3871	B-10 COAL COMPANY	B-10		SLOPE	MRP	1949-1959	DANVILLE	VERMILION	19N	12W	22
3872	ANDERSON (ALEX)	ANDERSON	1	SLOPE	RP	1931-1935	DANVILLE	VERMILION	19N	12W	22
3872	ANDERSON (ALEX) COAL COMPANY	ANDERSON	2	SLOPE	RP	1936-1941	DANVILLE	VERMILION	19N	12W	22
3872	ANDERSON-ANDERSON COAL CO.	ANDERSON		SLOPE	RP	1942-1942	DANVILLE	VERMILION	19N	12W	22
3872	ANDERSON (ALEX) COAL COMPANY	ANDERSON	2	SLOPE	RP	1943-1952	DANVILLE	VERMILION	19N	12W	22
3873	MAUCK BROTHERS COAL COMPANY	MAUCK		SLOPE	MRP	1929-1930	DANVILLE	VERMILION	19N	12W	23
3873	MAUCK(WALTER T. & ALBERT S.)	MAUCK		SLOPE	MRP	1931-1932	DANVILLE	VERMILION	19N	12W	23
3873	W. & W. COAL COMPANY	W. & W.		SLOPE	MRP	1933-1944	DANVILLE	VERMILION	19N	12W	23
3874	BIAVA (JOE)	BIAVA		SHAFT	RP	1936-1936	DANVILLE	VERMILION	19N	12W	25
3875	JONES MINE	JONES	3				DANVILLE	VERMILION	19N	12W	27
3876	BERTAN & HALL COAL COMPANY	BERTAN & HALL		SLOPE	MRP	1933-1935	DANVILLE	VERMILION	19N	12W	28
3876	B. & H. COAL COMPANY	B. & H.		SLOPE	MRP	1936-1937	DANVILLE	VERMILION	19N	12W	28
3876	CATLIN COAL COMPANY	CATLIN		SLOPE	MRP	1938-1946	DANVILLE	VERMILION	19N	12W	28
3876	B. S. & H. COAL COMPANY	B. S. H.		SLOPE	MRP	1946-1948	DANVILLE	VERMILION	19N	12W	28
3877	DIXON BLOCK COAL COMPANY	WALNUT GROVE		STRIP	STR	1946-1952	DANVILLE	VERMILION	18N	13W	1
3878	MAUCK (JOESEPH H.)	MAUCK		SLOPE	RPP	1910-1925	DANVILLE	VERMILION	19N	12W	30
3878	CENTRAL COAL COMPANY	CENTRAL NO. 1	1	SLOPE	RPP	1925-1927	DANVILLE	VERMILION	19N	12W	30
3878	CENTRAL COAL COMPANY	CENTRAL NO. 2	2	SLOPE	RPP	1928-1949	DANVILLE	VERMILION	19N	12W	30
3878	MAUCK (W. D.) COAL COMPANY	MAUCK		SLOPE	RPP	1950-1950	DANVILLE	VERMILION	19N	12W	30

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ISGS INDEX	COMPANY NAME	MINE NAME	MINE NO.	MINE TYPE	METHOD	YEARS OPERATED	SEAM MINED	COUNTY	LOCATION TWP	RGE	SEC
3878	CENTRAL COAL COMPANY	CENTRAL		SLOPE	RPP	1951-1952	DANVILLE	VERMILION	19N	12W	30
3879	FRANCE (S. & M.)	FRANCE		SHAFT	RP	1894-1896	DANVILLE	VERMILION	19N	12W	30
3879	FRANCE BROTHERS	FRANCE		SHAFT	RP	1896-1908	DANVILLE	VERMILION	19N	12W	30
3879	CRAWFORD BROTHERS	CRAWFORD		SHAFT	RP	1908-1913	DANVILLE	VERMILION	19N	12W	30
3880	BALDUCKI (LORENZO)	BALDUCKI		SHAFT	RP	1907-1913	DANVILLE	VERMILION	19N	12W	30
3881	CATLIN COAL COMPANY	CATLIN	1	SHAFT	RP	1895-1902	DANVILLE	VERMILION	19N	12W	35
3881	CATLIN COAL COMPANY	CATLIN	1	SHAFT	RP	1895-1902	HERRIN	VERMILION	19N	12W	35
3881	JONES & ADAMS COMPANY	JONES & ADAMS	2	SHAFT	RP	1902-1903	HERRIN	VERMILION	19N	12W	35
3881	CHICAGO COLLIERIES COMPANY	CHICAGO COLLIERIES	10	SHAFT	RP	1903-1907	DANVILLE	VERMILION	19N	12W	35
3881	JONES & ADAMS COMPANY	JONES & ADAMS	2	SHAFT	RP	1903-1904	DANVILLE	VERMILION	19N	12W	35
3881	CHICAGO COLLIERIES COMPANY	CHICAGO COLLIERIES	10	SHAFT	RP	1903-1907	HERRIN	VERMILION	19N	12W	35
3881	DANVILLE COLLIERIES COMPANY	CATLIN		SHAFT	RP	1907-1917	DANVILLE	VERMILION	19N	12W	35
3881	DANVILLE COLLIERIES COMPANY	CATLIN		SHAFT	RP	1907-1917	HERRIN	VERMILION	19N	12W	35
3881	TAYLOR & ENGLISH COAL CO.	TAYLOR-ENGLISH	1	SHAFT	RP	1917-1919	DANVILLE	VERMILION	19N	12W	35
3882	MUNCIE COAL COMPANY	MUNCIE NO. 1	1	SHAFT	RP	1893-1900	DANVILLE	VERMILION	19N	13W	9
3882	ENTRE NOUS COAL COMPANY	MUNCIE		SHAFT	RP	1900-1901	DANVILLE	VERMILION	19N	13W	9
3882	MUNCIE COAL COMPANY	MUNCIE NO. 1	1	SHAFT	RP	1901-1903	DANVILLE	VERMILION	19N	13W	9
3882	DAVIS (F. W.)	MUNCIE		SHAFT	RP	1903-1904	DANVILLE	VERMILION	19N	13W	9
3882	ATHERTON COAL COMPANY	ATHERTON NO. 1	1	SHAFT	RP	1904-1905	DANVILLE	VERMILION	19N	13W	9
3882	CENTRAL COAL & COKE CHICAGO	MUNCIE		SHAFT	RP	1905-1906	DANVILLE	VERMILION	19N	13W	9
3882	VERMILION VALLEY MINING CO.	VERMILION VALLEY		SHAFT	RP	1906-1907	DANVILLE	VERMILION	19N	13W	9
3882	DAVIS (FRANK)	MUNCIE		SHAFT	RP	1907-1908	DANVILLE	VERMILION	19N	13W	9
3882	BUSHONG BROTHERS	MUNCIE		SHAFT	RP	1908-1912	DANVILLE	VERMILION	19N	13W	9
3885	JORDAN & FALL COAL COMPANY	JORDAN & FALL		UG	RP	1932-1932	DANVILLE	VERMILION	19N	13W	27
3886	GEORGE BROS COAL COMPANY	GEORGE		SLOPE	MRP	1934-1940	DANVILLE	VERMILION	19N	13W	27
3887							DANVILLE	VERMILION	19N	13W	31

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3888	MIDDLE FORK COAL COMPANY	MIDDLE FORK	2	SLOPE	RP	1939-1948	DANVILLE	VERMILION	20N	12W	20
3889	CRAWFORD (W. F.) & SONS	CRAWFORD		SHAFT	RPB	1905-1918	DANVILLE	VERMILION	20N	12W	20
3890	SWISHER (SAMUEL)	PILOT		SHAFT	RP	1884-1888	DANVILLE	VERMILION	20N	12W	21
3891	MOORE (WILLIAM J.)	MOORE	1	SHAFT	RP	1888-1891	DANVILLE	VERMILION	20N	12W	29
3891	GLENBURN COAL COMPANY	GLENBURN		SHAFT	RP	1891-1892	DANVILLE	VERMILION	20N	12W	29
3891	BONNETT (ALEX H.)	BONNETT		SHAFT	RP	1892-1907	DANVILLE	VERMILION	20N	12W	29
3892	SWISHER (SAMUEL)	SWISHER		DRIFT	RP	1906-1908	DANVILLE	VERMILION	20N	12W	29
3893	CALVERT COAL COMPANY	CALVERT		SLOPE		1930-	DANVILLE	VERMILION	20N	12W	29
4221	I WONDER COAL CO.	I WONDER		UG	RP	1934-1935		VERMILION			
4536	ROBERTS COAL COMPANY	ROBERTS	2	SLOPE	RP	1938-1941	DANVILLE	VERMILION	19N	12W	13
4575	LEE COAL CO.	LEE		STRIP	STR	1960-1960	DANVILLE	VERMILION	19N	12W	20
5735				DRIFT	UG		HERRIN	VERMILION	19N	11W	16
6310	D. & B. COAL CO.	D. & B.		SLOPE	RP	1936-1937	DANVILLE	VERMILION	19N	11W	16
6458	MARTIN BROS COAL COMPANY	MARTIN	2	SLOPE	MRP	1939-1940	DANVILLE	VERMILION	19N	12W	13
6465	SHEWARD (J. P.) COAL COMPANY	SHEWARD	2	SLOPE	RPB	1937-1943	DANVILLE	VERMILION	19N	12W	21
6515							DANVILLE	VERMILION	19N	11W	17
6516	DENNIS COAL COMPANY	DENNIS		STRIP	STR	1949-1950	DANVILLE	VERMILION	19N	11W	21
6517	JUZAITIS COAL COMPANY	JUZAITIS		STRIP	STR	1956-1965	HERRIN	VERMILION	19N	11W	33
6517	TWO RIVERS COAL COMPANY	JUZAITIS		STRIP	STR	1966-1967	HERRIN	VERMILION	19N	11W	33

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6518				STRIP	STR		HERRIN	VERMILION	18N	11W	3
6519							DANVILLE	VERMILION	18N	11W	6
6521				STRIP			DANVILLE	VERMILION	18N	11W	34
6522	GEORGETOWN COAL CO.	GEORGETOWN	2			1953-1955	HERRIN	VERMILION	19N	11W	28
6523							DANVILLE	VERMILION	19N	12W	1
6525							DANVILLE	VERMILION	19N	12W	11
6526	CORBIN (E. W.) COAL COMPANY	CORBIN		STRIP	STR	1947-1949	DANVILLE	VERMILION	19N	12W	16
6528							DANVILLE	VERMILION	19N	12W	16
6529	NEUBERT COAL COMPANY	NEUBERT MINE		STRIP	STR	1950-1951	DANVILLE	VERMILION	19N	12W	16
6530							DANVILLE	VERMILION	19N	12W	21
6532							DANVILLE	VERMILION	19N	12W	21
6534	MIDDLE FORK COAL COMPANY	MIDDLEFORK		SLOPE	RP	1933-1936	DANVILLE	VERMILION	20N	12W	29
6534	FLETCHER BORTHERS COAL CO.	HOMER FLETCHER		SLOPE	RP	1937-1937	DANVILLE	VERMILION	20N	12W	29
6536							DANVILLE	VERMILION	19N	12W	31
6537	YANKEE BRANCH COAL COMPANY	YANKEE BRANCH	1	STRIP		1922-1926	HERRIN	VERMILION	17N	11W	11
6537	YANKEE BRANCH	YANKEE BRANCH	1	STRIP		1934-1935	HERRIN	VERMILION	17N	11W	11
6538	CAMPBELL (J. J.) & SON	CAMBELL		STRIP		1910-1911	HERRIN	VERMILION	17N	11W	12
6539				STRIP			HERRIN	VERMILION	17N	11W	14

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6541	BIGGS & FRAZEE	BIGGS & FRAZEE		DRIFT	RP		DANVILLE	VERMILION	19N	11W	17
6543	CO #556 BEFORE 1943			STRIP	STR		HERRIN	VERMILION	18N	11W	14
6544	CO #509 BEFORE 1943			DRIFT			HERRIN	VERMILION	18N	11W	14
6545	BEFORE 1943						DANVILLE	VERMILION	19N	12W	1
6546							DANVILLE	VERMILION	19N	12W	1
6547	BEFORE 1943						DANVILLE	VERMILION	19N	12W	1
6548	BEFORE 1943						DANVILLE	VERMILION	19N	12W	11
6549	STINE (WILLIAM)	STINE		DRIFT	RP	1901-1904	DANVILLE	VERMILION	19N	12W	11
6550	BEFORE 1943						DANVILLE	VERMILION	19N	12W	11
6552	BEFORE 1943						DANVILLE	VERMILION	19N	12W	12
6553	BEFORE 1943						DANVILLE	VERMILION	19N	12W	14
6555							DANVILLE	VERMILION	19N	12W	1
6556							DANVILLE	VERMILION	19N	11W	6
6558							DANVILLE	VERMILION	19N	11W	7
6559	BEFORE 1900						DANVILLE	VERMILION	19N	11W	7
6560	BEFORE 1943						DANVILLE	VERMILION	19N	11W	7
6561	BEFORE 1943						DANVILLE	VERMILION	19N	11W	7

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6562	BEFORE 1943						DANVILLE	VERMILION	19N	11W	17
6563	BEFORE 1900						DANVILLE	VERMILION	19N	11W	18
6565							DANVILLE	VERMILION	19N	11W	32
6566	BEFORE 1943				UG		HERRIN	VERMILION	19N	11W	33
6567	NELSON & SON	NELSON & SON		SLOPE	RP		HERRIN	VERMILION	19N	11W	34
6568	BEFORE 1943			UG			HERRIN	VERMILION	19N	11W	34
6569	BEFORE 1936			UG			HERRIN	VERMILION	19N	11W	34
6574	TILTON COAL COMPANY	TILTON		UG	MRP	1922-1923	DANVILLE	VERMILION	19N	12W	13
6574	WEST TILTON COAL COMPANY	WEST TILTON		UG	MRP	1923-1925	DANVILLE	VERMILION	19N	12W	13
6575	SALT FORK COAL CORPORATION	SALT FORK	1	STRIP	STR	1953-1955	DANVILLE	VERMILION	19N	12W	17
6575	SEYMOUR COAL COMPANY	SEYMOUR		STRIP	STR	1957-1959	DANVILLE	VERMILION	19N	12W	17
6576								VERMILION	19N	12W	17
6577	OPER 1945							VERMILION	19N	12W	17
6578				SLOPE			DANVILLE	VERMILION	19N	12W	18
6579	WOODARD COAL COMPANY	WOODARD		SHAFT	MRP	1912-1915	DANVILLE	VERMILION	19N	12W	19
6579	WOODARD (FRANK)	WOODARD		SHAFT	MRP	1915-1920	DANVILLE	VERMILION	19N	12W	19
6579	WOODARD (BURT)	WOODARD		SHAFT	MRP	1920-1922	DANVILLE	VERMILION	19N	12W	19
6579	WOODARD (FRANK)	WOODARD		SHAFT	MRP	1922-1932	DANVILLE	VERMILION	19N	12W	19
6579	WOODARD COAL COMPANY	WOODARD		SHAFT	MRP	1933-1936	DANVILLE	VERMILION	19N	12W	19
6579	LARSON (CHESTER W.)	WOODARD		SHAFT	MRP	1937-1939	DANVILLE	VERMILION	19N	12W	19
6579	WOODARD COAL COMPANY	WOODARD		SHAFT	MRP	1940-1940	DANVILLE	VERMILION	19N	12W	19

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6579	WOODARD COAL COMPANY	WOODARD		SHAFT	MRP	1940-1941	DANVILLE	VERMILION	19N	12W	19
6579	BUSKIRK COAL COMPANY	WOODARD		SHAFT	MRP	1941-1943	DANVILLE	VERMILION	19N	12W	19
6580				DRIFT				VERMILION	19N	12W	20
6582	HODGES (BEN)	HODGES		DRIFT	RP	1878-1882	DANVILLE	VERMILION	19N	12W	27
6582	HODGES (DANIEL)	HODGES		DRIFT	RP	1882-1883	DANVILLE	VERMILION	19N	12W	27
6582	HODGES (B. F.)	HODGES		DRIFT	RP	1883-1885	DANVILLE	VERMILION	19N	12W	27
6582	HODGES (WILLIAM)	HODGES		DRIFT	RP	1885-1888	DANVILLE	VERMILION	19N	12W	27
6583							DANVILLE	VERMILION	19N	12W	30
6584							DANVILLE	VERMILION	19N	13W	25
6586	RAMEY (WILLARD A.)	RAMEY		STRIP		1927-1935	HERRIN	VERMILION	17N	11W	11
6640				SHAFT	UG		DANVILLE	VERMILION	19N	12W	20
6649	LARSON (JOHN) COAL CO.	LARSON		SLOPE	RP	1919-1937	HERRIN	VERMILION	18N	11W	33
6670	BENNETT,WM H	BENNETT		SLOPE		1918-1923	DANVILLE	VERMILION	19N	11W	16
6675	LIND (CHARLES E.) COAL CO.	LIND		DRIFT	RP	1923-1926	DANVILLE	VERMILION	19N	12W	1
6675	LIND (AUGUST)	LIND		DRIFT	RP	1927-1928	DANVILLE	VERMILION	19N	12W	1
6675	LIND COAL COMPANY	LIND		DRIFT	RP	1929-1936	DANVILLE	VERMILION	19N	12W	1
6675	LIND(CHARLES E)& SON COAL CO	LIND	1	DRIFT	RP	1937-1939	DANVILLE	VERMILION	19N	12W	1
6748	WATTS (GEORGE)	WATTS		SLOPE	RP	1893-1896	DANVILLE	VERMILION	19N	12W	1
6749	LEWIS (JOHN)	LEWIS		SLOPE	RP	1888-1891	DANVILLE	VERMILION	19N	12W	1
6750	DOBBINS (C. J.)	DOBBINS		STRIP	STR	1888-1890	DANVILLE	VERMILION	19N	12W	1
6750	DOBBINS (JOHN)	DOBBINS		STRIP	STR	1890-1891	DANVILLE	VERMILION	19N	12W	1
6750	DOBBINS (CHARLES)	DOBBINS		STRIP	STR	1891-1892	DANVILLE	VERMILION	19N	12W	1

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6750	WATTS (GEORGE)	WATTS		STRIP	STR	1892-1893	DANVILLE	VERMILION	19N	12W	1
6750	DOBBINS (WILLIAM)	DOBBINS		STRIP	STR	1893-1895	DANVILLE	VERMILION	19N	12W	1
6750	DOBBINS (C. J.)	DOBBINS		STRIP	STR	1895-1898	DANVILLE	VERMILION	19N	12W	1
6751	MILLER (GEORGE A.)	MILLER		DRIFT	RP	1916-1919	DANVILLE	VERMILION	19N	12W	11
6751	MILLER (D. A. & B. W.)	MILLER		DRIFT	RP	1920-1922	DANVILLE	VERMILION	19N	12W	11
6751	MILLER (B. W.)	MILLER		DRIFT	RP	1922-1923	DANVILLE	VERMILION	19N	12W	11
6752	J. & J. COAL COMPANY	J. & J.		DRIFT	RPB	1941-1941	DANVILLE	VERMILION	19N	12W	16
6752	L. G. COAL COMPANY	J. & J.		DRIFT	RPB	1942-1942	DANVILLE	VERMILION	19N	12W	16
6752	J. & J. COAL COMPANY	J. & J.		DRIFT	RPB	1943-1943	DANVILLE	VERMILION	19N	12W	16
6753	A. D. & L. COAL COMPANY	A. D. & L.		SLOPE	MRP	1936-1940	DANVILLE	VERMILION	19N	12W	13
6753	LAWSON COAL COMPANY	LAWSON		SLOPE	MRP	1936-1936	DANVILLE	VERMILION	19N	12W	13
6753	ASHBY COAL COMPANY	A. D. & L.		SLOPE	MRP	1941-1941	DANVILLE	VERMILION	19N	12W	13
6753	A. D. & L. COAL COMPANY	A. D. & L.		SLOPE	MRP	1942-1942	DANVILLE	VERMILION	19N	12W	13
6754	MAUCK BROTHERS	MAUCK		SLOPE	RP	1895-1909	DANVILLE	VERMILION	19N	12W	11
6755	STANSBURY & WATKINS COAL CO.	STANSBURY & WATKINS		DRIFT	RP	1888-1907	DANVILLE	VERMILION	19N	12W	1
6756	SPELLMAN (JOESEPH)	SPELLMAN		DRIFT	RP	1882-1883	HERRIN	VERMILION	19N	11W	33
6756	SPELLMAN (T. L.)	SPELLMAN	1	DRIFT	RP	1883-1891	HERRIN	VERMILION	19N	11W	33
6757	BLACK HAWK COAL COMPANY	BLACK HAWK	2	SLOPE	RP	1942-1944	DANVILLE	VERMILION	19N	12W	9
6758	LIND COAL COMPANY	LIND		SLOPE	RP	1947-1947	DANVILLE	VERMILION	19N	12W	1
6759	WILSON & GRIMES COAL COMPANY	WILSON & GRIMES		SLOPE	RP	1947-1948	DANVILLE	VERMILION	19N	12W	13
6760	KIESTLER HILL COAL COMPANY	KIESTLER HILL		STRIP	STR	1951-1951	DANVILLE	VERMILION	19N	12W	15
6761	LIME SPRINGS COAL COMPANY	LIME SPRINGS	1	SLOPE	MRP	1917-1918	DANVILLE	VERMILION	19N	12W	14
6761	DANVILLE MINING COMPANY	LIME SPRINGS		SLOPE	MRP	1918-1920	DANVILLE	VERMILION	19N	12W	14

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6762	LIME SPRINGS COAL COMPANY	LIME SPRINGS	2	SLOPE	MRP	1929-1936	DANVILLE	VERMILION	19N	12W	14
6763	SCOTT (ROBERT)& SONS COAL CO	SCOTT		SLOPE	RP	1940-1941	DANVILLE	VERMILION	19N	12W	14
6764				UG	RP		HERRIN	VERMILION	19N	11W	33
6765				UG	RP		HERRIN	VERMILION	19N	11W	34
6766				UG	RP		HERRIN	VERMILION	19N	11W	34
6768				UG	RP		HERRIN	VERMILION	19N	11W	33
6769				UG	RP		HERRIN	VERMILION	19N	11W	33
6770				UG	RP		HERRIN	VERMILION	19N	11W	33
6771	OLSON (JOHN)	OLSON		SLOPE	RP	1909-1912	HERRIN	VERMILION	19N	11W	33
6772	ASHBY COAL COMPANY	ASHBY		STRIP	STR	1926-1929	DANVILLE	VERMILION	19N	11W	21
6773	WESTERN BRICK COMPANY	WESTERN BRICK		STRIP	STR	1903-1904	DANVILLE	VERMILION	19N	11W	21
6774				SURF	SF		HERRIN	VERMILION	19N	11W	16
6775				SURF	SF		HERRIN	VERMILION	19N	11W	16
6776	LONE OAK COAL COMPANY	LONE OAK		SLOPE	MRP	1922-1923	DANVILLE	VERMILION	19N	12W	9
6777	ISENBURG (LEE)	ISENBURG		SLOPE	RP	1935-1935	DANVILLE	VERMILION	19N	12W	21
6778	REDMOND (VICTOR)	REDMOND		SLOPE	RP	1913-1914	DANVILLE	VERMILION	19N	12W	22
6778	THOMPSON COAL COMPANY	THOMPSON		SLOPE	RP	1930-1933	DANVILLE	VERMILION	19N	12W	22
6778	THOMPSON HOLLOW COAL COMPAN	THOMPSON HOLLOW	1	SLOPE	RP	1934-1938	DANVILLE	VERMILION	19N	12W	22

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6779	THOMPSON HOLLOW COAL COMPAN	THOMPSON HOLLOW	2	SLOPE	RP	1936-1936	DANVILLE	VERMILION	19N	12W	22
6780	JONES (EVAN J.)	JONES		UG	RP	1890-1903	DANVILLE	VERMILION	19N	12W	22
6781	WILSON (TODD) & COMPANY	WILSON		SHAFT	RP	1904-1905	DANVILLE	VERMILION	19N	12W	22
6781	BELUKI (LAWRENCE)	BELUKI		SHAFT	RP	1905-1906	DANVILLE	VERMILION	19N	12W	22
6781	BUCKELLEW (JOHN)	BUCKELLEW		SHAFT	RP	1906-1907	DANVILLE	VERMILION	19N	12W	22
6782	REDMOND (VICTOR)	REDMOND		STRIP	STR	1914-1915	DANVILLE	VERMILION	19N	12W	22
6783	BLUEBIRD COAL COMPANY	BLUEBIRD		SLOPE	RPB	1926-1926	HERRIN	VERMILION	19N	11W	21
6784	CASWELL (ROBERT)	CASWELL		SHAFT	RPB	-1936	DANVILLE	VERMILION	19N	12W	21
6785	JENKINS	JENKINS		DRIFT	RP	-1937	DANVILLE	VERMILION	19N	12W	21
6786	CARBON COAL COMPANY	CARBON		SLOPE	RP	1934-1937	DANVILLE	VERMILION	19N	12W	1
6786	EUREKA COAL COMPANY	EUREKA		SLOPE	RP	1937-1938	DANVILLE	VERMILION	19N	12W	1
6787	MEEKER & MARTIN COAL COMPANY	MEEKER & MARTIN		SLOPE	MRP	1925-1927	DANVILLE	VERMILION	19N	11W	17
6787	MARTIN & MEEKER COAL COMPANY	MARTIN & MEEKER		SLOPE	MRP	1928-1929	DANVILLE	VERMILION	19N	11W	17
6787	MEEKER & MARTIN COAL COMPANY	MEEKER & MARTIN		SLOPE	MRP	1930-1930	DANVILLE	VERMILION	19N	11W	17
6787	MEEKER (EVERETT)	MEEKER		SLOPE	MRP	1931-1932	DANVILLE	VERMILION	19N	11W	17
6787	M. & M. COAL COMPANY	M. & M.		SLOPE	MRP	1933-1934	DANVILLE	VERMILION	19N	11W	17
6788	LLOYD (ELISHA)	LLOYD		SLOPE	RP	1889-1899	DANVILLE	VERMILION	19N	11W	7
6789	I. S. COTTON PROPERTY	COTTON				-1895		VERMILION	19N	12W	27
6790	BALES (JOE) & SON	BALES		SHAFT	MRP	1922-1923	DANVILLE	VERMILION	19N	12W	1
6790	BALES (HENRY)	BALES		SHAFT	MRP	1923-1924	DANVILLE	VERMILION	19N	12W	1
6790	BALES (PERRY) COAL COMPANY	BALES		SHAFT	MRP	1924-1932	DANVILLE	VERMILION	19N	12W	1

DIRECTORY OF COAL MINES FOR VERMILION COUNTY, ILLINOIS (February 2023)

ISGS INDEX	COMPANY NAME	MINE NAME	MINE NO.	MINE TYPE	METHOD	YEARS OPERATED	SEAM MINED	COUNTY	LOCATION TWP	RGE	SEC
6791	BALES & ARMSTRONG	BALES & ARMSTRONG		SLOPE	MRP	1922-1924	DANVILLE	VERMILION	19N	12W	1
6791	BALES & MCFARLAND	BALES & MCFARLAND		SLOPE	MRP	1925-1929	DANVILLE	VERMILION	19N	12W	1
6801	GENERAL AREA OF MINING	OLD DRIFTS		DRIFT	RP	1920-1930	DANVILLE	VERMILION	19N	12W	16
6802	LOMAX (GEORGE) & COMPANY	LOMAX		UG	RP	1931-1932	DANVILLE	VERMILION	19N	12W	22
6851	ELECTRIC COAL COMPANY	ELECTRIC	6	SLOPE	MRP	1918-1921	DANVILLE	VERMILION	19N	12W	8
6851	UNITED ELECTRIC COAL COMPANY	UNITED ELECTRIC	6	SLOPE	MRP	1921-1924	DANVILLE	VERMILION	19N	12W	8
7099				STRIP	STR		HERRIN	VERMILION	17N	11W	11
7100							HERRIN	VERMILION	17N	11W	11
7101	TERRILL (W. J.) landowner						HERRIN	VERMILION	18N	11W	34
7102	RICHARDSON (A. J.) landowner						HERRIN	VERMILION	18N	11W	34
7103	GONES (CHARLES)	GONES		SHAFT	RP	1868-1870	DANVILLE	VERMILION	19N	12W	27
7103	PAYNE (JAMES)	PAYNE		SHAFT	RP	1870-1881	DANVILLE	VERMILION	19N	12W	27
7103	PAYNE & HENDERSON	PAYNE & HENDERSON		SHAFT	RP	1881-1883	DANVILLE	VERMILION	19N	12W	27
7104	FAULDS (JOHN)	FAULDS		SHAFT	RP	1863-1870	DANVILLE	VERMILION	19N	12W	34
7104	MCNAIR & SWEANY	MCNAIR & SWEANY		SHAFT	RP	1870-1875	DANVILLE	VERMILION	19N	12W	34
7105				UG			DANVILLE	VERMILION	19N	12W	25
7106				UG			DANVILLE	VERMILION	19N	12W	25
7107	THOMAS (THOMAS)	THOMAS		SLOPE	RP	1875-1895	DANVILLE	VERMILION	19N	12W	21
7107	NEIL (WARREN)	NEIL		SLOPE	RP	1895-1898	DANVILLE	VERMILION	19N	12W	21
7108	PRICE (THOMAS)	PRICE		SLOPE	UG	1875-1879	DANVILLE	VERMILION	19N	12W	17

DIRECTORY OF COAL MINES FOR VERMILION COUNTY, ILLINOIS (February 2023)

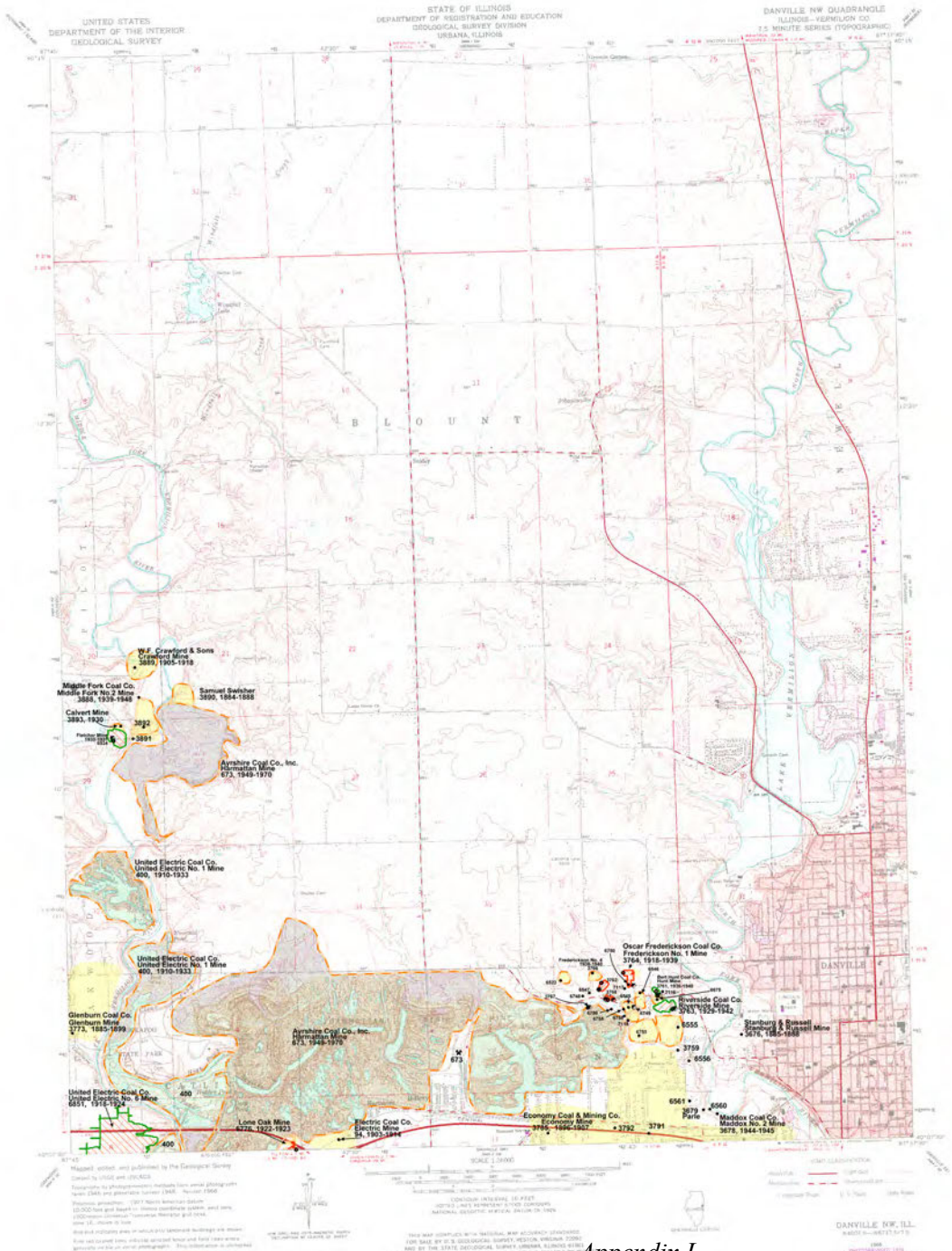
ISGS INDEX	COMPANY NAME	MINE NAME	MINE NO.	MINE TYPE	METHOD	YEARS OPERATED	SEAM MINED	COUNTY	LOCATION TWP	RGE	SEC
7109				UG		1875-	DANVILLE	VERMILION	19N	12W	9
7110				UG		1875-	DANVILLE	VERMILION	19N	12W	27
7111				UG		1875-	DANVILLE	VERMILION	19N	11W	17
7112				UG		1875-	DANVILLE	VERMILION	19N	11W	17
7113	CHICAGO & CARBON COAL CO.	CHICAGO & CARBON		UG	RP	1875-	DANVILLE	VERMILION	19N	11W	19
7114				UG		1875-	DANVILLE	VERMILION	19N	11W	7
7115				UG		1875-	DANVILLE	VERMILION	19N	11W	7
7116				UG		1875-	DANVILLE	VERMILION	19N	12W	1
7117				UG		1875-	DANVILLE	VERMILION	19N	12W	1
7118				UG		1875-	DANVILLE	VERMILION	19N	12W	1
7119				UG		1875-	DANVILLE	VERMILION	19N	12W	1
7120				UG			DANVILLE	VERMILION	19N	12W	2
7121				UG		1875-	DANVILLE	VERMILION	19N	12W	2
7122	BLAKENY (HUGH)	BLAKENY		DRIFT	RP	1866-1884	HERRIN	VERMILION	18N	11W	3
7122	BLAKENY (JOHN)	BLAKENY		DRIFT	RP	1885-1886	HERRIN	VERMILION	18N	11W	3
7123				UG			HERRIN	VERMILION	18N	11W	3
7124				UG		1875-	HERRIN	VERMILION	18N	11W	14
7125				UG		1875-	DANVILLE	VERMILION	19N	11W	17

DIRECTORY OF COAL MINES FOR VERMILION COUNTY, ILLINOIS (February 2023)

ISGS INDEX	COMPANY NAME	MINE NAME	MINE NO.	MINE TYPE	METHOD	YEARS OPERATED	SEAM MINED	COUNTY	LOCATION TWP	RGE	SEC
7126				UG		1875-	DANVILLE	VERMILION	19N	11W	17
7810							DANVILLE	VERMILION	19N	11W	7
7823	ELLSWORTH COAL CO.	ELLSWORTH	3	SHAFT	RP	1875-1886	DANVILLE	VERMILION	19N	11W	18
7823	CONSOLIDATED COAL STLOUIS	ELLSWORTH	3	SHAFT	RP	1886-1892	DANVILLE	VERMILION	19N	11W	18
7824				UG			DANVILLE	VERMILION	19N	11W	7
7825	(LiDAR generated polygon)			UG			HERRIN	VERMILION	19N	11W	34
7826	(LiDAR generated polygon)			UG			HERRIN	VERMILION	19N	11W	34
7827	(LiDAR generated polygon)			UG			DANVILLE	VERMILION	19N	11W	7
7828	(LiDAR generated polygon)			UG			DANVILLE	VERMILION	19N	11W	7
7829	(LiDAR generated polygon)			UG			DANVILLE	VERMILION	19N	11W	7
7830	(LiDAR generated polygon)			UG			DANVILLE	VERMILION	19N	12W	12
7831	(LiDAR generated polygon)			UG			DANVILLE	VERMILION	19N	12W	16
7832	(LiDAR generated polygon)			UG			DANVILLE	VERMILION	19N	11W	18
7833	(LiDAR generated polygon)			UG			DANVILLE	VERMILION	19N	12W	13
7834	(LiDAR generated polygon)			UG			DANVILLE	VERMILION	19N	12W	13
7835	(LiDAR generated polygon)			UG			DANVILLE	VERMILION	19N	12W	13
7836	(LiDAR generated polygon)			UG			DANVILLE	VERMILION	19N	12W	12

DIRECTORY OF COAL MINES FOR VERMILION COUNTY, ILLINOIS (February 2023)

ISGS INDEX	COMPANY NAME	MINE NAME	MINE NO.	MINE TYPE	METHOD	YEARS OPERATED	SEAM MINED	COUNTY	LOCATION TWP	RGE	SEC
7837	(LiDAR generated polygon)			UG			HERRIN	VERMILION	18N	11W	14



Coal Mines in Illinois
Danville Northwest Quadrangle
Vermilion County, Illinois

This map accompanies the Coal Mines Directory for the Danville Northwest Quadrangle. Consult the directory for a complete explanation of the information shown on this map.

Mining Method

- Room & Pillar (RP)
- Room & Pillar Basic (RPB)
- Modified Room & Pillar (MRP)
- Room & Pillar Panel (RPP)
- Blind Room & Pillar (BRP)
- Checkerboard Room & Pillar (CRP)
- High Extraction Retreat (HER)
- Longwall (LW)
- Underground, Method Unknown
- Strip Mine
- Auger Mine
- General Area of Mining

Source of Mine Outline

- Final Mine Map
- Not Final Mine Map
- Undated Mine Map
- Incomplete Mine Map
- Secondary Source Map

Tipple, Shaft, Slope, Drift Locations

- Strip Mine Tipple - Active
- Strip Mine Tipple - Abandoned
- Mine Shaft - Active
- Mine Shaft - Abandoned
- Mine Slope - Active
- Mine Slope - Abandoned
- Mine Drift - Active
- Mine Drift - Abandoned
- Air Shaft
- Uncertain Location
- Uncertain Type of Opening

Location

Mine Annotation
(space permiting)
Company
Mine Name
ISGS Index No., Years of Operation

Disclaimer

Please check the Coal Section at the Illinois State Geological Survey's web site at http://www.isgs.illinois.edu for the most up-to-date version of these products.

Note that each quadrangle scale mined-out area map requires the use of the associated text directory for full explanation of map features and mine attributes. Also note that some quadrangles have multiple seams of mining and therefore more than one map may be available for a particular quadrangle. Please take care to check for multiple maps, as extensive mining may exist in the other seams.

The maps and digital files used for these studies were compiled from data obtained from a variety of public and private sources and have varying degrees of completeness and accuracy. This compilation map presents reasonable interpretation of the geology of the area and is based on available data. Locations of some mine features may be offset by 500 feet or more due to errors in the original source maps, the compilation process, digitizing, or a combination of these factors. These data are not intended for use in site-specific screening or decision-making. Use of these documents does not eliminate the need for detailed studies to fully understand the geology of a specific site. The Illinois State Geological Survey, Prairie Research Institute, or the University of Illinois make no guarantee, expressed or implied, regarding the correctness of the interpretations presented in this data set and accept no liability for the consequences of decisions made by others on the basis of the information presented here.

These maps were designed for use at 1:24,000. Enlarging the map may reduce accuracy, as the original scale of the source maps used to compile the outlines shown varies from 1:400 to 1:150,000, and some mine locations are known only from text descriptions. See the accompanying mine directory for the original scale of the source map used for a specific mine to check accuracy of a given portion of the map. Areas with no mines shown may still be undermined; see the unlocated mines list at the back of each mine directory.

The image of the U.S.G.S. topographic base map was projected from the original UTM to Lambert Conformal Conic.

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

ISGS Illinois State Geological Survey Coal Section

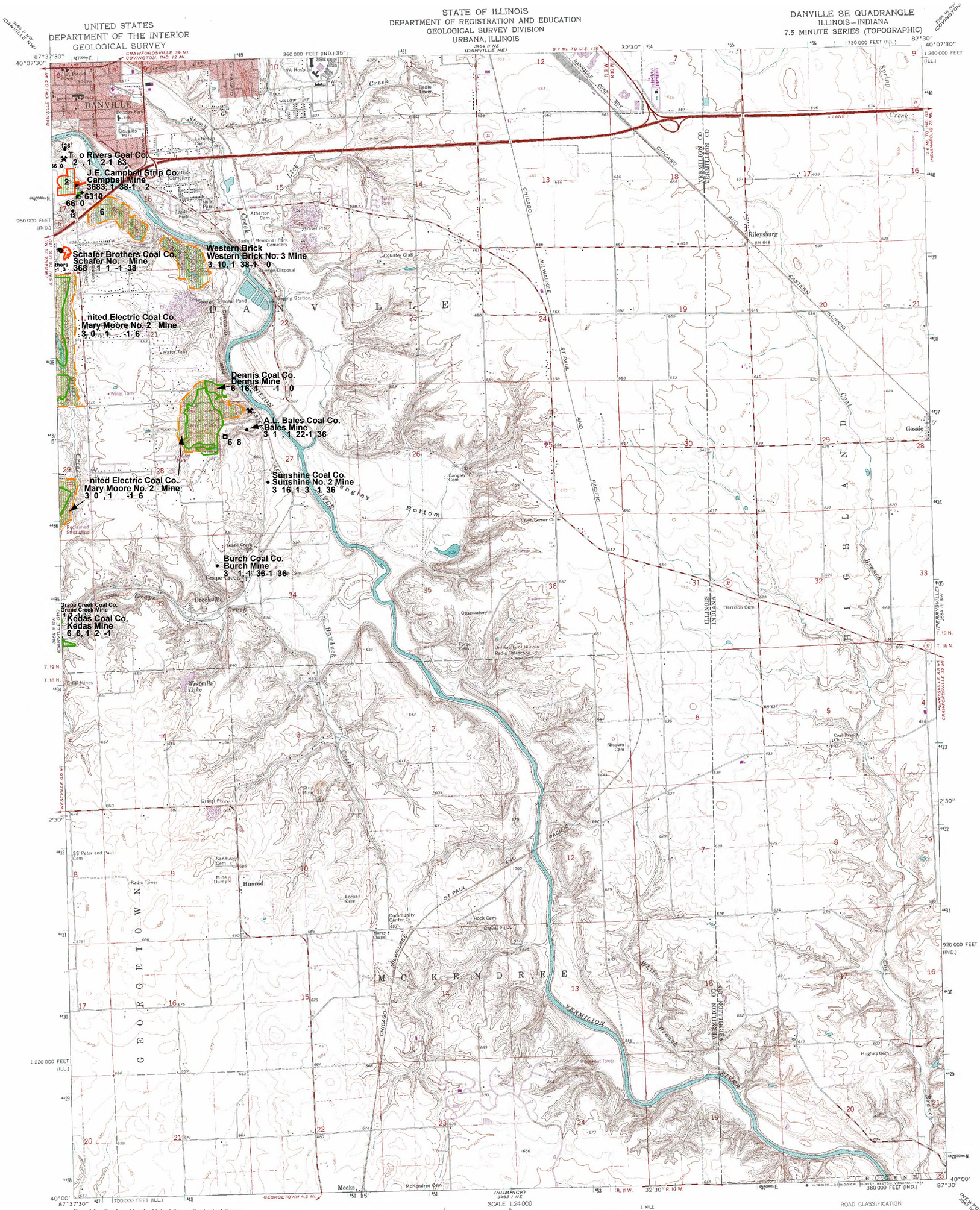
Illinois State Geological Survey
615 E. Peabody Dr.
Champaign, IL 61820

Mine Outlines Compiled by
Alan R. Myers & Melisa L. Borino

January 15, 2003

Revised October 4, 2007

Appendix L



Coal Mines in Illinois
Danville SE uadrangle

Vermilion County, Illinois

Danville Coal

This map accompanies the Coal Mines Directory for the Danville SE Quadrangle and the map of mines in the Danville Coal, Danville SE Quadrangle.
Consult the directory for a complete explanation of the information shown on this map.

Mining Method

- Room Pillar (RP)
- Room Pillar Basic (RPB)
- Modified Room Pillar (MRP)
- Room Pillar Panel (RPP)
- Blind Room Pillar (BRP)
- Checkerboard Room Pillar (CRP)
- High Extraction Retreat (HER)
- Longwall (LW)
- Underground, Method Unknown
- Strip Mine
- Auger Mine
- General Area of Mining

Other Areas Depicted

- Non-Coal Mines

Source of Mine Outline

- Final Mine Map
- Not Final Mine Map
- Undated Mine Map
- Incomplete Mine Map
- Secondary Source Map

Tipple, Shaft, Slope, Drift Locations

- Strip Mine Tipple - Active
- Strip Mine Tipple - Abandoned
- Mine Shaft - Active
- Mine Shaft - Abandoned
- Mine Slope - Active
- Mine Slope - Abandoned
- Mine Drift - Active
- Mine Drift - Abandoned
- Air Shaft
- Uncertain Location
- Uncertain Type of Opening

Other Points Depicted

- Non-Coal Mines

Location

Mine Annotation
(space permiting)
Company
Mine Name
ISGS Index No., Years of Operation

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These maps were designed for use at 1:2 , . Enlarging the map may reduce accuracy, as the original scale of the source maps used to compile the outlines shown varies from 1: to 1:1 , , and some mine locations are known only from text descriptions. See the accompanying mine directory for the original scale of the source map used for a specific mine to check accuracy of a given portion of the map. Areas with no mines shown may still be undermined; see the unlocated mines list at the back of each mine directory.

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Mine Outlines Compiled by
Alan R. Myers & Melisa L. Borino

September 2002, revised 200 , 2020 & 2022

Coal Mines in Illinois
Danville SW Quadrangle
Vermilion County, Illinois

Danville Coal

This map accompanies the Coal Mines Directory for the Danville SW Quadrangle and the map of mines in the Herrin Coal, Danville SW Quadrangle.
Consult the directory for a complete explanation of the information shown on this map.

Mining Method

- Room & Pillar (RP)
- Room & Pillar Basic (RPB)
- Modified Room & Pillar (MRP)
- Room & Pillar Panel (RPP)
- Blind Room & Pillar (BRP)
- Checkerboard Room & Pillar (CRP)
- High Extraction Retreat (HER)
- Longwall (LW)
- Underground, Method Unknown
- Strip Mine
- Auger Mine
- General Area of Mining

Other Areas Depicted

- Non-Coal Mines

Source of Mine Outline

- Final Mine Map
- Not Final Mine Map
- Undated Mine Map
- Incomplete Mine Map
- Secondary Source Map

Tipple, Shaft, Slope, Drift Locations

- Strip Mine Tipple - Active
- Strip Mine Tipple - Abandoned
- Mine Shaft - Active
- Mine Shaft - Abandoned
- Mine Slope - Active
- Mine Slope - Abandoned
- Mine Drift - Active
- Mine Drift - Abandoned
- Air Shaft
- Uncertain Location
- Uncertain Type of Opening

Other Points Depicted

- Non-Coal Mines

Location

Mine Annotation

(space permiting)
Company
Mine Name
ISGS Index No., Years of Operation

Disclaimer

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PRAIRIE RESEARCH INSTITUTE

Prairie Research Institute
Illinois State Geological Survey
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Champaign, IL 61820

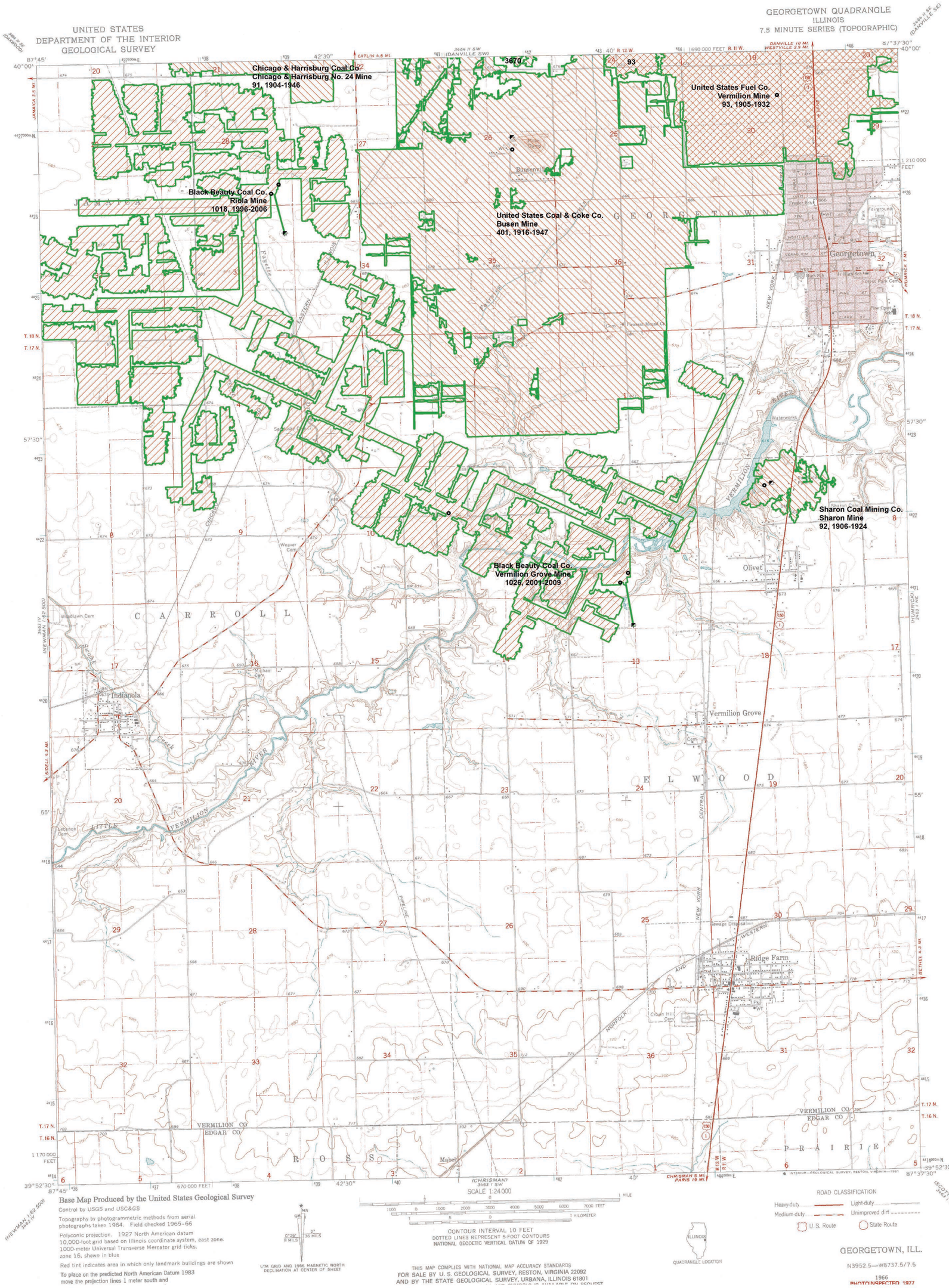
Mine Outlines Compiled by
Melisa L. Borino, Alan R. Myers,
& Jennifer M. Obrad

September 2002, revised 2007 & 2021

Coal Mines in Illinois
Georgetown Quadrangle

Vermilion & Edgar Counties, Illinois

This map accompanies the Coal Mines Directory for the Georgetown Quadrangle. Consult the directory for a complete explanation of the information shown on this map.



Mining Method

- Room & Pillar (RP)
- Room & Pillar Basic (RPB)
- Modified Room & Pillar (MRP)
- Room & Pillar Panel (RPP)
- Blind Room & Pillar (BRP)
- Checkerboard Room & Pillar (CRP)
- High Extraction Retreat (HER)
- Longwall (LW)
- Underground, Method Unknown
- Strip Mine
- Auger Mine
- General Area of Mining

Other Areas Depicted

- Non-Coal Mines

Source of Mine Outline

- Final Mine Map
- Not Final Mine Map
- Undated Mine Map
- Incomplete Mine Map
- Secondary Source Map

Tipple, Shaft, Slope, Drift Locations

- Strip Mine Tipple - Active
- Strip Mine Tipple - Abandoned
- Mine Shaft - Active
- Mine Shaft - Abandoned
- Mine Slope - Active
- Mine Slope - Abandoned
- Mine Drift - Active
- Mine Drift - Abandoned
- Air Shaft
- Uncertain Location
- Uncertain Type of Opening

Other Points Depicted

- Non-Coal Mines

Location

Mine Annotation

(space permiting)
Company
Mine Name
ISGS Index No., Years of Operation

Disclaimer

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ILLINOIS STATE GEOLOGICAL SURVEY
PRAIRIE RESEARCH INSTITUTE

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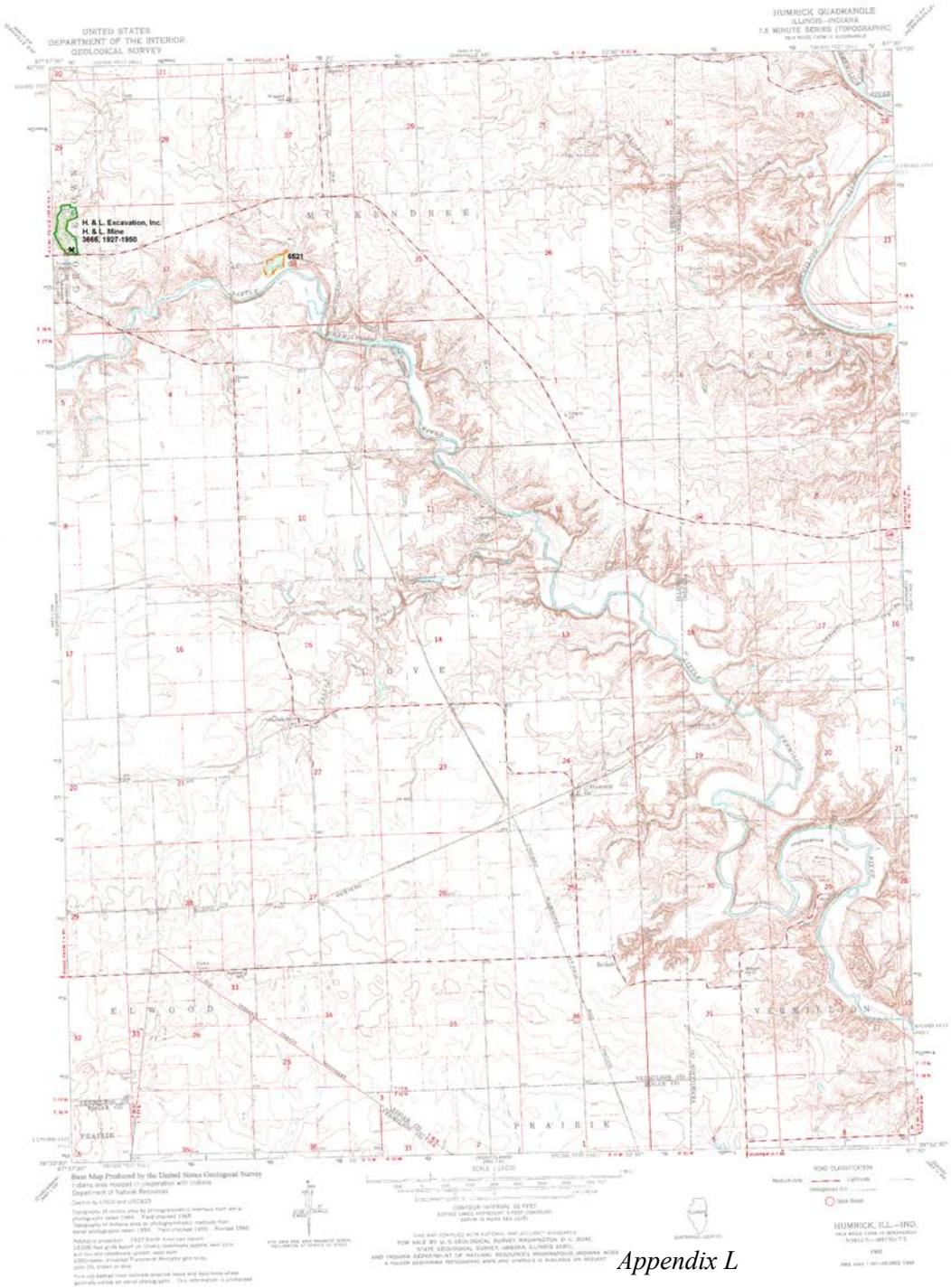
Champaign, IL 61820

Mine Outlines Compiled by
Jennifer M. Obrad

August 2010
Revised March 2017



Coal Mines in Illinois
Humrick Quadrangle

Vermilion & Edgar Counties, Illinois

Danville Coal

This map accompanies the Coal Mines Directory for the Humrick Quadrangle and map of mines in the Herrin Coal, Humrick Quadrangle. Consult the directory for a complete explanation of the information shown on this map.

Mining Method

- Room & Pillar (RP)
- Room & Pillar Basic (RPB)
- Modified Room & Pillar (MRP)
- Room & Pillar Panel (RPP)
- Blind Room & Pillar (BRP)
- Checkerboard Room & Pillar (CRP)
- High Extraction Retreat (HER)
- Longwall (LW)
- Underground, Method Unknown
- Strip Mine
- Auger Mine
- General Area of Mining

Source of Mine Outline

- Final Mine Map
- Not Final Mine Map
- Undated Mine Map
- Incomplete Mine Map
- Secondary Source Map

Tipple, Shaft, Slope, Drift Locations

- Strip Mine Tipple - Active
- Strip Mine Tipple - Abandoned
- Mine Shaft - Active
- Mine Shaft - Abandoned
- Mine Slope - Active
- Mine Slope - Abandoned
- Mine Drift - Active
- Mine Drift - Abandoned
- Air Shaft
- Uncertain Location
- Uncertain Type of Opening

Mine Annotation

(space permiting)
Company
Mine Name
ISGS Index No., Years of Operation

Location

DISCLAIMER

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The image of the U.S.G.S. Humrick Quadrangle used as a basemap was projected from the original UTM to Lambert Conformal Conic.

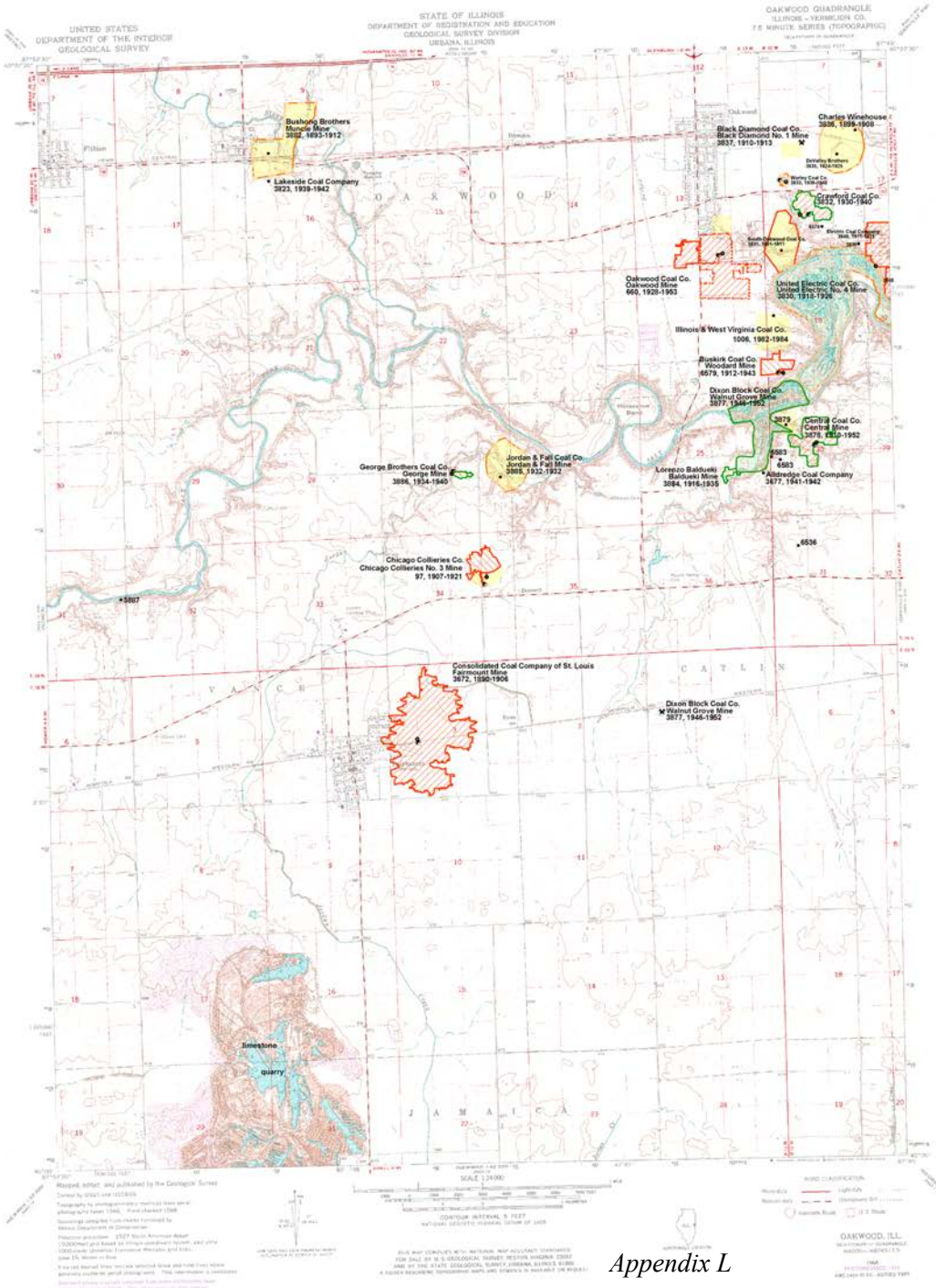
ILLINOIS DEPARTMENT OF NATURAL RESOURCES

ISGS Illinois State Geological Survey Coal Section

Illinois State Geological Survey
615 E. Peabody Dr.
Champaign, IL 61820

Mine Outlines Compiled by
Jennifer M. Obrad

September 5, 2007



Coal Mines in Illinois
Oakwood Quadrangle
Vermilion County, Illinois

This map accompanies the Coal Mines Directory for the Oakwood Quadrangle. Consult the directory for a complete explanation of the information shown on this map.

Mining Method

- Room & Pillar (RP)
- Room & Pillar Basic (RPB)
- Modified Room & Pillar (MRP)
- Room & Pillar Panel (RPP)
- Blind Room & Pillar (BRP)
- Checkerboard Room & Pillar (CRP)
- High Extraction Retreat (HER)
- Longwall (LW)
- Underground, Method Unknown
- Strip Mine
- Auger Mine
- General Area of Mining

Source of Mine Outline

- Final Mine Map
- Not Final Mine Map
- Undated Mine Map
- Incomplete Mine Map
- Secondary Source Map

Tipple, Shaft, Slope, Drift Locations

- Strip Mine Tipple - Active
- Strip Mine Tipple - Abandoned
- Mine Shaft - Active
- Mine Shaft - Abandoned
- Mine Slope - Active
- Mine Slope - Abandoned
- Mine Drift - Active
- Mine Drift - Abandoned
- Air Shaft
- Uncertain Location
- Uncertain Type of Opening

Mine Annotation

(space permiting)
Company
Mine Name
ISGS Index No., Years of Operation

Location

DISCLAIMER

These data were compiled and digitized from the best source maps available. Locations of some features may be offset by 500 feet of more due to errors in the original source maps, the compilation process, digitizing or a combination of these factors. Documentation of the source materials used is contained in the directory that accompanies this map. It is the user's responsibility to read this documentation and understand the limitations of the data. Though efforts have been made to compile these data accurately, the Illinois State Geological Survey does not guarantee the validity or the accuracy of these data.

The image of the U.S.G.S. Oakwood Quadrangle used as a basemap was projected from the original UTM to Lambert Conformal Conic.

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

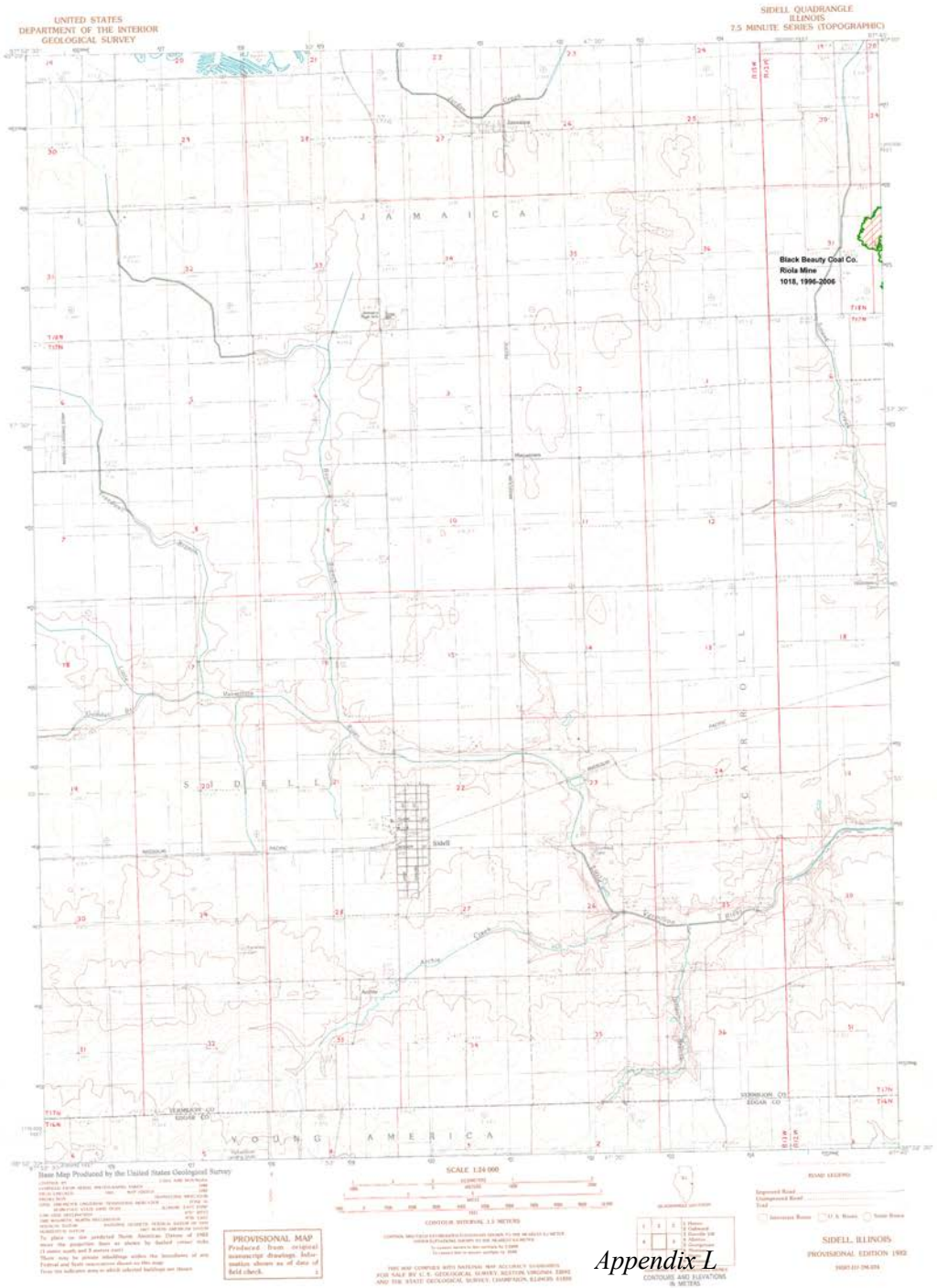
ISGS Illinois State Geological Survey Coal Section

Illinois State Geological Survey
615 E. Peabody Dr.
Champaign, IL 61820

Mine Outlines Compiled by
Jennifer M. Obrad & John J. LeGolvan

June 20, 2003
Revised May 25, 2006

Appendix L



Coal Mines in Illinois
Sidell Quadrangle
Vermilion & Edgar Counties, Illinois

This map accompanies the Coal Mines Directory for the Sidell Quadrangle. Consult the directory for a complete explanation of the information shown on this map.

Mining Method

- Room & Pillar (RP)
- Room & Pillar Basic (RPB)
- Modified Room & Pillar (MRP)
- Room & Pillar Panel (RPP)
- Blind Room & Pillar (BRP)
- Checkerboard Room & Pillar (CRP)
- High Extraction Retreat (HER)
- Longwall (LW)
- Underground, Method Unknown
- Strip Mine
- Auger Mine
- General Area of Mining

Source of Mine Outline

- Final Mine Map
- Not Final Mine Map
- Undated Mine Map
- Incomplete Mine Map
- Secondary Source Map

Tipple, Shaft, Slope, Drift Locations

- Strip Mine Tipple - Active
- Strip Mine Tipple - Abandoned
- Mine Shaft - Active
- Mine Shaft - Abandoned
- Mine Slope - Active
- Mine Slope - Abandoned
- Mine Drift - Active
- Mine Drift - Abandoned
- Air Shaft
- Uncertain Location
- Uncertain Type of Opening

Location

Mine Annotation
(space permiting)
Company
Mine Name
ISGS Index No., Years of Operation

Disclaimer

Please check the Coal Section at the Illinois State Geological Survey's web site at http://www.isgs.illinois.edu for the most up-to-date version of these products.

Note that each quadrangle scale mined-out area map requires the use of the associated text directory for full explanation of map features and mine attributes. Also note that some quadrangles have multiple seams of mining and therefore more than one map may be available for a particular quadrangle. Please take care to check for multiple maps, as extensive mining may exist in the other seams.

The maps and digital files used for these studies were compiled from data obtained from a variety of public and private sources and have varying degrees of completeness and accuracy. This compilation map presents reasonable interpretation of the geology of the area and is based on available data. Locations of some mine features may be offset by 500 feet or more due to errors in the original source maps, the compilation process, digitizing, or a combination of these factors. These data are not intended for use in site-specific screening or decision-making. Use of these documents does not eliminate the need for detailed studies to fully understand the geology of a specific site. The Illinois State Geological Survey, Institute of Natural Resource Sustainability, or the University of Illinois make no guarantee, expressed or implied, regarding the correctness of the interpretations presented in this data set and accept no liability for the consequences of decisions made by others on the basis of the information presented here.

These maps were designed for use at 1:24,000. Enlarging the map may reduce accuracy, as the original scale of the source maps used to compile the outlines shown varies from 1:400 to 1:150,000, and some mine locations are known only from text descriptions. See the accompanying mine directory for the original scale of the source map used for a specific mine to check accuracy of a given portion of the map. Areas with no mines shown may still be undermined; see the unlocated mines list at the back of each mine directory.

The image of the U.S.G.S. topographic base map was projected from the original UTM to Lambert Conformal Conic.

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UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Institute of Natural Resource Sustainability
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Mine Outlines Compiled by
Jennifer M. Obrad

August 13, 2010

Appendix L

APPENDIX M

Table 5-6: List of Mitigation Strategies Developed at Meeting 4 for Vermilion County*

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
1	Back-up Generators	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	High	Vermilion County plans to obtain back-up generators for the Courthouse, Courthouse Annex, and other County owned buildings and grounds.
2	Fuel Supply Station	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	High	Vermilion County wishes to build a multi-fuel station to supply gasoline, diesel to emergency vehicles.
3	Procure a Back-up Water Supply	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	All Hazards	High	Vermilion County would like to seek funding for a backup water supply.
4	Develop Alternate Traffic Routes	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Develop alternate traffic routes for critical roads	All Hazards	High	Vermilion County wishes to study and develop alternate traffic routes for Georgetown Road in the event of a HAZMAT incident. In addition, it would be useful to study and develop alternate traffic routes for other choke points in the county.
5	Public Education/Awareness	Goal: Develop long-term strategies to educate Vermilion County residents on the hazards affecting their community Objective: Raise public awareness of hazard mitigation	All Hazards	Medium	Vermilion County plans to raise public awareness of hazard risk to the county through a Facebook page, a local television channel, and a local radio frequency. This item is ongoing.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
6	Review Evacuation Plans	Goal: Develop long-term strategies to educate residents on the hazards affecting their community Objective: Improve education and training of emergency personnel and public officials	All Hazards	High	Vermilion County plans to review and enhance Evacuation law and plans. Shelter In Place will be enforced.
7	Enhance Alternate Emergency Operations Center	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	All Hazards	Medium	Vermilion County would like to enhance the alternate EOC facilities with communication, telephones, and other equipment.
8	Data Acquisition	Goal: Create new or revise existing plans/maps for county Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	All Hazards	High	Vermilion County would like to implement a plan to gather damage information for the E911 center. This will enhance damage assessments in a timely manner.
9	First Responders Study	Goal: Develop long-term strategies to educate residents on the hazards affecting their community Objective: Improve education and training of emergency personnel and public officials	All Hazards	Low	Vermilion County has a high degree of volunteers and low budget agencies that are having difficulties maintaining their operations. The county would like to study the situation and future of quality and quantity of First Responders and their agencies.
10	Evaluate Current Radio Community Capability Between Emergency Department	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency community in the county	All Hazards	High	Vermilion County would like to hire an independent radio communications engineering firm to evaluate our existing county radio communications network and advise us how we can utilize our existing system better, enhance our existing system or start replacing our systems to better serve Public Safety Agencies in the county for the future.
11	Install Traffic Cameras	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	All Hazards	Medium	Vermilion County would like to install traffic cameras in different areas of the county to get a better idea of road conditions and problems.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
12	Burn Ordinances	Goal: Create new or revise existing plans/maps for county Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Extreme Heat/Drought	High	Vermilion County would like to review and enhance current burn ordinances. The EMA will work with the Health Department and Fire Departments for enforcement.
13	Evaluate Water Source Sustainability	Goal: Evaluate the county's water source for the future Objective: Determine where the County's major water source is located	Extreme Heat/Drought	High	Vermilion County would like to evaluate water source sustainability for the future. This would require an evaluation of surface water level and quality trends.
14	Cooling/Warming Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	Extreme Temperatures	High	Vermilion County would like to improve the County's emergency sheltering.
15	Institute a buy-out plan for repetitive loss properties	Goal: Remove at risk structures to reduce flood losses Objective: Support compliance with the NFIP for each jurisdiction.	Flood	High	Vermilion County would like to assist the City of Danville on a buyout program at the Morin addition. The county would also like to investigate the possibility of purchasing lowlands adjacent to the state and county parks for a flood basin.
16	Participate in the NFIP	Goal: Create new or revise existing plans/maps for Vermilion County Objective: Support compliance with the NFIP for each jurisdiction in Vermilion County	Flooding	Medium	Vermilion County currently participates in NFIP. Vermilion County EMA will continue to administration of this program and satisfy all requirements of the NFIP. The county wishes to hire part-time or full-time personnel to train county board members and other elected officials about NFIP and how it affects the county. The county will continue to train new personnel in administration NFIP.
17	Floodplain Ordinance	Goal: Create new or revise existing plans/maps for Vermilion County Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Flooding	High	Vermilion County will review the current floodplain ordinances within the county in order to satisfy all requirements of the NFIP.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
18	Update Countywide GIS Capabilities	Goal: Upgrade GIS Objective: Identify flood areas for planning.	Flooding	High	Vermilion County wishes to identify flood prone areas by upgrading GIS data layers. This will enhance floodplain management countywide.
19	Flood Monitoring	Goal: Install new stream gauges on the river in Georgetown, IL Objective: Better monitoring of flooding in South Vermilion County	Flooding	High	Vermilion County has identified portion of the county that are prone to flooding. The county wishes to enhance flood monitoring along the river in Georgetown IL by installing new stream gauges.
20	Elevate Low-lying Roads	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Flooding	Medium	Vermilion County has identified low lying roads that need to be elevated in order to lessen the impacts of flooding. These roads will be added to the countywide GIS dataset.
21	Evaluate the Feasibility of Joining CRS	Goal: Reduce Flood losses, facilitate accurate insurance ratings, and promote awareness of flood insurance Objective: Encourage community floodplain management activities that exceed the minimum NFIP requirements	Flooding	Medium	Vermilion County would like to explore the idea of joining CRS and encourage county wide participation. The County wishes to help residents understand flood risk, improve flood maps and regulations to ensure safer development, protect existing development form flood damage, and prepare for floods with plans and warning systems.
22	Create an MOU between agencies for abandoned vehicles	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Clear up congestion of vehicles that have been abandoned on roadways	Winter Storms	Low	Vermilion County would like to locate an area that vehicles can be towed/stored when abandoned on major highways during winter storms.

*Allerton, Alvin, Belgium, Fairmount, Georgetown, Henning, Indianola, Oakwood, Potomac, Rankin, Rossville, Tilton and Westville adopts Vermilion County's Mitigation Strategies

Table 5-7: List of Mitigation Strategies Developed at Meeting 4 for Bismarck

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
23	Back-up Generators	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	All Hazards	Low	Bismarck wishes to seek funding to obtain back-up generates for the village office and garages. The USDA is a potential funding source.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
24	Stormwater Management Ordinances	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Flooding	High	Bismarck hopes to start a full village drainage project. As of 2014, the village does not have a stormwater ordinance in place. The USDA is a potential funding source.
25	Waterway management	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Flooding	Medium	Bismarck has identified regions where large amounts of debris and growth accumulates along creeks during large amounts of precipitation. The village would like to start a project that clears the creeks of debris and growth. The USDA is a potential funding source.
26	Emergency Plan / Protocol for HAZMAT	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	HAZMAT	High	Bismarck Fire Department will oversee this project.
27	Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Tornadoes	Low / Medium	Bismarck would like to bury power lines in the downtown section. This would be done as part of the village's development plan. The USDA is a potential funding source.
28	Install Battery-Backup Storm Sirens	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	Tornadoes	High	Bismarck would like to install battery-backup storm sirens to improve warning time. The village will oversee the project. The USDA is a potential funding source.
29	Buy supplies for the fire station	Goal: Lessen the impacts of people being forced out of homes Objective: Improve fire stations as emergency shelters	Winter Storms	High	Bismarck would like to obtain cots and blankets for the fire station. This will improve the fire station as an emergency shelter. The Fire Department will oversee the project and will start as soon as possible.

Table 5-8: List of Mitigation Strategies Developed at Meeting 4 for Catlin

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
30	Provided and Publicize Location of Safe Rooms and / or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	All Hazards	High	The Village of Catlin would like to improve the emergency sheltering and publicize the locations to residents.
31	Back-up Generators	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	All Hazards	High	The Village of Catlin Fire Departments currently have back-up generators.
32	Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Medium	The Village of Catlin has already established mutual aid agreements with ILEAS.
33	Procure a Back-up Water Supply	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	All Hazards	Low	The Village of Catlin acknowledges the need for a back-up water supply in the event of a hazardous event. The Water Department has reserves in the water tower.
34	Cooling/Warming Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	Extreme Temperatures	High	The Village of Catlin currently uses City Hall and the Fire Departments as shelters.
35	Property Acquisitions (buyouts)	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Flooding	Medium	Catlin would like to consider property acquisitions as a mitigation option and will seek funding. In the past the village has purchased property if the owner was willing to sell.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
36	Floodplain Ordinances	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Flooding	Medium	The village currently does not have flood ordinance in place and will work to develop one in the future
37	Stormwater Management Ordinance	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Flooding	Low	Stormwater management currently falls under the Sewer Department jurisdiction.
38	Emergency Plan / Protocol for HAZMAT	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	HAZMAT	Medium	The Village of Catlin currently has a HAZMAT Emergency plan on file.
39	Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Tornado / Severe Storms	Low	Most, not all, of new construction in the Village of Catlin currently buries power lines. The Village will consider this mitigation strategy for the future.
40	Anchoring of Manufactured Homes & Exterior Attachments	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Tornado / Severe Storms	Low	The Village of Catlin currently has an ordinance on file for anchoring of Manufactured Homes and Exterior Attachments.

Table 5-9: List of Mitigation Strategies Developed at Meeting 4 for Danville

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
41	Back-up Generators	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	All Hazards	Medium	Danville wishes to seek funding for back-up generators to keep critical facilities operational during a hazard event.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
42	Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	High	The City of Danville will work to develop mutual aid agreements between neighboring communities and between fire and police departments.
43	Cooling/Warming Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	Extreme Temperatures	Medium	The City of Danville currently uses City Hall and the Fire Departments as shelters but would like to increase sheltering in the city.
44	Property Acquisition (Buyouts)	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Flooding	High	Danville would like to investigate the opportunity for property acquisition. Moran Edition sits close to the River, almost every spring the residents have to be evacuated from their homes. Property buyouts would be an ideal solution for this location and others in the city.
45	Floodplain ordinances	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Flooding	Medium	Updating Danville's current floodplain ordinance will help new development in the city mitigation against flood damages.
46	Identification of Floodplain Structures	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Examine flood loss areas and generate a comprehensive list of structures located in floodplains	Flooding	High	Danville will use the research conducted in this plan to create a comprehensive list of floodplain structures.
47	Emergency Plan / Protocol for HAZMAT	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	HAZMAT	Low	The City of Danville currently would like to develop an emergency HAZMAT release plan.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
48	Provide and Publicize Location of Safe Rooms and/or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering	Tornadoes / Severe Storms	High	Danville plans to publicize the location of shelters to its residents.
49	Install Tornado Safe Room	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering	Tornadoes / Severe Storms	High	Danville wishes to seek funding for construction of a tornado safe room. Although several churches in the city have safe rooms, there is a need for additional safe rooms in the city to aid a larger portion of the residents.

Table 5-10: List of Mitigation Strategies Developed at Meeting 4 for Fithian

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
50	Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	High	Fithian would like to establish mutual aid agreements and plans to develop a triage area and transportation to/from medical facilities.
51	Back-up Generators	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	All Hazards	High	Fithian would like to obtain back-up generators to keep the water and sewer supply operational during a hazard event.
52	Family Disaster Plans & Kits	Goal: Develop long-term strategies to educate residents on the hazards affecting their community Objective: Raise public awareness on hazard mitigation	All Hazards	High	Fithian has identified the need to raise public awareness in the event of a disaster and to encourage residents to expand disaster planning to include animal rescue.
53	Establish Local Planning Committee	Goal: Create new or revise existing plans/maps for the county Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	All Hazards	High	Fithian would like to establish a local emergency planning committee. This group will be designated to organize emergency procedures.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
54	Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	High	Fithian plans to publicly appeal to its citizens and ask the special needs population or those caring for them to provide data for this list.
55	Procure a Back-up Shelter Supplies	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	All Hazards	High	Fithian would like to obtain bottled water, food rations, and first aid supplies for all residents.
56	Harden Existing Infrastructure	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	All Hazards	High	Fithian has identified the need to harden the existing infrastructure for the following facilities/locations: wells; sewer plant, and lift stations
57	Burn Ordinances	Goal: Create new or revise existing plans/maps for county Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Extreme Heat/Drought	High	Fithian would like to explore the option of burn ordinances in the village.
58	Cooling/Warming Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	Extreme Temperatures	Medium	Fithian would like to improve the village's emergency sheltering.
59	Emergency Plan / Protocol for HAZMAT	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	HAZMAT	High	Fithian would like to create an emergency plan for Hazmat incidents.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
60	Provide and Publicize Location of Safe Rooms and / or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	Tornado	High	Fithian has identified the need for more safe shelters in the village.
61	Tree Management/Trimming Plan	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	Tornado / Severe Storms	High	Fithian would like to have limbs cleared from power lines and for low-hanging limbs to be cleared.

Table 5-11: List of Mitigation Strategies Developed at Meeting 4 for Hoopeston

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
62	Back-up Generators	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	All Hazards	Medium	Hoopeston wishes to seek funding for back-up generators to keep critical facilities operational during a hazard event.
63	Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	High	The City of Hoopeston will work to develop mutual aid agreements between neighboring communities and between fire and police departments.
64	NOAA Weather Radios	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county	All Hazards	Medium	The City of Hoopeston would like to obtain funding to provide residents with NOAA weather radios.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
65	Public Education/Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community Objective: Raise public awareness of hazard mitigation	All Hazards	High	Although this mitigation strategy is ongoing in Hoopeston, the city would like to form a committee to oversee this mitigation strategy. The city will seek funding and a potential completion date would be August 2015.
66	Special Needs Population List	Goal: Create new or revise existing plans/maps Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Medium	Ambulance and emergency responders in Hoopeston will oversee this mitigation strategy. The city will look into its current budget to see if this is a feasible project – if not funding will be pursued.
67	Property Acquisition & Relocation	Goal: Remove at risk structures to reduce flood losses Objective: Support compliance with the NFIP for each jurisdiction.	Flood	Medium	The City of Hoopeston would like to investigate the option of property acquisition and relocation of property that in the floodplain.
68	Develop education materials on the benefits of the NFIP	Goal: Develop long-term strategies to educate residents on the hazards affecting their community Objective: Raise public awareness of hazard mitigation	Flooding	High	The City of Hoopeston wishes to educate its residents on the benefits of the NFIP. Local fire department and the county EMA office will oversee this strategy. The goal is seek funding for this project.
69	Provide and Publicize Location of Safe Rooms and / or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	Tornado	High	Hoopeston has identified the need to promote the location of safe rooms and shelters in the city.
70	Tree Management/Trimming Plan	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	Tornado / Severe Storms	Medium	Hoopeston would like to have limbs cleared from power lines and for low-hanging limbs to be cleared.

Table 5-12: List of Mitigation Strategies Developed at Meeting 4 for Muncie

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
71	Participate in the NFIP	Goal: Create new or revise existing plans/maps Objective: Support compliance with the NFIP	Flooding	High	The Village of Muncie currently participates in NFIP. Muncie will continue to revise plans to maintain active status in the NFIP.
72	Property Acquisition & Relocation	Goal: Remove at risk structures to reduce flood losses Objective: Support compliance with the NFIP for each jurisdiction.	Flood	Medium	The Village of Muncie would like to move home and people in the floodplain. The Village has also identified a park and baseball diamond that has reoccurring flooding.
73	Floodplain Ordinance	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Flooding	Medium	The Village of Muncie will review the current floodplain ordinances in order to satisfy all requirements of the NFIP.
74	Stormwater Ordinance	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Flooding	Medium	The Village of Muncie has identified regions in the village where storm tiles and field tiles need to be replaced in order to help drainage runoff.
75	Dam and/or Levee Maintenance Plan	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Flooding	High	The Village of Muncie would like to revamp the levee/waterway located in south Muncie to divert water away from the middle of town.
76	Elevate Low-Lying Roads	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Flooding	High	The Village of Muncie would like to elevate roads to prevent the road form washing out or holding water.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
77	Installation of Pumping Stations	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Flooding	Medium	The Village of Muncie would like to install pumping stations near the railroad tracks to prevent water from entering the town towards the south.
78	Culvert Replacement in Floodplains	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Flooding	Medium	The Village of Muncie would like to replace culverts to increase the capacity of water movement under roads and alleys.
79	Harden Existing Infrastructure	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Tornadoes/ Severe Storms	High	The Village of Muncie has identified the need to harden the existing infrastructure at the town hall for those with no basements in the event of a tornado.
80	Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Tornadoes/ Severe Storms	Low	The Village of Muncie wishes to remove overhead power lines that could become deadly if damaged by Tornadoes or Severe Storms.
81	Provide and Publicize Location of Safe Rooms and/or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering	Tornadoes/ Severe Storms	Medium	The town hall was built as a safe shelter and doubles as storage. The Village of Muncie will inform the community of the town hall safe room and other locations within the county.
82	Back-up Power Source for the Town Hall	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	All Hazards	Medium	The Village of Muncie wishes to obtain a back-up power source for the Town Hall to help create a heating and cooling center in case of power outage.
83	Ordinance for Higher Construction Standards / Techniques	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Tornadoes / Severe Storms	Medium	The Village of Muncie will develop an ordinance for high construction standards to help make the town safe from faulty construction of homes and buildings.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
84	Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Replace old trees and place wind breaks	Tornado / Severe Storms	High	The Village of Muncie would like to plant trees along the south side of town to develop a windbreak.
85	Emergency Alert System – Sirens	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	Tornado	High	The Village of Muncie would like to obtain funding to install a tornado siren.
86	Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Low	The Village of Muncie would like to obtain funding to install snow fences to slow snow from blowing from south and west of town.
87	Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering	Winter Storms / Extreme Heat and Drought	Medium	The Village of Muncie wishes to create a heating/cooling shelter within the community for people without generators or for those who are traveling through town.
88	Snow Removal Equipment	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Medium	The Village of Muncie would like to obtain equipment for snow plowing (truck or loader) to help clean streets and improve travel conditions.
89	Emergency Plan / Protocol for HAZMAT	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	HAZMAT	Medium	The Village of Muncie aims to create a committee that will oversee the handling of hazardous waste cleanup and planning.
90	Burn Ordinance	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Extreme Heat and Drought	Medium	The Village of Muncie will work to develop a burn ordinance to help prevent fires during dry conditions or fires that are illegally started.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
91	Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	High	The Village of Muncie will work to develop mutual aid agreements between neighboring communities and between fire and police departments.
92	NOAA Weather Radios	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county	All Hazards	Medium	The Village of Muncie would like to obtain funding to provide residents with NOAA weather radios.
93	Upgrade Sewer System	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	All Hazards	Medium	The Village of Muncie would like to install town sewer lines that connect to the Fithian Sewer Plant.
94	Back-up Water Source	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	All Hazards	Medium	The Village of Muncie would like to add city water and sewer to the town. In addition, they would like to add a water tower to increase the water supply to the town.

Table 5-13: List of Mitigation Strategies Developed at Meeting 4 for Oakwood*

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
95	Develop Alternate Traffic Routes	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Develop alternate traffic routes for critical roads	Winter Storms	High	Oakwood has become a drop-off site for stranded motorists and large trucks during winter storms – developing alternate traffic routes and increasing police control would help with this issue.
96	Buy emergency supplies for the local Christian Church	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering	All Hazards	High	The local Christian Church in Oakwood is used as a temporary site for stranded travelers during winter storms. Oakwood wishes to obtain necessary emergency supplies.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
97	Winter Storm Plan	Goal: Create new or revise existing plans/maps Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	High	Oakwood has identified the need to increase the amount of man power used during winter storms. Recent winter storms have required extra time clearing and salting roads.

*Oakwood wishes to adopt Vermilion County's Mitigation Strategies

Table 5-14: List of Mitigation Strategies Developed at Meeting 4 for Ridge Farm

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
98	Family Disaster Plans & Kits	Goal: Develop long-term strategies to educate residents on the hazards affecting their community Objective: Raise public awareness on hazard mitigation	All Hazards	Medium	Ridge Farm has identified the need to raise public awareness in the event of a disaster, to distribute emergency kits, and to encourage residents to have Family Disaster Plans.
99	Establish Local Planning Committee	Goal: Create new or revise existing plans/maps for the county Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	All Hazards	Medium	Ridge Farm would like to establish a local emergency planning committee. This group will be designated to organize emergency procedure on a regular basis.
100	Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	High	Ridge Farm plans to publicly appeal to its citizens and ask the special needs population or those caring for them to provide data for this list.
101	Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	Extreme Heat / Cold	Medium	Ridge Farm plans to make the public aware of the existing heating and cooling shelters in the village.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
102	Burn Ordinance	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Extreme Heat / Drought	Medium	Ridge Farm wishes to develop and implement an ordinance to limit/prohibit burning of any kind during heat or drought conditions.
103	Participate in the NFIP	Goal: Create new or revise existing plans/maps Objective: Support compliance with the NFIP	Flooding	Low	Ridge Farm currently participates in NFIP. Ridge Farm will continue to monitor existing plans/maps and satisfy all requirements of the NFIP in case flooding becomes a problem in the future.
104	Stormwater Management Ordinances	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Flooding	Low	Ridge Farm does not currently have stormwater ordinances in place. The village will work to develop ordinances should stormwater become an issue in the future.
105	Emergency Plan / Protocol for HAZMAT	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	HAZMAT	Medium	Ridge Farm does not have an Emergency Plan in the event of a HAZMAT incident. The village plans to develop a protocol for evacuation in the event of a chemical or other hazardous material spill.
106	Provide and Publicize Location of Safe Rooms and / or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	Tornado / Severe Storms	Medium	Ridge Farm plans to make the public aware of the existing shelters and safe rooms.
107	Anchoring of Manufactured Homes & Exterior Attachments	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Tornado / Severe Storms	Medium	Ridge Farm will work to develop and implement an ordinance requiring all manufactured homes and trailers to have tie downs.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
108	Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Medium	Ridge Farm wishes to install snow fences to help the drifting and blowing of snow to minimize the amount of snowdrift on roadways and railways.

Table 5-15: List of Mitigation Strategies Developed at Meeting 4 for Sidell

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
109	Public Education/Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community Objective: Raise public awareness of hazard mitigation	All Hazards	High	Sidell plans to raise public awareness of hazard risk.
110	Participate in the NFIP	Goal: Create new or revise existing plans/maps Objective: Support compliance with the NFIP	Flooding	Medium	Sidell does not currently participate in the NFIP. The village plans to investigate its options.
111	Stormwater Management Ordinances	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Flooding	Medium	Sidell does not currently have stormwater ordinances in place. The village will work to develop ordinances should stormwater become an issue in the future.
112	Floodplain Ordinances	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Flooding	Low	Sidell does not currently have floodplain ordinance in place. The village will work to develop ordinances should flooding become an issue in the future.
113	Anchoring of Manufactured Homes & Exterior Attachments	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Tornado / Severe Storms	High	Sidell will work to develop and implement an ordinance requiring all manufactured homes and trailers to have tie downs.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
114	Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Minimize the amount of infrastructure exposed to hazards	Tornado / Severe Storms	Medium	Sidell does not currently require new construction to bury power lines. The Village will consider this mitigation strategy for the future.
115	Provide and Publicize Location of Safe Rooms and / or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	All Hazards	High	Sidell plans to make the public aware of the existing shelters and safe rooms.
116	Back-up Generators	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	All Hazards	High	Sidell wishes to seek funding for back-up generators to keep critical facilities operational during a hazard event.
117	Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	Extreme Heat / Cold	High	Sidell wishes to seek funding for additional heating and cooling shelters. The village plans to make the public aware of the existing heating and cooling shelters.
118	Emergency Plan / Protocol for HAZMAT	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	HAZMAT	High	Sidell has an Emergency Plan in place in the event that a chemical discharge occurs. The village plans to update and maintain this plan.
119	Burn Ordinance	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Extreme Heat / Drought	High	Sidell already implements an ordinance to limit/prohibit burning of any kind during heat or drought conditions.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
120	Water Rationing	Goal: Create new or revise existing plans/maps Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	Extreme Heat / Drought	High	Sidell already implement an ordinance to limit/prohibit excessive use of water during heat or drought conditions.
121	Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	High	Sidell identifies the need to establish mutual aid agreements with neighboring communities.
122	Family Disaster Plans and Kits	Goal: Develop long-term strategies to educate residents on the hazards affecting their community Objective: Raise public awareness on hazard mitigation	All Hazards	High	Sidell will work to educate village residents on the need for family disaster plans.
123	Back-up Water Supply	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	All Hazards	High	Sidell wishes to seek funding for back-up water supply in the event of a hazard.
124	Establish Local Planning Committee	Goal: Create new or revise existing plans/maps for the county Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	All Hazards	Medium	Sidell would like to establish a local emergency planning committee. This group will be designated to organize emergency procedure on a regular basis.

Table 5-16: List of Mitigation Strategies Developed at Meeting 4 for American Red Cross

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
125	Provide and Publicize Location of Safe Rooms and / or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	All Hazards	High	The American Red Cross will assist the EMA to help educate and publicize shelter safety.
126	Cooling/Warming Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering in the county	Extreme Temperatures	High	The American Red Cross will continue to identify and open shelters as requested.
127	Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community Objective: Raise public awareness of hazard mitigation	All Hazards	High	The American Red Cross will continue to educate adults and children on safety measures
128	Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	High	The American Red Cross will continue to work with other agencies within Vermilion County and develop agreements.
129	Back-up Generators	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caused by secondary effects of hazards	All Hazards	High	The American Red Cross already has a generator at the EMA facility.
130	Family Disaster Plans and Kits	Goal: Develop long-term strategies to educate residents on the hazards affecting their community Objective: Raise public awareness on hazard mitigation	All Hazards	High	The American Red Cross will continue to educate the public on the need for family disaster plans.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
131	Establish Local Planning Committee	Goal: Create new or revise existing plans/maps for the county Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	All Hazards	High	The American Red Cross will serve on the Vermilion County LEPC.

*Representatives from American Red Cross suggest several mitigation items specific to the county.

Table 5-17: List of Mitigation Strategies Developed at Meeting 4 for Vermilion County Health Department*

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
132	Public Education / Awareness	Goal: Develop long-term strategies to educate Vermilion County residents on the hazards affecting their community Objective: Raise public awareness of hazard mitigation	All Hazards	High	The Vermilion County Health Department has an ongoing public education and awareness program that educates the public and disseminates information regarding all hazards. They provide information to local and public radio and television regarding emergency warning and public service announcements. The VCEMA, VCHD, Red Cross, and Media are involved. Funding sources include federal, state, local, and grants.
133	NOAA Weather Radios	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county	All Hazards	High	The Vermilion County Health Department encourages the use of NOAA all-hazards radios in residences and businesses throughout unincorporated areas. Local funding sources are utilized.
134	Family Disaster Plans and Kits	Goal: Develop long-term strategies to educate residents on the hazards affecting their community Objective: Raise public awareness on hazard mitigation	All Hazards	High	The Vermilion County Health Department currently educates the public on the importance of family disaster plans and kits. Local funding sources are utilized.

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
135	Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Medium	The Vermilion County Health Department would like to create a special needs population list by the end of 2016. The VCEMA, VCHD, Red Cross, CRIS, and Crosspoint will participate. Potential funding sources include federal, state, and local.

*Representatives from a few of the Vermilion County Health Department suggest several mitigation items specific to the county.

Table 5-18: List of Mitigation Strategies Developed at Meeting 4 for Vermilion County Schools*

No.	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
136	Establish Emergency Planning Committee	Goal: Create new or revise existing plans/maps for the county Objective: Review and update existing, or create new community plans and ordinances to support hazard mitigation	All Hazards	High	All school buildings have a Crisis Team to prepare for disasters. In addition, local police have been granted access to all school buildings and have school maps.
137	Public Education / Awareness	Goal: Develop long-term strategies to educate Vermilion County residents on the hazards affecting their community Objective: Raise public awareness of hazard mitigation	Fire / Tornado	High	Fire, tornado, and bus evacuation drills are conducted a minimum of two times each school year in each building.
138	Emergency Alert System – Sirens	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	Fire / Tornado	High	Fire and tornado alert systems are in each school building. In addition, per the Strategic Plan, each building's intercom systems have been updated to assist with communication within buildings

*Representatives from a few of the school districts of Vermilion County suggest several mitigation items specific to schools in the county.

APPENDIX N

Plan Maintenance Checklist

We are in the process of conducting our annual evaluation/status update for our Multi-Jurisdictional Hazard Mitigation Plan. Please review the following tasks and complete and return this checklist along with the necessary forms. If you have any questions, please let us know.

Jurisdiction: _____

Prepared By: _____

Title: _____ Date: _____

TASK 1: DAMAGE INFORMATION

Has your jurisdiction sustained any natural hazard-related damages to critical facilities and infrastructure within the last year?

☐ Yes ☐ No ☐ Don't Know

If Yes, please complete and return the attached critical facilities damages questionnaire.

TASK 2: STATUS OF EXISTING PROJECTS/ACTIVITIES

Please look over the attached Mitigation Action Tables for your jurisdiction and determine whether any of the mitigation projects/activities listed have been completed or are in progress (in the planning stages.)

Does your jurisdiction have any mitigation projects/activities in progress (in the planning stages) or completed?

☐ Yes ☐ No

If Yes, please fill out and return the attached Mitigation Action Progress Report for each project/activity that has been completed or is in progress.

Has your jurisdiction undergone any changes in priorities within the last 12 months that would impact the implementation of the listed mitigation projects/activities?

☐ Yes ☐ No

If yes, please detail the changes in priorities.

_____

_____

_____

Plan Maintenance Checklist

TASK 3: IDENTIFICATION OF NEW PROJECTS/ACTIVITIES

Are there any new mitigation projects/activities your jurisdiction would like to see add to the Plan? (Remember, only projects included in the Plan are potentially eligible for federal mitigation projects funding.)

☐ Yes ☐ No

If yes, please complete and return the attached New Mitigation Project Form.

TASK 4: JURISDICTION EVALUATION

Have there been any significant changes in development in your jurisdiction within the last 12 months (i.e. expansion of existing businesses, siting of new businesses, new subdivision development, or expansion of existing subdivisions, demolition of businesses/residents to create green spaces, etc.)

☐ Yes ☐ No

If yes, please specify the type of development changes.

Has your jurisdiction adopted any new/updated policies, plans, regulations, or reports (i.e., comprehensive plans, building codes, zoning ordinance, etc.) that could be incorporated into this Plan?

☐ Yes ☐ No

If yes, please provide the name of the policy, plan, regulation, or report and its purpose.

Were any components of the Hazard Mitigation Plan (i.e., mitigation actions, vulnerability analyses, etc.) integrated into any new/updated policies, plans, regulations, or reports (i.e., comprehensive plans, building codes, zoning ordinance, etc.)?

☐ Yes ☐ No

If yes, please provide the name of the policy, plan, regulation, or report and what component(s) of the hazard mitigation plan were integrated.

Plan Maintenance Checklist

TASK 4: JURISDICTION EVALUATION CONTINUED…

Do any new critical facilities or infrastructure need to be added to your jurisdiction's Critical Facilities Survey?

☐ Yes ☐ No

If yes, please provide the name and address of the facility.

What are your plans for sharing information on the Plan and its annual progress with your jurisdiction and constituents (i.e., informal presentation at board/council meeting, posting update to social media or website, etc.)?

Critical Facilities Damage Questionnaire

Supplemental information about ***damages to critical infrastructure/facilities*** (i.e., government buildings, schools, communication towers and radio equipment, water & sewer treatment facilities, hospitals, medical centers, etc.) that have ***taken place*** in the participating jurisdictions and County is needed for the risk assessment/vulnerability analysis portion of the Plan. If you could take a moment and think about the critical infrastructure damages caused by past natural hazard occurrences and provide any available information in the form below, it would be greatly appreciated.

Please complete <u>one record</u> for <u>each natural hazard event that damaged a critical facility</u>. Do not combine multiple events on one record. Additional forms are located on the back of this page. Please return the completed form(s) to Andrea or Zak. Thank you!

Jurisdiction: _____

Prepared By: _____ Date: _____

1.) Date of Event (month/day/year if possible)**:** _____

2.) Critical Facility Damaged: _____

3.) Type of Hazard:

☐ thunderstorm (straight-line winds)	☐ tornado	☐ landslide
	☐ snow storm	☐ sinkhole
☐ hail	☐ ice storm	☐ mine subsidence
☐ lightning strike	☐ extreme cold	☐ earthquake
☐ heavy rain	☐ drought	☐ levee failure
☐ flood	☐ excessive heat	☐ dam failure

4.) Types of Damages: _____

_____

5.) Estimate of Damages: $ _____

Mitigation Action Progress Report

As part of the Plan Maintenance "monitoring" phase, the implementation status of each project and activity listed in the Plan for the participating jurisdictions needs to be identified.

1) Please review the Mitigation Action Tables provided for your jurisdiction to determine whether any of the projects/activities listed have been ***"Completed"*** or are ***"In Progress"*** (in the planning stages.)
2) For each project or activity that is ***"Completed"*** or "***In Progress"***, please fill out the following Progress Report.

Jurisdiction: _____

Prepared By: _____

Title: _____ Date: _____

Progress Report Period	From Date: To Date:
Project/Activity Description	
Responsible Agency	
Project Status	☐ In Progress ☐ Approved by Council/Board ☐ Included in Capital Improvement Plan/Slated for Construction & Implementation ☐ Grant Completed & Submitted ☐ Letting/Contractor Selected ☐ Notice to Proceed Issued ☐ Construction Underway ☐ Anticipated Completion Date: _____ ☐ Other (please specify): _____ ☐ Completed ☐ Project Delayed ☐ Project Cancelled

SUMMARY OF PROJECT PROGRESS FOR THIS REPORT PERIOD

What was accomplished during this reporting period for this project?

Were any obstacles, problems or delays encountered?	☐	Yes	☐	No	☐ Don't Know
If Yes, please describe:					

If the project was delayed, is it still relevant?	☐	Yes	☐	No	☐ Don't Know
If Yes, should the project be changed/revised?					

Other comments:

New Hazard Mitigation Projects Form
Multi-Jurisdictional Hazard Mitigation Plan

Participating Jurisdiction _____

Prepared by: _____

Title _____ Date: _____

	Project Description	**Position/Organization Responsible for Implementation & Administration of the Project** *(i.e. Mayor / City Council; Public Works Director; Fire Chief / Board of Trustees)*	**Time Frame to Complete the Project** *(i.e. 1 year; 5 years; 2-5 years)*
1.			
2.			
3.			
4.			

APPENDIX O